City of Peterborough
Parkway Corridor Class EA

Assessment of the Recommended Alternative in Light of the Current Planning Context

Submitted by City of Peterborough

April 4, 2016
Executive Summary

The Notice of Completion for the Parkway Corridor Municipal Class Environmental Assessment (EA) Study was filed on February 7, 2014, following which the Minister of the Environment and Climate Change (Minister) received 88 requests asking that the City of Peterborough be required to prepare an Individual Environmental Assessment for the proposed Parkway Corridor Class EA. The City subsequently submitted its formal response to the Part II Order requests requested by the Ministry of Environment and Climate Change (MOECC), including Table A, on May 2, 2014.

Given that significant time has passed, the Minister has issued an Order that further study by the City be undertaken, prior to making a decision on the Part II Order requests. Specifically, the Order requires the City to submit a report to the Director of the Environmental Approvals Branch that:

a. Reviews the planning and design alternatives,
b. Describes and evaluates the decision-making process that was used to select the most appropriate alternative design, and
c. Identifies the advantages and disadvantages of the preferred design, all in relation to the preferred alternative for the section of roadway that traverses Jackson Park.

In accordance with the Minister’s Order, this report focuses on ensuring the preferred design and the environmental mitigation measures proposed are still valid in the current planning context, particularly with regards to the section of roadway that traverses Jackson Park.

This document also provides an overview of the relevant changes to legislation, Provincial areas of interest, local planning documents, policy or planning approvals, as well as any local transportation infrastructure and services in the study area, and how these changes relate to the preferred design and proposed mitigation measures. Based on the review and analyses undertaken as part of the Minister’s Order, further study has confirmed that while the evolving planning context strengthens the need for the Parkway Corridor, it has not significantly changed the planning, design and decision making process used to reach the preferred design. This conclusion is based on:

- Compliance with the changes to planning/policy direction while providing the necessary infrastructure to support planned growth within the current planning context.
- Understated growth associated with the various land use changes approved since the completion of the Study.
- Higher travel demands between the north and south ends of the City due to expected growth in proximity to emerging land uses.
- Evidence that the City is implementing its vision and investment in active transportation and improved transit services that formed a key part of the recommended solution.
- The role that the Parkway route will play in the City’s future multi-modal transportation network.
- Compliance with sustainability and climate change planning objectives by providing active transportation opportunities that are attractive, supporting enhanced public transportation, reducing regional GHG emissions compared to the status quo, and building infrastructure resilience into the preferred solution.
Executive Summary

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1. Introduction

1.1 Background

The history of the Parkway Corridor dates back to 1947 when a new transportation corridor was recommended to by-pass the west side of the City of Peterborough to connect to the recreational areas north of the City. This first “Official Plan” for the City, known as the Faludi Report, established the future road network and guided the development of lands around the corridor as the City continued to grow.

The City purchased the required land for the Parkway Corridor and designated the corridor within the Official Plan, but never moved forward to implement the entire project. Since then the City has grown up around the corridor and other routes have evolved to fill the role of the “highway by-pass” envisioned in the 50’s. However, as the City has grown new arterial roadways to serve the growth in the west and north ends of the City have not been constructed, primarily because the “Parkway Corridor” was protected and would serve that need.

The inability to move forward with implementation of this entire corridor has resulted in a fragmented arterial road network in the City; a network where local streets become the thoroughfares. As a result, there are numerous two lane residential streets that carry significant volumes of through traffic and as such, the need for a new corridor through the City has evolved from the “Parkway” concept of the 50’s to a modern arterial road no different from Water Street, Chemong Road, or any of the other arterial roads in the City.

Portions of the original Parkway corridor have been implemented; most notably the section between Highway 115 and Clonsilla Avenue, which has been in operation for over 20 years, and serves as the main entrance into the City from the south. Built in conjunction with the Highway 115 by-pass (which connects to Highways 7 and 28 east of the City), the southerly portion of the Parkway has not only transformed the land use and accessibility to the entire south end of the City, but the arterial road design for this initial segment clearly established that the Parkway Corridor to the north is to be an arterial road. The initial portion of the Parkway Corridor connects to the Lansdowne Street commercial corridor and the extension to Clonsilla Avenue has taken pressure off of other parallel residential roads, such as Goodfellow Road to serve this north-south linkage.
The purpose of the Parkway Corridor Municipal Class Environmental Assessment is to build upon the recommendations of previous studies and complete the remaining phases of the Class EA process for projects related to the Parkway Corridor, as identified in the 2012 Comprehensive Transportation Plan Update. The Parkway Corridor EA (the “Study”) was undertaken in one integrated Environmental Assessment to properly assess the city wide impacts and benefits of these projects. The limits of the study area include the entire Parkway Corridor, from Lansdowne Street in the south end to the intersection of Water Street / Carnegie Avenue / Cumberland Avenue, in the north end of the City.

The Study was carried out in accordance with the Planning and Design process for Schedule ‘C’ projects, as outlined in the Municipal Class Environmental Assessment document (October 2000, as amended in 2007 & 2011). The Study exceeded the requirements set out in Phases 1 through 4 of the process for a Schedule ‘C’ project. Phase 5 will be completed prior to construction, subject to resolution of the Part II Order requests.

1.2 Consultation

An extensive public consultation program was undertaken which exceeded the requirements set out for a Schedule ‘C’ project. The consultation program consisted of the following:

- Study notices issued at key points of the Study,
- Four Public Information Centres (PICs),
- A design workshop for members of the public and agencies that had expressed an interest in participating,
- External agency meetings,
- Presentations to City Advisory Committees and City staff from various departments,
- Council presentations,
- A study email address and a study website with “one-click” commenting capability.

The public consultation program was enhanced to include the first PIC being held during Phases 1 and 2 of the Class EA process. In addition, design concepts were presented at PIC 2, prior to undertaking the evaluation of the alternatives so that stakeholder feedback could be considered in the evaluation. A design workshop was held following PIC 3, with residents and other stakeholders to further enhance the design for the new corridor and obtain feedback on mitigation measures that could be incorporated to reduce adverse effects of the project. A fourth PIC was also added during the study to provide additional information on conceptual designs for the Jackson Park Area Alternatives, recognizing the sensitivity and public concern expressed about this area.
A summary of the comments received and the associated responses were posted on the website throughout the course of the study. A copy of the comments received from the public and associated responses prepared by members of the study team are included in Appendix D of the Environmental Study Report (ESR). The main body of the ESR documents how public feedback was considered and addressed at each stage of the study process, including how it influenced the evaluation criteria, the study process, the selection of the preferred alternative and the recommended design.

A wide variety of feedback has been received, including support for the project from members of the community. This has been demonstrated in written commentary received from the public during the study, verbal exchanges between study team members and the public during consultation events, and an online petition formed and signed by members of the community who have indicated their desire to have the Parkway project proceed. In addition, comments received from the public during the course of previous Municipal Class EA studies related to transportation projects in the City (i.e., New PRHC Road Network Improvements Addendum and Parkhill Road West) have indicated a measure of public support for the extension of the Parkway corridor. City Council, the elected representatives of the community, in November 2013 voted 8 to 3 to endorse the entire recommended Parkway. To date, despite having a new Council elected late in 2014, the direction provided by Council in 2013 has not been changed.

1.3 Part II Orders

The Ministry of the Environment and Climate Change (MOECC) received 88 requests asking that the City of Peterborough be required to prepare an Individual Environmental Assessment for the proposed Parkway Corridor Class EA. Many of the Part II Order requests focussed on criticisms of the current City Official Plan, and the recently completed 2012 Comprehensive Transportation Plan Update, including the demand management program, which were fundamental policy documents that set the context for how the City has decided to manage growth, land use, and the city-wide transportation system. These documents were developed in accordance with the Planning Act and the Municipal Class EA process for Master Plans and included full public consultation as part of the municipal decision making and approval process.

On May 2, 2014, the City submitted its formal response to the Part II Order requests, including the completed Table A, requested by the MOECC.

1.4 Our Understanding of the Minister’s Order

The Notice of Completion for the Study was filed on February 7, 2014. Given that significant time has passed since the filing of the Notice, the Minister has requested further study by the City prior to making a decision on the Part II Order requests. In accordance with the Minister’s Order, this report focuses on ensuring the preferred alternative and the environmental mitigation measures proposed are still valid in the current planning context, particularly with regards to the section of roadway that traverses Jackson Park. Specifically,
the Order requires the City to submit a report to the Director of the Environmental Approvals Branch that:

a. reviews the planning and design alternatives,
b. describes and evaluates the decision-making process that was used to select the most appropriate alternative design, and
c. identifies the advantages and disadvantages of the preferred design, all in relation to the preferred alternative for the section of roadway that traverses Jackson Park.

In assessing the current planning context, this report will focus on relevant changes to legislation, provincial areas of interest, changes to local planning documents, policy or planning approvals, and any local changes to transportation infrastructure and services in the study area and how these changes relate to the preferred alternative and proposed mitigation measures.

As the Minister’s Order has not identified any deficiency with respect to the consultation program or the underlying technical work completed as part of the ESR dated February 2014, this report has been structured as a technical resource document to assist the Minister in making an informed decision on the Part II Order requests. As such, the report relies on much of the information already generated as part of the Class EA process, the filed ESR, and the information provided by the City in May 2014 in response to the request for information at the completion of the Class EA review period.

1.5 Report Content

In accordance with the requirements of the Minister’s Order, this report:

- discusses the current planning context relative to the planning context at the time of the study;
- provides an overview of the study process;
- reviews the planning and design alternatives in the current planning context;
- describes and evaluates the decision-making process that was used to select the preferred alternative design considering the current planning context; and
- identifies the advantages and disadvantages of the preferred design;

all in relation to the preferred alternative for the section of roadway that traverses Jackson Park.
2. **Planning Context**

The Order from the Minister of the Environment and Climate Change references two critical issues with the MOECC review of the Study and the reasons for the Order. The City has noted and appreciates that the Minister has not identified any gaps, weaknesses, or errors with the Study through the issuance of this Order. The Order instead relates to:

a. The length of time that has passed since the Notice of Completion; and

b. Any changes to the Planning Context that may have taken place during the MOECC review of the EA.

As such, this report has been prepared in consideration of obvious legislation and policy context from a Provincial and Municipal perspective, as well as the less obvious, less tangible, but no less important, issues that are also considered to form part of the current planning context, and not limited to specific Planning Act or municipal land-use planning policies.

2.1 **Setting the Context**

In assessing the current planning context, this report focuses on relevant changes to legislation, provincial and municipal areas of interest, changes to local planning documents or planning approvals, and any local changes to transportation infrastructure and services in the study area and how these changes relate to the preferred alternative and proposed mitigation measures.

Despite the length of time that has passed since filing the Notice of Study Completion on February 7, 2014, changes to the current planning context are relatively limited and can be grouped under the following four themes, as described in subsequent sections: Approved and Emerging Land Use Changes, Changes to Provincial Planning Direction, Sustainability and Climate Change Planning, and Transportation Infrastructure.

2.2 **Planning Context at Time of Study**

In consideration of the amended Growth Plan (2014), there is an even greater need for the project. During the Study, forecasts of future population and employment growth in the City were provided in the Provincial Growth Plan (Places to Grow), issued by the Province in 2006, and the City’s Official Plan, which was brought into conformance with the Provincial Growth Plan in August 2009. Population was forecast to grow by 11.8% from 78,698 in 2011 to 87,997 by 2031. In addition to intensification within the downtown, the majority of the greenfield population growth was planned for the north end of the City, and distributed between the Carnegie East, Carnegie West, Chemong East, and Chemong West growth areas, on lands previously annexed by the City to accommodate future growth. Employment growth was forecast at 3% to 2021, with no growth forecast between 2021 and 2031. The majority of the employment growth was planned in the downtown and southwest areas of the City.
The City had also initiated planning for the future Lily Lake planning area, one of the areas annexed by the City to accommodate future longer term growth. Upon full build out of the designated growth areas plus the Lily Lake development, an additional 9,200 residents can be accommodated in the north end of the City beyond the 2031 horizon. The final Secondary Plan had not come forward to City Council for approval before the completion of the Parkway Corridor Class EA Study.

In response to requests from various members of the public, additional sensitivity analysis was undertaken to assess the implications of the potential additional growth in the Lily Lake planning area on the assessment and evaluation of alternatives in this Study, since this future development area was not included in the original 2031 forecasts used in the Comprehensive Transportation Plan Update. In response to these comments, and recognizing that the designated growth areas in the north end of the City could accommodate more growth than was originally forecast for 2031, the Study also included the ability to accommodate growth beyond 2031 as one of the evaluation criteria used in assessing alternative solutions.

During the course of the Study, the Province approved Amendment 2 to the Provincial Growth Plan, and increased the City’s growth projections by 17% above the original 2031 forecast and above the numbers relied upon for the previous 2012 Comprehensive Transportation Plan Update, and used for the purpose of this Study (i.e. population expected to exceed 100,000 people by 2031 and 115,000 people by 2041). Since the Provincial Growth Plan requires municipalities to use the provincial forecasts in land use and infrastructure planning, it was expected that the Official Plan Update (discussed in section 2.3.5) would incorporate these new forecasts as appropriate. If the approved higher growth forecasts are realized, it is conceivable that all of the north end growth areas may be built out by 2031.

The Study used the original 2006 forecasts as the basis for the growth projections in the travel demand forecasting work. These growth forecasts were consistent with the 2012 Comprehensive Transportation Plan Update and the current City Official Plan; however they were lower than Amendment 2 forecasts the province had directed municipalities to use in their planning.

Key Consideration:
The need for new transportation capacity was based on growth forecasts in the original provincial Growth Plan.
2.3 **Approved and Emerging Land Use Changes**

Since the Study was completed and submitted to the MOECC for review, several municipal Land Use Planning changes have occurred. The locations of these initiatives are shown in Figure 1 and are discussed below.

**Figure 1:** Approved and Emerging Land Use Changes
2.3.1 Lily Lake Secondary Plan Approval

The Lily Lake Secondary Plan strongly reinforces the need for the Parkway Corridor. While the travel demand forecasting for the project did not initially include growth within this planning area, a sensitivity analysis was undertaken during the Study to assess the implications of this future potential growth on the planning and design alternatives under consideration. The findings of the sensitivity analysis supported the selection of the preferred alternative, specifically as it relates to the recommended bridge across Jackson Park. The analysis further indicated that the alternative (to go around the park) was found to provide insufficient capacity to accommodate the full build out of the Lily Lake Planning Area.

Subsequent to the approval of the Study recommendations by City Council, the Lily Lake Secondary Plan was approved in June 2014. Draft plans of subdivision have been submitted for the lands in the secondary plan area, and the proponents of these developments are completing the necessary background studies and technical analysis to secure planning approvals, in accordance with the Planning Act. The transportation capacity to support this new approved growth area is only provided by the preferred alternative and in particular the proposed bridge crossing Jackson Park. This is further discussed in Section 7 of this report.

2.3.2 Trent University Research and Innovation Centre

The establishment of other new facilities in the north end of the City will also increase the demand for north-south travel along the Parkway Corridor. For many years Trent University has contemplated the establishment of a research park as an extension of the Trent Campus. The Endowment Lands Plan (2006) identified an 85 acre (34.4 ha) tract of the campus east of the original DNA buildings on the north side of Pioneer Road as the preferred location for an Innovation/Research and Development campus. The Trent Lands Plan (2013) confirmed this strategic direction and the preferred location.

City Council initiated amendments to the Official Plan and Zoning By-law to recognize employment uses in the Major Institutions land use designation and the UC – University and College Zoning District, at its meeting of December 7, 2015. At the same time, the City’s CAO was authorized by City Council to execute a Memorandum of Understanding with Trent University to facilitate the implementation of the Trent Research and Innovation Park. Trent University is currently a major
employment node in the City, employing approximately 1,500 people at the north end and
downtown campuses. At full build out, the 34.4 hectare site has the potential to support
approximately 1,400 new jobs, none of which were contemplated during the 2012 Comprehensive
Transportation Plan Update, or during the Study.

Establishing this facility as an employment destination will increase the demand for north-south
travel across the city.

2.3.3 New Twin-Pad Arena and Sports Complex

The City is currently planning for a new arena and sports complex, which is also expected to
generate new north-south travel demands. The City has prepared a series of staff reports over the
past 20 months for the development of a new complex to replace the aging Northcrest Arena and
provide additional ice capacity in the community. A thorough site selection process was completed
and a new complex was recommended to be located on lands provided to the City by Trent
University, on the east bank of the Otonabee River.

City Council has approved the new location and have authorized staff to undertake the detailed
design work for a new arena complex that includes a twin pad arena with 1000 spectator seats, an
elevated walking/running track, a commercial restaurant space, three multi-purpose rooms,
associated office and support services, and provisions for a future aquatic centre with competitive
pool(s) and support facilities. The introduction of this development was not contemplated during the
2012 Comprehensive Transportation Plan Update, or during the original Study. It is expected this
new complex, with significantly expanded facilities over the existing facility, will generate new north-
south travel demands, following the general route of the Parkway Corridor.

2.3.4 Potential South-end Casino Complex

The City expressed interest in hosting a new casino and has publicly recognized a location adjacent to the
existing Parkway / Crawford Drive intersection, in close proximity to Highway 115, as an ideal location for a
future OLG Casino. The City expects to initiate a Zoning By-law amendment to facilitate the construction of a new
casino complex as part of the OLG Casino modernization program for the Eastern Ontario Gaming bundle in the
near future. The potential casino site could include the OLG facility, a restaurant and an ancillary hotel.

From a transportation perspective, the potential casino would be situated directly adjacent to the
site identified for a potential new train station (part of the Shining Waters Rail Service proposal)
which is envisioned to provide rail access between Peterborough and the GTA. The combination of
these two developments in the Southwest portion of the City would generate new north south travel
demands along the Parkway Corridor route and would also trigger the need for new enhanced
transit services to properly support these initiatives. As such the City is protecting for a future
transit hub to be located at the train station site (and perhaps in advance of train service being restored) to ensure that multi-modal access is provided to these large future trip generators.

Over time, as the Parkway Corridor is implemented, its role as a transit spine and an enhanced transit corridor will emerge; linking the Major Bennett industrial park, the potential future casino and train station, the Peterborough Regional Hospital, and the Trent University Campus and Research Park.

2.3.5 City Official Plan Review

The higher growth forecasts that will be adopted in the new Official Plan (in accordance with the Growth Plan) will further support the need for the Parkway Corridor. The City is currently in the process of updating the Official Plan. The update will incorporate the revised growth forecasts contained in Amendment 2 of the Growth Plan, which directed additional growth to the City of Peterborough beyond those used during the planning and travel demand forecasting work undertaken as part of the Study.

One of the criticisms levied against the City in many of the Part II Order requests relate to current and forecast growth patterns, suggesting that further growth in the north end of the City is not in keeping with the Growth Plan emphasis on intensification. A review of recent growth patterns indicates that the City has exceeded the Provincial requirement for intensified growth within the built boundary is 40%; however, the City has achieved a 49% intensified growth rate over the past 5 years. Policies to support continued intensification will be included in the updated Official Plan.

From a transportation perspective, the Official Plan Update will take direction from the 2012 Comprehensive Transportation Plan Update, which provided the strategic focus, infrastructure elements, and policy direction to guide transportation decision making in the City. The 2012 Comprehensive Transportation Plan Update established reasonable, evidence-based targets to increase the share of trips using transit and active transportation modes, and included recommended policies, infrastructure, and funding requirements to achieve these goals. The plan promotes the establishment of “complete streets” that serve all transportation users, and this has been the vision used in the design of the Parkway Corridor throughout the Study.

2.3.6 Major Infrastructure Investment to Support Growth in the North End

For many years the City of Peterborough has planned for extensive growth in the north portion of the City. In order to provide supporting infrastructure necessary for this growth to occur, many studies have been completed and infrastructure projects have been implemented to support this growth. The 2014 Provincial Policy Statement and its predecessor require municipalities to plan its
infrastructure in a manner that is coordinated, efficient and cost-effective. As a result of this forward thinking approach, the City has spent in excess of $35 million on projects with components designed specifically to support new growth in the northern part of the City.

While planning infrastructure repairs, replacements or upgrades, the City has always looked forward through its Official Plan and the various guiding documents provided by the Province. This approach encourages coordinated, efficient and cost-effective means and methods for provision of infrastructure that meets current needs but also supports planned and approved growth through the City’s Official Plan. Commencing with land-use planning objectives, through to secondary plans, servicing plans, development charge bylaws, environmental assessments and finally construction planning and implementation, the City has devoted countless resources to ensure growth occurs in a conscientious manner that respects its Official Plan and exceeds provincial and municipal expectations.

Recent examples of our infrastructure investments to support designated growth in the north end of the city include:

- the Parkhill Road Sewage Pumping Station reconstruction (more than $4 million), which required a capacity upgrade to support imminent growth, but was ultimately planned and constructed to support forecasted growth in the Lily Lake area as well.
- many recent sanitary sewer projects have been designed with future growth in mind to ensure future servicing is provided in a cost-effective manner. Some of these projects are listed below:
  - Chemong Secondary Plan Trunk Sanitary Sewer ($1.4 million)
  - Parkway Corridor Sanitary Sewer ($2.8 million)
  - Hilliard Street Sanitary Sewer ($2.7 million)
  - Water Street Sanitary Sewer ($3 million)
  - Aylmer-Dalhousie Sewer Replacement ($4.1 million)

It is important to note that the Parkway, as a transportation corridor, is only one piece of the infrastructure necessary to support the growth that has been planned and approved. Many segments of the Parkway Corridor already have municipal services constructed within the right-of-way, in advance of the need for the road itself. It is equally important to note that all of this planning and servicing has been completed only after ensuring necessary (and appropriate) municipal and provincial standards, guidelines and policies have been strictly adhered to.

The City has already invested significant resources to provide infrastructure to support designated growth in the north end of the City, much of it located within the Parkway Corridor right-of-way. The preferred design provides the necessary transportation infrastructure to support this planned growth and is consistent with the current planning context that encourages coordinated, efficient and cost-effective approaches to the provision of infrastructure to support growth.
2.4 Changes to Provincial Planning Direction

2.4.1 2014 Provincial Policy Statement

The new policy direction provided in the 2014 Provincial Policy Statement (PPS) is consistent with the planning process used for the Study. The decision making process for the Class EA had regard for the draft requirements of the 2014 PPS, which was approved by the province in 2014 to guide municipal planning processes.

The main updates to the PPS focus on a few key issues:

i. Active Transportation and Transit;
ii. Planning of infrastructure and infrastructure corridors, for efficiency and all modes of transportation;
iii. Strengthening protection for natural areas and fostering complete communities; and
iv. Consideration of Climate Change when planning new infrastructure and development

Key changes relevant to the Parkway Class EA include:

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<th>Changes in 2014 Provincial Policy Statement</th>
<th>How Reflected in Preferred Design</th>
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<tr>
<td>Promote transportation choices that increase the use of active transportation and transit before other modes of travel.</td>
<td>Future corridor will be a transit spine to allow improved service. Multi-use trail along corridor will fill in missing segments in trail network and encourage active transportation.</td>
</tr>
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<td>Promote development and land use patterns that conserve biodiversity and consider the impacts of a changing climate.</td>
<td>Transportation capacity provided within built up area as opposed to the urban fringe, which could encourage sprawl outside built boundary. Preferred solution in north end avoids Provincially Significant Wetland. Preferred long span bridge and commitment to reduce number of piers in the valley protects potential habitat areas within Jackson Park valley. Stormwater management ponds oversized to reduce downstream flood potential.</td>
</tr>
<tr>
<td>Efficient use shall be made of existing and planned infrastructure, including through the use of transportation demand management strategies, where feasible.</td>
<td>2012 Transportation Plan increased transit and active transportation mode shares and established TDM polices to achieve these targets. Infrastructure to support transit and active transportation incorporated into preferred design as appropriate.</td>
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### Changes in 2014 Provincial Policy Statement

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<th>Changes in 2014 Provincial Policy Statement</th>
<th>How Reflected in Preferred Design</th>
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<tr>
<td>Nothing limits the planning for infrastructure and public service facilities beyond a 20-year time horizon.</td>
<td>Class EA evaluation process incorporated ability to accommodate growth beyond 2031 as one of the criteria.</td>
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<td>New development proposed on lands adjacent to existing or planning corridor and transportation facilities should be compatible with, and supportive of, the long-term purposes of the corridor and should be designed to avoid, mitigate or minimize negative impacts on and from the corridor and transportation facilities.</td>
<td>Lands adjacent to Parkway Corridor right-of-way designated as natural areas in Official Plan to provide buffer for adjacent residential areas, in anticipation of future transportation corridor. Mitigation measures to enhance buffer treatment (vegetation, noise berms / walls) and connectivity between neighbourhoods (trail crossings) included in preferred design.</td>
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<td>Providing for an efficient, cost-effective, reliable multimodal transportation system that is integrated with adjacent systems and those of other jurisdictions, and is appropriate to address projected needs to support the movement of goods and people. Transportation corridors shall be planned to support the movement of goods and people.</td>
<td>Preferred Design is a multi-modal corridor designed to accommodate all modes of travel. Preferred design will enhance inter-regional access to Regional Hospital, and will act as a goods movement corridor to connect employment nodes in north end of City to the provincial highway system.</td>
</tr>
<tr>
<td>Development of public spaces should foster social interaction and facilitate active transportation and community connectivity.</td>
<td>New public spaces incorporated into preferred design in Sunset Park, and multi-use trail connects activity areas such as the Peterborough Zoo (north end), Sunset Park, Jackson Park, and Kinsmen Center – all located along Parkway Corridor. Reduction of traffic infiltration through adjacent neighbourhoods is a key measure that can contribute to the creation of Complete Communities that foster active lifestyles.</td>
</tr>
<tr>
<td>Recognize Provincial Parks, Conservation Areas, and other protected areas and minimize impacts to these areas.</td>
<td>Preferred design avoids provincially significant wetland in north end. Long Span bridge minimizes intrusion in Jackson Park. Development of Jackson Park Management Plan, as recommended in the Study, will provided enhanced protection for park area.</td>
</tr>
</tbody>
</table>
### Changes in 2014 Provincial Policy Statement

<table>
<thead>
<tr>
<th>Changes in 2014 Provincial Policy Statement</th>
<th>How Reflected in Preferred Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop infrastructure that considers impacts from Climate Change. Consider aspects of climate change that may increase risk from natural hazards.</td>
<td>Preferred design incorporates enhanced stormwater management treatments to enhance water quality and reduce downstream flooding. Preferred design reduces regional emissions compared to “Do Nothing” and compared to “Alternative Route around Jackson Park”.</td>
</tr>
<tr>
<td>Infrastructure should be financially viable over the lifetime of the infrastructure, which can be demonstrated through an asset management plan.</td>
<td>Benefits of preferred solution exceed lifecycle costs as demonstrated in Cost Benefit study in Environmental Study Report.</td>
</tr>
</tbody>
</table>

The new inclusions in the 2014 PPS, while forward thinking and appropriate are not necessarily ‘new’ to municipalities, as was demonstrated in the ESR and in response to the Part II Orders. The Study has already incorporated appropriate measures to reflect the new policy directions outlined in the 2014 PPS. The City has for many years placed a priority on Active Transportation and Transit and will continue to do so.

The implementation of the 2014 Provincial Policy Statement has increased awareness of the need to promote alternative transportation modes, create complete communities, and protect natural areas. This change to the planning context was anticipated during the Study and is reflected in many of the project outcomes and recommended mitigation measures. Development of the Jackson Park Management Plan, recommended in the Study, will provide enhanced protection for the Jackson Park area and is itself a recognition of the current planning context.

### 2.4.2 Growth Plan Review Recommendations

The Province manages growth, protects the environment and supports economic development in the Greater Golden Horseshoe through four provincial land use plans. These plans are currently being reviewed. To support the review, the Province appointed an advisory panel, chaired by David Crombie, to develop recommendations on how to amend and improve the plans.

Of particular interest to the Study and the current planning context is recommendation #53 in the Growth Plan Review (the “GPR”) which pertains to planning and protection of infrastructure corridors. The model for how the GPR envisioned long term corridor protection to occur is consistent with the history of the Parkway Corridor. The land for the Parkway Corridor was designated well in advance of the need for the corridor, other utilities and infrastructure have been located within the corridor (e.g. trunk sewer, active transportation infrastructure), and growth was permitted to occur around the protected corridor until such time as the need for the road arose. That time is now. It is expected that the updated Growth Plan will incorporate stronger policy language to support municipalities and the province as they plan for new infrastructure corridors.
Another key aspect of the GPR is an enhanced focus on Climate Change. While efforts should be directed towards reducing the causes of climate change, there is also a focus on adaptation, as well as the protection of natural and cultural heritage. Such things as protection and stewardship of water resources, strengthening source water and watershed protection, improving mapping and strengthening protection for natural heritage systems and strengthening protection of cultural resources are all recommendations made as part of the GPR. A regional reduction in emissions, enhanced flood reduction measures, cultural heritage recognition and natural heritage protection and restoration are key components of the preferred design.

The Parkway Corridor represents a long term corridor planning process that is consistent with the current planning context for efficient infrastructure planning.

2.5 Sustainability and Climate Change Planning

2.5.1 City of Peterborough Focus on Climate Change, Active Transportation, Sustainability and Resiliency

The City of Peterborough, in partnership with the County of Peterborough, the eight member Townships, Curve Lake First Nation and Hiawatha First Nation adopted the Greater Peterborough Area (GPA) Community Sustainable Plan in April 2012. The Sustainable Peterborough Plan (SP) defines what a sustainable Peterborough will look like for the next generation, and sets goals, directions, and actions for balancing the environmental, socio-cultural, and economic pillars of sustainability.

Following adoption of this Plan, a Sustainable Peterborough Coordination Committee (SPCC) was formed to oversee the continuous progress, community involvement, and momentum in sustainable actions and activities within the Greater Peterborough Area. The SPCC has established six active communities based working groups, focusing on priority actions outlined in six themes:

- Climate Change
- Energy
- Food and Farming
- Healthy Kids Community Challenge
- Sustainable Peterborough Business Initiative
- Water Working Group

Beyond establishing the six working groups, the GPA has been the beneficiary of an Ontario Trillium Foundation grant and funding grant from the Federation of Canadian Municipalities’ Green Municipal Fund. These grants have allowed the GPA to finance a Climate Change Action Plan project.
The City of Peterborough and its partners passed supporting Council resolutions to become members of the FCM Partners for Climate Protection (PCP) Program. Through the PCP, the partners formed a collaborative to undertake the five-milestone framework to address climate change. The five milestones include:

1. Establishing a Green House Gas (GHG) inventory and forecast;
2. Set emission reduction targets;
3. Develop a local action plan;
4. Implement the local action plan;
5. Monitor progress and report results.

On a Community basis, residential building sources are the greatest contributor (48%), followed by commercial and institutional sources (25%). Transportation represents 14% of the total emissions by sector for the entire community (please refer to Figure 2). With respect to the City of Peterborough, an analysis of emissions by sector has shown that emissions by the City’s vehicle fleet are the largest source (39%) followed by buildings (32%).

In relation to “Fleet” and “Transportation” there are physical barriers in place to reducing emissions. One of those is the efficiency of the City’s transportation network. For many years, despite constant growth, capacity improvements to the City’s arterial road network have been rather subdued and have not kept pace with increasing demand. Despite a focus on improving accessibility, reliability and frequency of public transit as well as a focus on providing transportation infrastructure to support active transportation, automobile transportation remains the dominant choice and congestion is beginning to occur. As growth continues, this congestion will worsen and result in an increase to GHG emissions. The Parkway Corridor is expected to demonstrate a reduction in regional GHG emissions, when compared to ‘Do Nothing’.

The efficiency of the recommended design is not only limited to the Parkway Corridor and surrounding area. Efficiencies were demonstrated on virtually every other arterial road in the City based on the results of traffic modelling carried out as part of the Study.

2.5.2 Ontario Government Committed to Climate Change Action

Ontario is a world leader in fighting climate change alongside global partners. Ontario is building transit friendly cities to cut down on vehicle emissions and helping businesses reduce their carbon footprint. In 2015, Ontario released its strategy to reduce greenhouse gas emissions to 80% below 1990 levels by 2050. The recommended Parkway design is aligned with this strategy as it results in a decrease in airborne emissions due to reduced congestion and out-of-way travel. The Parkway extension will also serve as a future transit spine and active transportation corridor to encourage and support non-auto travel modes.
2.5.3 Sustainable Peterborough Plan and Prioritization of Sustainable Infrastructure

Sustainability is a commonly used term that has various meanings for different communities. In the case of the SP, sustainability has been explained as seeking “to find a balance between environmental, socio-cultural, and economic pillars, in recognition of the fact that social and economic development is bound by environmental constraints”, (sustainable Peterborough, Page 1). The SP has identified several key themes and among those is transportation.

The SP acknowledges the personal vehicle remains the dominant choice for travel in the Peterborough area. In response to the reliance on the personal vehicle, the SP has established a 25-year goal: to have in place an accessible transportation network that places priority on active and efficient modes of transportation.

To support this goal, two Strategic Directions have been provided:

- Provide accessible and complete active transportation opportunities that are attractive alternatives to the private automobile; and
- Enhance public transportation that is accessible, affordable, efficient, and effective to support the needs of the community.

As described in Section 2.6, the City of Peterborough’s recent investment in transportation projects has included significant efforts to incorporate or enhance active transportation infrastructure. Such things as signalized pedestrian crossings, tactile walking surfaces, signage, landscaping and separate walking and cycling facilities have all been incorporated into recent projects in an effort to encourage active transportation. The recommended Parkway Corridor incorporates all of these features, including grade separated pedestrian crossings, wherever it is feasible to do so.

There are also less obvious benefits to the recommended design. The expected efficiencies in the transportation network include a reduction of out-of-the-way travel and neighbourhood short-cutting and/or congestion, as well as a dramatic increase in active transportation users. This is directly compatible with the first strategic direction of the SP and will create more Complete Communities that encourage more active lifestyles.

Another less tangible benefit of the recommended design addresses the second strategic direction of the SP. The reduction in congestion throughout the City will improve the ability of the City to provide an efficient, accessible and effective public transit system.
2.6 Transportation Infrastructure

The City has made a number of investments in transportation infrastructure in the past 2 years following completion of the Study. Two arterial road reconstruction projects (Brealey Drive and Ashburnham Drive) proceeded as Schedule A+ reconstruction projects since the need for widening these facilities was negated by the Council decision to approve the Parkway Corridor project. In addition to these roadway reconstruction projects, additional investments in on-road cycling facilities, off road multi-use trails, new and enhanced transit services, and new sidewalks have proceeded in accordance with the recommendations of the 2012 Comprehensive Transportation Plan Update.

The City’s investment in non-auto infrastructure has been significant over the past two years following completion of the Study. A recent analysis of total capital and operating budget spending by mode of travel, based on the 2015 and 2016 budget documents, concluded that the City invested 44% of the total Transportation capital and operating budgets in 2015 on Transit and Active Transportation infrastructure and services, compared to 56% on road related spending. In 2016, Transit and Active Transportation represented 49% of total Transportation spending with 51% devoted to roadworks. Please refer to Figure 3.

This allocation of spending in recent years demonstrates the City’s commitment to funding alternative transportation modes in order to achieve the community and societal benefits associated with the mode share targets established through the Comprehensive Transportation Plan Update process.

Figure 3: Investment in Transportation by Mode – 2015/2016 Budget

Since 2001, the City has only added 5.2 lane-km of new roadway capacity (other than new local roads in development areas) while the cycling network has been expanded by 30km of new on-road bike lanes and off-road trails. Over the same period annual revenue service hours on the conventional transit system have been increased by 90%, and while this has encouraged a 74% increase in annual passenger boardings, from 2.16 M to 3.8 M in 2015, the transit mode share for
the City has remained virtually unchanged. The same can be said for the walking and cycling mode share, based on 1996-2011 data (Figure 4) from the Transportation Tomorrow Survey.

Figure 4: Transportation Tomorrow Survey – 2011 Mode Share Data

2.6.1 Investments by the City in Active Transportation Network

Since the first trail projects initiated by the City in 1991, the active transportation network has expanded to a network comprised of 64 km of on-road bike lanes, separated multi-use trails, and multi-use paths along arterial roadways. In 2015 alone, the City implemented 9 km of new cycling infrastructure to its network, including multi-use paths along key arterial roads such as the existing Parkway, Brealey Drive, Ashburnham Drive, and a new section of the Trans-Canada Trail (former CP Rail corridor in the south-east portion of the City). These initiatives are all part of the ultimate cycling network identified in the 2012 Comprehensive Transportation Plan Update.

Development of the ultimate trail network is ongoing and, once implemented, will provide 183 km of on-road and off-road cycling infrastructure that reaches each corner of the City, including cycling facilities on the majority of arterial roads.

The City is a leader in the provision of active transportation infrastructure for its residents. In 2015, Peterborough was upgraded from a bronze to a silver designation as part of the 2015 Bicycle Friendly Communities Award program launched by the Share the Road Cycling Coalition. In 2016, the City was awarded a Silver Walk Friendly Community Award by Walk Friendly Ontario in recognition of the initiatives that the City has undertaken to support walking in Peterborough. Since completion of the 2012 Transportation Plan Update, the City has established a dedicated capital budget to fund expansion of the sidewalk program in the City, expansion of the cycling and trail network, and for upgrades to strategic trail crossings with busy arterial roads.

The City continues extensive investment in trails and sidewalks to support active transportation.
In addition to new trail and cycling lane construction, the City has aggressively pursued the purchase of abandoned rail corridors within the City limit, as they become available. In 2015, approximately 3.5 km of inactive CP Rail lines were purchased to permit construction and opening of the Trans-Canada Trail extension between Lansdowne Street and the east limits of the City. The City is currently negotiating the next phase of this rail corridor purchase program for an additional 1.5 km of inactive rail spur, which will facilitate connection of the existing Crawford Trail and the new section of the Trans-Canada Trail to Bethune Street.

2.6.2 Bethune Street Active Transportation Investment

The Bethune Street Corridor represents a unique project and opportunity to expand and connect the active transportation network in the City of Peterborough in a meaningful way. The project was initiated to provide a new storm sewer diversion tunnel, that will protect the downtown from flooding during major storm events and to provide a trunk sanitary sewer to serve approved growth in the north end of the City. Given the extent of excavation for the sewer project, the City has initiated a comprehensive land use and streetscape planning initiative as part of the restoration plan for the corridor. Bethune Street connects existing and future multi-use trails that will eventually connect all four quadrants of the City.

2.6.3 The Preferred Design for the Parkway Corridor Completes Missing Trail Segments

The Parkway Corridor serves as a key connecting link between employment/residential lands in the north, commercial areas in the centre, and employment, commercial and residential lands in the south portions of the City. Sections of the Parkway Trail currently exist; however, there are significant gaps in the area of Jackson Park, and between Sherbrooke Street and Clonsilla Avenue (please refer to Figure 5).

Implementation of the Parkway Corridor will connect the gaps in the trail system and provide a continuous multi-use trail between the employment areas within the southwest portion of the City and Water Street within the north portion. This corridor will provide equal access to all users regardless of mobility or preferred transportation mode.
Figure 5: Current and Planned Trails

Current & Planned Trails

**Existing Trails**
- Parkway Trail
- Rotary Trail
- Trans Canada Trail
- Crawford Trail
- Other Trails

**Proposed Trails**
- Bethune Street Corridor
- Parkway Trail Connections
- Rail Corridor Trails
- Crescent St Trail
- Parkhill Road Trail
2.6.4 Recent Investments in Transit Service

The City has clearly established public transit as a key priority as part of its efforts to reduce congestion and fight climate change. Over the past three years, the City has placed increased emphasis on investment in transit service in the community. In 2013, the City invested $650,000 in new annual operating funding to introduce enhanced transit service on four of the City’s busiest transit routes. A review of 2014 ridership found that peak period ridership increased by approximately 20% on these routes following introduction of this enhanced service, despite a flattening of overall system-wide ridership during the same year.

In December of 2015, the City approved a plan to implement a Universal Transit Pass Agreement (U-Pass) with Fleming College Student Association. The agreement provides unlimited transit passes to all Fleming College Students. The fees collected from the Universal Pass will be used to provide enhanced transit service during the school year and enhance active transportation infrastructure on the Fleming Campus. The proposed transit service plan will increase the level of service provided to Fleming College by approximately 700%.

This new U-Pass program will result in increased frequency of service for all transit users on key routes between the downtown and Fleming College in the southwest part of the City. Ridership forecasts suggest that this new service has the potential to increase overall ridership by approximately 10-11%. The enhanced service is scheduled to begin in fall of 2016 with full implementation by the fall of 2017. The City is investing $2,000,000 in capital funding in 2016 to purchase 4 new transit buses to deliver this new service and ongoing operational costs are estimated at $770,000 per year, to be funded from the tuition fees collected by the Student Association.

In December 2016 the City approved $127,000 in funding to introduce new holiday weekend transit service. Transit service will be provided on eight statutory holidays throughout the year on all regular routes. This enhanced service is expected to increase annual ridership and make transit more accessible to residents who rely on this service for their day-to-day travel needs.

2.6.5 The Role of the Parkway in Transit

The Parkway Corridor would provide a core north-south express transit route through the City. Beyond the recently implemented transit enhancements, the City’s route system may eventually need significant modification to continue to function as a viable alternative to personal auto travel by aligning with emerging growth patterns, reducing passenger travel times, and improving customer service. The existing transit routes in the City are experiencing delays due to growing congestion and enhanced service is difficult to maintain.

At some time in the future a series of transit hubs could serve as nodes to support intensification and provide transfer points where local neighbourhood services connect to a core route system, featuring enhanced service levels. A conceptual transit route framework, comprised of these future transit hubs and the core transit route system, is illustrated in the Transportation & Land Use Context Map shown in Figure 6.
As the transit system evolves, a series of express routes may connect various transit hubs envisaged to provide enhanced service frequency and improved customer travel times to encourage increased ridership. Opportunities to begin implementation of these changes to transit service will be assessed in the next Transit Operations Review and will require approval of City Council.

The recommended design of the Parkway, particularly the bridge crossing Jackson Park would be the ideal route for a future express transit route, as it runs north-south through the City to connect the education / employment node in the north end with the Regional Hospital, and the potential Casino / Train Station / employment node in the south end. The proposed Parkway Corridor is poised to emerge as a key link in this future transit network, enabling the implementation of an efficient higher order express service running at service frequencies that can better compete with travel by personal automobile.

The opportunity to introduce an effective higher order, enhanced transit service would not be possible on a route that weaves its way through local neighbourhoods, is delayed by heavy turning movements at key intersections, and is forced to travel on congested and existing arterial roads that are poorly designed for efficient transit operations. This type of service would also not be feasible along an auto-oriented “west by-pass” route around the periphery of the City, where there is limited density, few destinations to attract transit riders, and is therefore only intended to serve automobile traffic. The Parkway Corridor can provide the necessary multi-modal infrastructure to make this north-south express route concept work.
Figure 6:  Transportation and Land Use Context Map
2.6.6 Timelines for Phase 2 of 407 Extension

The Province recently announced the updated timelines for construction of Highway 407 East, with a connection to Highway 35/115 anticipated to occur by 2020. Once completed, this section of Highway 407 is anticipated to significantly drive growth and investment in Peterborough as transportation access is improved for businesses, residents and tourists to the region. In the Infrastructure Ontario press release announcing the government decision to move forward with the project, the potential benefits to the Peterborough area were recognized:

“Building Highway 407 East is important for the Region of Durham and communities of Peterborough and Kawartha. Design and construction of the highway will create thousands of jobs during the first phase and generate significant economic spin-off benefits for local businesses. Once completed, the highway will create opportunities for business, population and employment growth” Infrastructure Ontario News Release, April 28, 2011.

For the Peterborough area, the improved link to the Greater Toronto Area (GTA), Durham Region, and the future Seaton Community in north Pickering will drive the growth planned for the region as businesses and residents take advantage of the enhanced access to the GTA. This will support the achievement of the Province’s updated and higher growth forecasts for the Peterborough area that were released in Amendment 2 to the Growth Plan for the Greater Golden Horseshoe. The comprehensive effect of completion of the Highway 407 East extension will be an attractor to the south terminus of the Parkway.

2.7 Summary of Current Planning Context Changes

In summary, there have been key changes to the planning context that suggest an even stronger need and case for the Parkway. These can be generally categorized as follows:

i. **Higher growth is likely** – with the various land use changes approved since the completion of the Study (Lily Lake Planning Area, Trent University node, Amendment 2 of the Growth Plan) the current planning context suggests that the Study understated the growth potential in the study area.

ii. **Travel demands will be higher** – the higher growth forecasts combined with the proximity of these emerging land use nodes will introduce higher travel demands between the north and south ends of the City - aligned with the orientation of the Parkway Corridor.

iii. **Infrastructure in Place to Support Growth** – planning for future growth has already resulted in significant investments in underground utility infrastructure to support growth – what is remaining is to implement the transportation infrastructure to support growth.

iv. **The City is investing in all Modes of Transportation** – The City has demonstrated a commitment to invest in Active Transportation and improved transit services to support growth in line with City and Provincial policies. The Parkway represents a key link in the future network to support non-auto modes of travel.

v. **Climate Change** – an emphasis has been placed by both the City and Province to implement measures to combat and adapt to climate change. The preferred design reduces regional GHG emissions compared to the status quo and adaptation measures have been incorporated into the design to address the impacts of climate change.
3. Review of Planning and Design Alternatives

The following sections provide an overview of the planning and design process followed, the alternatives considered and the decision-making process utilized during the course of the Study.

3.1 Brief Overview of Study Process for Entire Study Area

The Study was carried out in accordance with the Planning and Design process for Schedule ‘C’ projects, as outlined in the Municipal Class Environmental Assessment document (October 2000, as amended in 2007 & 2011). The study exceeded the requirements set out in Phases 1 through 4 of the process for a Schedule ‘C’ project. Phase 5 will be completed prior to construction, subject to resolution of the Part II Order requests. Please refer to Figure 7 for a summary of the process followed for this Study. A detailed review of this process is outlined in the subsequent sections.
Figure 7: Summary of Study Process

- **Phase 1**: Identify and Describe the Problem or Opportunity
  - Notice of Study Commencement: Jul / Aug 2012

- **Phase 2**: Identify and Assess Alternative Solutions and Confirm the Preferred Alternative
  - PIC #1: Oct 2, 2012

- **Confirm Project Schedule** (Schedule ‘C’)
  - PIC #2: Mar 21, 2013

- **Phase 3**: Identify Alternative Design Concepts, Potential Environmental Effects and Preferred Design
  - PIC #3: Jun 27, 2013
  - Corridor Design Workshop: Aug 20, 2013

- **Phase 4**: Prepare Environmental Study Report Documenting Phases 1 to 3
  - PIC #4: Sept 26, 2013

- **File Environmental Study Report**

- **Phase 5**: Complete Drawings and Documents Proceed to Construct, Operate and Monitor Project
  - Notice of Study Completion: Feb 2014
  - Opportunity to Request Part II Order during Review Period
3.1.1 Phase 1 – Identify and Describe the Problem or Opportunity

As per the Municipal Class EA process, Municipalities undertake certain projects in response to identified problems or deficiencies. There may also be opportunities which need to be addressed. The Problem/Opportunity Statement for this project was set during the initial stages of the Study, in consultation with the public, agencies and stakeholders, and set the context for the later stages of the Study. The following Problem/Opportunity Statement was developed at the outset of the Study, in consultation with the public, agencies and stakeholders:

“To accommodate population and employment growth designated in the Official Plan, the Comprehensive Transportation Plan (2012) identified the need to provide additional road capacity to accommodate north-south travel demands on the west side of the Otonabee River.

Without increasing roadway capacity in the study area, major road network links in the north end of the City will be operating at/over capacity by 2031, increasing congestion and safety concerns at major intersections.

In addition, the termination of Medical Drive at Sherbrooke Street and the interim intersection improvements on Sherbrooke Street can accommodate short term growth but are not able to accommodate future long term growth to 2031. This will result in congestion and safety concerns at key intersections in the Clonsilla Avenue, Goodfellow Road, and Sherbrooke Street area. Improvements to better connect the road network in this area to the south end of the City are also required.”

This statement established the key problems that the project is trying to solve; namely to provide capacity for longer term growth and to improve connectivity to the south end of the City. Given the current planning context, including increased population and employment forecasts per Amendment 2 of the Growth Plan (Section 2.2) and additional planned development in the Study Area (Section 2.3), increased travel demands are expected within the City, beyond those forecasted during the Study, further increasing congestion and safety concerns at major intersections. These changes to the planning context reinforce the need to implement the Parkway Corridor.

The Problem and Opportunity Statement has only been reinforced in the current planning context as a result of the land use changes approved since completion of the Study.

3.1.2 Phase 2 – Identify and Evaluate Alternative Solutions

Four Alternative Solutions were generated to address the identified problems and opportunities: Do Nothing, Non-Auto Based Improvements, Intersection Improvements, and Widen Existing Roads/Add New Roads. An evaluation of the Alternative Solutions was carried out in consideration of the natural, built, social, cultural and economic environments, as well as technical and financial considerations. The findings of the evaluation indicated that a combination solution including Non-Auto Based Improvements, Intersection Improvements and Widening Roads and/or Add New
Roads was recommended. This Preferred Solution was selected to address the Problem/Opportunity Statement, since Do Nothing, non-Auto Based Improvements and Intersection Improvements do not sufficiently address the Problem/Opportunity Statement, either singularly or in combination.

Section 2.6.1 has demonstrated that an aggressive investment in active transportation infrastructure and transit service since 2001 has not been enough to encourage any noticeable shift in the travel mode shares in the City. A more aggressive approach to transit service delivery will be required, prompting the need for an effective corridor that can support higher frequency services. Similarly, to increase active transportation rates in the central and west ends of the City, connected trail corridors will be needed, similar to those being developed into and around the downtown. The preferred design achieves both of these objectives.

3.1.3 Phase 3 – Identify and Evaluate Alternative Design Concepts

Alternative design concepts were identified and evaluated during this phase of the Study process. A detailed inventory of the environment was undertaken to describe the existing environmental conditions and to support the assessment of alternative design concepts and the selection of the Preferred Design. The approach to identifying and evaluating the alternative designs is described herein.

3.1.3.1 Approach to Identifying Alternative Design Concepts

A staged approach was used to generate alternative designs. The first stage included the development of road network alternatives representing various combinations of road widening and new road connections to address the problems and opportunities. These road network alternatives were designed to a 10% level of design to identify areas of impact based on a typical right-of-way width, typical intersection design treatments, and typical design standards for urban arterial roads.

The second stage involved the development of the preferred road network alternative to a higher level of design, with alternative design concepts identified and evaluated for major intersections, connecting roads and entrances, and alternative alignments considered to avoid or minimize impacts to features or properties within the corridor.

3.1.3.2 Three-Step Approach to Evaluate Alternative Design Concepts

Given the size of the study area and complexity of the project, the study area was divided into three sub-areas (i.e. North End, South End and Jackson Park), with multiple alternatives generated for each. A three-step evaluation process was used; similar to the approach used in other complex Class EA, Individual EA, and route planning studies (please refer to Figure 8). This approach not only reduced the complexity of the evaluation, but also provided a more easily traceable decision making process, a key objective of the Class EA Process.
Evaluations of the South and North End Alternatives were completed first (i.e., Step 1 and Step 2). In recognition of the potential impacts to private property or Jackson Park, additional public input was sought on the alternatives in the Jackson Park Area (i.e., Step 3) prior to evaluation of this component. A detailed review of the activities carried out as part of Step 3 of the evaluation is described in Sections 3.1.3.6 and 4 of this report.

**Figure 8: Three-Step Evaluation of Network Alternatives**

The criteria used to evaluate the alternatives reflected the transportation performance of each alternative; financial considerations; and the potential effects on the natural, built, social, cultural, and economic environments, as well as input received from the public during the course of the Study.

### 3.1.3.3 Consideration of West By-Pass

In addition to the three sub-areas, and to address questions or concerns raised by many members of the public, an assessment of the “West By-Pass” was undertaken.

The “West By-Pass” route currently exists and includes portions of Airport Road, Brealey Drive, Ackison Road, Lily Lake Road, 3rd Line, and County Road 19. An upgraded West By-Pass route would not attract enough traffic to solve identified capacity issues and the assessment concluded that it does not address the key problems identified. In light of the emerging land use and transportation considerations discussed in Section 2.6, it is becoming clear that a “West By-Pass” would play virtually no role in supporting enhanced transit and improved connectivity for active transportation in the City. In addition to playing no role in achieving the non-auto mode share improvements envisioned in the Transportation Master Plan, this auto-oriented solution presents the real potential to encourage sprawl into rural areas beyond the current built boundary of the City.
Accordingly, this concept is not a “reasonable” solution to the problems identified and was not carried forward in the Study. Since the West By-Pass route does not address the Problem/Opportunity Statement, does nothing to support transit and active transportation, has no value in terms of greenhouse gas reductions and would likely encourage sprawl, the conclusion reached during the study with regard to the West By-Pass would not change and would likely be strengthened in the current planning context.

The Current Planning Context strengthens the decision regarding the West By-Pass

3.1.3.4 Step 1 – South End

The following network alternatives were developed and evaluated for the South End:

Alternative 1 – Extension of Medical Drive south to Clonsilla Avenue via the Parkway Corridor
Alternative 2 – Extension of Medical Drive to Goodfellow Road via the Parkway Corridor plus widening of Goodfellow Road (4-lanes) and widening Clonsilla Avenue to 6 lanes
Alternative 3 – Extension of Medical Drive to Clonsilla Avenue (at Third Avenue) plus widening of Clonsilla Avenue to 6 lanes
Alternative 4 – Extension of Medical Drive south to Clonsilla Avenue via a refined Parkway Corridor to reduce impacts to Byersville Creek

As a result of the detailed evaluation, Alternative 4, the Parkway Corridor with a revised alignment was recommended. Overall, the revised alignment for the South End has fewer impacts to the natural, social and cultural environments than the original right-of-way and most of these impacts can be effectively mitigated. The current planning context does not change this recommendation.

The higher growth forecasts and travel demands anticipated in the current planning context support and reinforce the Parkway Corridor as the preferred alternative for the South End.

3.1.3.5 Step 2 – North End

The following network alternatives were developed and evaluated for the North End:

Alternative 1 – Parkway right-of-way through to Cumberland Avenue and Water Street
Alternative 2 – Widening of Fairbairn Street, Selwyn 3rd Line, County Road 19, Cumberland Avenue and Water Street
Alternative 3 – Parkhill Road Widening to 4 lanes plus widening/upgrades to Water Street and George Street
As a result of the detailed evaluation, Alternative 1, the Parkway Corridor was recommended because it:

- Provides the best overall reduction in capacity deficiencies;
- Provides the highest level of traffic reduction at key intersections with capacity/safety concerns;
- Displaces the fewest residential and commercial properties;
- Impacts the fewest number of properties during construction;
- Requires the lowest amount of property;
- Allows for mitigation of many of the impacts to the natural and social environment;
- Impacts existing utilities the least;
- Has no impact on built heritage resources;
- Has no impacts on planned development areas;
- Supports planned growth areas;
- Provides the largest network wide travel time savings;
- Is the least expensive to construct; and
- Has the highest overall benefit/cost ratio.

The current planning context does not change this recommendation.

3.1.3.6 Step 3 – Jackson Park Area

Following the evaluation of the North and South End network alternatives, and the identification of the Preferred Alternatives for the North End and South End of the study area, two reasonable alternatives (please refer to Figure 9) were left for the Jackson Park Area (i.e., the New Bridge Alternative and the Parkhill / Fairbairn Widening Alternative). For each of these alternatives, different sub alternatives were investigated representing different ways of designing each alternative.

Figure 9: Reasonable Alternatives for the Jackson Park Area
Three sets of network alternatives (please refer to outline below) were initially developed for the Jackson Park Area, including the widening of Parkhill Road and Fairbairn Street, and two separate routes crossing the Jackson Park area (i.e., one connecting to the original Parkway Corridor and the other following an unopened road allowance to connect to Fairbairn Street in the vicinity of Hillside Street). It should be noted that two design alternatives were developed for each component of the Parkhill Road/Fairbairn Street widening, each of which have very different effects in some categories of the evaluation.

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<tr>
<th>Alternative J1 – New Bridge across Jackson Park</th>
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<td>• Connection to the original Parkway Corridor route</td>
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<thead>
<tr>
<th>Alternative J2 - Fairbairn Street to Parkhill Road to Medical Drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairbairn Street Segment</td>
</tr>
<tr>
<td>• Fairbairn ‘A’ - Widen Fairbairn Street to east</td>
</tr>
<tr>
<td>• Fairbairn ‘B’ - Widen Fairbairn Street to west</td>
</tr>
<tr>
<td>Parkhill Road Segment</td>
</tr>
<tr>
<td>• Parkhill ‘A’ - 3 leg roundabout intersection with Medical Drive</td>
</tr>
<tr>
<td>• Parkhill ‘B’ - Signalized intersection with dual left turns and bridge widening</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fairbairn Street, Parkway and Highland Street Intersection</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Offset Three-Leg Roundabout Highland Road Closure</td>
</tr>
<tr>
<td>• Full Move Intersections, Highland Road Realignment (Roundabout)</td>
</tr>
<tr>
<td>• Full Move Intersections, Highland Road Realignment (Signalized)</td>
</tr>
<tr>
<td>• ‘T’ Intersections Highland Road Closure (Roundabout)</td>
</tr>
<tr>
<td>• ‘T’ Intersections Highland Road Closure (Signalized)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alternative J3 - New Bridge across Jackson Park</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Following an unopened road allowance to connect to Fairbairn Street in the vicinity of Hillside Street</td>
</tr>
</tbody>
</table>

The recommendation to proceed along the Parkway Corridor within the North End of the study area meant that this portion of the corridor would connect to Fairbairn Street in the vicinity of Highland Road. This recommendation eliminated the new bridge crossing alternative to connect to Fairbairn Street in the vicinity of Hillside Street. As such, Alternative J3 was not carried forward as it no longer represented a reasonable solution.
For the remaining New Bridge across Jackson Park alternative, a short span bridge and long span bridge concept were developed. For the Parkhill Road / Fairbairn Street Widening Alternative, the widening of Parkhill Road to a five lane cross section, so that proper turning lanes could be implemented at the Medical Drive, Monaghan Road, and Fairbairn Street intersections; plus widening of Fairbairn Street to four lanes, as recommended in the 2012 Comprehensive Transportation Plan Update was considered. Different road widening alternatives were developed (e.g. widen Fairbairn Street to the east or west). In addition, various intersection configurations (roundabout versus traditional traffic signals) were considered to tie these improvements together.

The comprehensive set of alternatives considered for the Jackson Park Area is still valid in light of the current planning context. The alternatives encompass the range of reasonable means for implementing the preferred solution, specifically widening existing corridors versus new corridor options.

As in the north and south segments of the Study Area, the additional growth and new travel destinations emerging in the current planning context will exacerbate the problems and opportunities identified during the Study. The additional travel demands generated by increased population and employment and additional planned development in the Study Area will influence the overall transportation performance of each alternative but does not influence the range of alternatives generated. Further, since it was recognized during the Study that the designated growth areas in the north end of the City could accommodate more growth than was originally forecast for 2031, the Study already included the ability to accommodate growth beyond 2031 forecast as one of the evaluation criteria used in assessing alternative solutions.

The decision making process for the selection of the preferred alternative for the Jackson Park Area is described in Section 4.1.
4. Evaluation of the Decision Making Process

4.1 Review of Jackson Park Area

A thorough decision making process was utilized to generate, assess and evaluate alternatives for the Jackson Park Area and the other study area segments. The decision making process encompassed the following key principles of EA planning:

- Consultation with affected parties early and throughout the process, such that the decision making process was able to incorporate feedback and concerns;
- Consideration of a reasonable range of alternatives, both the functionally different ‘alternatives to’ and the ‘alternative methods’ of implementing the solution;
- Identification and consideration of the effects of each alternative on all aspects of the environment;
- Systematic evaluation of alternatives in terms of their advantages and disadvantages, to determine their net environmental effects; and
- Provision of clear and complete documentation of the planning process followed, to allow ‘traceability’ of decision-making with respect to the project.

A comprehensive net effects evaluation was used for each step of the evaluation process, in consideration of the transportation, natural, built, social, cultural, economic, and financial environments. The assessment of effects was based on the detailed inventory of environmental features that was undertaken for the design alternatives, detailed transportation assessment results, and consideration of potential mitigation measures and comments and input received from the public, agencies and other stakeholders.

On the basis of the detailed evaluation of the two alternative bridge design concepts developed for the new crossing of the Jackson Park Valley (i.e. a long span bridge designed to span the valley and a short span bridge), the long span bridge alternative (please refer to Figure 10) was selected as the preferred alternative as it minimizes the impacts associated with extensive fill in the valley. A detailed description of the evaluation of the alternative bridge design concepts is provided in Section 6, pgs. 6-97 to 6-98, of the ESR. The long span bridge would be designed to span the valley from top of bank to top of bank, with the lowest feasible number of piers constructed within the valley. A detailed list of the strengths and weaknesses of each bridge alternative is provided in Chapter 6 of the ESR.

Figure 10: Long Span Bridge Across Jackson Park Valley

![Long Span Bridge Across Jackson Park Valley](image-url)
The detailed evaluation of the Parkhill Road / Fairbairn Street Widening Alternatives identified widening Fairbairn Street to the east, with conventional signals at Parkhill Road/Fairbairn Street was the best alternative route around Jackson Park (please refer to Figure 11).

Figure 11: Parkhill Road/Fairbairn Street Widening Alternative

A comparative analysis between the Widening Fairbairn Street/Parkhill Road alternative and the Long Span Bridge across Jackson Park alternative was subsequently undertaken as the final step in the comprehensive evaluation process. The advantages and disadvantages of each alternative are clearly documented in the ESR to demonstrate the net environmental effects. A summary of the key advantages and disadvantages is briefly summarized below.
<table>
<thead>
<tr>
<th>Long Span Bridge Across Jackson Park</th>
<th>Widening Fairbairn Street/Parkhill Road</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transportation</strong></td>
<td><strong>Environment</strong></td>
</tr>
<tr>
<td>Provides best overall transportation network performance</td>
<td>Inferior performance</td>
</tr>
<tr>
<td>Accommodates Lily Lake planning area</td>
<td>Does not accommodate Lily Lake planning area</td>
</tr>
<tr>
<td>Requires 4 lane Parkway, from Chemong Road to Clonsilla Avenue</td>
<td>Would require roadway widening in other areas of the City</td>
</tr>
<tr>
<td><strong>Natural Environment</strong></td>
<td><strong>Built Environment</strong></td>
</tr>
<tr>
<td>Highest potential to disturb terrestrial and aquatic environments</td>
<td>Displaces five residential properties</td>
</tr>
<tr>
<td>Potential to affect groundwater quality</td>
<td>Avoids impacts to commercial properties/access</td>
</tr>
<tr>
<td><strong>Social Environment</strong></td>
<td><strong>Cultural Environment</strong></td>
</tr>
<tr>
<td>Displaces five residential properties</td>
<td>Highest number of receptors with noise levels greater than 5 dB(A)</td>
</tr>
<tr>
<td>Avoids impacts to commercial properties/access</td>
<td>Reduction in noise within Jackson Park pond area and Hamilton Park</td>
</tr>
<tr>
<td>Bisects portion of Jackson Park</td>
<td>Improved air quality within Jackson Park pond area and Hamilton Park</td>
</tr>
<tr>
<td>No significant utility relocations</td>
<td>Lower traffic using local / collector roads</td>
</tr>
<tr>
<td><strong>Economic Environment</strong></td>
<td><strong>Financial Considerations</strong></td>
</tr>
<tr>
<td>Supports planned growth to 2031, including full build out of Lily Lake Planning area</td>
<td>Smallest area having archaeological potential</td>
</tr>
<tr>
<td>Generates $4.2M in annual delay savings</td>
<td>Displaces five potential built heritage structures</td>
</tr>
<tr>
<td><strong>Cultural Environment</strong></td>
<td><strong>Economic Environment</strong></td>
</tr>
<tr>
<td>- Largest area having archaeological potential</td>
<td>Supports planned growth to 2031, however does not support full build out of Lily Lake Planning area</td>
</tr>
<tr>
<td>- Displaces five potential built heritage structures</td>
<td>- Generates $2.0M in annual delay savings</td>
</tr>
<tr>
<td>- Impacts character of Jackson Park Cultural Heritage Landscape</td>
<td>- Highest Capital</td>
</tr>
<tr>
<td>- Lowest Capital</td>
<td></td>
</tr>
<tr>
<td>- Lowest additional property cost</td>
<td>- Lowest additional property cost</td>
</tr>
<tr>
<td>- Highest overall benefit/cost ratio</td>
<td>- Highest overall benefit/cost ratio</td>
</tr>
</tbody>
</table>
The findings of evaluation indicated that the Long Span bridge across the Jackson Park was preferred based on the following key rationale:

- Avoids impacts to commercial properties on Parkhill Road;
- Provides the best safety and network wide capacity performance;
- Accommodates long term growth of City to 2031 and beyond;
- Displaces 22 fewer residential properties along Fairbairn Street;
- Provides the highest reduction in neighbourhood traffic infiltration; and
- Minimizes noise and air quality impacts through neighbourhood areas and in the prime activity areas of Jackson Park close to Parkhill Road.

In consideration of the current planning context, the expected growth and travel demands support and reinforce the new bridge across the Jackson Park Valley as the preferred alternative.

The Fairbairn Widening Alternative does not provide sufficient capacity to support the approved growth from the Lily Lake Planning Area. In the current planning context this alternative does not address the Problem/Opportunity Statement established for the Study.

Recognizing the awareness of the Jackson Park Area, the study team sought public, agency and stakeholder input to the decision-making process at and following five public consultation events (i.e., four PICs and one design workshop) held during the Municipal Class EA process.

The Jackson Park Area alternatives were initially developed and presented at PIC #2 to solicit public feedback on the alternatives, potential effects to the environment and methods to minimize those effects prior to carrying out the evaluation of the alternatives. PIC #3 was held to present and solicit feedback on the preliminary evaluation of the Jackson Park Alternatives and the recommended design concepts for the corridor. Subsequent to PIC #3, a corridor design workshop was held to solicit design ideas from trail users, property owners and other interested members of the public to assist in the development of innovative ways to implement mitigation measures and other features along the corridor that are sensitive to surrounding areas, uses and supportive of all travel modes for the preliminary recommended alternative design.

A fourth PIC was added during the study to present and seek feedback on the final recommended design for the entire study corridor, including the section of roadway traversing Jackson Park, and associated mitigation measures.

In summary, the decision making process was thorough, systematic, traceable and clearly documented at each phase of the study process, with the opportunity for meaningful public engagement throughout the process. The recommended design is for a truly complete street. Recognizing the importance of all modes of transportation, particular emphasis has been paid to accommodating and encouraging recreational and commuter cyclists, walking and running. By use
of careful landscaping techniques and physical barriers, the Parkway Corridor will remain a route of choice for all non-auto based travel.

The recommended design accommodates and addresses key factors established in the current planning context better than the alternatives considered. **There is nothing within the current planning context that would suggest a change in this decision making process is required.**

The Parkway Corridor is designed for all users, connecting communities and providing social and recreational opportunities

### 4.2 Mitigation Measures

In accordance with the Class EA process, some of the potential impacts and concerns related to the project were mitigated through the process by which the recommended corridor was selected. Site-specific measures to either minimize or offset effects that could not be avoided were identified in the planning process through extensive consultation with technical experts, review agencies and the public.

Specialists representing a variety of environmental and technical fields (i.e., terrestrial, aquatic, environmental, planning, archaeological, cultural heritage, air quality, traffic noise, stormwater, and structural) were engaged during the study to gather professional perspectives on specific effects to the environment. The participation of experts was critical to developing effective mitigation measures and detailed design commitments to ensure that effects that cannot be avoided are minimized to the extent possible, including potential adverse impacts during construction of the project.

During preliminary design of the preferred alternative, the specific net effects were identified. Stakeholder consultation events in the form of public information centres and a corridor design workshop were held to confirm and identify negative effects on the environment as a result of the project and to tailor the design to minimize the negative effects to the extent possible. During each consultation event, attendees were encouraged to provide verbal and/or written input to the design process. Specifically, the corridor design workshop engaged various interest groups and affected property owners in assisting with developing innovative design features for the recommended alternative, including walking/cycling trails, noise mitigation treatments, stormwater management facilities, enhanced landscaping treatments and pedestrian crossings. A number of refinements to the proposed design of the corridor were made based on the feedback received as part of PIC#3 and the Corridor Design Workshop to incorporate the additional mitigation measures.
The environmental effects of the proposed undertaking and recommended mitigation measures to be incorporated into the next phase of the planning and design process are summarized in Chapter 8 of the ESR and include:

- Aggressive Tree Planting and re-vegetation program
- Noise Mitigation consisting of noise walls and vegetated berms
- New and replacement trail construction
- Construction of replacement trails prior to removal of existing trails
- Extensive landscape treatments
- Recognition of heritage features (Lee Pioneer Cemetery, Jackson Park, Parkway Trail historical uses)
- Bridge design considerations to minimize effects of the bridge
- Stormwater management features
- Features to improve or aid pedestrian movements

Impacts to Jackson Park will be minimized to the extent possible through bridge design and mitigation measures outlined in the ESR, including a series of bridge design principles that were developed to guide future design work, such as efforts to reduce the number of piers and/or utilize non-invasive construction techniques, as well as the development of a Jackson Park Management Plan. The current Planning Context has not changed the effects associated with the alternative, nor have any new measures or standards for mitigation of effects been established since the conclusion of the Study. The emphasis on enhanced protection for natural areas, biodiversity, and the impacts of Climate Change that are contained within the 2014 Provincial Policy Statement has raised awareness of the need to incorporate enhanced mitigation measures into the design for new infrastructure in the current planning context. In anticipation of these requirements, the Study included specific enhanced mitigation measures and commitments to further work, as outlined in Section 8 of the Environmental Study Report.

Continued coordination with the local Conservation Authority and the Ministry of Natural Resources and Forestry, will be undertaken during design and implementation to ensure the highest standards of mitigation are met and any new mitigation requirements or standards that are adopted during implementation can be incorporated into the final design of the project. Accordingly, the current planning context does not alter, or invalidate the recommended mitigation measures.

The Current Planning Context does not alter or invalidate the recommended mitigation measures contained in the Environmental Study Report.

### 4.3 Validity of the Decisions

The decision making process for the generation, assessment and evaluation of alternatives was thorough, systematic, traceable and clearly documented at each phase of the study process, with
the opportunity for meaningful public engagement throughout the process. Further, the decision-making process is compliant with recent changes from a planning context as described below.

### 4.3.1 Mode Share Targets

Many of the critiques of the project have suggested that the established targets for shifting more trips to transit and active transportation modes are too low, and that by adopting more aggressive targets the City could avoid the need for the project. The City’s Comprehensive Master Transportation Plan has emphasized the importance of shifting the transportation mode shares towards Transit and Active Transportation. The 2012 Comprehensive Transportation Plan Update (CTPU) detailed the current mode shares and established targets for 2031:

<table>
<thead>
<tr>
<th>Travel Mode</th>
<th>Actual</th>
<th>Target (2031)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Driver/Passenger</td>
<td>87%</td>
<td>83%</td>
</tr>
<tr>
<td>Transit</td>
<td>4%</td>
<td>6%</td>
</tr>
<tr>
<td>Cycling/Walking</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>

It was acknowledge at the time of the CTPU that the targets established were ambitious but based on evidence from other jurisdictions they were felt to be achievable. City Council supported the CTPU targets and has invested heavily in active transportation and public transit as described in Section 2.6, since adoption of the CTPU.

Within the current planning context the mode share targets established in the 2012 Comprehensive Transportation Plan Update and used as the basis for the Parkway Corridor Class EA are indeed aggressive for a City the size of Peterborough and with an aging population that is less inclined to use transit when other alternatives are available.

At the time of the Study, the 2006 Transportation Tomorrow Survey (TTS) identified the specific mode shares, the purpose of trip making and how members of a household use the available transportation system. The TTS is undertaken to provide data and evidence to help improve decision making on transportation investments, both now and in the future. Since the completion of the Study, the TTS survey results for 2011 (data released in 2013) has been made available to the City. What the 2011 survey tells us is that despite the many efforts and significant investment the City has made in non-auto travel modes - including cycling network expansion, increased transit frequencies, express routes, more buses, etc. - the mode share has not shifted. While transit ridership has increased, it has only done so in keeping pace with the City’s growth.
The TTS Survey results also indicate that the challenges facing the transit system are more substantial than the hours of service provided. It is apparent that more substantial investment in the transportation system is needed to improve transit travel times to better compete with automobile travel. Measures such as dedicated bus lanes, queue jumps and express routes, and improvements to address the occurrence of congestion identified in the CTPU and in the Parkway EA will be necessary to improve the efficiency of the public transit system. The Parkway Corridor provides needed congestion relief to other arterial roads to facilitate improved transit travel times across the system, while also providing a potential transit spine and future express route connecting major growth and residential areas with key employment and commercial nodes. Please refer to Section 2.6 for additional information on the potential transit benefits.

Only the preferred design will allow the City to fully take advantage of a continuous linear corridor that is capable of supporting enhanced transit frequencies and lower transit travel times necessary to achieve improved ridership and a higher transit mode share.

4.3.1.1 Multi-modal Infrastructure

The City’s approach to recent growth and transportation projects has been focused on providing a transportation system that is accessible to all modes and is consistent with the emerging practice of providing “Complete Streets”. The City has recently undertaken several high profile road reconstruction projects, where the major enhancements that accompanied these projects have been focused on active transportation and infrastructure to support transit service. These measures have included, separated cycling facilities and improvements such as pedestrian signals, tactile walking surfaces and landscaping to create a more welcoming, inclusive pedestrian environment.

The ability to make these enhancements within the existing right-of-way was predicated on implementation of the Parkway, which will provide sufficient network-wide capacity, and avoids the need for widening these other arterial road corridors.

This emphasis on non-automotive travel is also apparent in new development approvals. An emphasis is now being placed on improving connectivity and encouraging active transportation modes in all new developments. This multi-modal approach to growth and future transportation needs not only complies with the City’s Official Plan and the CTPU but also provincial policy with respect to transportation planning and the creation of complete communities.

In recognizing that the proposed Parkway will eventually carry significant volumes of traffic, the planning for the Parkway Corridor has clearly emphasized the value of this multi-modal approach, as evidenced by the commitments for separate infrastructure, enhanced landscaping, and extensive measures such as pedestrian signals and grade separated pedestrian crossings. These extensive measures, which in the case of grade separated crossings have never been contemplated in the City before this study, are all incorporated within the recommended design in order to create as welcoming an environment as possible.
While it has been argued that new roads will not solve congestion problems, the Parkway project has been developed to provide relief to the existing transportation network in the City. The City and MOECC have already heard from opponents and supporters of the project, that the heavy volumes of traffic and congestion occurring elsewhere in the City’s transportation system create an uncomfortable system for cyclists and walkers alike. The significant active transportation measures incorporated into the Parkway project have been included to address the forecast traffic volumes in the corridor and ensure that the Parkway will remain a viable, safe and welcoming option for those wishing to walk, cycle, roller skate/blade, jog or skate board as either a recreational pastime or as a mode of transportation.

4.3.2 Non-Park Crossing Alternatives

The transportation assessment undertaken in the Study concluded that the Fairbairn Street / Parkhill Road widening alternative would essentially be at capacity by 2031 and cannot accommodate the additional traffic that would be generated by the Lily Lake development or if the remaining growth areas in the north end of the City (e.g. Chemong West) build out to their capacity as is envisioned within the current planning context.

The proposed bridge across the Jackson Park Valley is a long term solution as it and accommodates growth to 2031 and beyond, including additional planned growth for the north end of the study area per the current planning context.

4.3.3 Summary of Preferred Design versus Current Planning Context

The preferred alternative for the Jackson Park Area (i.e. the long bridge crossing of the Jackson Park Valley) is still valid and in many regards is strengthened by the current planning context for the reasons stated below:

- The preferred alternative has sufficient capacity to accommodate travel demands associated with the approved and emerging land use changes identified since the completion of the Study.
- The preferred alternative complies with changes to the provincial planning direction.
- The preferred alternative complies with sustainability and climate change planning by reducing emissions, incorporating flood reduction measures to deal with Climate Change adaptation, and by supporting non-auto modes of travel.
- The preferred alternative incorporates infrastructure that provides accessible and complete active transportation opportunities that are attractive alternatives to the private automobile, and supports enhanced and efficient public transportation to serve the needs of the community today and in the future.
- The preferred alternative will reduce congestion on other arterial and collectors roads throughout the majority of the City, improving the quality of life in existing neighbourhoods, reducing the need for other road widening projects and their associated environmental
effects, and resulting in a significant improvement in the ability of the City to provide an efficient, accessible and effective public transit system.

In summary, the current planning context strengthens the need and justification for the proposed Parkway, particularly the bridge crossing of Jackson Park and may accelerate the timing for its implementation.

4.4 Validity of the Mitigation Measures

The proposed mitigation measures for the Jackson Park Area are still valid in the current planning context as they address impacts associated with the introduction of new transportation infrastructure while minimizing the longer term effects on the social, cultural and natural environments and supporting sustainability and climate change planning. Mitigation measures included in the preferred design include:

- Bridge deck drainage restricted to ensure stormwater is directed to a stormwater management pond for treatment prior to discharge to Jackson Creek;
- Bridge design (and estimated budget) based on minimizing the number of piers and/or incorporation of non-invasive construction techniques to avoid disruption of features and uses within the park;
- Features in the bridge design to recognize the cultural heritage of the Park (such things as the rail corridor that traverses the length of the Park, or the former quarry site, just east of the proposed bridge location) by inclusion of viewing platforms and informative plaques;
- Vegetation replacement and enhancement to restore disturbed areas, maintain/replace habitat, and provide visual screening of the bridge from recreational areas within the park;
- Pedestrian infrastructure on bridge to complete the missing link between the Parkway Trail system and the multi-use path along Medical Drive;
- Barrier wall on bridge separating driving lanes on bridge from the pedestrian facilities to improve safety for trail users and reduce road spray from the bridge onto adjacent vegetation;
- Development of a Management Plan for Jackson Park; and
- Commitments to continued coordination with ORCA and MNRF to ensure best practices for design and mitigation treatments are included in subsequent phases of implementation.

For a complete and detailed list of all mitigation measures proposed refer to Section 8 in the ESR.

The mitigation measures are project and area specific in nature and were developed in consultation with the study team specialists as well as the public, agencies and stakeholders. The recommended measures comply with all municipal and provincial policies and are intended to comply with future policies that may be implemented during subsequent phases of implementation. For example, the City does not currently have an urban forestry plan or policy in place; however staff are in the process of developing one. Assuming City Council endorses the policy, the tree replacement program associated with the Parkway extension will adhere to this more strict policy.
The ESR committed to a tree replacement program at 2:1; however the Policy will likely require 3:1 replacement for all trees removed. When implemented, the Parkway project will compensate at the higher replacement value if the policy receives approval from Council.
5. Preferred Design

5.1 Brief Overview of Preferred Design for Entire Corridor

The Preferred Design, described in Section 7 of the ESR, provides a truly multi-modal corridor, balancing the needs of a growing City while remaining sensitive to the features and current uses/users of the right-of-way. It best addresses future capacity deficiencies, safety, supports planned growth and minimizes capacity improvements that would otherwise be required elsewhere in the City if the Preferred Design was not implemented. Further, it offers the best balance of avoiding/minimizing potential adverse environmental effects while still achieving the goals of the project by addressing the Problem//Opportunity Statement.

The Preferred Design includes:

- A multi-modal arterial road corridor, designed for transit, cycling, pedestrians and auto use
  - Four lanes between Clonsilla Avenue and Chemong Road
  - Two lanes from Chemong Road to Cumberland Avenue and Water Street
- Future express transit route intended to connect with local transit routes, Trent University, and Sir Sandford Fleming College
- Provision for transit infrastructure (i.e. stops / shelters)
- Sidewalks and a continuous multi-use trail along the corridor
- Pedestrian/trail crossings at various locations
- Enhanced landscaping and vegetation features
- Noise mitigation treatments
- Enhanced stormwater management
- Various intersection arrangements, including roundabouts and signalized intersections

The current planning context prioritizes investment in infrastructure that supports transit and active transportation and reduces sprawl. The preferred design achieves these objectives and is consistent with the current planning context.

5.2 Detailed Description of Design for Jackson Park Area

The recommended corridor for the Jackson Park Area generally follows the designated Parkway right-of-way, which crosses Jackson Park as identified in the existing Official Plan. The design provides for an ultimate four lane arterial road on this segment between Parkhill Road and Fairbairn Street. The Study envisioned that this portion of the project may not be required until at least 2021, or when Fairbairn Street reaches its functional capacity, although this may need may be accelerated in light of the current planning context.

To the north of Parkhill Road, the design calls for the four lane Parkway Corridor to be depressed in a cut section. This will eliminate the need for noise walls along this portion of the corridor. Vegetative planting will be used to provide a buffer between existing residential properties and the
Parkway Corridor and the steep cut slopes provide an ideal opportunity for the implementation of enhanced vegetation in this segment providing a visually appealing approach to the Park Area.

Along this section of the corridor, multi-use paths will be provided on both sides of the Parkway Corridor to connect to the existing path along Medical Drive and to provide a link to the existing trail access into the lower park areas. The depressed road grade in this area also allows for the construction of a pedestrian overpass bridge, to provide a safe crossing for pedestrians and cyclists from the neighbourhoods on the west side of the Parkway to the park and the neighbourhoods to the east.

The alignment of the approach to the bridge has been carefully selected to minimize the amount of fill that would need to be placed in the valley and the bridge design will span the valley from bank to bank, resulting in a bridge that is about 370 m in length and about 24-26 m above the ground level in the valley. The existing Parkhill Road Bridge is about 11m above the ground level of the trail below. The City will restore areas disturbed by the construction of the new bridge including any trails and vegetation removed.

The preliminary design has eight piers in the valley area, although the project team is confident that this can be further reduced during detailed design, once a detailed geotechnical investigation can be completed to verify the existing soil conditions can support a bridge with fewer support piers. Accordingly, the ESR included a series of bridge design principles to guide future design work. These include commitments to:

- minimize the number of bridge piers in the valley and avoid pier placements in the creek or other sensitive areas;
- promote openness and unimpeded access through the valley;
- utilize low impact construction techniques;
- provide native vegetation to restore disturbed areas and visually screen the bridge from view;
- maintain the recommended bridge height to promote vegetation regrowth;
- collect / direct rainwater from the bridge to be treated in stormwater ponds outside of the valley; and
- consider opportunities to incorporate enhanced bridge architectural design features.

The bridge design concept developed for this study incorporates pedestrian lookouts to provide views across Jackson Park from the wide sidewalks that will be provided on both sides of the bridge deck. Barrier treatments will separate the roadway from the sidewalk areas, allowing for the use of architectural railing treatments that add aesthetic value, provide enhanced views of the valley, and reduce road salt spray from impacting adjacent vegetation in the valley. These types of design treatments are commonly being used where bridges span across important natural areas in both large and small cities.

There are a number of options to enhance the bridge aesthetic value through careful design of the bridge piers. Low impact construction techniques, including building the bridges completely from above, are also becoming more common where bridges cross environmental features and park areas. As a result, the cost for this type of construction technique is becoming more affordable, and falls within the range of the cost estimates developed for this project. While the bridge will not
be invisible from the valley floor, the height of the structure will promote openness beneath the structure and allow for vegetation growth under the bridge itself which will support wildlife habitat and movements through the valley.

At the Fairbairn Street end of the bridge, a multi-lane roundabout will be used to provide smooth and efficient access to the Parkway, and Fairbairn Street. The design of the roundabout will improve the safety for motorists travelling south along Fairbairn Street, and the grade raise needed for the roundabout, allows for the construction of a pedestrian underpass tunnel to provide safe and unimpeded access from the Parkway Trail to the Jackson Park entrance on the west side of Fairbairn Street.

As part of this design, Highland Road will be closed at Fairbairn Street, reducing short cut traffic passing through this neighbourhood and past Highland Heights Public School.

A new stormwater pond will also be required at this intersection to accommodate roadway drainage from the Parkway Corridor to the north and from the bridge. This pond will also include measures to improve water quality.

A combination of noise barriers and noise berms will be used in this area to reduce noise impacts to adjacent properties. These will be provided along the north and south sides of the road, extending from the intersection to the north. Barrier walls with transparent panels at the top will be used to provide views from the outdoor living areas at the rear of the residential properties.

5.3 Advantages and Disadvantages of Preferred Design for Jackson Park Area

The Preferred Design for the Jackson Park Area (i.e. long span bridge alternative) provides the best safety performance, the highest reduction in overall network capacity deficiencies and reduces capacity issues and operational / safety concerns at the Parkhill Road / Monaghan Road and Parkhill Road / Fairbairn Street intersections. In addition, this alternative provides improved access to the hospital and south end of City, can act as an efficient future transit corridor, and accommodates growth to 2031 and beyond, including growth expected by the Lily Lake development. As such, the preferred design alternative best addresses the Problem/Opportunity Statement for the project.

The bridge alternative also avoids impacts to commercial properties and displaces 22 fewer residences than the Fairbairn Street / Parkhill Road widening alternative, protecting this existing community. One of the avoided homes is a designated heritage site, which is also an important consideration in assessing the overall net effects on the cultural environment. The bridge provides the highest reduction in neighbourhood traffic infiltration and minimizes noise / air quality impacts at the most critical receptor locations, including the adjacent neighbourhoods, the Pond and Pagoda Bridge area of Jackson Park and Hamilton Park.

The assessment has acknowledged the potential natural, social and cultural drawbacks of the bridge alternative, and has carefully considered the concerns raised by those who have expressed those sentiments. The evaluation results incorporate the fact that reasonable measures to mitigate
these specific issues can be implemented as part of the design to lessen the net effects of the preferred design.

The long span bridge can be designed to minimize intrusion and disruption to the natural features in Jackson Park, and the height of the structure will allow natural light and precipitation to penetrate to the valley floor providing conditions suitable for vegetation restoration. In addition, low impact construction techniques can be used to further reduce these impacts during construction.

While the concerns expressed about the effects of the bridge on the quality and social value of Jackson Park were considered by the project team, there are a number of other park areas that have continued to provide these important community benefits despite being crossed by similar types of high level bridges. Access to the lower park area will be maintained and even enhanced with the new bridge alternative compared to the Fairbairn Street / Parkhill Road widening alternative and.

Based on assessment results, the bridge can be designed to minimize intrusion and disruption within the park, so that longer term ecological functions and longer term use and enjoyment of the park can continue with minimal adverse effects. Although the bridge represents a higher cost alternative, the incremental benefits outweigh the incremental costs as demonstrated in the benefit-cost assessment.

As noted in Section 4.1, the evaluation of the best alternative crossing Jackson Park (Long Span Bridge) and the best alternative that went around Jackson Park (Widening Fairbairn Street to the east and widening Parkhill Road bridge) is described in detail in Chapter 6 of the ESR. This comparison included detailed assessment of effects of each alternative, including potential for mitigation of those effects. The evaluation process identified that the preferred design was the most balanced approach to transportation planning available to the City, when considering all aspects of the Environment, as defined in the Environmental Assessment Act. The table below provides a summary of the advantages and disadvantages of the preferred alternative. Many of the advantages of the preferred design represent disadvantages for the route around Jackson Park, and vice versa. The Environmental Study Report includes a number of commitments to reduce / avoid potential impacts that have been noted under disadvantages through design, construction methods and/or restoration and other forms of mitigation.
### Advantages
- Best network performance – avoids need for widening 6.6 km of other roads
- Best safety performance
- Results in best intersection capacity improvements in study area
- Best reduction in network delays – improving travel time for transit and auto traffic
- Only alternative that accommodates growth beyond 2031 (including Lily Lake development)
- Avoids displacement of 27 homes, including 22 potential built heritage resources and one designated heritage site
- Avoids impacts to commercial properties
- Avoids relocation of parking for lower park area – maintains current accessibility to park and Pagoda bridge (a designated heritage resource)
- Improved air quality at most sensitive receptors
- Largest reduction in regional CO2 emissions
- Less traffic relying on local roads – improving quality of life in local neighbourhoods
- Long span bridge protects existing trails in the valley and design incorporates improved and formal trail connections
- Pedestrian lookouts, create new views and vistas of valley
- Generates $4.2 million in annual delay savings
- Has the highest benefit / cost ratio over the planning period
- Minimal Property impacts
- Mitigation incorporated a long-term management plan for Jackson Park

### Disadvantages
- Highest potential for disturbance to natural areas*
- Minor potential to impact fish habitat*
- Displaces five residences
- Temporary disruption to Jackson Park during construction*
- Change to ambiance and potential relocation of recreational trail at bridge crossing location
- New bridge crosses 3.0 Hectares of open space area
- Alternative crosses area of highest archaeological potential*
- Highest number of receptors with potential for noise impacts*
- Permanent impact to character of Jackson Park in the area of the bridge crossing*
- Most expensive alternative

*Specific mitigation measures proposed to reduce / avoid impacts through design, construction methods and/or restoration
6. Climate Change and Sustainability

The Parkway is intended to be a multi-modal corridor that will result in overall fewer vehicle kilometres travelled. The new corridor will accommodate higher order transit, a 3.0 m wide multi-use trail, and a sidewalk (or multi-use path) along the entire length of the new roadway, with grade separated crossings provided at selected locations to provide a controlled crossing for pedestrians and cyclists to cross the new roadway and maintain connectivity between neighbourhoods. These features are expected to reduce the reliance on private auto travel within the corridor.

Regional emissions modeling undertaken as part of the Study demonstrated that the preferred alternative results in a decrease in airborne emissions due to reduced congestion and out-of-way travel. Regional air quality impacts were determined by assessing the overall change in vehicle use expected following implementation of the undertaking. The analysis focused on regional VOCs and NOx as these pollutants are important in the production of ozone. In addition, CO2 was included due to its association with climate change. CO was also evaluated as it is most associated with motor vehicle use. Decreases in airborne emissions are expected on a regional level due to the total reduced travelled distances associated with the implementation of the Parkway and reduced congestion. The new crossing of Jackson Park is expected to result in the greatest reduction in airborne emissions, when compared to ‘Do Nothing’ or the Fairbairn Widening alternative.

Climate change resiliency has been built into the Preferred Plan through improved stormwater management facilities, vegetation restoration, expanded active transportation infrastructure and accommodation of higher order transit.

Enhanced stormwater management practices are proposed for the Parkway Corridor which include vegetated swales, stormwater ponds as well as implementation of flood reduction measures. The stormwater management plan provides stormwater quantity control by maintaining post-development flows at or below pre-development levels and water quality control to Enhanced (Level 1) protection as per the MOECC’s Stormwater Management Planning and Design Manual for Enhanced (Level 1) Protection, dated March 2003. Enhanced measures were also incorporated into the stormwater pond at the Chemong Road / Sunset Boulevard intersection area to over control stormwater discharge beyond the need for the Parkway right-of-way to mitigate downstream historical flooding risks along Chemong Road.

The City will prepare a Vegetation Restoration Plan during detailed design so that opportunities for preserving existing trees and pre-planting new trees in advance of construction works can occur to allow new vegetation to grow and mature. The Vegetation Restoration Plan will identify the approach to new tree plantings which includes replacement of lost vegetation at an enhanced rate, in consideration of the City’s new Urban Forestry Plan (i.e., a 3 to 1 tree replacement ratio).

The City of Peterborough has also implemented the following city-wide initiatives which support Adaptive Climate Change:

- Flood Reduction Master Plan - a strategy to reduce flooding in the City
- Urban Forest Strategic Plan – a long term strategy for the maintenance, renewal and community awareness of the City’s urban forest resource
7. Conclusions

7.1 Implication of Not Proceeding with Bridge

Throughout the study it has been acknowledged and understood that the proposed bridge over Jackson Park has been an issue of debate within the community. The project team, as well as the MOECC, has heard from those who feel the proposed bridge is unnecessary, and that similar goals could be achieved with a much shorter, lower cost bridge, despite the more invasive nature of a shorter span structure. While on the opposite end of the scale, the City and MOECC have also heard from many who feel any intrusion on Jackson Park is unacceptable. While the passionate nature of both sides of the debate is understood, the City is still obligated by not only City policy, but also provincial policy (such as the 2014 PPS) to plan an efficient transportation system that is able to accommodate planned growth. The effects of not including the bridge over Jackson Park in the recommended design would be widely felt all over the City. This was clearly demonstrated in the Section 6 of the ESR.

In accordance with requirements of the Class EA process and the PPS, the recommended design is the best balance of effects on all aspects of the environment. The wide ranging benefits of the recommended Parkway design have already been incorporated within other municipal projects. For example, without the bridge, traffic modeling demonstrated that a major capacity increase would be needed for several main arterial streets. Two of these arterial roads (Ashburnham Drive and Brealey Drive) are currently undergoing major reconstruction. However, rather than widening the road platform to accommodate increased traffic, the City has been able to focus priorities within the limited rights-of-way, to provide dedicated and separated cycling facilities and measures to support pedestrian travel. This forward thinking approach to transportation is a viable option primarily due to the traffic relief provided by the proposed Parkway, and in particular the transportation capacity provided by the proposed bridge crossing of Jackson Park. In the absence of a bridge crossing Jackson Park, Section 6.4.6.3 of the ESR identified that 6.6 km of additional widening would be required on a number of other arterial roads across the City, with significant additional costs and social / environmental impacts.

7.2 Official Plan Considerations

The City’s Official Plan not only includes policies about how the City will grow, but includes transportation planning policies as well. These policies identify evidence-based mode share targets that are realistic for a City the size of Peterborough, establish acceptable limits of congestion, and identify future infrastructure improvements and transportation corridors to support planned growth. This forward planning approach is also a key requirement of the PPS and is consistent with the recent recommendations within the David Crombie Growth Plan Review.

The Parkway Corridor has been a component of the City’s Official Plan for many decades. The City purchased the lands well in advance of needing them for transportation purposes to accommodate other utility services needed to support growth, to provide buffers adjacent to newly developing residential land uses, and to secure the longer term transportation corridor for when it was needed. It is important to be aware that when considering future growth in the City, reliance has been placed upon the ability of the future Parkway to provide efficient transportation, as such
other arterial road network connections have not been protected. While the Study explored alternatives, none were found to result in a comparable level of efficiency as the recommended design and none can support the planned growth, particularly in light of the current planning context.

Since the completion of the Study, the Lily Lake Secondary Plan has received Council approval. Further to this approval, two formal Site Plan applications have been received and are currently under review. Alternatives to the recommended Parkway design did not accommodate transportation demands associated with the Lily Lake growth area as was demonstrated in Section 6 of the ESR.

### 7.3 Infrastructure Already In Place

As discussed in Section 2.3, the City of Peterborough has planned for extensive growth in the northern part of the City for many years. In order to provide supporting infrastructure necessary for this growth to occur, many studies have been completed and projects have been implemented to support this growth. The 2014 Provincial Policy and its predecessor require municipalities to plan its infrastructure in a manner that is coordinated, efficient and cost-effective. As a result of this forward thinking approach, the City has spent in excess of $35 million on projects with components designed specifically to support new growth in the northern part of the City.

### 7.4 Emphasis on City TDM Measures

As discussed in Section 2.6, the City’s allocation of spending in recent years demonstrates the City’s commitment to funding alternative transportation modes, including active transportation and transit service, in order to achieve the community and societal benefits associated with the mode share targets established through the Comprehensive Transportation Plan Update process. Since 2001, the City has only added 5.2 lane-km of new roadway capacity (other than new local roads in development areas) while the cycling network has been expanded by 30km of new on-road bike lanes and off-road trails. This emphasis on implementation of transportation demand management measures will continue, with consideration currently being given to a longer term vision for transit to reconfigure the City’s transit services to better align with emerging growth patterns, reduce passenger travel times, and improve customer service. The preferred design corridor supports the implementation of these measures in the most effective manner.

### 7.5 Assessment of Changes to the Current Planning Context

After having completed a review of the Current Planning Context and the recommendations, preliminary design and mitigation measures, from the perspectives of the Municipal Land Use Planning, Provincial Policy, Transportation, and Climate Change it is clear that the recommended Parkway Corridor project is still preferable to the alternatives. It is also apparent that the process followed to reach these conclusions would not be altered given the current planning context. Finally, the review of the proposed mitigation measures has also demonstrated they are appropriate and valid in the current planning context.