City of Peterborough

To:	**Members of the General Committee**
From:	**Cynthia Fletcher** **Commissioner of Infrastructure and Planning Services**
Meeting Date:	**July 5, 2021**
Subject:	**Report IPSTR21-009** **Cycling Master Plan Update**

Purpose

A report to recommend approval of the Vision, Goals and Scenario for the Cycling Master Plan, and to update Council on the project.

Recommendations

That Council approves the recommendations outlined in Report IPSTR21-009, dated July 5, 2021, of the Commissioner, Infrastructure and Planning Services as follows:

a) That the presentation by IBI Group on the Cycling Master Plan be received;

b) That the recommended Vision for the Cycling Master Plan "Peterborough is a leader in cycling with a safe, connected and accessible network that serves all ages and abilities by 2041. Cycling for transportation and recreation contributes to a thriving, healthy and resilient community and supports the City's sustainability and climate change goals." be approved;

c) That the Goals for the Cycling Master Plan, as outlined in Table 1, be approved; and

d) That a hybrid Accelerate-Spark Scenario, as outlined in the report, be endorsed for the purposes of completing the Cycling Master Plan.

Budget and Financial Implications

There are no direct financial implications associated with approval of the recommendations of this report.

In the 9-year period between 2012 and 2020, the City invested approximately $19.1 M on trails and on-road cycling infrastructure incorporated into road reconstruction projects or separate trail or bicycle lane projects. This equates to an investment of approximately $2.1 M per year, comprised of $1.5 M in City funding and $0.6 M in external funding annually.

To implement the hybrid “Accelerate-Spark Scenario”, future capital investments would be required to construct new cycling infrastructure and new operating costs would be incurred to maintain an expanded multi-use trail and on-road base cycling network that would include approximately 80 km of new cycling infrastructure, in addition to the 76 km of trails and cycling lanes that exist today.

Building the base network described in the hybrid “Accelerate-Spark Scenario” over the 2021-2041 horizon represents an annual capital investment of between $1.2 M-$1.5 M per year, in 2020 dollars and is consistent with the aggressive pace that cycling infrastructure has been provided over the past 9 years. Some of the projects contemplated for this strategy are already in the planning stages, as part of road reconstruction projects.

Requests for capital and operating funding will be reflected in future budget requests and reviews. Opportunities to secure federal funding, through the recently announced National Active Transportation Strategy, will be explored once eligibility details of this new federal infrastructure program are announced. Securing funding under this program may allow the City to leverage the recommended investment to construct additional strategic cycling infrastructure, associated with the Spark Scenario.

Background

A Cycling Master Plan is a long-term strategic plan intended to:

- Guide the development and implementation of the cycling network over time;
- Identify supporting programs and policies;
- Provide recommendations to support cycling as part of the broader multi-modal transportation network, and
- Provide an action-oriented implementation plan to guide investment over the short-term horizon.

Council, at its meeting of June 26, 2017 in considering Report USTR17-015 – Implementation of the Cycling Network, recommended that staff update the Cycling Network shown in the 2012 Comprehensive Transportation Plan. The Cycling Master Plan is intended to feed into the Transportation Master Plan and includes the development of a mode share target for cycling.

In January 2020 a Request for Proposals was released to retain a project consultant to develop the plan, and Report IPSTR20-007 – Award of RFP-01-20 Cycling Master Plan, recommended awarding the project to IBI Group. The project commenced in the late spring of 2020 and an internal working group with representation from transportation planning, transit, engineering and construction, infrastructure planning, public works, planning, and accessibility have reviewed progress of the work.

Cycling Master Plan Process

The Cycling Master Plan provides the blueprint to building a more cycling-friendly city and encouraging more people to choose cycling as a transportation option in Peterborough. The process being followed for this study is consistent with the Municipal Class Environmental Assessment (MCEA) process. Some of the larger infrastructure projects recommended in a Cycling Master Plan will still require further study and detailed level of design work prior to approval for implementation.

The scope of the Cycling Master Plan project includes:

- An assessment of the existing cycling network, programs, and travel patterns in the City;
- A review of case studies from leading bicycle friendly communities to incorporate best practices and lessons learned into a plan designed for Peterborough;
- Establishing a long-term vision and goals for cycling to guide infrastructure and policy development;
- Development of scenarios to assess the costs, benefits and potential mode share targets associated with different levels of cycling investment;
- Expansion and identification of policies and programming to support enhanced cycling use;
- Development of a future cycling network to guide infrastructure planning, budgeting and implementation priorities;
- The assessment of opportunities and development of functional plans for new cycling facilities in 8 corridors where future road construction work is already planned;

- Development of bicycle facility design guidelines for use in future capital projects; and

- Extensive public engagement program to seek feedback from residents and other stakeholders on all aspects of the Cycling Master Plan.

Many of the project tasks have been completed and several are still underway, with more work to be done over the upcoming months. Appendix A includes a working draft of the first three chapters of the Cycling Master Plan report, which represents a compilation of the work completed to date on the project, including;

- an overview of the project

- policy context and prevailing travel trends

- a vision for cycling in Peterborough

- goals to support the vision

- assessment of three scenarios representing different alternatives for cycling investment and support in Peterborough over the 20-year horizon of the study.

Public engagement to support the initial phases of the project has also been completed as described below.

Work on the assessment and evaluation of potential cycling infrastructure along 8 corridors is ongoing. Two of the corridor assessments for Charlotte Street and George Street South have been completed and have been presented to Council for approval through Reports IPSTR20-025 – Cycling Facilities on Charlotte Street and IPSTR21-001 – Extension of Cycling Lanes on George Street. Works on 6 other corridors are in progress.

Development of the Vision, Goals, Scenarios and a recommended Scenario, with an assessment of potential cycling mode share targets, have been completed. The summary of Community Engagement, and recommended Vision, Goals, and Scenarios are presented below.

Community Engagement

To inform the development of the Vision, Goals and Scenario, three “rounds” of engagement have been completed with the community and stakeholders to date. The project was started during the pandemic and most public engagement activities have been in an online format using the ConnectPtbo engagement platform. The address for the Cycling Master Plan page is **www.connectptbo/cycling**.

The purpose of these public engagements was to:

- Introduce the project and understand the community aspirations for the Cycling Master Plan;
- Receive input on the project direction including the draft vision statement, project goals and scenarios;
- Receive input on network development criteria and potential mode share targets associated with each of the scenarios; and
- Share and receive input on the proposed the cycling network, including improvements to existing cycling infrastructure and priorities for new infrastructure.

As noted with other projects, on-line engagement is becoming more challenging as the process develops, particularly as there is more material, including detailed maps, to present. As a result, the consultation programs are taking longer to complete to ensure that residents have a chance to participate and to review the material and provide feedback through online forums.

Despite the challenges with an online format, community response has been strong with approximately 490 responses to the initial on-line survey held during the summer of 2020, 169 responses to the first public engagement session held in the fall of 2020, and 191 survey responses for the second public engagement session held in the Spring of 2021. Additional consultation has been held for each of the corridors where the team has developed functional plans for new cycling infrastructure, with 379 responses received for the Charlotte Street project and 230 responses received for the George Street project.

As seen by the number of survey responses, a significant amount of community interest has been generated in this project. Respondents to the surveys represent a wide range of age groups and income levels. This is important because one of the outcomes of a more cycling friendly community is a transportation system that better meets the needs of people of diverse ages and incomes, improving transportation equity.

The following additional public engagement activities have taken place:

- a stakeholder visioning workshop was held on-line in June 2020;
- a focus group with lower income people was held in person at B!KE in December 2020 to gain a better perspective on issues impacting lower income cyclists;
- Several meetings have been held with the Peterborough Bicycle Advisory Committee to discuss some aspects of the plan in more detail;
- Meetings with programming stakeholders (GreenUP and B!KE); and

- Meetings with other stakeholders, such as Trent University and the Peterborough Environmental Advisory Committee.

Cycling Master Plan – Foundational Work

The focus to date has been to develop the foundational components of the plan including the Vision, Goals and a recommended Scenario to form the basis for the plan. These will provide the direction for the development of the other components of the Cycling Master Plan, including the cycling network, policies, and programs.

Cycling Master Plan Vision

The vision statement was developed and refined through public engagement and input from the Peterborough Bicycle Advisory Committee. The recommended Vision is:

"Peterborough is a leader in cycling with a safe, connected and accessible network that serves all ages and abilities by 2041. Cycling for transportation and recreation contributes to a thriving, healthy and resilient community and supports the City's sustainability and climate change goals."

The vision statement, presented to Council for approval, reflects the community input received and recognizes the inherent relationship between a continued growth in cycling and meeting the City's sustainability, climate change, and public health related goals. In the Spring 2021 public engagement, 78% of respondents indicated strong support for the vision statement, 16% somewhat supported it, 2% were neutral, 2% somewhat do not support and 3% strongly do not support the vision statement. Overall, 94% of respondents indicated support for the vision statement.

Cycling Master Plan Goals

The vision statement describes the overarching desired future for cycling within the City of Peterborough, and the goals are actionable items that will help achieve the vision and support cycling in Peterborough. They describe how the vision statement can be realized, and in the final Cycling Master Plan, each one will be associated with a series of actions and recommendations.

Comments received from the community and various stakeholders helped shape the goals. In the spring 2021 survey, 73% of respondents indicated strong support for the goals, 18% indicated that they somewhat support the goals, 4% were neutral, 1% somewhat do not support, and 4% strongly do not support the proposed goals. Overall, 91% of respondents indicated support for the goals. Table 1 summarizes the recommended goals for use in the Cycling Master Plan.

Table 1- Cycling Master Plan Goals

Goal	Description
Create an Irresistible Network	This goal focuses on creating a more connected, accessible, and safer cycling network, making cycling a more attractive and competitive mode of transportation.
Encourage Year-Round Riding	To achieve a consistent, higher mode share of cycling, year-round cycling is important. The focus of this goal is on supporting maintenance practices that will encourage people to cycle year-round and make winter cycling a more viable and enjoyable mode of transportation.
Pursue Design Excellence	This goal focuses on developing a network that is accessible to cyclists of all ages and abilities, with an emphasis on separated cycling infrastructure, quiet streets routes and bicycle boulevards that provide a higher level of comfort for people cycling.
Build Cycling Culture	This goal focuses on continued and expanded programming efforts that contribute to a community culture that is supportive and aware of cycling as a mode of transportation. Programming efforts help increase ridership, contributing to mode share targets and positive health outcomes for the community.
Go for Gold	This goal focuses on an implementation plan that will help Peterborough become a cycling leader in Canada. This study's goal focuses on achieving a Gold certification level through the Bicycle Friendly Communities program.

Cycling Master Plan Scenario Development

A four-step approach was taken to developing Cycling Scenarios to guide the development of the Cycling Master Plan, including the assessment of potential cycling mode shares in Peterborough:

1. Evaluate current network and model travel behavior;

2. Scenario development and visioning;

3. Qualitative evaluation and public engagement; and

4. Quantitative evaluation of Scenarios.

In Step 2, three scenarios emerged: Continue, Accelerate, and Spark. These scenarios build on the current network of cycling facilities and involve increasing levels of investment to expand the cycling network and encourage increased usage.

Population and employment projections were used to assess the potential for increased cycling activity and to establish potential future mode shares based on the infrastructure growth and trends uncovered in Step 1. In addition to infrastructure, an increased investment in programming and policy were included in the Accelerate and Spark scenarios to support further increases in cycling use and the higher potential mode shares.

The current cycling network consists of approximately 76 km of infrastructure. The three future scenarios are described below:

Continue: Modest Investment

The Continue scenario focuses on maintaining and filling connectivity gaps between segments of the existing network and upgrading some minor segments of the network. While no major investment in new facilities is included in this scenario, the filling of connectivity gaps in the existing network results in approximately 20 km of new network connections by 2041.

The initial, very high-level capital cost estimate to implement the Continue scenario is between $6M -$7.3 M over a 20-year span of the plan, based on historical costs to develop the existing network. This equates to an annual capital investment of between $0.3 M-$0.4 M per year, in 2020 dollars.

Implementing the Continue scenario has the potential to increase the future cycling mode share to 5% of all trips (up from 3.5% today), based on infrastructure investment only.

Accelerate: Increased Investment

The Accelerate scenario focuses on improving cycling facilities in higher density areas close to the downtown core. In this scenario, dedicated cycling facilities would be constructed so that all residents living within 2 km of downtown would be located within 400 m of a cycling facility, along with some targeted investments and upgrades in areas beyond the 2 km radius. This scenario calls for the construction of 80 km of new infrastructure by 2041 and an increase in funding towards programming.

The initial, very high-level capital cost estimate to implement the Accelerate scenario is between $24 M -$29 M over a 20-year span of the plan. This equates to an annual capital investment of between $1.2 M - $1.5 M per year, in 2020 dollars.

Implementing the Accelerate scenario has the potential to increase the future cycling mode share to 7-10% of all trips (up from 3.5% today).

Spark: Significant Investment

The spark scenario describes an aggressive plan to ensure that cycling facilities are nearby for most residents of the city. Like the Accelerate scenario, all residents living within 2 km of downtown would be within 400 m of a cycling facility. Outside of the

downtown core, 90% of residents would also be within 400 m of a cycling facility. The aim of this scenario is to make cycling on a dedicated route an option across Peterborough. A proposed network of 160 km of new cycling infrastructure would be constructed in this scenario, along with an increase in funding towards programming.

The initial, very high-level capital cost estimate to implement the recommended cycling scenario is between $48 M -$58 M over a 20-year span of the plan, based on historical costs to develop the existing network. This equates to an annual capital investment of between $2.4 M-$2.9 M per year, in 2020 dollars. Some of the projects contemplated for the final plan are already in the planning stages, as part of road reconstruction projects.

Implementing the Spark scenario has the potential to increase the future cycling mode share to 12% (up from 3.5% today). This scenario reflects the development of a true "bike culture", which tends to reinforce cycling as a viable transportation choice among a much larger proportion of the population as increased ridership exponentially grows the visibility of cyclists.

Scenario Evaluation

Each of the three scenarios were assessed from three key perspectives.

- A Qualitative assessment reviewed how each scenario aligned with other City plans and goals (such as Climate Change, Community Health, Mobility and Equity benefits).

- A Quantitative assessment used more traditional cost-benefit measures of performance (including factors such as Greenhouse Gas Emission reductions, Air Quality Improvement, congestion and auto operating cost reductions) to report on the financial performance of each scenario.

- The scenarios were presented in two public engagement surveys for feedback, and the results of the public feedback was used as the third perspective in the scenario evaluation.

The results of the evaluation are summarized in Table 2. A more detailed overview of the assessment and evaluation process and results is summarized in Appendix B.

Table 2 – Summary of Scenario Evaluation

Evaluation Perspective	Scenario		
	Continue	Accelerate	Spark
Alignment with Other City Plans / Goals (Qualitative)			Preferred
Benefits & Costs (Quantitative)		Preferred	
Public Feedback		Endorsed	Preferred

The Scenario Evaluation results concluded that the Spark Scenario ranked highest in the Qualitative assessment reflecting a higher degree of alignment with other City plans and goals compared to the Accelerate and Continue Scenarios.

In both public engagement sessions, a survey of participants indicated a majority supportive of the Spark scenario. At the 1st Public Open House most participants indicated support for the Spark scenario (72.9%). This was followed by the Accelerate scenario (20.5%) and then the Continue scenario (3.6%). In the Spring 2021 survey, 78% of respondents indicated that they were very supportive of the draft recommendation of the Spark scenario, 15% were somewhat supportive, 2% were neutral, 2% somewhat do not support and 3% strongly do not support the Spark scenario. Overall, 93% of respondents indicated support for the Spark scenario.

The cost-benefit assessment completed as part of the quantitative analysis compared total capital and operating costs for each scenario with estimated societal cost savings (benefits). The assessment found that the Accelerate scenario performs the best of three scenarios, with approximately $31.6M in overall societal benefits over a 20 year horizon at an overall cost of $28.0 M, for a benefit-cost ratio of 1.13. The difference between overall costs and overall benefits (also known as the net present value) is estimated at $3.6M. The Spark Scenario also provides societal benefits greater than the overall cost, with a benefit-cost ratio of 1.03, suggesting that either scenario can be justified based on overall value to society.

At the April 21, 2021 meeting of the Peterborough Environmental Advisory Committee, the proposed Cycling Master Plan Vision, Goals and Spark Scenario were endorsed as a key strategy to help mitigate greenhouse gas (GHG) emissions from the community transportation sector to achieve broader community reduction targets.

Prior Investment

In the 9-year period between 2012 and 2020, the City invested approximately $19.1 M on trails and on-road cycling infrastructure, representing an aggressive rate of investment of approximately $2.1 M per year. Of that, an average of approximately $1.5 M per year was City funded, through tax supported capital funding and development

charges, while an average of $0.6 M per year was funded from other sources, such as private donors and provincial grants.

Recommendation

Implementing any scenario which increases the cycling network will require new capital investment to fund initial construction, an annual investment in increased operating costs to support maintenance of the additional infrastructure, and additional programming costs to support and encourage increased cycling rates. The Spark Scenario, while providing a number of benefits, would proportionally require more annual operating and maintenance investment than the other 2 scenarios and it may prove to be difficult to provide funding for this scenario on a sustained basis. The City will need to consider the cycling priority in relation to many other Council and Community priorities.

The Accelerate Scenario would essentially double the cycling network compared to the current network, at a funding level that the City has been able to maintain over the past 9 years. The quantitative analysis of costs and benefits found that the Accelerate Scenario would have the highest ratio of benefits to costs. The lower benefit-cost ratio of the Spark Scenario (compared to Accelerate) suggests the significant cost associated with this level of network expansion brings a diminishing return on community benefits. It is important to recognize that many of the community benefits of investing in cycling accrue at the provincial and federal levels of government (such as reduced health care costs) and are not realized by the City directly.

Based on the work completed to date, and the above considerations it is recommended that the City complete the Cycling Mater Plan based on a hybrid Accelerate-Spark scenario, consisting of the following strategies:

- Provide a base Cycling Network and Implementation Funding Plan based on the Accelerate Scenario (up to 80 km of new infrastructure), at an estimated annual investment cost of between $1.2 M-$1.5 M per year, in 2020 dollars; and

- Identify and prioritize additional strategic cycling infrastructure, associated with a Spark Scenario, which could be implemented if new / external funding is secured.

The Cycling Master Plan final report will provide additional detail on the recommended base cycling network, the potential strategic cycling facilities, and will refine the high-level capital and operating cost estimates noted above for implementing the recommended scenario.

Alignment with Transportation Master Plan

The Cycling Master Plan is one of the “feeder’ studies supporting the completion of the ongoing Transportation Master Plan (TMP). The vision, goals and cycling scenario approved as part of the Cycling Master Plan will form inputs to the “Future Transportation Strategy Development” Phase of the TMP, which will undertake an

assessment of various integrated multi-modal transportation strategies to develop a recommended strategy to guide the completion of the TMP.

As part of this work, additional technical assessment of various mode share scenarios for all modes of travel will be undertaken using quantitative modelling tools to understand the benefits, trade offs, and achievability of various individual targets for cycling use, walking, transit, and auto use, and how they support the recently approved vision, goals and objectives of the TMP. This work will include scenario based testing and the consideration of external trends influencing travel behaviour to develop final mode share forecasts for all modes of travel, which will be used as the basis for planning and infrastructure needs in the TMP.

The network development phase of the Cycling Master will provide a detailed Cycling Network that will be incorporated into the TMP, and the policy and programming work will provide background input to support the development of an integrated transportation policy approach across all modes of travel for the final TMP.

Next Steps

The next phase of the Cycling Master Plan study includes refinement of the cycling network recommendations, and policy and program recommendations. In addition to recent recommendations for Charlotte Street (Park Street to Monaghan Road) and George Street (Lake Street to Lansdowne Street) have already been approved by Council, work is continuing to develop concept plans for the other six corridors, which will include additional public engagement. Developing design guidelines for cycling facilities is will also start this summer, and project completion is anticipated for late fall 2021.

Summary

The Cycling Master Plan provides the blueprint to building a more cycling-friendly city and encouraging more people to choose cycling as a transportation option in Peterborough. There appears to be a high level of community interest in the Cycling Master Plan with good participation in the three public engagements so far.

Approval of the recommended Vision, Goals, and Scenario will set the foundation for the development of the other components of the Cycling Master Plan. The technical work program and community responses to date indicate strong support for the Spark scenario, including an extensive investment in new cycling infrastructure, which can support a number of City goals and objectives and has the potential to achieve a 12% cycling mode share in the future. This scenario and potential mode share target will feed into, and be further assessed, as part of the Transportation Master Plan process. Council is asked to endorse the hybrid Accelerate-Spark Scenario for the purposes of completing the Cycling Master Plan. The level of investment and implementation horizon (planned for 20 years) will be approved by Council as part of the annual budget review process.

Submitted by,

Cynthia Fletcher
Commissioner, Infrastructure and Planning Services

Contact Name:

Kevin Jones
Manager, Transportation
Phone 705-742-7777; ext. 1895
Toll-Free: 1-855-738-3755
E-mail address: kjones@peterborough.ca

Susan Sauve
Transportation Demand Management Planner
Phone 705-742-7777; ext. 1485
E-mail address: ssauve@peterborough.ca

Attachments:

Appendix A: Draft Cycling Master Plan Working Report – Chapters 1-3
Appendix B: Scenario Evaluation Memo

Report IPSTR21-009 - Appendix A

Draft Report

Peterborough Cycling Master Plan

Report

Prepared for City of Peterborough
by IBI Group
With Share the Road
April 15, 2021

Table of Contents

1 Project Overview and Context

1.1 What is a Cycling Master Plan?

A Cycling Master Plan is a **long-term strategic plan** intended to:

- Guide the development and implementation of the cycling network over time;
- Identify supporting programs and policies;
- Includes recommendations to support cycling as part of the broader multi-modal transportation network, and
- Provide an action-oriented implementation plan to guide investment over the short-term horizon.

The Cycling Master Plan provides the blueprint to **building a more cycling-friendly city** and encouraging more people to choose cycling as a transportation option in Peterborough.

A master plan is not the same as a capital plan or feasibility study. It articulates the vision, network concept and recommendations. However, each project or program in the master plan will be subject to additional steps prior to implementation, depending on the project type and funding needs.

Role of a Master Plan

A Master Plan Provides:

- An overall vision and strategy;
- An ultimate network concept;
- An implementation plan for short-term improvements;
- Policy, programming and network recommendations.

A Master Plan Does Not Provide:

- Specific design and implementation details for proposed facilities (except for case study corridors);
- Detailed cost estimates and annual funding commitments.

1.2 Why does Peterborough need a Cycling Master Plan?

Creating a Cycling Master Plan allows the City of Peterborough to:

- Create a long-term vision for cycling in Peterborough and set goals for how cycling will fit into the overall transportation system and serve desired land-use patterns;
- Effectively grow the cycling network in a coordinated and strategic manner while improving connectivity, accessibility and safety; and
- Contribute to sustainability, social equity and climate change action in Peterborough.

Increasing cycling provides many benefits, both to individuals and the City as a whole, and aligns with policy objectives at the municipal, provincial and federal level. Integrating physical activity into day-to-day transportation needs through cycling is an effective way to improve personal physical and mental health and can even lead to reduced pressure on the public health system. Increasing the number of people cycling can also create a more liveable city, leading to positive place-making outcomes. Finally, reducing the reliance on personal automobiles can contribute significantly to the emissions reduction targets from the Climate Change Action Plan. For more information on the benefits of cycling, the *Peterborough City & County Active Transportation and Health 2020 Indicators Report* further describes many benefits that accrue to communities that are more bike friendly.

1.3 What's Inside

The Cycling Master Plan report has been structured around the following sections:

- **Chapter 1** provides context on the study process, consultation, policy and travel trends in Peterborough to inform the master plan development;
- **Chapter 2** provides the foundation for the study by describing the project vision and goals;
- **Chapter 3** provides a summary of scenario development and evaluation to guide the plan recommendations;
- **Future Chapters 4 through 7** will identify the core study recommendations and actions, with each chapter linked to a core study goal:
  - Create an Irresistible Network
  - Encourage Year-Round Riding
  - Pursue Design Excellence
  - Build a Cycling Culture; and
- **Future Chapter 8 will** describe the fifth and final goal (Go for Gold) which also encompasses the implementation plan.

Supporting appendices provide additional detail and context.

1.4 Study Process

1.4.1 Study Phases

The broad steps involved in creating the Cycling Master Plan are outlined in Exhibit 1-1 and described below:

1.0 **Assessing existing conditions** including the existing cycling network, recent travel trends, transportation and land use patterns, and infrastructure growth and identifying best practices;

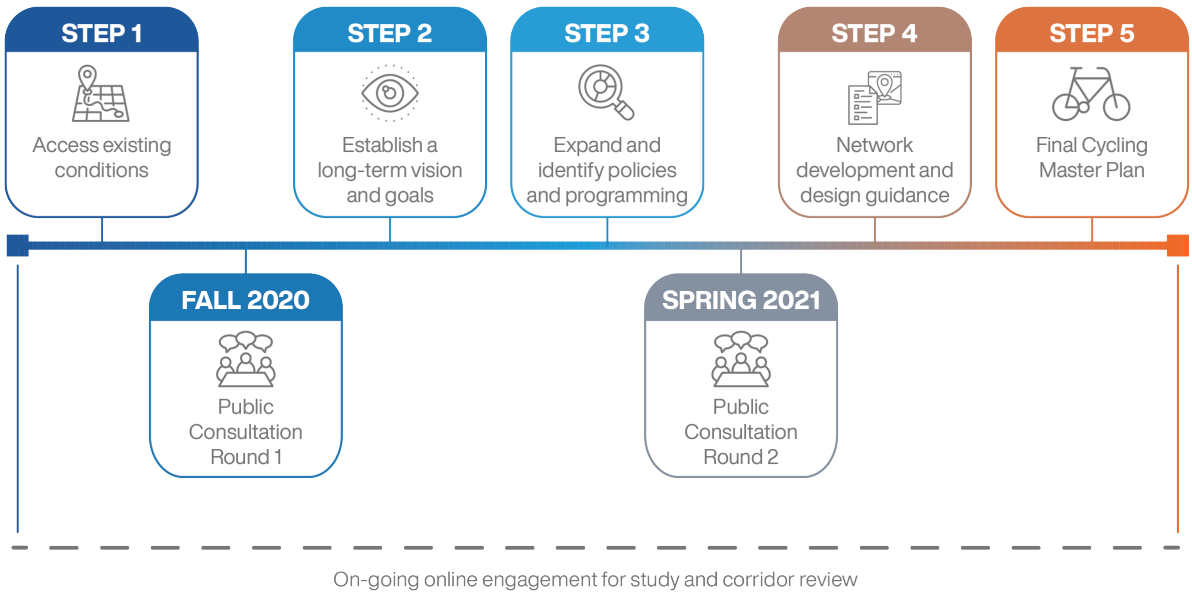
2.0 Developing a **long-term vision and goals** for Peterborough's cycling network, considering the potential for cycling to support climate change objectives and influence infrastructure priorities;

3.0 **Strengthening existing initiatives and recommending new policies and programs** which promote cycling as an attractive transportation option;

4.0 Establishing a **comprehensive network plan** with input from the public and stakeholders, made up of both on-road and off-road cycling and trail projects for the short- and long-term, including preparing supporting design guidelines and preliminary design concepts for specific corridors; and,

5.0 Developing the final **Peterborough Cycling Master Plan Report** & study documentation.

Exhibit 1-1: Peterborough Cycling Master Plan Study Process



1.4.1 MCEA Process

The Cycling Master Plan study was conducted in accordance with the master planning process to fulfill requirements of Phases 1 and 2 of the Municipal Class Environmental Assessment (EA) process under the Environmental Assessment Act. This study was conducted using Master Plan Approach 1. The Class Environmental Assessment process provides a transparent approach to planning and building municipal infrastructure. Public and stakeholder participation is mandatory throughout the process.

Phases 1 and 2 involve identifying problems and opportunities and presenting alternative solutions. For the Peterborough Cycling Master Pan, the major problems that needed to be addressed were planning for future growth, meeting the needs of current residents and increasing the use of cycling to support broad community objectives. Broad alternative approaches were developed in order to address these needs, in particular by creating a candidate network and a series of mode share scenarios. These scenarios were evaluated, and a preferred alternative was chosen. The preferred alternative led to the recommended projects, policies and actions presented in this CMP.

Under Approach 1, the Master Plan considers a broad level of assessment thereby requiring more detailed investigations at the project-specific level in order to fulfil the Municipal Class EA documentation requirements for any Schedule B and C projects identified within the Master Plan. Schedule B projects would require the filing of the Project file for public review while Schedule C projects would have to fulfil Phases 3 and 4 prior to filing an Environmental Study Report (ESR) for public review.

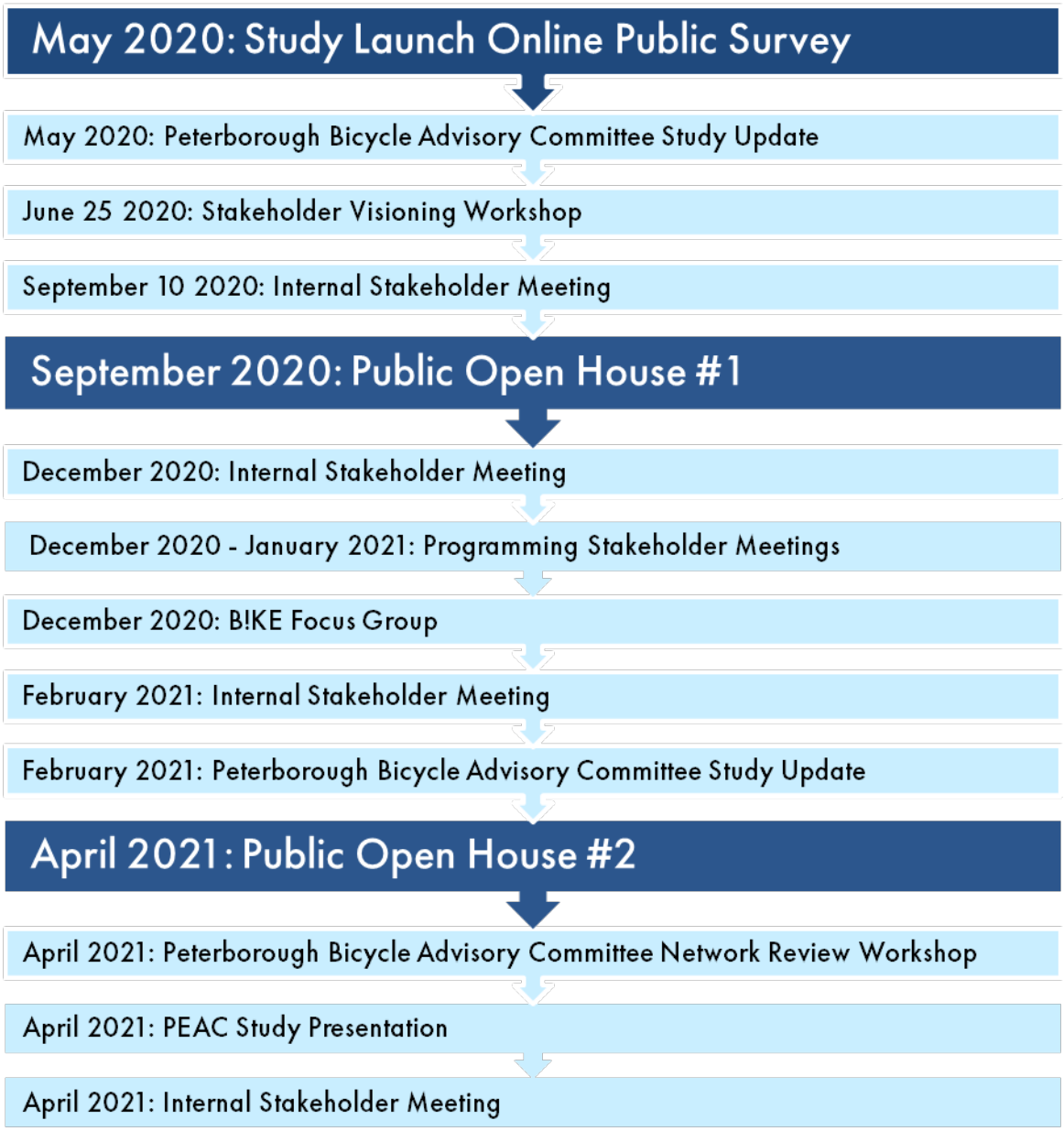
1.5 Engagement and Consultation Overview

Developing a thorough understanding of the community's needs and desires is paramount to creating a plan that reflects the needs of residents. The consultation program for the Cycling Master Plan consisted of numerous stakeholder meetings, two rounds of public engagement and on-going online engagement via the ConnectPTBO platform.

As the study was initiated shortly before the COVID-19 pandemic, public open house events were hosted virtually via a combination of Microsoft Teams and through the project website, ConnectPTBO.

Exhibit 1-2 outlines a timeline of various consultation activities, with more detail on the public consultation sessions in the following sections.

Exhibit 1-2: Timeline of Consultation and Engagement Activities (to April 2021)



Online Launch Survey

An online survey was posted on the project website through the ConnectPTBO portal as of May 27, 2020 and was available online until August 2020. The survey was intended to introduce the Cycling Master Plan project and gather initial input to inform study development. **Just under 500 people provided responses to the launch survey** during this time. In addition to the survey, an

interactive map of the City's existing cycling network was posted on the project website for members of the public to review.

Key findings of this survey include:

- In an expanded cycling network, most participants would like to see multi-use trails for people walking and cycling, protected cycling lanes, streets that are prioritized for cycling and where traffic is slowed, and cycling lanes with a painted buffer;
- Most participants are comfortable cycling on busy streets with bike lanes, but a significant number of participants choose to cycle mostly on quiet streets and multi-use trails;
- A strong majority of participants would like the community to be much more bicycle friendly with many more multi-use trails and facilities along roads;
- The most common factors that discourage people from cycling include feeling unsafe due to vehicular traffic, not being able to get to where they need to go because the network is not well connected, concerns over their bike being stolen, and a lack of bike racks or storage rooms to securely park their bike; and
- Participants indicated that the most important factors for improving and expanding the cycling network are improving safety, ensuring cycling routes have no gaps, planning for the cycling network to serve all ages and abilities, and ensuring the cycling network links well to most neighbourhoods.

"Peterborough is just the right size for cycling -- the whole city is within an easy cycling distance. As our City has declared a climate emergency, and as we embark on a significant period of adapting to the reality of Covid-19, this is an ideal time to shift how we as a community get around -- towards more cycling. The health and environmental benefits are enormous. The key issues to me are improving safety (reduced speeds, protected bike lanes) and filling in the network so that cycling is a safe and reasonable option for all routine transportation in this city. And mode shift (from cars to bikes) should be identified as an explicit part of our climate response." – Peterborough Resident

Public Open House #1 (POH #1): September 2020

The first POH gathered feedback from the public on the draft vision statement, potential mode share scenarios for Peterborough, guiding principles, and the candidate cycling network. Participants were able to provide comments on a map of the candidate cycling network, indicating locations that are a priority for them and where they think a bike route should or should not be added.

During the first POH, over 150 people responded to the online survey. Additionally, over 100 comments were provided on the map of the candidate cycling network.

Some key themes that emerged from the first round of public engagement include:

- Most people support the “Spark” scenario which includes targeting a high cycling mode share and supporting a significant investment in cycling;
- Participants were generally supportive of the corridors identified in the candidate cycling network but identified some additional links and areas to expand; and,
- The community places a high priority on safety, with significant concern for year-round maintenance, separated facilities, signage, traffic, and driver education and enforcement.

“I'd like to see something that speaks to developing a culture of cycling. I have a young family and we love to bike downtown, but in usual times it is a stressful experience and so we avoid it. During COVID with the extra space we have very much enjoyed cycling downtown with the kids. Having a wider lane, with cars on the left (no chance of dooring), and a protected lane make a world of difference when biking with kids. I'd like to see more routes like this along main routes to encourage parents to let their kids bike to school. ” – POH #1 Participant

Public Open House #2 (POH #2): April 2021

The second POH gathered public input on the refined study vision, study goals, proposed mode share scenario and target, preliminary programming recommendations and the potential cycling network. Participants were able to provide comments on several maps, including the existing cycling network upgrades map, the potential cycling network and the candidate priority cycling routes.

During this round of consultation, just under 200 people responded to the online survey. Additionally, over 100 comments were provided on the various online maps.

Some key themes that emerged from the first round of public engagement include:

- Most participants (about 80%) strongly supported the vision statement, study goals and the "Spark" scenario including targeting a high cycling mode share and supporting a significant investment in cycling ($48M);
- Participants provided many detailed comments on the potential networks and identified improvements to the existing network; and,
- The community places a high priority on improving the connectivity of the cycling network, particularly with an emphasis on separated cycling infrastructure such as trails, protected bike lanes and cycle tracks.

"While it is good that we now have some dedicated cycling lanes, more are needed in the downtown as well as other main thoroughfares. While trails are good, many people want to cycle to work or school and many workplaces/schools are not on the trails. "– POH #2 Participant

"This plan will move us in the right direction, I believe. If we keep building, maintaining and improving the infrastructure for cycling in the city, then the culture and use by residents will grow. There are several excellent bike paths in the city, but they need to be connected better." – POH #2 Participant

1.6 Policy Context

Numerous policies at the federal, provincial and municipal levels demonstrate support for cycling within Peterborough. This is important as often, new development that occurs must adhere to these policy directions, in particular, the Provincial Policy statement (2020) and the City's Official Plan; both of which are supportive of increased cycling and active transportation more broadly. Some examples of key passages in support of this Plan are:

- **Provincial Policy Statement (2020)** - 1.1.3.2 – Land use patterns within settlement areas shall be based on: a) densities and a mix of land uses which: …4. Support active transportation;
- **City of Peterborough Draft Official Plan (2019)** - 4.1.4 – a) This Plan recognizes the need to increase the convenient access of residents' daily shopping needs to support complete communities and active transportation (…);
- **City of Peterborough Draft Official Plan (2019)** - 6.2.1 – a) Successful communities are supported by planning public streets, spaces and facilities to be safe, meet the needs of pedestrians, cyclists, transit users and motorists, foster social interaction and facilitate community connectivity;

Common cycling-related aspects included in policy documents are:

- Encouraging the integration of land use and transportation planning for the development of complete communities which have many benefits including enabling people to use active transportation;
- Reducing environmental impact and improving public health through active transportation; and,
- Recognizing cycling as an important part of a multi-modal transportation system and emphasizing the role of programming and outreach combined with cycling infrastructure.

Exhibit 1-3 provides an overview of the relevant planning documents at each level of government and their level of emphasis on key aspects related to cycling.

Exhibit 1-3: Overview of Federal, Provincial, County and City Planning Documents

PLAN	LAND USE POLICIES TO SUPPORT ACTIVE TRANSPORTATION	CYCLING AS A MODE OF TRANSPORTATION	INVESTMENT IN INFRASTRUCTURE & NETWORKS	SUPPORT FOR PROGRAMMING & OUTREACH
Federal and Provincial Planning Documents				
Draft Federal Sustainable Development Strategy (2018)	○	●	●	●
Provincial Policy Statement (2020)	●	●	◑	○
A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2017)	●	◑	●	○
#CycleOn – Ontario's Cycling Action Plan & Cycling Network Study (2018)	◑	●	●	●
Integrated Accessibility Standards, Ontario Regulation 191/11	○	○	●	○
County and City of Peterborough Planning Documents				
City of Peterborough Official Plan (2019)	●	●	●	○
City of Peterborough Comprehensive Transportation Master Plan (2012) – Ultimate Cycling Network	◑	●	●	◑
City of Peterborough Vision 2025 Strategic Plan (2016)	○	●	●	◑
City of Peterborough Accessibility Plan (2018)	○	●	●	○
Peterborough Age-Friendly Community Plan (2017)	○	◑	●	●
County of Peterborough Official Plan (1994)	○	◑	○	○
Peterborough Community Well-Being Plan (2019)	○	●	●	○
Greater Peterborough Area Climate Action Plan (2016)	○	●	●	○
Peterborough & The Kawarthas Future Ready Regional Economic Development Plan	○	○	◑	○

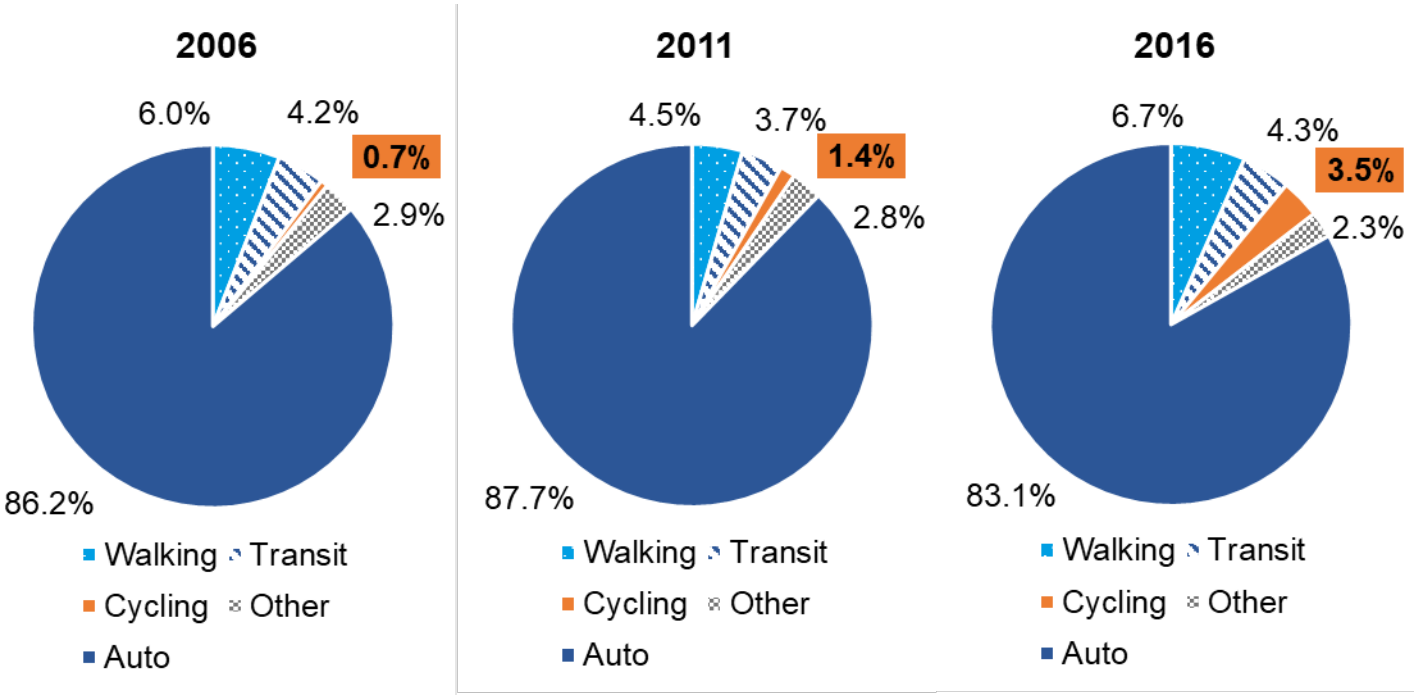
Key: Low Emphasis ○ ◑ ● High Emphasis

1.7 Travel Trends

Understanding historical transportation trends is important in order to develop and implement strategies to shift travel behaviour.

In Peterborough, while the automobile remains the most dominant mode of transportation for all trips, the cycling mode share is increasing. Between 2006 and 2016, cycling has increased from 0.7% to 3.5% of all trips made by Peterborough households.

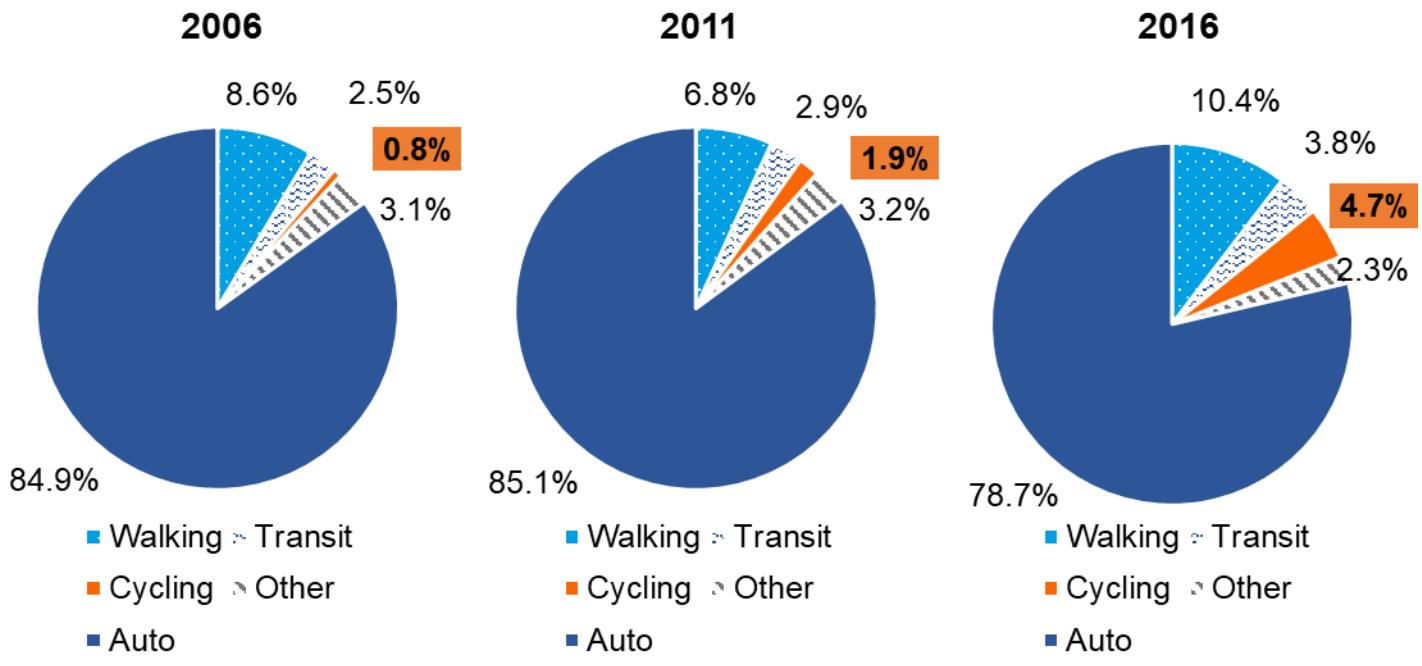
Exhibit 1-4: Daily Mode Share for All Trips for Peterborough Households, 2006-2016



Source: Transportation Tomorrow Survey (TTS)

For cycling, it is important to also consider the mode share for trips under 5 km because that is a distance that is easily travelled by bike. Considering trips under 5km, the cycling mode share increases to 5% and for trips that take place during the AM peak period, it increases slightly more to 5.1% which may be partially attributed to active school travel. Trips under 5 km in length make up about 65% of the total number of trips by Peterborough households.

Exhibit 1-5: Daily Mode Share for Trips ≤ 5 km, 2006-2016



Source: Transportation Tomorrow Survey (TTS)

Despite these encouraging trends, close to 80% of all trips in Peterborough under 5 km are still taken by automobile (driver or passenger). These short trips provide a potential market of trips that can more easily be converted to cycling. To encourage people to bike short distances more frequently, it is important for the cycling network to be connected, accessible and safe.

Peterborough compares favourably to peer cities in terms of cycling mode share. Journey to work mode shares from the 2016 census were compared to other similarly-sized peer cities including Barrie, Brantford, Guelph, Kingston, and Thunder Bay (refer to Exhibit 1-6).

Exhibit 1-6: Mode Share Trends for Peterborough and Comparative Peer Cities

MUNICIPALITY	POPULATION (2016)	CYCLING MODE SHARE -JOURNEY TO WORK
Peterborough	82,094	2.2%
Barrie	197,059	0.5%
Brantford	98,179	1.1%
Guelph	131,794	1.6%
Kingston	177,660	2.4%
Thunder Bay	121,621	1.3%

Source: Statistics Canada (2016)

Peterborough has invested significantly in cycling infrastructure since the 2012 Transportation Master Plan was completed, with an estimated $14M in cycling-specific infrastructure spending (City expenditure). This city investment has been supplemented by investment from other levels of government with an additional approximately $5M. With this historic investment, the City is seeing the corresponding increase in cycling mode share. Notably, the 20-year active transportation mode share target of 8% (walking and cycling) presented in the 2012 Comprehensive Transportation Master Plan was surpassed early on in the life of the Transportation Master Plan, demonstrating the speed of growth in cycling and active transportation more broadly in Peterborough.

2 Vision for Cycling in Peterborough

2.1 Vision Statement

The study vision statement reflects the desired future for cycling in Peterborough and guided the development of the Cycling Master Plan and the ultimate cycling network. The vision statement is:

"Peterborough is a leader in cycling with a safe, connected and accessible network that serves all ages and abilities by 2041. Cycling for transportation and recreation contributes to a thriving, healthy and resilient community and supports the City's sustainability and climate change goals."

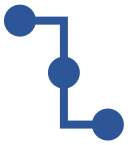
2.1.1 How Was the Vision Developed?

Input from the public and stakeholders was crucial for developing a vision statement that reflected the desired future of the community. The first step to gather input was a Visioning Workshop with stakeholders including representatives from the community, the Peterborough Bicycle Advisory Committee, the County of Peterborough and representatives from various City departments. This workshop provided the foundation for the vision statement which was then shared with the public at the first Public Open House. The majority of participants were supportive of the vision statement and additional feedback was collected and integrated to strengthen the statement which resulted in the final vision for the Plan.

2.2 Study Goals

The Cycling Master Plan goals are comprised of actionable items that will help achieve the vision and support cycling in Peterborough. The goals are described briefly below and then in more detail in the following study chapters.

Create an Irresistible Network



This goal focuses on **creating a more connected, accessible and safer cycling network**, making cycling a more attractive and competitive mode of transportation. Specific network improvements are recommended including proposed new links and upgrades to the existing network in line with the priority network and the Hybrid Accelerate-Spark scenario.

This goal is tied to the following study objective:

- Review and update the Cycling Network from the 2012 Comprehensive Transportation Master Plan to incorporate upcoming and planned infrastructure improvements, best practices in cycling facility selection, and prepare functional design concepts for select corridors;

Encourage Year-Round Riding

The focus of this goal is on **supporting maintenance practices and cycling infrastructure that will encourage people to cycle year-round** and make winter cycling in particular a more viable and enjoyable mode of transportation. Key recommendations include expanding winter maintenance initiatives and developing facilities that are accessible to people of all ages and abilities.

This goal is tied to the following study objective:

- Provide recommendations and cost estimates for a maintenance program to encourage year-round cycling;

Pursue Design Excellence

This goal focuses on developing a **network that is accessible to cyclists of all ages and abilities**, with an emphasis on separated cycling infrastructure, quiet streets routes and bicycle boulevards that provide a higher level of comfort for people cycling. In support of this study goal, supporting design guidelines for cycling facilities have been prepared with an emphasis on all ages and abilities infrastructure..

This goal is tied to the following study objective:

- Develop design standards for cycling infrastructure that incorporate best practices for cycling safety and consider items such as wayfinding and signage, buffers, bicycle parking, intersection safety, and considerations for year-round cycling;

Build a Cycling Culture

This goal focuses on continued and expanded programming efforts that contribute to a **community culture that is supportive and aware of cycling as a mode of transportation**. Programming efforts help increase ridership, contributing to mode share targets and positive health outcomes for the community. Actional items include specific programs that can be implemented to grow the culture of biking in Peterborough.

This goal is tied to the following study objective:

- Identify recommendations for effective programming to increase cycling as a preferred travel option.

Go for Gold

This goal focuses on an implementation plan that will help Peterborough become a cycling leader in Canada. In particular, this study goals focuses on achieving a Gold certification level through the Bicycle Friendly Communities program. This chapter includes specific targets and a monitoring plan to track progress on the Cycling Master Plan goals.

This goal is tied directly to the following study objectives:

- Establish a cycling mode share target that is aspirational but realistic to support increased cycling mode share and promote a strong cycling culture;
- Develop strategies to improve the City's current silver Bicycle Friendly rating to gold or platinum using the Bicycle Friendly Community criteria;

3 Exploring Future Scenarios

An important component of developing the cycling master plan was identifying three scenarios representing different alternatives for cycling investment and support in Peterborough over the 20-year horizon of the study.

These future scenarios allow us to ponder questions like:

- **How well do investments in cycling support broader community goals and objectives in Peterborough?**
- **What role is envisioned for cycling in the overall transportation network in Peterborough?**
- **What level of commitment and pursuit of cycling improvements is most appropriate?**

These future scenarios encompass programming and infrastructure improvements, each including a predicted cycling mode share as a key indicator. Mode share is used here as the primary indicator as it applies an outcome-oriented lens to scenario development and allows for a quantitative assessment of scenario impacts.

"Mode" refers to the way that Peterborough residents travel around the city (i.e. by walking, biking, taking transit, driving, or as a passenger in a car). Cycling mode share is the share of all trips taken by bike and is usually shown as a percentage.

A necessary first step to exploring the future, is understanding the present – specifically, what the current mode share and travel trends are in Peterborough. Tracking mode share over time gives an objective view of how people's travel habits are changing, and it is an important indicator used in transportation planning. This foundation was used to develop the future scenarios presented in this chapter. The main influences on scenario development, the evaluation framework and the recommended scenario are also described below.

3.1 Influences

In developing future scenarios, it is important to consider emerging influences on our transportation networks. These influences may be either internal (related to community values, land use and network context, and policy support) or external (related to broader trends influencing the community).

Several key considerations are described in the following sections.

Our Aging Population

The City of Peterborough has a relatively high proportion of older adults. Presently, a very small portion of older adults in Peterborough walk or cycle as their main daily mode of transportation. However, the percentage of older adults cycling has increased from 0.1% in 2011 to 1.7% in 2016. An important potential disruption to travel trends for older adult cyclists is the growing adoption and widespread, low-cost access to e-bikes and e-cycles. E-cycles are attractive to a wider range of residents, including older adults, since they reduce the physical strength and skill necessary to cycle, and increase the ease of using different forms of bicycles such as tricycles, recumbents etc. From this perspective, the anticipated growth in older adults as a percentage of Peterborough's residents occurring at the same time as e-assist bicycles are expanding rapidly in availability may present a unique opportunity for Peterborough.

"I belong to a Seniors e-Trike Group and e-Motors are getting Seniors back into Cycling in a huge way in Canada and the USA" – PIC #2 Comment

Post-Pandemic Travel

The Cycling Master Plan was initiated just as the COVID-19 pandemic hit across Canada and around the globe. Throughout consultation for this study, the pandemic is top of mind for many residents, who have identified the potential for cycling, and active transportation more broadly, to play a major role in pandemic recovery.

Embracing Equity

Historical approaches to transportation planning have resulted in decisions that disproportionately disadvantaged community members based on physical or cognitive ability, age, race, income, gender, language spoken etc. The growing recognition of, and need to overcome, these inequities inform transportation planning practice today. Equity in transportation planning is about acknowledging barriers and people's differences, especially those of vulnerable residents, and identifying strategies to provide access that reflects these differences. Cycling infrastructure can play an important role in expanding opportunities for mobility for many residents. When high-quality infrastructure is provided throughout the city, the benefits of cycling including health benefits and the cost savings of not having to rely on a car for all or most trips are available to more people.

"I have cycled in and around Peterborough for 35 years and have witnessed the growth of cycling infrastructure, and subsequent use of the system. People will use cycling routes if they are available and with the current pandemic, cycling is growing even more. The time is right!" – PIC #2 Comment

3.2 Scenario Development

A four-step approach was taken to analyze current and predicted cycling mode share in Peterborough:

1. Evaluate current network and model travel behavior;
2. Scenario development and visioning;
3. Qualitative evaluation and public engagement; and,
4. Quantitative evaluation.

In Step 2, three scenarios emerged: Continue, Accelerate, and Spark. These scenarios build on the current network of cycling facilities and involve increasing levels of investment into the cycling network. Notably, while the extent of the network varies across scenarios, the intent is that the network would be made up of high-quality cycling facilities appropriate for the roadway context that reflects an all ages and abilities (AAA) approach.

Population and employment projections were used to predict the future mode share based on the infrastructure growth and trends uncovered in Step 1. In addition to infrastructure, an increased investment in programming and policy were included in the Accelerate and Spark scenarios to further increase mode share. The three scenarios are described in the following sections. More detailed descriptions are available in the *Peterborough Cycling Master Plan: Vision & Goals Memo*.

Continue: Modest Investment

The Continue scenario focuses on maintaining and filling connectivity gaps between segments of the existing network and upgrading some minor segments of the network. However, no major investment in new facilities is included resulting in approximately 20 km of new network by 2041.

Achieving the Continue scenario results in a predicted future mode share of 5% based on infrastructure investment only.

Accelerate: Increased Investment

The Accelerate scenario focuses on improving cycling facilities in higher density areas close to the downtown core. In this scenario, dedicated cycling facilities will be constructed so that all residents living within 2km of downtown will be located within 400m of a cycling facility, along with some targeted investments and upgrades in areas beyond the 2km radius. This scenario calls for the construction of 80km of new infrastructure by 2041 and an increase in funding towards programming.

Achieving the Accelerate scenario results in a predicted future mode share of 7-10%.

Spark: Significant Investment

The spark scenario describes an aggressive plan to ensure that cycling facilities are nearby for almost all residents of the city. Like the Accelerate scenario, all residents living within 2km of downtown will be within 400m of a cycling facility. Outside of the downtown core, 90% of residents will be within 400m of a cycling facility. The aim is to make cycling on a dedicated route an option across Peterborough. A proposed network of 160km is constructed in this scenario along with an increase in funding towards programming.

Achieving the Spark scenario results in a predicted future mode share of 10-20%. This also reflects the development of a true “bike culture”, which tends to reinforce cycling as a viable transportation choice among a much larger proportion of the population as increased ridership exponentially grows the visibility of cyclists.

3.3 Scenario Evaluation & Recommendation

To better understand the impacts and trade-offs of each scenario, several layers of review were conducted. For full details, refer to the Cycling Master Plan *Scenario Evaluation Memo*.

Qualitative Review

This review was conducted to assess alignment with City plans, policies & objectives under the following community goals:

- Reduce Climate Change Impact
- Reduce Single-Occupancy Vehicle Use
- Community Health
- Local Economic Uplift
- Recreational Benefit
- Mobility & Equity Benefit
- Funding Impacts

Public & Stakeholder Input

It is important that the future cycling investment is supported by the public and stakeholders. This review helped ensure the Plan’s recommendations reflected local input & consultation. Input was received through the Cycling Master Plan Launch Public Survey, a stakeholder workshop, and both rounds of online public open houses.

Quantitative Review

Used as a “check-and-balance” for the qualitative review and public input, the quantitative review uses a cost-benefit perspective. The evaluation of costs included capital, operating and maintenance, and program expenses for each scenario.

Recommended Scenario

Through the scenario evaluation process, a hybrid Accelerate-Spark scenario emerged as the recommended scenario for the Cycling Master Plan, consisting of the following strategies:

- Provide a base Cycling Network and Implementation Funding Plan based on the Accelerate Scenario (up to 80 km of new infrastructure), at an estimated annual investment cost of between $1.2 M-$1.5 M per year, in 2020 dollars; and
- Identify and prioritize additional strategic cycling infrastructure, associated with a Spark Scenario, which could be implemented if new / external funding is secured.

IBI GROUP
200 East Wing – 360 James Street North
Hamilton ON L8L 1H5 Canada
tel 905 546 1010 fax 905 546 1011
ibigroup.com

Memorandum

To/Attention	Susan Sauvé	**Date**	February 2021
From	IBI Group	**Project No**	125338
Cc	Project Team		
Subject	City of Peterborough Cycling Master Plan: Summary of Scenario Evaluation		

1 Introduction

A Cycling Master Plan is a long-term strategic plan intended to guide the development and implementation of a cycling network as well as supporting programs and policies. The Plan will recommend ways for the City of Peterborough to support cycling as part of the broader multi-modal transportation network within the City. It will include recommended cycling and trail infrastructure projects and facility types, an action-oriented implementation plan, and policies and strategies that will encourage more people to choose cycling as a transportation option in Peterborough.

An important component of the Cycling Master Plan is establishing a scenario for cycling support around which to structure potential policy and infrastructure investments. This memo summarizes the evaluation of scenarios. For more information on the development of the vision, goals and scenarios, please refer to the full *Vision & Goals Memorandum*.

2 Scenario Evaluation

2.1 Overview

Three scenarios were developed to encapsulate different alternatives for cycling investment and support: Continue, Accelerate, and Spark. These scenarios involve increasing levels of investment into the cycling network and are described in subsequent sections.

Using population and employment targets from the provincial *Growth Plan for the Greater Golden Horseshoe* for Peterborough in 2041 and varying levels of cycling infrastructure investment and corresponding infrastructure build-out, future mode share can be estimated for each scenario based on existing relationships between cycling mode share and infrastructure. Since 2012, Peterborough has added cycling facilities at a rate of about 3km per year to reach the current 80km long network. The three scenarios supplement the current network with additional facilities, with the most ambitious fully-built out candidate network estimated to include about 160km of new facilities. It should be noted that in all three scenarios, while the extent of the network varies, the intent is that the network will be made up of high-quality cycling facilities appropriate for the roadway context that reflect an all ages and abilities (AAA) approach.

In addition to investment in infrastructure, programming and policy play a role in influencing travel behavior. Today, the city spends about $80,000 per year in dedicated cycling programming (although it is worth noting that this programming budget is supplemented by expenditures from partners in programming delivery through grant programs). In the Accelerate and Spark scenarios, the amount spent directly by the City on dedicated cycling programming would increase. While the mode share analysis does not consider the impact of programming and policy changes explicitly, an increased mode share can be anticipated based on this expenditure, considering examples of other TDM related mode share impacts.

Continue

The Continue scenario focuses on maintaining and filling connectivity gaps between segments of the existing network, and upgrading some minor segments of the network. However, no major investment in new facilities is included, and programming costs increase only with inflation. Facility construction therefore slows to 1km per year, leading to 20 km of new network by 2041.

Achieving the Continue scenario results in a predicted future mode share of 5% based on the infrastructure investments. Since programming costs will be maintained at $80,000 per year, no additional mode share gains are attributed to programming in this scenario.

Accelerate

The Accelerate scenario focuses on improving cycling facilities in higher density areas close to the downtown core. In this scenario, dedicated cycling facilities will be constructed so that all residents living within 2km of downtown will be located within 400m of a cycling facility, along with some targeted investments and upgrades in areas beyond the 2km radius. This scenario calls for the construction of 80km of new infrastructure (about 4 km/year).

Achieving the Accelerate scenario results in a predicted future mode share of 7-10%. This requires accelerating the current levels of facility construction, from 3km to 4km per year through 2041. Mode share is expected to increase to 7% with infrastructure investments alone, with the remaining gains coming from improved programming. Program costs are assumed to increase to $240,000 per year over a 10 year-period, after which funding would be maintained at that level.

Spark

The spark scenario describes an aggressive plan to ensure that cycling facilities are nearby for almost all residents of the city. Like the Accelerate scenario, all residents living within 2km of downtown will be within 400m of a cycling facility. Outside of the downtown core, 90% of residents will be within 400m of a cycling facility. The aim is to make cycling on a dedicated route an option across Peterborough. A proposed network of 160km is constructed in this scenario (requiring ~8 km / year – more than doubling the current rate).

Achieving the Spark scenario results in a predicted future mode share of 10-20%. This scenario assumes that the city would more than double its rate of infrastructure construction to 8km of cycling facilities per year. These infrastructure investments would increase mode share to 9%, with the remaining gains coming from expanded programming. Program costs would increase to $360,000 per year over 10 years, after which funding would be maintained at that level. While the percentage of mode share attributable to programming is higher in this scenario, this reflects the development of a true “bike culture”, which tends to reinforce cycling as a viable transportation choice among a much larger proportion of the population as increased ridership exponentially grows the visibility of cyclists.

Summary

The key parameters of each scenario are summarized in Exhibit 2.1.

Exhibit 2.1: Summary of Scenarios

Scenario	New Cycling Facilities (KM)	Increase in Programming Costs	Estimated Mode Share (Network)	Estimated Mode Share (Programming)	Estimated Total Mode Share
Continue	20 km	Status Quo (Inflation-only)	5%	None assumed	5%
Accelerate	80 km	Up to $240,000/yr (3X)	7%	+0% to +3%	7 – 10%
Spark	160 km	Up to $360,000/yr (4.5X)	9%	+1% to +11%	10 – 20%

Each of the three scenarios will impact the City, residents, and businesses differently. To better understand the impacts and tradeoffs of each scenario, it is important to consider several layers of review:

- **Qualitative Review** (refer to Section 2.2) - To assess alignment with City plans, policies & objectives to ensure the proposed scenario and targets support community goals
- **Public & Stakeholder Input** (refer to Section 2.3) – To ensure plan recommendations reflect local input & consultation to date
- **Quantitative Review** (refer to Section 2.4) **–** Used as a "check- and-balance" to review the scenarios from a cost-benefit perspective

The qualitative and quantitative analyses generally follow the strategic and economic case frameworks from Metrolinx's April 2019 *Business Case Manual Volume 2: Guidance.*

2.2 Qualitative Review: Strategic Considerations

The strategic case considers how well the three scenarios advance the City's mission and priorities.

Climate Change Mitigation

The City of Peterborough has declared a climate emergency and developed the *City of Peterborough Climate Change Action Plan*. In this plan, the City has committed to reducing GHG emissions by 30% from 2011 levels by 2031. Replacing auto trips with cycle trips is an effective method of reducing emissions from the transport sector. Each scenario contributes to the City's emission

reduction commitment. The report specifically identifies increasing cycling as a key strategy to reducing emissions from the transportation sector.

Based on the change in auto distance travelled in Exhibit 2.11, the GHG emission reduction associated with each scenario can be estimated. These estimates for the 20-year period are presented in Exhibit 2.2. Of the three scenarios, the Spark scenario reduces emissions the most aggressively, followed by Accelerate and Continue.

Exhibit 2.2: Reduction in GHG emissions for three scenarios over 20-year period

Scenario	Reduction in GHG Emissions (Tonne CO^2 Equivalent)
Continue	-2,100
Accelerate	-9,350
Spark	-16,650

Reduction in Single-Occupant Vehicle Dependence

The 2012 *Transportation Master Plan* identifies reducing the use of single occupancy vehicles (SOV) as a key strategic priority and primary method of demand management. Of the three scenarios, the Continue scenario has the least significant impact on auto mode share, with a decrease of only 0.8%. For any significant change to auto mode share, the City should consider the more aggressive Accelerate and Spark scenarios, which reduce auto mode share by 3.3% and 5.9% respectively.

Community Health

The active nature of cycling improves the health of travelers, particularly for the portion of travelers who switch from auto modes to cycling. More broadly, increasing the adoption of active transportation and reducing vehicular traffic can benefit community members who may suffer health-related concerns due to poor air-quality and pollution. Key excerpts from the *Active Transportation & Health 2020 Indicators Report* articulate the relationship between increasing active transportation use and community health outcomes:

- “Active transportation and transit contribute to increased physical activity, which can lead to enhanced health outcomes and increased quality of life. Active transportation exposes the traveler to fresh air and often to green space, which can provide added benefits.
- Brisk walking and cycling count as moderate intensity activities, making active transportation one way for adults and children to meet

their recommended targets of 150 min/week and 60 min/day, respectively.

- While the majority (84%) of Canadians do not meet the recommended physical activity guidelines, there appears to be a higher proportion of adults in the GPA meeting or exceeding the guidelines than Ontario as a whole.
- Compared to the 1990s and early 2000s, the number of days with poor air quality in Peterborough appears to be significantly reduced. In the last five years, there has been only one day with a special air quality statement."

Source: Active Transportation & Health 2020 Indicators Report

Of the three scenarios, the Spark scenario is associated with the greatest community health benefit, followed by Accelerate and then Continue. A quantitative assessment of the health benefit is included in Section 2.4 of this report.

Local Economic Uplift

Some communities have seen economic benefits to retail businesses of cycling infrastructure and programs operating close to those businesses. Recent studies of the Bloor Street Bikeway in Toronto[1] showed that cyclists spent more and visited nearby businesses more often after the bikeway was installed. While similar studies have yet to be done to quantify the economic uplift that cyclists bring to retail businesses in Peterborough, the observations in nearby Toronto suggest that there is some additional economic benefit to local business areas.

In addition, Peterborough is located at the periphery of the Greater Golden Horseshoe (GGH), near popular vacation destinations in the Kawartha Lakes region. The Ontario Ministry of Heritage, Sport, Tourism, and Culture Industries has identified cycle tourism as a growing industry in Ontario. Peterborough's location is ideal for it to capitalize on this growing industry. Considering that cycle tourists generally spend more than other tourists[2], the City would benefit from attracting this activity. The *Peterborough & The Kawarthas Future Ready Regional Economic Development Plan* is centred on the vision statement: "To be the most sustainable and innovative community and economy in Ontario." Cycling tourism is highly compatible with this vision and could be supported by increasing investments in cycling infrastructure and trails.

The Accelerate and Spark scenarios both create a network that would differentiate Peterborough's cycling network from other cities, potentially drawing in cycling tourists. The Accelerate scenario would draw tourists to downtown

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[1] City of Toronto. November 2019. *Bikeways and Business on Bloor Street: Research Summary*.
[2] Ontario Ministry of Heritage, Sport, Tourism, and Culture Industries. October 2018. *Ontario's Cycling Tourism Plan*.

areas, as the focus of this scenario is enhancing this area. Tourists are most likely to benefit from enhancements downtown rather than those in residential suburbs. The Spark scenario would make the entire city bikeable, potentially even enhancing connections to the surrounding County networks for a more seamless experience for visitors, and contributing to Regional tourism opportunities.

Recreational Opportunities

The City's 2016 Vision 2025 Strategic Plan identifies the 10-Year Strategic Plan for Recreation, Parks, Arenas and Culture, and was developed based on extensive community input. When residents were asked about the importance of various recreational facilities to their households, trails and pathways rated highest, with 94% of survey participants (representing over 1500 residents) identifying trails as important or very important. Moreover, a significant portion of Peterborough's bike trips start or end around parks and greenspaces, indicating that thousands of trips a year are made to enjoy the city's amenities, attractions, and other non-work and non-school destinations. These factors indicate the demand for trails and pathways both as a means of accessing recreational facilities & parks/open space but also to directly provide recreational opportunities. The Vision 2025 document identifies several key actions related to trails and cycling under Objective 3.34: Continue to expand and enhance the trail and on-road cycling network throughout the City, including:

- Place a priority on closing the remaining gaps along major routes.
- Strive to connect all neighbourhoods into the city-wide/regional trail network.
- Create new trail segments (e.g., around Little Lake, and along newly acquired rail lines and along the Trent-Severn Waterway).
- Increase the focus on the southern and western parts of the City that currently have fewer trails and designated on-road cycling routes.
- Where possible, increase the number of river crossings (e.g., former Lansdowne Street train bridge, the dam at Lock 19, the dam at the Riverview Park and Zoo).

The Continue scenario would address some of these actions (for example, by filling gaps and through enhancements and upgrades to current facilities) but would not significantly grow the trail and cycling network to expand access to more residents. The more aggressive Accelerate and Spark scenarios would fulfill more of these actions by expanding the concentration of cycling and trails networks significantly outside of the current core network.

Mobility and Equity

The 2019 *Draft Official Plan* envisions Peterborough to be equitable for all residents and visitors. Mobility and equity benefits are difficult to monetize in this context but for many residents, cycling brings tangible opportunities to gain access to destinations and activities that may not otherwise be available to them.

At present, there are some neighbourhoods in Peterborough where it may be difficult to provide cost-effective fixed-route transit to improve mobility of residents. In some cases, buses may not come frequently enough to satisfy residents' desire to make short trips around the neighbourhood while in other cases, residents may simply live too far away from the route they want to take. For residents who do not have the choice to use a car, this challenge finding public mobility options is a potential equity concern as they may be excluded from some activities and opportunities. Having safe, comfortable, well-connected bike routes nearby can help fill this gap by offering an alternative to the car and transit, or by offering a first and last mile connection to transit. It also provides a viable option for those residents who would have foregone the trip altogether given the mobility challenges they face.

The Spark scenario's city-wide enhancements improve transportation access for everyone in Peterborough, regardless of location of residence or workplace. The connections provided by this scenario would make cycling a viable option for many more trips within the city compared to the Accelerate and Continue scenarios.

Funding Impacts

The City's 2020 budget described a balanced approach to city services with an emphasis on maintaining service levels while limiting property tax increases around the rate of inflation. While the Spark scenario is the most aggressive in reducing emissions and reducing SOV dependence, it comes at twice the cost of the Accelerate scenario with a lower Benefit-Cost Ratio suggesting a diminishing return on investment (a full economic analysis is described in Section 3.7).

Summary of Qualitative Review

Based on these strategic considerations, enhancing the cycling network as described in the Accelerate and Spark scenarios better aligns with the City's objectives, with the Spark scenario providing the highest level of alignment and support on all but one of the objectives.

A summary illustrating how well each strategic objective is met by the scenarios is shown in Exhibit 2.3.

Exhibit 2.3: Qualitative evaluation of each scenario

Strategic Objective	Continue	Accelerate	Spark
Reduce Climate Change Impact	◔	◑	●
Reduce Single Occupancy Vehicle Use	◔	◑	●
Community Health	◔	◑	●
Local Economic Uplift	◔	◕	◕
Recreational Benefit	◔	◕	●
Mobility and Equity Benefit	◔	◑	◕
Funding Impacts	●	◕	◑

2.3 Public & Stakeholder Input

It is important that the recommended target and scenario reflects public and stakeholder input, as summarized in the following sub-sections.

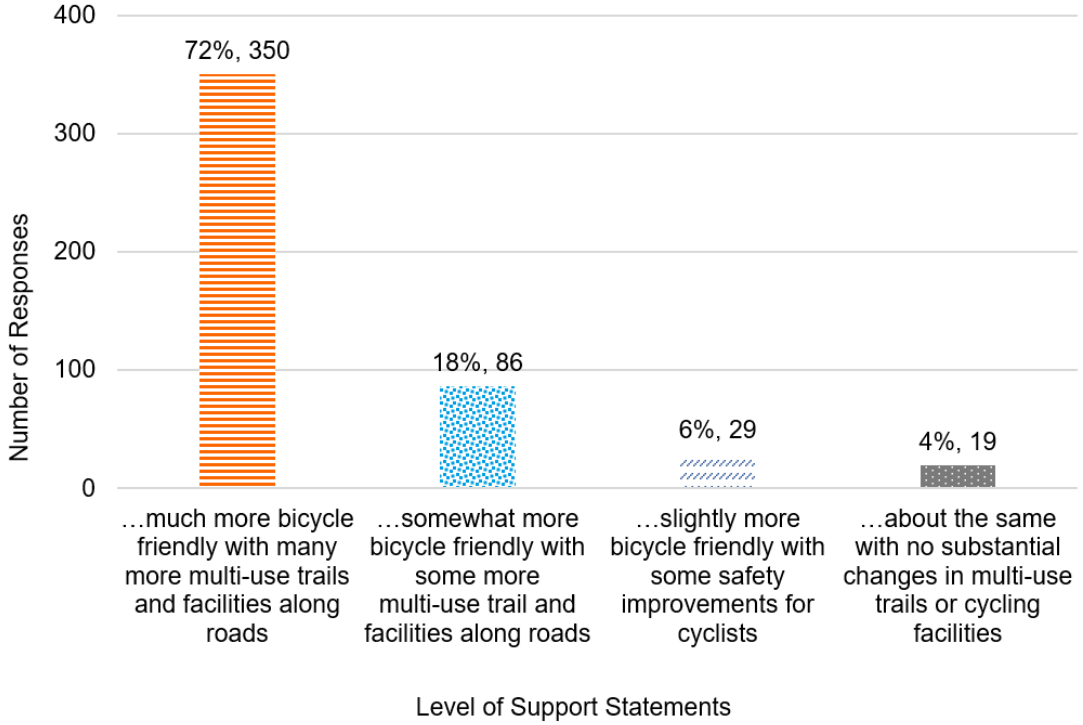
Cycling Master Plan Launch Public Survey

The study team received preliminary public input through an online survey developed to launch the Cycling Master Plan which received over 475 responses. Key findings regarding support for cycling are provided below.

Support for Cycling

Participants were also asked to indicate how they would like to see cycling supported in Peterborough, ranging from about the same to much more. As shown in Exhibit 2.4, the most common answer with 350 votes (72%) was to **make Peterborough much more bicycle friendly** with many more multi-use trails and facilities along roads.

Exhibit 2.4: Support for Cycling in Peterborough - I would like our community to be…



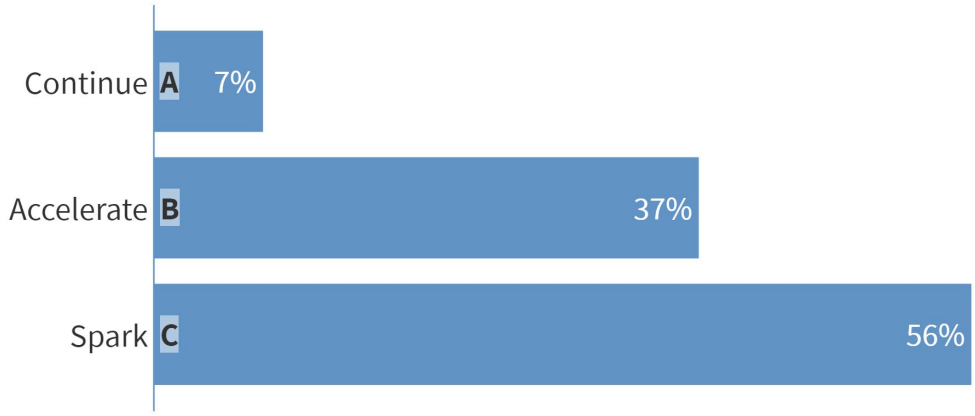
Source: City of Peterborough Cycling Master Plan Survey, 2020

Stakeholder Workshop

The study team held a Visioning Workshop for key stakeholders in June 2020. In addition to discussing the study vision, a major focus of the workshop was on reviewing potential mode share scenarios and mode share targets for Peterborough. A summary of the discussion on mode share is presented below.

After reviewing mode share and presenting current mode share trends across Peterborough and case studies of similar communities, participants were asked to provide input about mode share targets for Peterborough. Participants were presented with the three future potential scenarios (i.e. Continue, Accelerate, and Spark) based on different mode share targets and levels of investment. Most participants indicated support for an ambitious mode share target of 20% and supported the Spark scenario which includes a substantial mode share target and increase in investment. As illustrated in Exhibit 2.5, 56% of participants (15 people) voted or the Spark scenario, while 37% voted for the Accelerate scenario (10 people), and 7% voted for the Continue scenario (2 people).

Exhibit 2.5: Poll Everywhere – Mode Share Scenario Voting Results

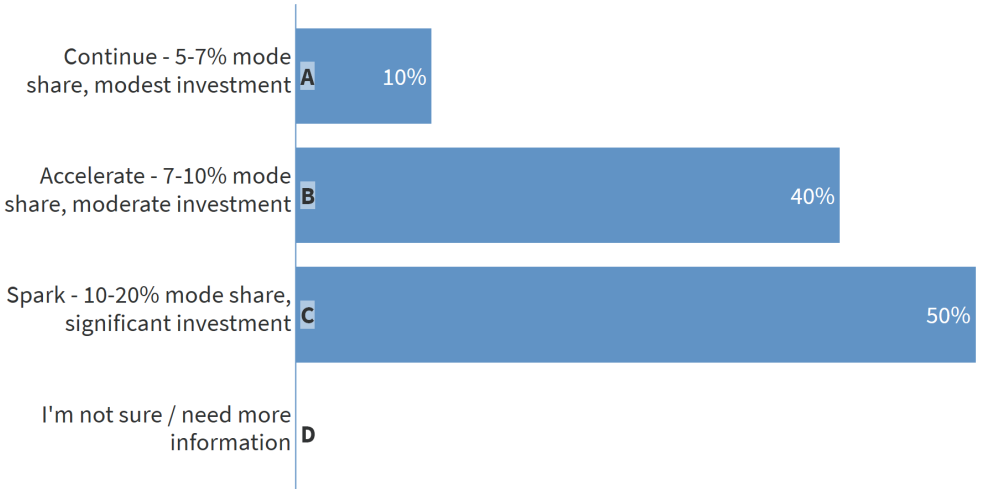


Public Consultation – PIC #1

At the live PIC #1 event, the study team presented the three potential cycling mode scenarios to attendees (i.e. Continue, Accelerate, and Spark). About 20 participants attended the live event.

As indicated in Exhibit 2.6, most participants voted for the Spark scenario (50%) which includes a 10-20% mode share and significant investment. 40% of participants voted for the Accelerate scenario with a 7-10% mode share target. Finally, 10% of respondents indicated support for the Continue scenario with a 5-7% mode share and modest investment.

Exhibit 2.6: Preferred Cycling Mode Share Scenario for Peterborough

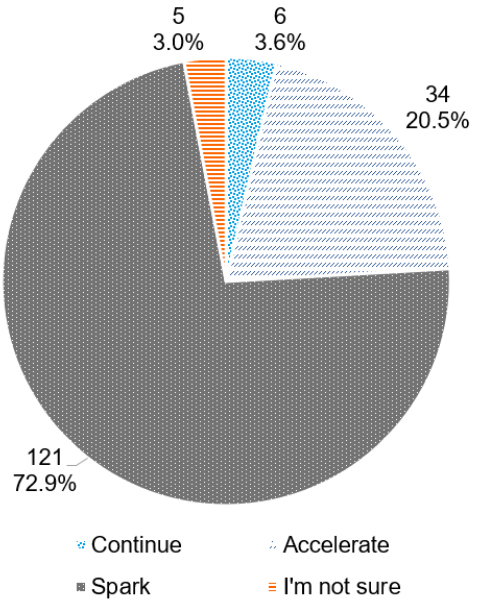


Source: City of Peterborough PIC #1 Live Event, 2020

In addition to the live event, a survey was posted online to gather additional feedback on the draft vision statement and cycling mode share targets, with about 150 respondents. As illustrated in Exhibit 2.7, most participants indicated

support for the Spark scenario (72.9%). This was followed by the Accelerate scenario (20.5%) and then the Continue scenario (3.6%).

Exhibit 2.7: Preferred Cycling Mode Share Scenario for Peterborough



Source: City of Peterborough PIC #1 Survey, 2020

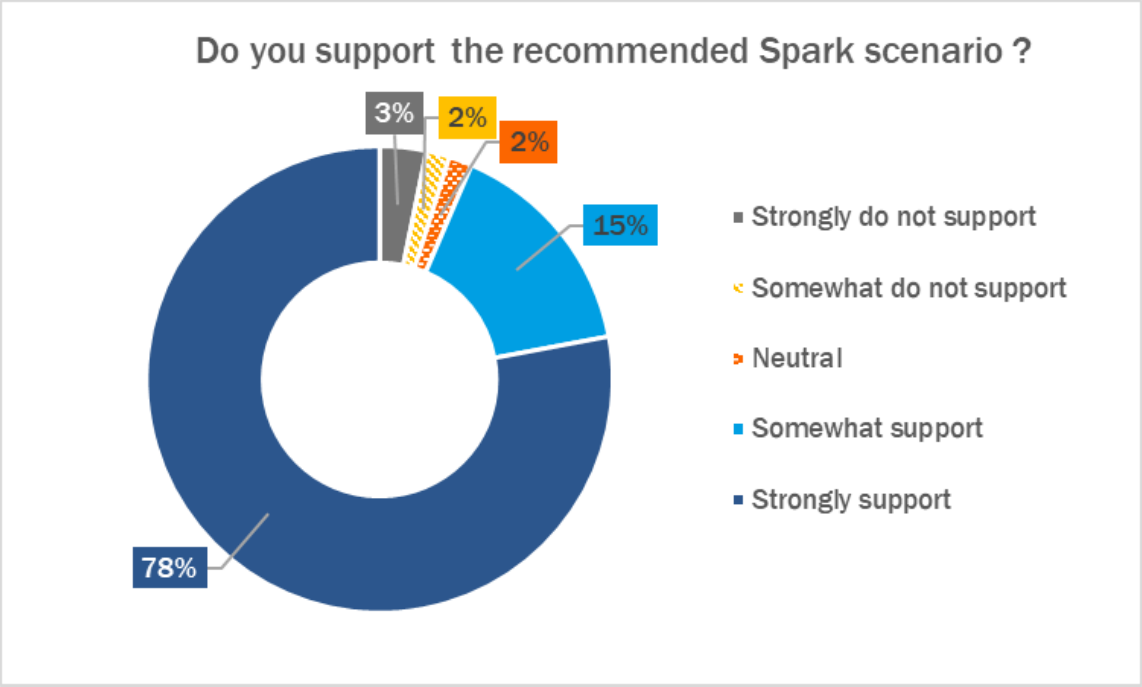
Survey participants were also provided an opportunity to provide comments at the end of the survey. The following comment was related to the cycling mode share scenarios:

"I would love to see real ambition for the "Spark" target for significantly increased mode share. Our community is ideal for this kind of approach, and with vision and commitment we could realize the genuine benefits that a much higher cycling mode share would have for all our citizens -- both those who cycle and those who do not. Substantial increases in mode share won't come from strong cycling infrastructure alone; other factors in the transportation master plan and other policies will be needed to get there, including parking policy, speed management, and housing density targets."

Public Consultation – PIC #2

Results of the public survey from PIC #2 with just under 200 participants are shown in Exhibit 2.8. Almost 80% of participants strongly supported the Spark scenario and corresponding investment levels and mode share targets.

Exhibit 2.8: Level of Support for the Preferred Cycling Mode Share Scenario



Source: City of Peterborough PIC #2 Survey, 2021

Summary of Public Input

Considering the stakeholder and public input, there is significant support for increased investment in cycling and more aggressive targets for cycling mode share. While it is important to acknowledge that survey participants are self-selecting (i.e. may skew towards existing cyclists), with more than 500 responses to the initial survey, 150 responses to PIC #1 and just under 200 responses to PIC #2, this represents a healthy response rate. For example, the City of Toronto 2016 10-Year Network Implementation Plan had 10,500 survey responses, representing a rate of .35 responses / capita. In contrast, 500 survey responses in Peterborough represents a rate of .6 responses/capita.

2.4 Quantitative Review: Economic Considerations

Economic analysis is a useful tool for comparing alternatives and provides a “check and balance” on the qualitative review and public input presented in the

preceding section. The following economic analysis generally follows Metrolinx's recommended process and answers the question "what is the scenario's overall value to Peterborough society" using standard economic analysis factors tailored to the GGH.

A twenty-year horizon is used, typical for transportation investments and consistent with the City of Peterborough's other planning initiatives. Two economic indicators are used to assess the economic case: the benefit-cost ratio (BCR) and net present value (NPV). BCR is the total benefits divided by the total costs. NPV is the difference between the total benefits and the total costs. Exhibit 2.9 summarizes the BCR and NPV of the three scenarios.

Exhibit 2.9: Summary of BCR and NPV for three scenarios

Scenario	Assumed Target Mode Share	Benefit-Cost Ratio	Net Present Value
Continue	5%	0.95	-$386,000
Accelerate	10%	1.13	$3,583,500
Spark	15%	1.03	$1,826,000

The Continue scenario has a BCR lower than 1 and negative NPV, indicating the costs of this scenario are higher than associated benefits. These costs are detailed in the following subsection. Accelerate has the highest BCR and NPV, indicating a comparatively high return on investment. Spark has a lower NPV and BCR than Accelerate, suggesting the significant cost associated with this level of network expansion brings a diminishing return on community benefits. However, since both Accelerate and Spark provide a BCR > 1 and a positive NPV, either scenario can be justified based on the overall value to society.

The remainder of this section details the costs and benefits of each scenario.

Costs

Capital, operating and maintenance, and program costs are associated with each scenario, as summarized in Exhibit 2.10. These present-value costs are expressed in 2020 dollars. That is, costs have been discounted by the recommended 3.5% per year. Additionally, costs are escalated at a rate of 1% per year.

Capital costs are those associated with expansion of the network. Planning, design, and construction fall into this category. For each kilometre of new cycling facilities, a capital cost of $370,000 /km is applied. This weighted average unit cost has been developed based on an assumed distribution of various facility types within the proposed cycling network, with an emphasis on all ages and abilities (AAA) facilities. This high-level cost estimate excludes major standalone investments such as trail bridges, overpasses and underpasses, which are more

likely to be funded through project-specific grants from higher orders of government. Specific corridor-based unit costs will be prepared as the network is developed and refined - the intent of this high-level cost is to inform the benefit-cost analysis only.

Operating and maintenance (O&M) costs are those associated with keeping the network in a good state of repair. As with all infrastructure investment, O&M costs associated with the cycling network are anticipated to grow with expansion of the network. For this analysis, only operating costs associated with network expansion are considered. That is, the cost of maintaining current facilities is not included. Like the capital cost calculation, a weighted average approach is taken, with average costs for each facility type assumed in the capital costs. There are significant uncertainties associated with overall impacts to O&M costs as a result of cycling network expansion – for example, based on proposed maintenance service levels for the cycling facility, changes to maintenance fleets and practices to serve cycling facilities, or the possible deferral of the need for road widening or intersection improvements that may reduce O&M costs.

Program costs are those that fund programs and events that encourage cycling. The City already spends about $80,000 per year on these types of initiatives and that figure is expected to increase in both the Accelerate and Spark scenarios. Since much funding for programming presently comes from unreliable grant programs, increasing City investment in these programs will enable an on-going and reliable delivery of vital programs intended to grow cycling culture. The Accelerate and Spark scenarios would see a steady increase in program funding to $240,000 and $360,000 respectively over a 10-year period, after which funding would remain constant at those levels.

Exhibit 2.10: Summary of costs for three scenarios

Scenario	New Cycling Facilities (KM)	Capital Cost Present Value	O&M Cost Present Value	Program Cost Present Value
Continue	20	$6,059,500	$147,500	$1,310,000
Accelerate	80	$24,237,324	$589,500	$3,171,500
Spark	160	$48,474,500	$1,179,000	$4,553,000

Benefits

Many of the economic benefits considered in this analysis are due to shifts in distances people travel via various modes. Specifically:

- **Reduced auto operating costs:** the reduction in indirect costs of vehicle ownership such as depreciation and insurance as people drive less;

- **GHG emissions reduction:** the reduction of carbon dioxide and other emissions from privately owned autos;
- **Local air quality improvement:** the reduction of toxic gasses such as nitrous oxides, carbon monoxide, and fine particles;
- **Traffic congestion reduction:** a result of having fewer autos on the road; and
- **Cycling and walking health benefit:** the active nature of walking and cycling improves the health of travelers.

Increased cycling mode share results in decreased mode share for other methods of travel. For this analysis, about half of future additional cycling trips are assumed to be diverted from driving trips that are 3.6 km or shorter. This trip length is the 80th percentile length of cycling trips in the city, demonstrating that this distance is potentially cyclable but people perhaps lack access to safe infrastructure to make those trips by bike.

When compared to the current 83.1% auto-driver mode share, the Continue, Accelerate, and Spark scenarios all see a reduction in this value to 82.4%, 79.9%, and 77.4% respectively. Overall, this represents a total reduction of driving mode of .7%, 3.2% and 5.7%, respectively.

Based on experience from other cycling projects, 30% of cycling trips are assumed to be diverted from walking. The remaining trips are assumed to come from transit and other modes. The changes in distance travelled for cyclists, pedestrians, and drivers for the twenty-year period are shown in Exhibit 2.11.

Exhibit 2.11: Change in total distance travelled by each mode for three scenarios

Scenario	Change in Driving Distance (KM)	Change in Walking Distance (KM)	Change in Other Modes (KM)	Change in Cycling Distance (KM)
Continue	-10,722,000	-3,368,000	-3,994,500	18,084,500
Accelerate	-47,486,500	-14,915,500	-17,691,000	80,093,000
Spark	-84,251,000	-26,463,500	-31,387,500	142,102,000

These changes in distances travelled are monetized using factors suitable for the local context from the Metrolinx *Business Case Guidance*. Monetizing the benefits allows for a like-for-like comparison with the costs associated with each scenario.

Greenhouse gas emission reductions are based on the city-driving fuel consumption ratings of a standard vehicle of average size and age (2010 Honda

Civic) as reported to Natural Resources Canada, which yields an emission factor of 0.199 kg CO2e per kilometre travelled. Electric and hybrid vehicles are neglected for this high-level calculation.

Walking health benefits are negative, since the total distance walked is reduced in favour of increased cycling. By contrast, driving trips converted to cycling see a significantly positive overall health benefit.

The cycling health benefit is discounted by 2.5% per year to account for the increasing prevalence of electric-assisted bicycles and scooters, which require less effort from the rider than conventional bicycles (but may support residents of different abilities, including older adults, in switching to cycling).

As in the cost analysis, benefits are escalated at 1% per year and discounted at 3.5% per year to yield a total present value benefit in 2020 dollars. The economic benefits for each scenario are presented in Exhibit 2.12.

Exhibit 2.12: Summary of monetized benefits of three scenarios

Benefit	Continue	Accelerate	Spark
Auto Operating Cost Savings	$680,000	$3,011,000	$5,342,500
GHG Emissions Savings	$75,500	$334,500	$593,500
Local Air Quality Benefits	$15,000	$67,000	$118,500
Congestion Benefits	$774,500	$3,430,500	$6,086,500
Walking Health Benefit	-$9,301,500	-$41,194,500	-$73,087,500
Cycling Health Benefit	$14,887,500	$65,933,000	$116,979,000
TOTAL BENEFITS	**$7,131,000**	**$31,582,000**	**$56,032,500**

2.5 Final Mode Share Target & Scenario

Considering the travel trends to date, and the qualitative and quantitative review process, key considerations for the recommended mode share scenario and target are summarized below:

- **Qualitative Review:** Increasing the cycling mode share will help to action many of the City's existing goals and targets, specifically with respect to climate change, community health, recreational opportunities and the local economy. More aggressive mode share scenarios (Accelerate, Spark) are most reflective of City goals, plans and policies. Given that the City has declared a climate emergency and the strong alignment with goals in other City plans, the Spark scenario provides the most support.
- **Public & Stakeholder Input:** The majority of public and stakeholders (generally in excess of 80% across events/surveys) support either the Accelerate or Spark scenarios based on consultation to date. The Spark scenario was the most strongly supported.
- **Quantitative Review:** Considering the economic case, the Accelerate scenario reflects the highest Benefit-Cost Ratio (1.13) and net present value (~$3.6M). Both the Accelerate & Spark scenarios provide a BCR > 1 and a positive NPV suggesting that both scenarios can be justified based on overall value to society.

It is important to recognize that many of the benefits of investing in cycling accrue at the provincial and federal levels of government (i.e. through reduced health care costs). Therefore, in keeping with recent projects, the use of funding from these higher levels of government can be used to supplement City investment.

Given these considerations and the preceding analysis, the draft recommendation is for **the City to pursue a hybrid Accelerate-Spark scenario**, consisting of the following strategies:

- Provide City investment at the funding level of Accelerate (up to 80 km of equivalent investment) at an estimated annual investment cost of between $1.2 M-$1.5 M per year, in 2020 dollars; and
- Identify and prioritize additional strategic cycling infrastructure, associated with a Spark Scenario, which could be implemented if new / external funding is secured. Examples of these programs include the Ontario Municipal Commuter Cycling Program and the recently announced COVID-19 Resilience funding stream of the *Investing in Canada Infrastructure Program*, as well as the upcoming federal investment through the development of the National Active Transportation Strategy. These funding sources can also be leveraged for standalone capital project costs not reflected in the

current analysis, such as those for bridges, underpasses and overpasses.

For planning purposes, **a cycling mode share target of 12% for the 2041 horizon is recommended**, with sensitivity analysis of a range of 10-12% to be considered in the Transportation Master Plan. Achieving the targeted investment from additional levels of government could push this target even higher. The relative increase that can be attributed to funding from the provincial and federal levels of government would be a "value-added" and could ultimately justify targets for cycling mode shares higher than 12% (towards the higher end of the Spark scenario). As with all plans, the updating of the targets and objectives on a 5-year rolling basis can consider a potential increased mode share target to reflect realities of funding from the province and federal governments.

3 Summary & Next Steps

The scenario analysis memo is intended to directly inform the development of the Cycling Master Plan by identifying an optimistic, yet achievable, scenario and mode share target and corresponding level of investment for Peterborough. Based on qualitative review, public and stakeholder input, and economic analysis, a hybrid Accelerate-Spark scenario and cycling mode share target of 12% by 2041 is recommended.

The next steps for the cycling master plan study will include:

- Reviewing public and stakeholder feedback received throughout the study throughout public consultation activities;
- Undertaking the network feasibility review and preparing the draft cycling network for public and stakeholder review; and
- Developing recommended policies and strategies to support the vision and mode share targets.