



City of Kawartha Lakes

# Fenelon Falls Second Crossing Study Report

*October 2021*



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# Executive Summary

This report summarizes the transportation planning, engineering, environmental and consultation work completed between 2019 and 2021 to identify solutions to existing and future traffic issues in the town of Fenelon Falls. The work completed and documented in this Study Report fulfills Phases 1 and 2 of the Municipal Class Environmental Assessment (MCEA) process. The report includes a problem and opportunity statement, documentation of existing conditions, consultation record and the identification and assessment of alternative solutions to address the traffic problems. Alternative solutions examined include improvements to in-town traffic operations and intersection design, expansion of the existing bridge crossing in Fenelon Falls, construction of a second in-town bridge crossing and construction of a new bypass connection.

The traffic congestion issues in Fenelon Falls are a concern of many residents and businesses in Fenelon Falls. There are issues related to the existing and future transportation network capacity, existing road and intersection design and challenges related to transportation and land use planning. There are also opportunities to improve the design and experience of downtown Fenelon Falls by addressing traffic congestion. Chapter 2 details the problems and opportunities to be addressed.

Consultation for the project was completed through a series of meetings and communications with stakeholders, the public and City Councillors. Outreach to Indigenous communities was also undertaken as per the MCEA process. Consultation activities are documented in Chapter 3. Information on how input from consultation informed the work is documented throughout the report.

Two primary study areas were identified in order to assess locations and impacts of the alternative solutions. Existing conditions were studied for the in-town and bypass study areas and are documented in Chapter 4.

Chapter 5 describes the alternative solutions and Chapter 6 documents the impact assessment and summarizes the trade-offs between the solutions. Chapter 7 provides the summary of recommendations and next steps.

Based on the work completed, including consultation with stakeholders and the public, the recommendations are:

1. Progress the intersection design improvements at the intersection of Helen Street and Lindsay Street and at the intersection of Elliot Street and Lindsay Street. This includes completing upgrades to Elliot Street and preparing detailed designs to address site access and turning movement permissions for the Sobeys and Tim Hortons. This does not require further EA study and can proceed to design at the City's direction. Additional consultation with businesses and surrounding property owners should be completed as the designs progress.
2. Proceed with further study of the Burnt River bypass solution following a Schedule C process which includes Phases 3 and 4 of the MCEA process. This should involve examination of design

options, required road improvements, assessment of impacts and further consultation with potentially impacted property owners and surrounding residents.

3. Proceed to monitor traffic conditions in Fenelon Falls following the implementation of recommendation #1 and complete the Growth Management Study for the City of Kawartha Lakes to inform future decisions on the need and justification for a second in-town bridge crossing. This should be completed before the implementation of a bypass is pursued. The findings of the Growth Management Study, including transportation planning, should inform a decision on implementation of a bypass.

This is not a complete environmental assessment (EA) report. Based on the findings documented in this report, either a second in-town bridge or a bypass solution would require further analysis, including the completion of Phases 3 and 4 of the MCEA process as required for a Schedule C transportation project.

This study commenced in 2019 and was delayed when the COVID-19 pandemic began to impact Ontario in March 2020. The study went on hold in March 2020 and restarted in April 2021. During the period of study from 2019 through to October 2021, the MCEA process was amended to include clarification regarding project assessment requirements. In the transportation project schedules of the MCEA manual, new water crossings (bridges, causeways, etc.) were identified as requiring Schedule C MCEA process completion. The scope of work for this study followed the Schedule B process (which is a less detailed study); as such additional work is required to complete a Schedule C study if the proponent would like to pursue a new water crossing either via a bypass or a new in-town crossing.



# 1.0 Introduction

The community of Fenelon Falls is located in the City of Kawartha Lakes and is centred on the Trent-Severn Waterway between Cameron Lake and Sturgeon Lake. There is currently one bridge crossing of the Trent-Severn Waterway in Fenelon Falls. This bridge crossing serves as the primary north-south travel route through Fenelon Falls and connects the surrounding region. The City of Kawartha Lakes Transportation Master Plan and, more recently, the Fenelon Falls Corridor Study identified the need for additional roadway capacity across the Trent-Severn Waterway. There are existing and growing traffic delays related to the existing Fenelon Falls bridge crossing that are particularly acute during peak demand times, which are typically weekends from May through September. During summer weekends, traffic congestion along Lindsay Street and Colborne Street can result in extended traffic queues through town. The summer period is particularly busy given the cottage population in the region. Although summer peak periods see the most extensive traffic delays, there are also community concerns that overall traffic through the community has grown increasingly worse and that a solution that improves traffic at all times of the year and throughout the week is desired. Furthermore, a group of residents have identified a desire for a second bridge crossing to provide a reliable alternative route when the existing bridge is not accessible or blocked.

Given the traffic issues identified by the community and through previous studies, in 2019 the City of Kawartha Lakes (the City) retained Dillon Consulting (Dillon) to complete the Fenelon Falls Second Crossing Study. The City is the project proponent. This report documents the findings of the study, which was completed between 2019 and 2021. The focus of the study was to identify and assess options to address the Fenelon Falls traffic issues. A second bridge crossing has the potential to address the traffic issues in Fenelon Falls and could be located either in-town or could be part of a bypass outside of Fenelon Falls. Although the project is referred to as the Second Crossing Study, this study also examined the design and configuration of existing transportation routes and intersections in the community and includes recommendations for improvements to existing facilities in town.

The study process followed Phases 1 and 2 of the Municipal Class Environmental Assessment (MCEA) process. This report documents the problems and opportunities related to transportation and traffic in Fenelon Falls, identifies potential solutions to the problems, evaluates the impacts of the potential solutions and makes recommendations based on the evaluation of solutions. The work completed aligns with Phases 1 and 2 of the MCEA process but does not include all components needed for a complete environmental assessment (EA) of solutions. Some of the recommendations found in Chapter 7 require additional study, including completion of Phases 3 and 4 of the EA process for a Schedule C project.

## 1.1 Study Area

The project study area is separated into two parts: an in-town study area and a bypass study area. The in-town study area is shown in **Figure 1.1**. The study area covers the community of Fenelon Falls along the Trent-Severn Waterway from Cameron Lake to south of Wychwood Crescent. The northern boundary is

where County Road 121 intersects with County Road 8. The eastern boundary is Sturgeon Point Road and the western boundary is Cameron Lake.

The bypass study area is shown in **Figure 1.2**. This area is along Highway 35 from Long Beach Road in the south to the area north of Somerville Concession Road 3, north of Baddow, and from Bobcaygeon in the east to Balsam Lake in the west.





Figure 1.1: In-Town Study Area





Figure 1.2: Bypass Study Area

## 1.2 Study Process

This study followed Phases 1 and 2 of the MCEA process. **Figure 1.3** outlines the phases of the MCEA process and highlights the work completed in the study and documented in this report. The MCEA document, dated October 2000, as amended in 2007, 2011, 2015 and most recently in 2021, outlines the overall EA process and requirements for municipal infrastructure projects, including roads and water crossings. The MCEA provides information on the different undertakings that each project needs to follow to meet the requirements of the Environmental Assessment Act. The MCEA recognizes that different projects will vary in the impact they have on the environment and will require different degrees of assessment. The MCEA provides a list of different ‘schedules’ so that these varying degrees of projects (from low impact to high impact) can be assessed accordingly.

A solution for a second crossing either as an in-town bridge or a bypass would require a Schedule C EA. This is based on the most recent amendments to the MCEA. At the commencement of this study the requirements for a Schedule C EA for a new water crossing were tied to the scale of the project. In the recent MCEA amendments the scale of a new water crossing is no longer relevant. All new water crossings regardless of size and cost require a Schedule C EA. As such, changes to the requirements mean that further work is required to complete Phases 3 and 4 of the MCEA process if the City would like to progress plans for either the bypass solution or the second in-town crossing solution, because both include new water crossings.

For other solutions examined that do not require a new bridge crossing, such as altering existing intersection configurations, additional EA study would not be required beyond this report. If the City chooses to proceed with a solution that is focused on design alterations to existing intersections (referred to as in-town traffic improvements), those solutions fall within a Schedule A / A+ level of study and no further EA work is required before progressing to design. More information regarding recommendations and next steps of study and design is included in Chapter 7 of this report.

NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA

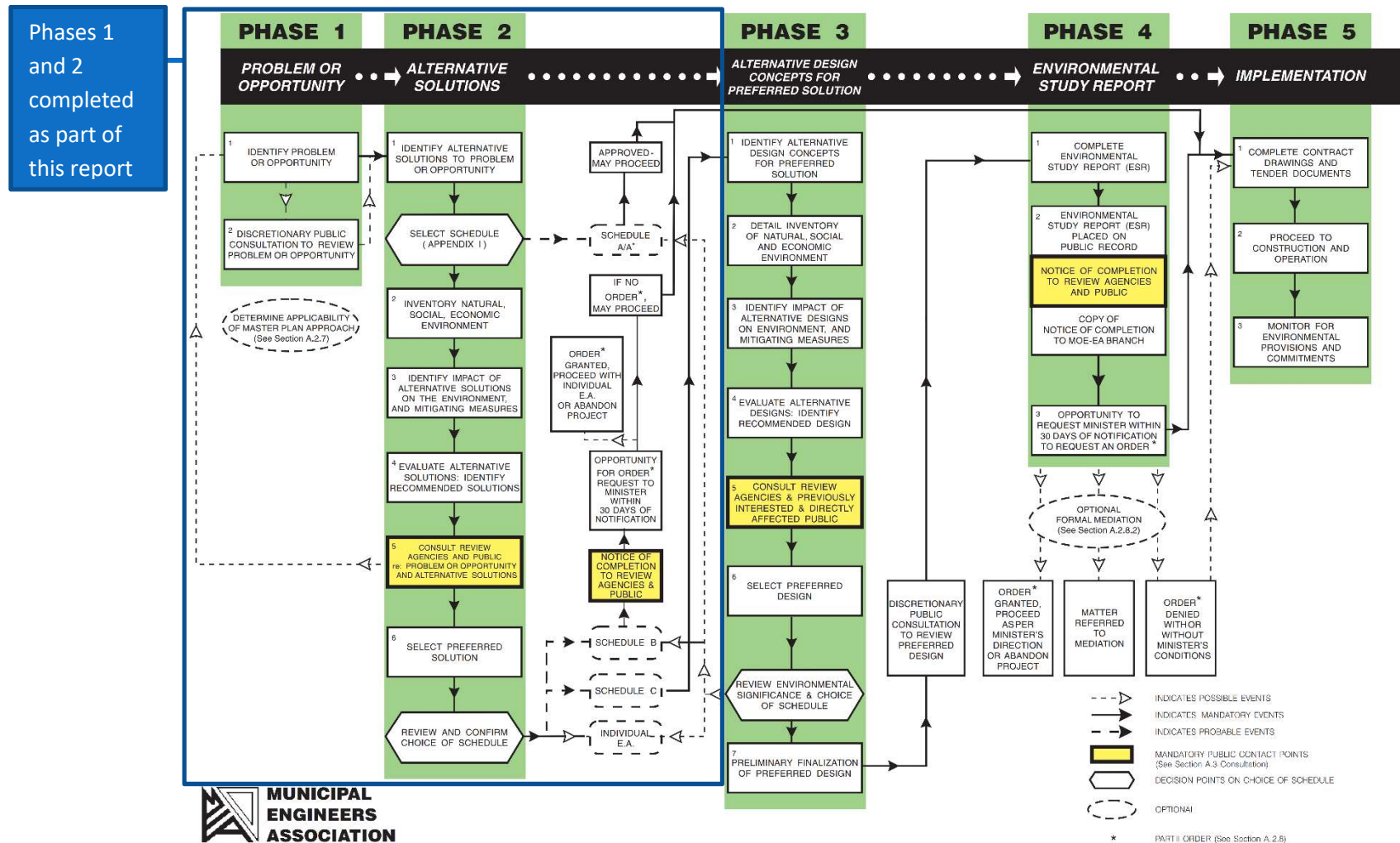


Figure 1.3: MCEA Process and Completed Work

## 2.0 Problem and Opportunity Statement

This project is based on the results of the City's Transportation Master Plan and the Fenelon Falls Corridor Study that both identified the need for additional roadway capacity across the Trent-Severn Waterway within a 2031 planning horizon. In addition, the City's Aggregate Haul Route Study completed in 2006 identified the need for a new designated truck route to provide added capacity for aggregate transport trucks across the City.

From approximately mid-May through September, Fenelon Falls experiences an increase in vehicular traffic along Lindsay Street and Colborne Street. This is in part due to seasonal driving conditions during these months that see more auto trips in the area by local residents and due to the seasonal population increase associated with cottages. As there is only one bridge crossing in Fenelon Falls, all of the traffic moving through the community needs to travel over this key crossing. Issues with intersection design and increased traffic volumes related to popular businesses in the area of the bridge leads to congestion, with extended traffic queues. Tim Hortons and Sobeys, located on Lindsay Street, are anchor destinations in Fenelon Falls that generate traffic from a broad geography. Increased foot traffic also results from the additional visitors that arrive by boat via the Trent-Severn Waterway. The key problems and subsequent opportunities related to traffic issues in Fenelon Falls and potential solutions are presented in Sections 2.1.1 and 2.1.2.

The problems and opportunities were consulted on with the community and stakeholders at the first Stakeholder meeting and the first Public Information Centre (PIC) held in May 2019. The problems and opportunities reflect the input heard through consultation. There are a wide range of concerns related to traffic in the community that extend beyond the issues of inconvenience associated with longer travel times. Residents are also concerned with issues such as safety, main street experience and business operations.

The problems and opportunities identified do not account for changes in traffic patterns due to the COVID-19 pandemic. COVID-19 has affected travel patterns; however, any permanent changes to traffic are not yet understood. Every 5 years the City does a roads review to update the 5 year plan for transportation network improvements. The next roads review will commence in 2022 at which time the City will look at current traffic patterns including the traffic patterns that have resulted from the pandemic. Given the timing of this study and the lack of data regarding permanent changes in travel patterns due to COVID-19, this report focuses on the conditions documented and understood in 2019 prior to the pandemic. Once the 2022 roads review study is complete, results of that work should be considered in relation to the findings in this report.

### Key Problems

Current traffic related problems identified in 2019 in Fenelon Falls include:

- Congestion and traffic delays on Lindsay Street and Colborne Street:
  - Colborne Street and Lindsay Street are the main streets in Fenelon Falls connecting either side of the bridge across the Trent-Severn Waterway. These streets experience higher traffic volumes than normal during May-September periods and an increase in larger



vehicles such as commercial trucks and cars with trailers/boats. Congestion is a problem throughout the week and is even more pronounced on the weekends. The congestion creates delays for through traffic, idling vehicles, challenges with left-turns, challenges with on-street parking, an increase in travel times for residents and visitors and concerns related to an increase in potential conflicts and safety risks;

- The existing bridge crossing is 2 lanes, one in each direction with a pedestrian sidewalk on the west side of the bridge. The south end of the bridge connects to the intersection of Helen Street and Lindsay Street. This is where traffic splits south along County Road 121 (Lindsay Street) and west along County Road 8 (Helen Street). On the east side of the intersection is the access driveway to Sobeys and Tim Hortons. All turning movements are permitted at this intersection, with dedicated signalized left turn lanes. The combination of traffic movements being made at this intersection and the volume of traffic moving across the bridge and through the intersection from May through September results in multiple conflicts. The demand for the southbound left turn into Sobeys and Tim Hortons results in long queues backing up north on the bridge. The queue then blocks the southbound through lane on the bridge. This results in southbound congestion backing up on Colborne Street. This issue is exasperated by the other turning movements at the Helen and Lindsay intersection including the northbound left turn from Lindsay Street onto Helen Street, the eastbound left turn from Helen Street onto the bridge and the westbound left turn from the Sobeys/Tim Hortons onto Lindsay Street. The demand for these movements can result in queues that extend into the through lanes on Lindsay Street and prevent traffic from flowing through the intersection;
- The location of the Sobeys and the Tim Hortons at the south end of the bridge on the east side of Lindsay Street at the intersection with Helen Street is a key reason for the traffic congestion. These land uses are regional anchors that draw traffic from the broader area around Fenelon Falls. The combination of land use, the volume of vehicles travelling to and through the area during peak periods, and the existing transportation network and intersection design results in the traffic congestion noted;
- The Tim Hortons drive-through entrance on Elliott Street just east of Lindsay Street adds to the traffic challenges. There can be long queues for the drive-through that extend onto Elliot Street and at times even further south onto Lindsay Street. The queue can block northbound through traffic on Lindsay Street and southbound left turning traffic from Lindsay onto Elliot Street;
- Traffic congestion through the main corridors of Lindsay Street and Colborne Street, as well as on Helen Street, can also impact traffic on the connecting local road network. Particularly at Elliot Street, Water Street and Francis Street; and,
- North of the bridge on Colborne Street, the intersections at Water Street and at Francis Street also pose operational challenges with competing turning movements that further delay through movements during peak periods.

- Poor main street experience and business impacts:
  - Colborne Street is a vibrant retail and commercial main street. When this main street is heavily congested, it creates a poor experience for residents and visitors. This experience may be felt by people in vehicles who are stuck in traffic or by pedestrians who experience noise from idling vehicles. Business owners have expressed concerns that idling traffic creates a poor main street experience and fewer people may spend time walking along the main street if it is unpleasant being a pedestrian;
  - Additional traffic may bring more potential shoppers to the downtown businesses of Fenelon Falls, but the increase traffic may also impact local businesses and discourage local visitors to stop. As Colborne Street is the main downtown street of Fenelon Falls, it experiences an increase in vehicle parking over the weekend period. Combined with the traffic commuting through Fenelon Falls, there is a significant increase in parking demand during this time. As such, local residents have reported avoiding travelling into the area at these times as they can have trouble parking and get caught up in congestion. This may have a knock-on effect to local businesses who are unable to attract more shoppers if parking is a challenge. There is a larger parking lot located off the main corridor but this requires shoppers to walk to the main corridor which is not ideal for seniors, people with disabilities or people purchasing larger items;
  - Local businesses have expressed concerns about the impacts that traffic can have on attracting patrons; and,
  - Commercial truck traffic is a contributor to traffic congestion and impacts the overall experience of downtown, especially during periods of congestion when trucks are idling in long traffic queues.
- Other associated problems:
  - On the west side of Lindsay Street and north of Green Street is Fenelon Falls Secondary School. During May, June and September, when school is still in session and the seasonal cottage population starts to grow, southbound travel on Lindsay Street becomes a challenge. Buses for the high school park on Lindsay Street which impacts road traffic. The bridge is also an important pedestrian connection for students from the high school to access the main street of Colborne. Safety and operational concerns have been raised regarding pedestrian and vehicle circulation at the intersection of Helen and Lindsay Streets.
  - There are concerns in the community that emergency services may have impacted response times due to traffic congestion and limitations with only one bridge crossing in town.
  - There are concerns that if the existing bridge needs to be closed for any reason, there is no alternative route.



## Key Opportunities

By providing a solution to the above problems, the project has the following opportunities:

- Reduce delays and traffic congestion:
  - Addressing the issues of traffic congestion along Lindsay Street and Colborne Street could relieve commute times and facilitate a better flow of traffic moving through the downtown; and,
  - Addressing congestion could also support improved access to local businesses.
- More traditional main street experience:
  - The main street experience could be improved by removing instances where vehicles are backed up along the main street. There would be less idling, less noise and improved opportunities for people to experience the main street as a community asset, rather than a congested thoroughfare; and,
  - Reduced traffic congestion could help make parking on the main street easier to access.
- Improved connectivity:
  - This project presents an opportunity to create better connectivity through Fenelon Falls and around the entire main street area by addressing traffic operations. A solution to the problem will allow for people to have better success travelling through the area to reach their destination and also for people who are trying to travel around Town.
- Alignment with Downtown Revitalization Plan:
  - There is an opportunity to align the solution to this problem with the Downtown Revitalization Plan. The solution to this problem could result in additional support for the work proposed to beautify and improve the experience of downtown Fenelon Falls, specifically for Colborne Street.
- Rethinking land use and transportation systems:
  - Important destination points within Fenelon Falls are contributors to some of the traffic problems identified, with commuters, visitors and residents all attempting to access key areas along the congested route. Rethinking how land uses interact with the transportation network presents opportunities to improve the overall experience of the community.
- Addressing impacts of truck traffic:
  - Providing a solution that includes alternative routes may help reduce truck traffic travelling through the downtown, which would improve the overall experience of the downtown, especially for pedestrians.

Many of the problems and opportunities identified have been concerns in the community for years. During consultation, community members were vocal about wanting the City to taken action quickly. Concerns

were raised about additional study being required given that traffic in Fenelon Falls has been studied previously. Taking action to address the problems identified is a primary interest in the community.

## 3.0 Consultation Program

The consultation program for this project was extensive and went beyond the requirements outlined in Phases 1 and 2 of the MCEA process. The consultation with the public, stakeholders, agencies (municipal, provincial and federal), and Indigenous communities included a total of 3 stakeholder meetings, 3 PICs, 1 Committee of the Whole presentation, email and telephone correspondence with community members upon request, mail out letters, public notices and posting of consultation materials on the project website, including video recordings of presentations and a detailed Frequently Asked Questions (FAQ) document. Many meetings in 2020 and 2021 were conducted virtually as a result of the pandemic.

The objectives of the consultation activities were to:

- Identify and understand the traffic issues in Fenelon Falls;
- Build awareness of the MCEA process and meet the consultation requirements of a Schedule B MCEA process;
- Provide clear, concise information about the project that is easy for the public to access and understand;
- Identify issues and opportunities that the project can address that are important to the public and stakeholders;
- Provide opportunities for people to meaningfully participate in the study;
- Gather input on the solutions and criteria for evaluation, evaluation results and recommendations;
- Maintain transparency and openness on the projects progression and goals; and
- Review input received to inform the outcome of the project.

This chapter provides a summary of the consultation completed for this study. Input received that informed various components and outcomes of the study is outlined in subsequent chapters of this report.

### 3.1 Agency Consultation

As required for an MCEA, Federal and Provincial agencies were consulted as a part of this study. A summary of consultation with the key agencies is provided below.

- Parks Canada – Parks Canada was consulted given that the Trent-Severn Waterway is a National Historic Site and is therefore under the jurisdiction of Parks Canada. Any proposed work that crosses or would have impacts on the Trent-Severn Waterway would require approval and permitting from Parks Canada. Key areas of interest relate to cultural heritage status, protected viewpoints, navigational waterbody clearances, restrictions for in-water works, designing infrastructure based on high and normal water levels, protection of environmental features and habitat including aquatic species and habitat. Through

consultation, Parks Canada confirmed that expanding the existing bridge or constructing a new bridge over the Trent-Severn would be deemed as a new Physical Work and its construction would be considered a Physical Activity and therefore the project would be subject to Section 82 to 89 of the *Impact Assessment Act*. As such, a work permit would be required and subject to the Parks Canada Impact Assessment review process. This input was used to inform the assessment of potential solutions and to identify assessment processes to be followed.

- Ministry of Environment, Conservation and Parks (MECP) – MECP requires consultation for a Municipal Class EA in the province. MECP was provided with a copy of the Notice of Commencement and project information form. MECP provided input on the Indigenous Communities to be consulted as part of the project. MECP would like to be kept informed of project decisions and progress.
- Ministry of Natural Resources and Forestry (MNRF) – MNRF was consulted regarding existing terrestrial and aquatic environment conditions. Input was provided related to natural heritage systems, wetlands, Areas of Natural and Scientific Interest (ANSI's), fish and fish habitat, Species at Risk (SAR), significant woodlands, significant wildlife habitat (SWH), deer yarding areas and deer winter congregation areas and raptor nests. Input also provided details on potential wells and oil, gas and salt resources and other general information related to MNRF approvals, including items related to the *Lakes and Rivers Improvement Act*, the *Public Lands Act* and the *Fish and Wildlife Conservation Act*.
- Kawartha Conservation Authority (KCA) – KCA was consulted as their jurisdiction covers the study area. KCA is interested in the potential impacts of an undertaking on floodplains and wetlands. In particular, KCA is interested in the Burnt River area where a by-pass solution could be located given existing flooding issues. KCA provided updated flood plain mapping information to the team.
- Ministry of Transportation (MTO) – MTO was consulted given that a bypass solution could divert traffic along Highway 35, a Provincial road. MTO affirmed their interest in the project only if the bypass option is pursued as the preliminary preferred solution. Preliminary discussions with MTO indicated that the traffic volumes being considered for the bypass would not significantly impact existing Highway 35 operations but this would need to be confirmed if the bypass solution were to proceed.

## 3.2 Public Consultation

### Notices

The project Notice of Commencement (NOC), was sent out on May 13, 2019. The NOC served as a means of introducing the public to the project and included an invitation to the first PIC, held on May 27, 2019. The notice was shared on the City's website, on social media and printed in the local newspaper, the *Kawartha Lakes This Week*. The Notice was also mailed directly to those properties in the study areas.

The notification for the second PIC, held on November 6, 2019, was posted on the City's website, advertised in the *Kawartha Lakes This Week* newspaper and shared on the City's social media on October 23, 2019.

Notice for PIC #2 was also sent via email to stakeholders and people who signed up for the project contact list either at the first PIC or by emailing the project team.

On November 3, 2020, a presentation was given by the project team to the City of Kawartha Lakes Committee of the Whole. Notification for this was included in the City Clerk's Agenda update and was emailed to the stakeholders and project contact list. Notice was also included on the project website along with a link to a recording of the meeting after the event.

The notification for the third PIC, held on May 29, 2021, was posted on the City's website, advertised in the *Kawartha Lakes This Week* newspaper and shared through the City's social media account on May 13, 2021. Notice for PIC #3 was also sent via email to stakeholders and people on the project contact list. The Notice was also mailed directly to those properties in potential impact areas of the alternative solutions. In addition, electronic notice was placed on a road sign on Lindsay Street to advertise the event.

On November 2, 2021 the Study Report was presented to Committee of the Whole. Notification for this was included in the City Clerk's Agenda update, posted on the City social media account and was emailed to the stakeholders and project contact list. Electronic copies of reports associated with the Committee Meeting were made available via the Clerk's Office. Notice of the meeting was also included on the project website.

## Project Website

The City's website (<https://www.kawarthalakes.ca/en/municipal-services/major-projects.aspx>) has been used throughout the project to keep members of the public and interested stakeholders updated on opportunities for consultation and to share project materials. The website has been used to post notifications of upcoming PICs, and to provide copies of presentations and meeting documents. An online comment form was available on the project website for members of the public to provide comments and project team contact information was posted.

## Summary of Public Consultation, Input and Responses

### Public Information Centre #1

The first PIC took place on May 27, 2019 in person at the Fenelon Falls arena. This meeting provided an opportunity to introduce members of the public and key stakeholders to the project and to provide them with an opportunity to give feedback on the problems and opportunities and potential solutions for consideration. Approximately 86 people attended the event.

The PIC was designed as an interactive event. Participants were encouraged to provide feedback to the project team through a series of activity stations and facilitated question and answer discussion. The topics covered included:

- Problems and opportunities;
- Identification of important transportation routes used by community members;

- Criteria and considerations for developing and evaluating solutions; and,
- Identification of preliminary locations and recommendations for solutions.

Issues were raised regarding the Helen and Lindsay Street intersection, the condition of the existing bridge crossing, the congestion around the Tim Hortons and Sobeys and the impacts that traffic congestion has on the overall community. Attendees stated that while it is important to find a solution that addresses the traffic issues in town, it is also important to consider the potential impacts to local businesses. Interest was expressed in finding solutions that can improve business opportunities and the attractiveness of visiting the downtown area.

Input received was used to prepare the problem and opportunity statement, develop alternative solutions and refine work plans for baseline study and impact analysis.

#### Public Information Centre #2

The second PIC took place on November 6, 2019 in person at the Fenelon Falls arena. The PIC focused on providing an update on work completed to date. Content included:

- Baseline conditions assessment information, including information on the traffic studies, natural environment studies, archaeological studies, and cultural heritage studies completed;
- Alternative solutions considered;
- Preliminary evaluation results; and,
- Identification of preliminary recommendations.

Approximately 45 people attended the event. The meeting format consisted of a presentation, followed by facilitated table discussions and an open question and answer session. Feedback varied regarding the preliminary recommendations. Attendees raised concerns regarding the existing condition of the current bridge, discussed the need for another bridge in the community and highlighted issues related to emergency response. Concerns and questions were also raised regarding the effectiveness and impacts of traffic improvement options. Attendees reiterated the need to move quickly to address traffic issues. A bypass was supported as a potential solution that could be progressed more quickly, and with fewer impacts than a second in-town bridge. Concerns about whether a bypass would do enough to relieve the traffic issues in the community were raised. There was also acknowledgement that a second crossing over the Trent-Severn would require a federal assessment process in accordance with Parks Canada regulation associated with the National Historic Site designation.

Preliminary recommendations regarding improvements to the existing intersection design of the Helen and Lindsay Street intersection were a focus of conversation. Attendees wanted to see more information on what the intersection improvements would be and the resulting traffic analysis. Input received was used to refine the evaluation and preliminary recommendations. This included direction for the study team to complete additional transportation planning work to model and assess the in-town intersection improvements. Based on input for the bypass solutions, the study team also completed additional review of the potential environmental impacts of the bypass.

### Public Information Centre #3

The third PIC was held on May 29, 2021. It was a virtual public meeting using Zoom events. The PIC focused on providing a project update and was centred on answering key questions that the team received from the public over the course of the study. This PIC was held as an additional opportunity for community consultation based on direction from the Committee of the Whole. In November 2020 the Committee directed the study team to further consult the community in spring 2021 in order to gather more input from property owners and residents in the vicinity of the bypass. Properties along the Burnt River were mailed the public meeting notice to encourage engagement. Over 130 participants registered for the event and logged in for the presentation. Prior to PIC #3, many residents and business owners reached out to the study team via email and telephone with questions and comments regarding the study. The presentation material for PIC #3 focused on providing a comprehensive overview of the study and answering the questions and comments that the team received. The presentation material included:

- Overview of study objectives, problem and opportunities;
- Update on studies completed including information on the traffic studies, environment and heritage studies completed;
- Description of the alternative solutions and rationale for consideration;
- Preliminary evaluation results;
- Identification of preliminary recommendations; and,
- Requirements for next steps, including information on future MCEA work required for a bypass.

There was a wide range of input and questions received. Residents along the Burnt River do not want the bypass to proceed and residents in the community located along Juniper, Ellice, Wychwood and Elliott Streets do not want the in-town bridge crossing or the intersection modifications to proceed. We also heard from businesses in the community who are concerned about the impacts of the intersection modifications on their operations. All of the options result in some degree of impact on residents and property owners which is why there were concerns raised for every solution. Concerns regarding the impacts of the bypass included issues related to property impacts, wildlife, wetlands, woodlands, recreational features, noise and impacts to overall quality of life for people living in the vicinity of the bypass. Concerns and questions were also raised regarding the effectiveness of the bypass and whether it would address the traffic issues identified. Concerns regarding the in-town second crossing also included concerns related to property impacts environment, noise and impacts to schools and seniors. Attendees stated that since COVID, traffic congestion has increased during the week as more seasonal residents remain at cottages for longer periods of time. There were concerns with land use planning in the community and the location of the Tim Hortons drive-thru. Some residents feel that the road network is not the issue but that where Tim Hortons is situated is the biggest issue. Suggestions included either relocating the Tim Hortons or altering the site design so that traffic is better managed on site. Residents also raised concerns with the impacts to Elliot Street that would arise by redirecting traffic from Lindsay Street onto Elliot Street in order to access the Sobeys. More information regarding the redesign of Elliott Street was requested. Comments also included concerns with the consultation process. If the City proceeds with one of the bridge options or a bypass, people would like to see more consultation before any decisions are made.

Following PIC #3 the study team released a Frequently Asked Questions (FAQ) document that identified the questions submitted to the project team and provided responses. The FAQ includes a comprehensive list of the questions and concerns raised throughout consultation over the duration of the study. The FAQ was posted on the project website, emailed to the project contact list and mailed to property owners who requested a printed copy. A copy of the FAQ is included in **Appendix A**.

### 3.3 Stakeholder Consultation

Stakeholder consultation mirrored the public consultation. Following the first PIC, a stakeholder contact list was established with input from City staff. The stakeholder contact list included:

- Fenelon Forward;
- Chamber of Commerce;
- Downtown Revitalization Committee;
- Local Councillor for Fenelon Falls;
- Ministry of Transportation;
- Kawartha Conservation Authority;
- Parks Canada; and,
- Local area businesses at Helen Street and Lindsay Street.

The first stakeholder workshop took place on September 30, 2019 at the Fenelon Falls arena. Presentation materials included an update on study progress since PIC #1, findings from baseline conditions studies and identification of preliminary solutions. Content included draft materials for public presentation at PIC #2. During the meeting, the stakeholders were split over whether the bypass or an in-town solution would be the most effective. Concerns were raised over whether the amount of vehicles a bypass would remove would be enough (20-30% vehicles removed), while concern was also raised over the number of properties impacted by an in-town solution. Others commented that as the City grows there would need to be an in-town solution in the future regardless of the outcome of this study. Stakeholders also suggested that further clarification of the Streetlight traffic study analysis was needed for PIC #2. Input from stakeholders was used to refine presentation materials for PIC #2 in November 2019.

The second stakeholder meeting was split into three smaller meetings, all held over the course of one day on August 5, 2020. The meetings focused on the findings and preliminary recommendations of the study. The first meeting of the day was with the business owners of Sobeys, Tim Hortons, and RWH Construction. The second stakeholder meeting was with the business owners of the Texas Burger and the UPI Gas Station. The third meeting included all of the key businesses at the Helen and Lindsay Street intersection that were invited to the first two meetings as well as the broader list of stakeholders.

Input from stakeholders focus on the operational issues of the Helen and Lindsay Street intersection. This included discussions related to the turning movements at the intersection as well as the traffic volumes generated by the Tim Hortons and Sobeys. Discussions of road design improvements centred on the potential impacts to business operations. Discussion of potential solutions included adding turning lanes and



adjusting signal timing at the intersection. Stakeholders also raised concerns regarding the time it would take to complete the necessary Phase 3 and 4 MCEA work for the bypass.

### 3.4 Indigenous Community Outreach

The Ministry of Environment, Conservation and Parks (MECP) provided a short list of Indigenous Communities that the project team should consult with as part of the EA. This included the following:

- Alderville First Nation;
- Curve Lake First Nation;
- Hiawatha First Nation;
- Mississaugas of Scugog Island First Nation;
- Kawartha Nishnawbe First Nation; and,
- MNO Peterborough and District Wapiti Métis Council.

The project team also engaged with the Chippewas of Rama First Nation, Moon River Métis Council, and the Métis Consultation Unit. Initial notifications were sent on May 22, 2019. The notice of commencement provided background on the project and offered to set up a meeting to discuss the project. On May 22, 2019, Curve Lake First Nation provided a response to the notice of commencement. The response confirmed receipt of the notification and stated that a file fee was required for the project and requested that they be kept updated on the project's status. Curve Lake First Nation also asked that the archaeological studies be shared when complete. No other responses were received.

Further notifications were sent out on October 9, 2019, inviting Indigenous Communities to the upcoming second PIC. No responses were received. If either the bypass or second in-town bridge option is progressed to Phases 3 and 4 of the MCEA process, additional effort to consult with Indigenous communities is needed. This includes consultation on and involvement in the monitoring for the archaeological studies.

## 4.0 Overview of Existing and Planned Conditions

This section of the report summarizes the existing and planned conditions in the in-town and bypass study areas. Identification and documentation of baseline conditions included desktop analysis and field studies completed in 2019 and 2020. The information was used to inform the development and assessment of alternative solutions.

### 4.1 Trent-Severn Waterway and Burnt River

#### Physiographic and Geomorphologic Description

When considering new roads and bridges it is important to understand the physiographic and geomorphic conditions in the study area. The in-town and bypass study areas both lie over geology from the Paleozoic Era with Middle Ordovician bedrock from the Ottawa group, Simcoe group and Shadow Lake formation bedrock, consisting of limestone, dolostone, shale, arkose and sandstone (Ontario Geologic Survey, 1991).

Two Paleozoic bedrock units occur within the in-town study area; the Bobcaygeon unit and the Verulam unit. The Bobcaygeon unit forms a corridor generally associated with Cameron Lake and Fenelon River that forms a general corridor through the surrounding Verulam unit. These bedrock typologies consist of limestone and shale (Verulam) and limestone with minor shales (Bobcaygeon). The entirety of the in-town study area lies within the Peterborough Drumlin Field physiographic region (Chapman and Putnam, 2007). Physiographic mapping reveals that the study area lies within drumlinized till plain area with a drumlin feature that partially transects the center of the study area in a southwest to northeast orientation (Chapman and Putnam, 2007). In addition, Surficial Geology of Southern Ontario mapping from the Ontario Geologic Survey (2003) indicates that Paleozoic bedrock dominates the western half of the study area while drumlinoid ridges, a centralized esker (with an unknown direction of flow) and two types of till dominate the eastern half of the study area. Till types within the eastern half include stone-poor as well as stony sandy silt to silty sand-textured till.

Two Paleozoic bedrock units occur within the bypass study area; the Gull River unit and the Bobcaygeon unit. The Gull River unit forms a north-south oriented corridor with Burnt River within the larger surrounding Bobcaygeon unit. These bedrock typologies consist of limestone and dolostone (towards base) (Gull River) and limestone with minor shales in upper part (Bobcaygeon). The bypass study area occurs within the Carden Plain physiographic region within the western half and the Drummer Moraines physiographic region within the eastern half of the bypass study area (Chapman and Putnam, 2007). Physiographic mapping reveals that a central spillways landform forms a corridor associated with Burnt River surrounded by limestone plains. Further, Surficial Geology of Southern Ontario mapping from the Ontario Geologic Survey (2003) indicates that modern alluvial deposits containing clay, silt, gravel, with a potential for organic remains occurs in association with Burnt River, while stony, sandy silt to silty sand-texture till on Paleozoic

terrain covers most of the remaining study area with the exception to minor occurrences of coarse-textured glaciolucustrine deposits and organic deposits.

## Watershed and Surface Water

The in-town study area is located within the jurisdiction of the Kawartha Conservation Authority (KCA) and is located in the Kawartha Conservation watershed. The overall watershed covers 2,563 square kilometres and has a unique landscape that holds wetlands, and long meandering rivers that flow to and from lakes along the Trent-Severn Waterway. The Trent-Severn Waterway is managed by Parks Canada as a National Historic Site and is a predominant feature of the study area. The Kawartha Conservation watershed is made up of 27 smaller drainage areas called subwatersheds, which are areas drained by a stream or group of streams also referred to as tributaries. The majority of Fenelon Falls is located in the Sturgeon Lake watershed. The western side of Fenelon Falls, adjacent to Cameron Lake, is in the Cameron Lake watershed.

There are two primary tributaries located within the in-town study area: one north of the Fenelon River and one south. The southern tributary drains rural and urban lands to Sturgeon Lake. There is potential that the southern tributary has the same upstream drainage area as the northern watercourse which drains north of the Fenelon River, although it is unclear. A flood plain study has yet to be finalized for this tributary.

The northern tributary drains the rural and urban areas to the Fenelon River upstream of the falls. This watercourse consists of a large enclosed section from Francis Street to the river outlet. A Fenelon Falls North Tributary Flood Plain Mapping Study was prepared by the KCA. The report states that the northern watercourse has flooded in the past, likely as a result of undersized culverts and channels or blocked culvert inlets.

Based on data from the KCA, the Cameron Lake watershed surface water quality is in excellent condition whereas the Sturgeon Lake watershed surface water quality ranges from good to fairly poor condition depending on levels of precipitation. This is based on monitoring of total phosphorous (TP) and/or benthic macroinvertebrates (aquatic insects) family biotic index (FBI) in the subwatersheds. The surface water watershed conditions are a reflection of the drainage area, conditions of wetlands and woodland areas, surface water runoff and development in the watershed. Conditions vary based on seasonal precipitation.

The bypass study area is located within the Goose Lake and Burnt River watershed. The Ministry of Natural Resources and Forestry (MNRF) oversees the watershed along with the City of Kawartha Lakes as there is no designated Conservation Authority for the area. The Burnt River drains an area of 1,300 square kilometres from its headwaters near Canning Lake south into Cameron Lake. Given the topography, stream gradient, water volume and resulting current of the Burnt River, suspended solids affect water quality which can range from good to very poor depending on seasonal precipitation and overall water levels in the watershed.

Floodplain mapping of the Burnt River was provided by the KCA. The Burnt River drains a large area of land north of Cameron Lake that extends beyond Kinmount to the area just south of Haliburton. Flooding is a common occurrence along the Burnt River. The study area for this project includes the portion of Burnt River

that floods most frequently, between the community of Burnt River and Cameron Lake. The riverbanks are low and the flood plain is wide in this area. Development along the riverbank is at risk of flood damages during rain events and spring thaw. The largest recorded flood of the Burnt River occurred in 2019 with water levels 20 centimetres higher than the previous record in 2013. Floodplain conditions and constraints are important considerations for the design of a bypass in the area of the Burnt River.

## Soils and Groundwater

The quaternary soil deposits associated with the study area are mapped as diverse deposits ranging from Coarse-textured glaciolacustrine deposits and stone-poor and stony till to minor areas with modern alluvial and organic deposits (Chapman & Putnam, 1984).

The in-town and bypass study areas are dominated by loamy soils from the Otonabee Loam and Drummer Loam group with a minor occurrence of a sandy area from the Wendigo Sand group encapsulating the Burnt River corridor (Agmaps, 2019).

No Provincial Groundwater Monitoring Network (PGMN) wells were identified within or within the immediate vicinity of the study areas. A review of the water well records from the MECP for the area indicates that there has been a large number of water wells drilled within the study areas to service private properties. The wells vary in drill depth due to the varying topography. The nearest PGMN well (Well ID: W0000433-1) occurs on private land approximately 6 km southwest of the in-town study area boundary and contains limited data. From the available data from Well - W0000433-1 the lithology contains sand and gravel and daily water level records from the years 2005 and 2006 indicate water levels remain fairly stable ranging from 248.2 masl to 249.2 masl.

Given the need for bridges to have secure footings, groundwater conditions in the area of impact of a new bridge, either in the community or as part of a bypass, would require further study based on more refined bridge designs.

## Source Water Protection

The in-town and bypass study areas are located in the Kawartha-Haliburton Source Protection Area (KHSPA) of the larger Trent Conservation Coalition Source Protection Region (TCCSPR). The Source Protection Area (SPA) and Source Protection Region (SPR) are guided by the *Clean Water Act, 2006*. The *Clean Water Act, 2006* is part of the multi-barrier approach to ensure clean, safe and sustainable drinking water for Ontarians, by protecting sources of municipal drinking water such as lakes, rivers and well water (Conservation Ontario).

The Kawartha-Haliburton Source Protection Authority Board is comprised of Kawartha Conservation Board Members, who represent the municipalities within the Kawartha Conservation watershed, and representatives of the municipalities comprising Haliburton County. The Kawartha-Haliburton Source Protection Authority Board identifies the area between Cameron Lake and the Fenelon River (north of the falls) as an Intake Protection Zone #1. All other waterbodies (including the Fenelon River and Burnt River) in the area are listed as being an Intake Protection Zone #3. As identified in the TCCSPR Trent Assessment

Report Map 6-2 (2011) and the online MECP Land Information Ontario (LIO) database's Source Protection Information Atlas (2019), both the in-town and bypass study areas are located within Highly Vulnerable Aquifer areas (vulnerability score of 6). Highly vulnerable aquifers are defined as subsurface, geologic formations that are sources of drinking water, which could relatively easily be impacted by the release of pollutants on the ground surface. Further, based on a review of MNRF LIO Ministry of Agriculture, Food and Rural Affairs (AgMaps) (2019) database, a corridor of Significant Groundwater Recharge Area occurs along west side of the Burnt River within the bypass study area. Residences in the bypass area are serviced by private well. Due to these factors and established regulatory requirements, new development needs to minimize impacts on drinking source water.

## 4.2 Natural Environment

### Designated Natural Areas

Natural features that occur within the in-town study area include Wooded Areas, one Unevaluated Wetland, Watercourses and one Waterbody (Fenelon River). Along the east and west sides of the Fenelon River from approximately between Colborne Street to the north and Janlisda Drive to the south, there is an Environmental Constraint Area identified (Schedule A; Village of Fenelon Falls, 2012). A portion of Fenelon River is identified as an Environmentally Sensitive Area from approximately Colborne Street to the north and the fork in the river to the south (Schedule C; Village of Fenelon Falls, 2012). The study area does not overlap with KCA Regulated Areas (KCA, 2019).

Natural features that occur within the bypass study area include Wooded Areas, Provincially Significant Wetlands (PSW) (Balsam Lake 15 and Ellery Bay), Unevaluated Wetlands, Locally Significant Wetlands (Sturgeon Lake No. 14), Watercourses, Waterbodies and one Area of Natural and Scientific Interest (ANSI) – Life Science (Burnt River Mouth Wetlands). The study area does not overlap with KCA Regulated Areas (KCA, 2019).

The study areas are known for their natural features and wildlife. Detailed mapping of the natural areas and documented wildlife for the alternative solutions is provided in **Appendix B: Natural Environment Baseline Study, Part A: Desktop Study and Part B: Field Investigations**.

### Ecological Land Classification (ELC)

ELC mapping was used to identify and assess potential natural heritage features in the study areas. High-level ELC reconnaissance was completed to classify and map ecological communities. Ecological community boundaries were determined through aerial photography, background mapping and a review of on-site conditions. Due to much of the study areas being located on private land, windshield surveys made up the majority of on-site surveys.

The in-town study area has a total of 17 separate ELC communities, 10 of which are considered natural and the remaining cultural. The natural communities have all been disturbed due to adjacent anthropogenic uses (i.e., roads, parks, agricultural lands, recreational activities, development, etc.) and contain a number of

invasive species, such as Common Dandelion (*Taraxacum officinale*), Reed Canary Grass (*Phalaris arundinacea*), Common Buckthorn (*Rhamnus Cathartica*), and White Sweet-clover (*Melilotus albus*). Much of the lands within the Study Area are influenced by anthropogenic activities and consist of urban residential and active agricultural lands. Natural communities also found in the area included woodlands, thicket, swamp, and meadows.

For the bypass study area, the full extents of the broad area where a potential bypass could be located were not examined through ELC mapping. The ELC mapping was focused along the potential bypass route identified in the City's previous Haul Route Study completed in 2006. The bypass route identified in the 2006 Haul Route study recommended implementing a new bypass around Fenelon Falls that would utilize Highway 35, Concession Road 3, include a new bridge over the Burnt River at Concession Road 3, and connect to Highway 121 on the west side of the Burnt River. Given that the Haul Route study identified the route as a future bypass, the ELC mapping was examined in detail for the segment of the route along Concession Road 3 where potential construction disruption would occur. In this study area of the bypass a total of 17 separate ELC communities, 11 of which are considered natural and the remaining cultural. The natural communities within the study area are preserved in many areas with intermittent disruptions from existing anthropogenic uses, particularly roads, recreational trails, agricultural lands and residential properties. There are large well preserved natural features in the bypass study area including large contiguous wetlands. Detailed ELC mapping for the alternative can be found in **Appendix B**.

## Vegetation and Botanical Survey

The botanical survey was conducted in unison with the ELC assessment and covered the same study area extents noted for ELC. A total of 34 plant species were documented in the bypass study area that would utilize Concession Road 3 as per the 2006 Haul Route Study. A total of 44 plant species were documented in the in-town area. A combined total of 55 species were documented. Of the 55 species, 64% are listed as native species and are considered to be common (SRank of S4) to very common (SRank of S5) in the province of Ontario. Conversely, 36% of the species observed are listed as introduced species; therefore, a status ranking is not applicable as the species are not a suitable target for conservation activities (SRank of SE or SNA). No SAR species were identified during vegetation survey for either the in-town study area or the bypass study area that would utilize Concession Road 3.

The Co-efficient of Conservatism (CC) provides additional information on the nature of the vegetation communities within the study areas. The CC values range from 0 to 10 and represent an estimated probability that a plant is likely to occur in a landscape that is relatively unaltered or is in a pre-settlement condition. Of the 54 species identified within the study areas, three have a CC value of 7 or greater; American Larch (*Larix laricina*), Eastern Hemlock (*Tsuga canadensis*), and Black Spruce (*Picea mariana*). Once the location of the preferred solution is identified, potential impacts to plant species would have to be examined in more detail. Full details of the vegetation and botanical survey can be found in **Appendix B**.

## Aquatic Habitat

A detailed in-water aquatic assessment was not completed for the in-town study area as part of this report. There are various potential alignments for a second bridge crossing in town. Given that the team did not have access to private residential and commercial properties and due to the steep cliff faces along the Fenelon River, in-water aquatic assessment was not included in the scope. Instead, a desktop study of the area was completed. The following watercourses are located within in-town study area:

- Fenelon River; and,
- 1 unnamed watercourse.

Based on the presence of these watercourses, there is fish habitat present within the in-town study area. A review of Ontario Aquatic Resources Area (ARA) polygon segment database for Sturgeon Lake immediately downstream of the in-town study area identified a fish community consisting primarily of spring and fall spawning minnows and baitfish, coarse fish, and sport fish species, including top predators (Muskellunge (*Esox masquinongy*), Northern Pike (*Esox lucius*), Largemouth Bass (*Micropterus salmoides*, Smallmouth Bass (*Micropterus dolomieu*). None of the fish species identified are Species of Conservation Concern (SCC) (S1-S3 ranked and Special Concern species). Review of DFO's aquatic species at risk mapping (August 2019) did not identify any aquatic SAR within the in-town study area. Lake Sturgeon (*Acipenser fulvescens*) was identified in Sturgeon Lake which is directly connected to the Fenelon River immediately downstream of the in-town study area, however, Lake Sturgeon was not identified on DFO's aquatic SAR map (August 2019).

The following watercourses are located within the broader Bypass study area:

- Cameron Lake;
- Sturgeon Lake;
- Martin Creek;
- Rosedale River;
- Balsam Lake;
- Goose Lake;
- Burnt River; and,
- several unnamed watercourses.

Based on the presence of the aforementioned watercourses and waterbodies, there is fish habitat present within the bypass study area. A review of Ontario Aquatic Resources Area (ARA) point, line and polygon segments database within the Study Area identified fish communities consisting primarily of spring and fall spawning minnows and baitfish, coarse fish, and sport fish species, including top predators such as Muskellunge (*Esox masquinongy*), Northern Pike (*Esox lucius*), Largemouth Bass (*Micropterus salmoides*). None of the fish species identified are Species of Conservation Concern (SCC) (S1-S3 ranked and Special Concern species). Review of DFO aquatic species at risk mapping (August 2019) did not identify any aquatic SAR within the bypass study area. Lake Sturgeon (*Acipenser fulvescens*), listed as provincially Endangered (Great



Lakes – Upper St. Lawrence populations), was identified in Sturgeon Lake within the bypass study area, however, Lake Sturgeon was not identified on the DFO aquatic SAR map (August 2019).

For the bypass study area, the Burnt River at the location of Concession Road 3, was the focus of a more detailed aquatic assessment given that the location had been previously identified for a future bypass and new bridge. Due to safety concerns of wading in the Burnt River during the time of field work, the aquatic assessment was completed from the shoreline. As such, channel dimensions are approximate. The Burnt River has a wetted width of 37m while the mean bankfull width is approximately 40m and the depth greater than 2m. The dominant substrate along the west bank consists of sand with minor amounts of gravel and detritus. In-stream cover observations consisted of vascular macrophytes, woody debris and organic debris. Some portions of the banks where residential properties are maintained have been hardened by concrete, steel sheet piling and railroad ties. Where the bank isn't hardened, the riparian area is vegetated with mixed coniferous and deciduous trees and shrubs. Both banks are considered to be stable.

If either the bypass or second in-town bridge crossing options are progressed further, in-water work would be needed to confirm aquatic habitat and species and to inform impact mitigation and monitoring plans.

### Species at Risk (SAR) and Significant Wildlife Habitat

The area surrounding Fenelon Falls is known to support common wildlife for the geography. The contiguous natural areas in the bypass study area support a wide range of wildlife habitat and species. The focus of analysis for this study was on the potential for alternative solutions to impact species at risk (SAR) or significant wildlife habitat. The following SAR were identified as having potential habitat within both Study Areas based on the result of background reviews and the field investigations. The species provincial status under the *Endangered Species Act, 2007* (ESA) follows the scientific name (i.e., 'THR' means threatened and 'END' means endangered):

- Chimney Swift (*Chaetura pelagica*; THR);
- Barn Swallow (*Hirundo rustica*; THR);
- Bobolink (*Dolichonyx oryzivorus*; THR);
- Eastern Meadowlark (*Sturnella magna*; THR);
- Blanding's Turtle (*Emydoidea blandingii*; THR);
- Eastern Small-footed Myotis (*Myotis leibii*; END);
- Little Brown Myotis (*Myotis lucifugus*; END);
- Northern Myotis (*Myotis septentrionalis*; END); and
- Tri-colored Bat (*Pipistrellus subflavus*; END)

No SAR were observed within the study areas during field investigations; however, targeted species-surveys were not included as part of the field investigation scope. If a new in-town bridge crossing or bypass is progressed further, additional targeted species-surveys would be required during Phase 3 and 4 MCEA work.

The Significant Wildlife Habitat Technical Guide (MNRF 2000) defines Species of Conservation Concern (SCC) as globally, nationally, provincially, regionally, or locally rare (SRank of S1 to S3) and federally Endangered, Threatened and Special Concern species, but do not include SAR (listed as Endangered or Threatened under the ESA).

A total of 16 SCC were identified as potentially occurring within the vicinity of the in-town study area. Of the 16 species identified, 11 have been identified as having potential habitat within the in-town study area based on field investigation results; ESA designations follow the species scientific names (i.e., 'SC' means special concern; 'S1B' means breeding population is critically imperiled; 'S3' means vulnerable; 'S4N' means non-breeding population is apparently secure):

- Canada Warbler (*Cardellina Canadensis*; SC)
- Rough-legged Hawk (*Buteo lagopus*; S1B, S4N)
- Evening Grosbeak (*Coccothraustes vespertinus*; SC);
- Eastern Wood-Pewee (*Contopus virens*; SC);
- Bald Eagle (*Haliaeetus leucocephalus*; SC);
- Red-headed Woodpecker (*Melanerpes erythrocephalus*; SC);
- Western Chorus Frog (*Pseudacris triseriata*; S3)
- Snapping Turtle (*Chelydra serpentina*; SC);
- Northern Map Turtle (*Graptemys geographica*; SC);
- Eastern Musk Turtle (*Sternotherus odoratus*; SC);
- Monarch (*Danaus plexippus*; SC)

A total of 16 SCC were identified as potentially occurring within the vicinity of the bypass study area. Of the 16 species identified, 13 have been identified as having potential habitat within the bypass study area based on field investigation results.

- Canada Warbler (*Cardellina Canadensis*; SC);
- Common Nighthawk (*Chordeiles minor*; SC);
- Rough-legged Hawk (*Buteo lagopus*; S1B, S4N)
- Western Chorus Frog (*Pseudacris triseriata*; S3)
- Snapping Turtle (*Chelydra serpentina*; SC);
- Northern Map Turtle (*Graptemys geographica*; SC);
- Eastern Musk Turtle (*Sternotherus odoratus*; SC);
- Monarch (*Danaus plexippus*; SC)

Details of the studies completed can be found in the Natural Environment baseline report in **Appendix B**.

## 4.3 Infrastructure and Transportation

### Existing Roadways

The City of Kawartha Lakes Transportation Master Plan (2012) provides details on the existing road network in and around Fenelon Falls. **Figure 4.1** illustrates the road network for the study area as classified in the plan.

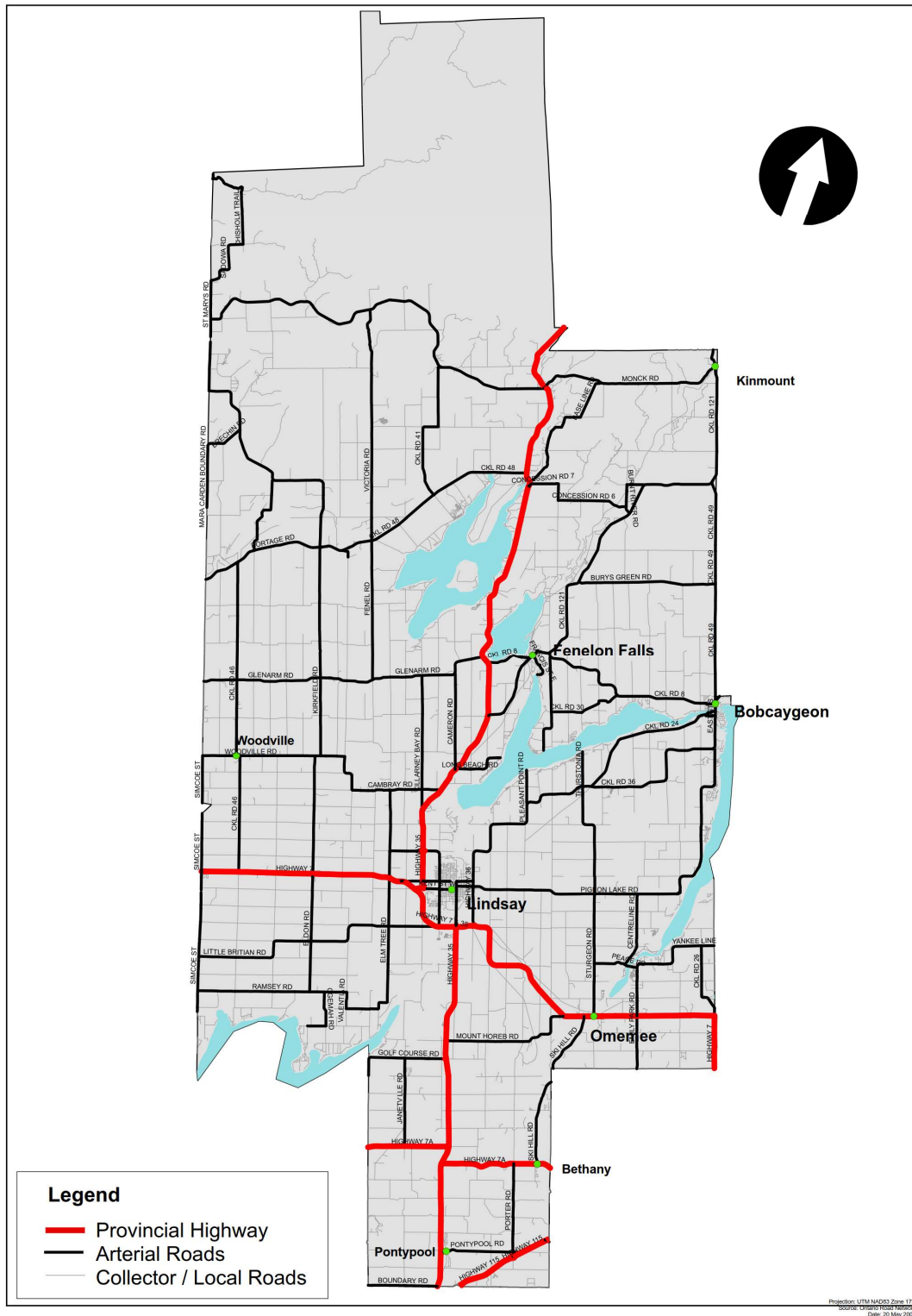


Figure 4.1: City Roadway Functional Classification, Transportation Master Plan 2012

There are a number of different road classifications located in or adjacent to the study area. These are described below. There are four main access routes in and out of town. These are Route 121 from the North and South, connecting to Route 8, East and West.

The primary routes to connect for a bypass would be Highway 35 and County Road 121.

### **PROVINCIAL HIGHWAYS**

Major Highways surrounding Fenelon Falls include Highways 35, 36, 48 and 49. MTO has jurisdiction over Highway 35 but all other roads are owned and maintained by the City of Kawartha Lakes.

Highway 35 runs north to south and is located to the west of Fenelon Falls. The bypass study area includes a portion of Highway 35. The right-of-way widths for Provincial Highways are determined by the MTO.

### **MAJOR ROADS (ARTERIAL)**

Arterial roads are identified as serving a “mobility function with limited degrees of access to adjacent land use.” County Road 121, County Road 8 and Sturgeon Point Road are identified in the Transportation Master Plan as major arterial roads. The right-of-way for arterial roads are stated as being between 26 and 45m, according to the Transportation Master Plan. This range reflects the minimum 26m required as per the Official Plan, and adds additional allowance for the provision of on and off-street cycling and pedestrian facilities, as well as urban and rural drainage and utility requirements.

In the in-town study area, County Road 121 runs through the community and consists of Lindsay Street and Colborne Street. Through town, these streets are made up of a mixture of two and four lane roads, which alternate between 7m and 14m wide. The speed limit along these streets in the community is 50 km/h. The existing bridge, which connects the two streets is made up of two sections: the southern span crosses the Fenelon River and the norther segment spans the Trent-Severn Waterway Lock (Lock number 34). Travelling northbound on Route 121 there is a choke point in the road network through the community on Lindsay Street where two-lane traffic meets one lane of traffic on Route 8 (Helen Street) to become a one-lane per direction on the bridge across the river. The segment of Route 121 north of the bridge (Colborne Street) is two lanes with on-street parking on either side.

The intersection of Helen Street and Lindsay Street is a major bottleneck south of the Fenelon Falls crossing. The intersection is signalized with the east leg being a controlled access for the Sobeys and Tim Hortons parking area. The northwest corner is occupied by a gas station with multiple depressed curbs providing access from all directions. There is also a driveway located on the east side of the Lindsay Street between Helen Street and the crossing providing access to a power transformer station, and a local restaurant/bar.

There are several driveways on Colborne Street north of the bridge crossing providing access to off-street parking areas. The City is undertaking improvements to the intersection of Colborne and Water Street and Colborne and Francis Street which will improve traffic operations north of the bridge. This includes restricting left turns from northbound Colborne Street onto Water Street.

The current condition of the existing bridge in the community is poor and requires rehabilitation. The City is undertaking bridge rehabilitation as part of a separate project. In February 2021 the City initiated emergency repairs for the bridge.

### **MINOR ROADS (COLLECTOR/LOCAL)**

Minor roads are often broken down into collector and local roads. Collector roads provide a more balanced mobility and land access function while local roads serve a more predominant land access function. For the in-town study area all roads in Fenelon Falls, other than those listed above, are considered to be minor roads. The right-of-way for local roads is stated as being 20m to 23m wide according to the Transportation Master Plan.

In the bypass study area, concession roads are identified as collector roads except for Concession Road 6 which is an arterial road. Concession Road 3, which is being considered for a bypass route, is a collector road. The minimum right-of-way width for a collector road is 26m where possible. The width of Concession Road 3 is 26m. The primary function for Concession Road 3 is to provide land access.

Historically Concession Road 3 had a bridge crossing over the Burnt River. The right-of-way over the Burnt River at Concession Road 3 still remains as a City owned right-of-way even-though no bridge exists now.

Running north and south along both sides of the Burnt River are minor local roads providing access to properties along the Burnt River. These connections provide the only access options to these properties.

### **Future Roadways and Network Improvements**

While there are no proposed new roadways outlined in the Transportation Master Plan that affect the study area, there are some recommended improvements listed for the in-town road network. This included the provision of traffic signals at Colborne Street and Bond Street due to the high volumes of traffic. The Transportation Master Plan also recommends the addition of a westbound right turn lane at Lindsay Street and Helen Street.

Beyond the Transportation Master Plan, the City also has more recent plans to improve the local road network in town. Improvements include the urbanization of Elliot Street, Ellice Street, Murray Street and Wychwood Crescent. Improvements include the addition of sidewalks and improvements to drainage.

In addition to the planned road network improvements, a multi-unit subdivision development is proposed in the northeast area of Fenelon Falls at Sturgeon Point Road and County Road 121. This could result in the development of property that is currently rural. If the development proceeds then the area will require the creation of new roads as part of the future subdivision and these will need to tie in to the existing road network.

### **Pedestrian and Cycling Connections**

The City of Kawartha Lakes Official Plan contains policies that encourage active transportation and improving connectivity for pedestrians and cyclists. This also includes the promotion and use of trails. In

town, there is an overall need to improve pedestrian connections, and improvements are being made for sidewalks on local roads.

On the existing Fenelon Falls bridge, pedestrians must use the west side of the bridge because there is no sidewalk on the east side. The existing sidewalk is in poor condition and needs to be improved as part of the bridge rehabilitation project. The City has confirmed that the bridge rehabilitation project will include improving sidewalks and adding a sidewalk on both sides of the bridge to improve the pedestrian connections.

The Trails Master Plan for the City of Kawartha Lakes identifies the Victoria Rail Trail Corridor as a primary City-owned recreational trail. This trail is located in both the in-town and bypass study areas. In the in-town study area, the Victoria Rail Trail crosses Wychwood Crescent. In the bypass study area, the Victoria Rail Trail crosses Concession Road 3 on the eastern side of the Burnt River.

## Traffic Conditions

The crux of this study is related to traffic conditions in Fenelon Falls. In order to understand the issues, the study team from Dillon reviewed previous traffic studies and also completed additional studies to better understand the existing and future traffic issues.

### PREVIOUS REPORTS

The Transportation Master Plan provides a summary of the existing traffic conditions in the City of Kawartha Lakes and presents the Level of Service (LOS), and the volume-to-capacity ratio (V/C) of different roadways. In Fenelon Falls, these intersections were shown to operate as Level of Service A or B, meaning there is little delay:

- Helen Street and Lindsay Street;
- Francis Street and Colborne Street;
- Bond Street and Colborne Street;
- Princess Street and Colborne Street; and,
- County Road 8 and County Road 121.

As for volume-to-capacity, the two intersections studied were found to operate at below 60%.

The anticipated LOS for Fenelon Falls in 2031 determined that the intersections would remain as LOS A or B for three of the intersections, while the Helen and Lindsay Street intersection could likely be a LOS C or D, and the Bond Street and Colborne Street intersection would likely be an E or F.

As for the V/C, the Fenelon River crossing was stated in 2012 to be operating at 0.61 V/C in fall and 0.76 in summer, and it was anticipated to increase to 1.10 in fall and 1.37 in summer. The Transportation Master Plan identified a need to provide additional through capacity either through a bridge widening or the provision of a second crossing of the Fenelon River.



In 2016, the City prepared a Corridor Study of Lindsay Street and Colborne Street to identify any existing issues and to provide a series of recommendations to address them. The key deficiencies along the corridor were identified as being limited pedestrian sidewalks and crosswalks and intersection issues related to turning lanes and traffic signals.

#### ADDITIONAL TRAFFIC STUDY OF 2031 CONDITIONS

For this study additional traffic analysis was completed to understand future traffic conditions in Fenelon Falls and potential concerns. Traffic volumes were obtained from the Corridor Study that was previously completed by The Ainley Group in 2015 (referred to as the Corridor Study 2015). The project study team from Dillon also collected weekend traffic data at Lindsay Street and Helen Street from May 24, 2019 to May 28, 2019 to help with confirming the future 2031 volume from the corridor study. The scope of the study included analysis of the 2031 PM peak and 2031 Saturday peak periods. The 2031 Saturday peak hour volumes were used for the primary analysis since they had the largest volume at the intersection of Lindsay Street and Helen Street.

Traffic data at the intersection of Lindsay Street at Elliot Street was unavailable for the weekend periods, therefore it was assumed that the PM weekday volumes would be the most representative of the Saturday peak. At the intersections of Lindsay Street at Elliot Street and Lindsay Street at Green Street the PM peak hour volumes were balanced to align with the Saturday peak hour at Lindsay Street and Helen Street.

**Figure 4.2** shows the anticipated 2031 PM and Saturday peak hour traffic volumes. Note that all analyses were performed using 2031 volumes, with no reduction for a potential bypass route.

**Figure 4.3** illustrates the existing lane traffic control and intersection lane arrangements, assumed to be present in 2031.

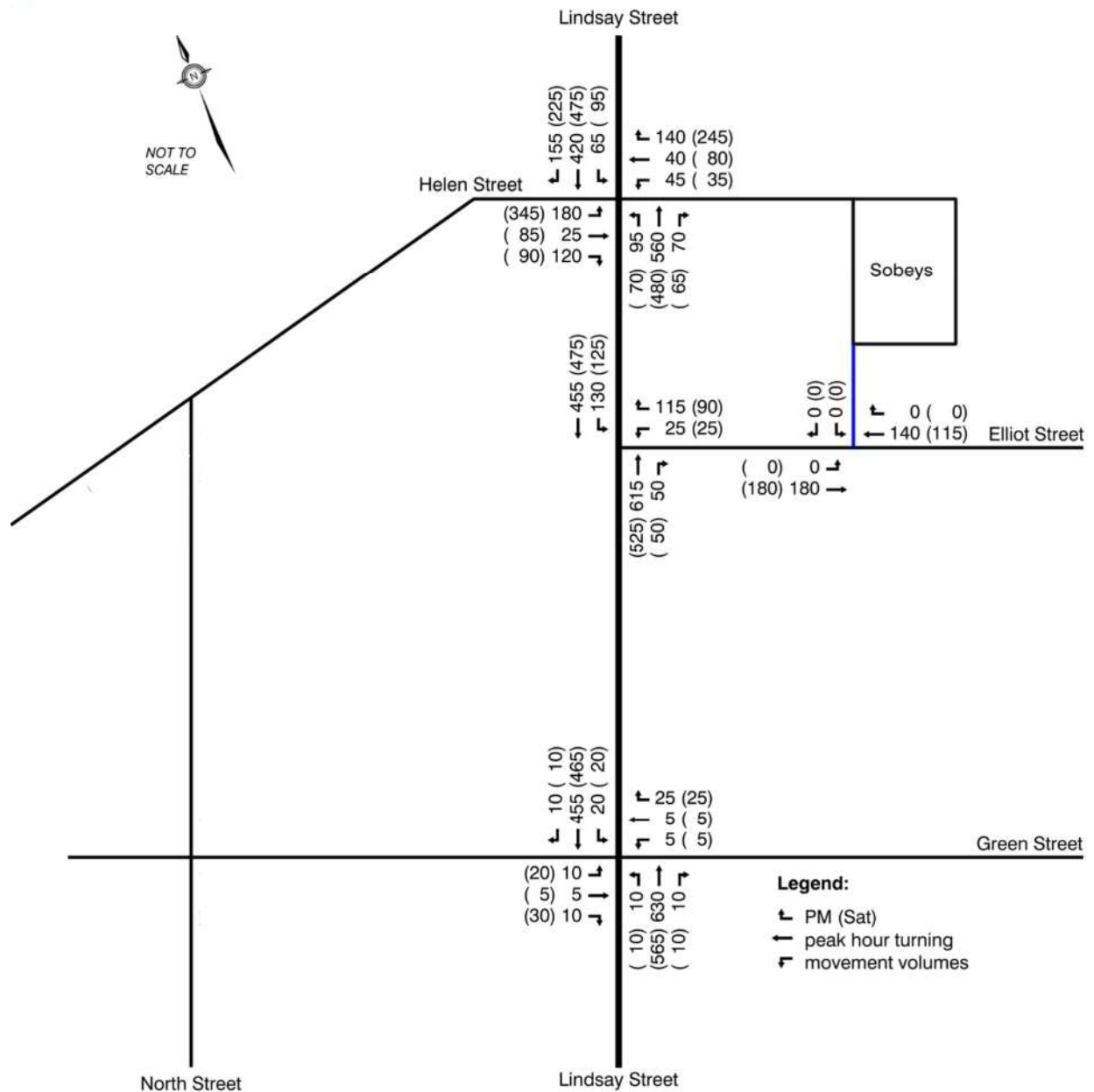
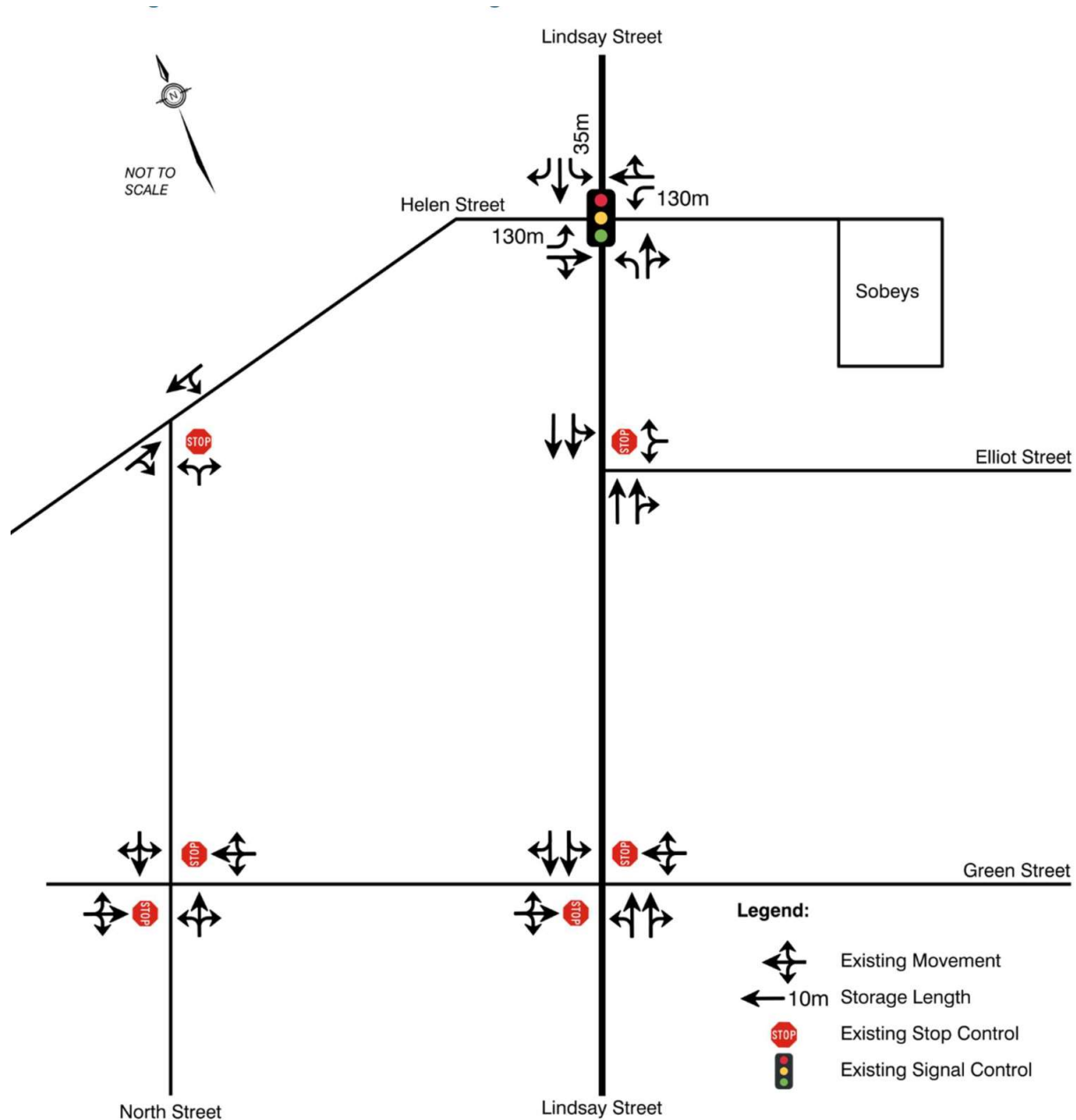


Figure 4.2: 2031 Traffic Volumes



**Figure 4.3: Existing Traffic Control and Lane Arrangements**

Using the same assumptions as for the Corridor Study 2015, analysis indicates that the intersection of Lindsay Street and Helen Street will operate poorly since the southbound left-turn movement is anticipated to queue past the existing storage length resulting in queues backing up and blocking the through movement. As a result, Lindsay Street at Helen Street is not anticipated to operate at an acceptable level of service with the existing signal timing and lane geometry. As well, the eastbound left-turn movement is anticipated to have a V/C that is higher than desired for ideal operations. The other intersections within the study area are anticipated to operate acceptably. Through the review of existing and future conditions it is

clear that the intersection of Helen Street and Lindsay Street is a choke point in the system that results in broader traffic impacts due to queueing and the resulting impacts to through traffic.

## Parking

Fenelon Falls has on-street parking within the downtown area and also along a majority of streets that intersect with the downtown. Public and private parking lots are also located close to the downtown corridor, off of Colborne Street. These are located between May Street and Colborne Street and also at the Fenelon Falls Curling Club, on Bond Street W. The Transportation Master Plan identifies that Fenelon Falls will require an additional 210 parking spaces by 2031 to meet projected demand. Through consultation the community identified that parking is an important feature required to support the vitality and prosperity of town.

## Haul Routes

There are a number of quarries and pits surrounding Fenelon Falls. Aggregate from these areas is transported around the region via designated haul routes. As part of the Official Plan review for the City of Kawartha Lakes, an Aggregate Haul Route Study was conducted in 2006 to identify a City-wide haul route network. The Haul Route Study does not identify any of the existing roads that run through Fenelon Falls as recommended designated haul routes. Highway 35 is listed as a recommended major haul route, and Concession Road 3 is also recommended as a minor haul route, with a future connection recommended on Concession Road 3 over the Burnt River with a new bridge to connect to County Road 121. County Road 121, north of Bury's Green Road is also identified as a future recommended haul route.

At the time of the Haul Route Study, Mitchells Bridge, which crosses the Burnt River connecting North Line Road was in poor condition, could not handle the load requirements of aggregate trucks and was not recommended to be used as a haul route. Mitchells Bridge was upgraded in 2014/2015. A potential bypass route connecting Hwy 35 and County Road 121 could be considered that uses Concession Road 3, North Line Road, and Poulson Road. All of these roads are two lanes, generally used for residential property access and would require upgrades and expansion if trucks were to use the route.

## 4.4 Servicing and Utilities

The in-town study area is on full municipal servicing while the bypass study area is on private well and septic.

In town there is servicing infrastructure present on the existing in-town bridge. Along the east side of the bridge is a 200mm schedule 40 welded steel sanitary forcemain, which is suspended from the deck of the bridge. There is no heat tracing present. Along the western side, there is a 200mm schedule 40 welded steel watermain which is suspended from the deck of the bridge. This pipe is insulated and heat traced.

If a new bridge crossing was provided either in town or as a bypass, no new watermains, sanitary pipes or stormwater pipes would need to be provided. If the existing bridge were to be widened however, then the

existing servicing suspended from the bridge would be impacted, as it would need to be moved to make way for a widening.

There is a stormwater outfall pipe located to the east of the existing bridge (North Street Re-construction and Storm Sewer Outfall Drawings, 2010).

## 4.5 Land Ownership and Existing Land Uses

The majority of land within the in-town project study areas is privately owned. As noted earlier in this report, the area along the Trent-Severn Waterway is federally owned and is operated by Parks Canada.

The bypass study area includes land owned by the MTO along Highway 35. Concession Road 3 consists of privately owned land along the length of the road, with a municipally owned parcel where Concession Road 3 meets the Burnt River on the western side. This provides a boat launch for public access to the Burnt River.

The in-town study area has a mix of land uses. The main street area has commercial/retail uses while the connecting local streets are predominantly low density residential. Lindsay Street and Colbourne Street contain a number of commercial uses. The only grocery store in the community is located on Lindsay Street, just south of the existing crossing and is directly next to the community's Tim Hortons. There are some other small commercial uses along the street between the bridge and Wychwood Crescent. The main downtown commercial area is located along Colborne Street between the existing bridge crossing and Louisa Street. This stretch of road contains retail stores, services such as banks and hair salons, and restaurants. There are a number of other commercial uses in the area surrounding Colborne Street, mainly along Water Street and Francis Street.

There are several institutional uses located throughout the study area. The Fenelon Falls Secondary School is located on Lindsay Street and the primary school, Langton Public School, is located on Wychwood Crescent. The local Recreation Centre and Arena is located on Veterans Way and there is a long term care home located along Wychwood Crescent. There are also some churches located in the area.

Fenelon Falls also has a number of light industrial uses within the study area. These are primarily located along Wychwood Crescent, between West Street South and Ellice Street.

The bypass study area is rural. There are large residential and farm lots located along Concession Road 3 as well as large natural features. Along the Burnt River are cottage residential properties lining the river north and south. Some of the residences are all season. Highway 35 has a number of residential properties located along it, as well as some traditional rural commercial uses such as storage and farm equipment.

## 4.6 Community and Economic Setting

Fenelon Falls is a typical rural Ontario community with a main street and local businesses that serve both the immediate and surrounding rural areas. The population of Fenelon Falls at the time of the 2016 Census was 2,464 persons. 35% of the population is over the age of 65. The population of Kawartha Lakes in 2016 was 75,423 persons. These populations do not account for seasonal increases associated with cottagers. Both

the community of Fenelon Falls and the bypass area experience seasonal increases in population that contribute to local activity.

Fenelon Falls has a full range of businesses and services located within the community. The majority of businesses are located along the Lindsay Street and Colborne Street corridor.

On the southern side of the falls there is the only grocery store in town, a Sobeys, located on Elliot Street, immediately south of the existing bridge. Next to the Sobeys is a Tim Hortons restaurant. Other businesses on the southern side of the Fenelon River include a Canadian Tire, a Home Hardware, a Salvation Army thrift store, some car repair shops, a liquor store, some restaurants, a gas station and a car wash. These businesses attract visitors from a wide area.

The majority of businesses are located on the northern side of the Fenelon River. There are a number of restaurants and bars located along Colborne Street and also on the adjacent side streets. There is also a small market, banks, a pharmacy, retail shops, hair salons and barbers, a liquor store, and a brewery.

In addition to the restaurants and local shops, there are a number of tourist attractions and features in Fenelon Falls. One tourist feature in the community is the Trent-Severn Waterway, a National Historic Site. Fenelon Falls is part of the canal system along the Trent-Severn and lock 34 is located next to the existing bridge crossing in town. In summer, boaters travel through Fenelon Falls via this lock and often stop in town. The area is connected to trails and natural systems that attract a wide range of visitors.

There are a number of community facilities in Fenelon Falls. On the southern side of the Fenelon River, there is the Fenelon Falls Recreation Centre located on Veterans Way that includes spaces for community gatherings, social clubs, indoor sports and an arena for hockey and skating as well as outdoor space. The schools also provide recreation facilities for students as well as community members. There is also a Senior Citizens Club located on Murray Street.

On the north side of the Fenelon River, there is the Fenelon Falls Curling Club, which is located on Bond Street West. There are also six churches: the St. James Anglican Church and Immanuel Baptist Church on Bond Street East, the Trentside Baptist Church and St. Andrew's Presbyterian Church on Colborne Street, the Salvation Army Citadel Church on Bond Street West, and the Fenelon Falls United Church on Queen Street.

The Burnt River area is an area of recreation for local cottagers and residents. Boating, fishing, trail walks/running, cycling and cross country skiing and skidooing in the winter are all activities that are popular in the area, particularly along the Victoria Rail Trail. The area is known for the natural areas to explore and enjoy.

## 4.7 Cultural Environment

### Archaeology

ASI Heritage Consultants (ASI) were retained to conduct a Stage 1 Archaeological Assessment of the in-town and bypass study areas. This consisted of preliminary background research and a property inspection. Historical background research was completed including review of Indigenous land use and settlement. Three sources of information were consulted to identify what previous archaeological work has been conducted within the study areas. This included:

- Site record forms for registered sites from the MTCS “Ontario’s Past Portal” website
- Published and unpublished documentary sources
- Internal files and documents

Reviews of historical maps and aerial imagery was also consulted. A review of satellite imagery found that the study areas have remained relatively unchanged since 2007. In addition, a field survey was conducted, as the state of the natural environment is often an indicator of archaeological potential.

The Stage 1 assessment identified six previously registered archaeological sites within 1 km of the study areas. These sites were identified from a study of the Ontario Archaeological Sites Database (OASD). Only one of the six sites is located directly within the in-town study area boundaries. Site BdGq-19 Fenelon Trails is located near Sturgeon Point Road in Fenelon Falls. Documentation identifies a scatter of 31 artifacts dating to the mid- to late-nineteenth-century Euro-Canadian artifacts within 11 positive test pits. Based on previous documentation, this site has further cultural heritage value or interest and requires Stage 3 archaeological assessment. It is ASI’s preliminary determination with the current information that the BdGq-19 site does not show a sufficient amount of cultural heritage value or interest to require Stage 4 mitigation of development impacts.

Another site of interest within the in-town study area is the Fenelon Falls Cemetery. ASI recommends that this should be avoided by project designs. Any proposed impacts within 10 m of the cemetery property should be subject to Stage 3 Cemetery Investigation to confirm the presence or absence of unmarked graves.

Beyond the Fenelon Falls Cemetery and the six previously registered archaeological sites, the property inspection determined that some areas within the two study areas exhibit archaeological potential and therefore require a Stage 2 assessment.

Overall, the study areas have been determined to meet certain criteria which is indicative of archaeological potential. This includes:

- Previously identified archaeological sites;
- Water sources (Cameron Lake, Balsam Lake, Sturgeon Lake, Fenelon River and Burnt River);
- Early historic transportation routes (Concession Rd 3);
- Proximity to early settlements (Baddow, Fenelon Falls); and,

- Well-drained soils.

Once a preliminary preferred option has been determined, a Stage 2 invitation will need to take place as the lands have archaeological potential. Areas that exhibit signs of deep and extensive land disturbance, low and wet conditions, slopes in excess of 20 degrees or areas that have undergone previous assessment will not require additional review.

A copy of the draft Stage 1 Archaeological Assessment is included in **Appendix C**.

## Cultural Heritage Landscapes and Built Heritage Resources

ASI was retained to conduct an assessment of the cultural heritage and built heritage resources (collectively referred to as cultural heritage resources) located within the in-town and bypass study area. The review was conducted using background historical research, secondary source material, including historical mapping, as well as on site field work to confirm the presence of cultural heritage features. To assess the existing conditions, the following resources were reviewed:

- Kawartha Lakes Heritage Property Register;
- Inventory of Ontario Heritage Trust Easements;
- Ontario Heritage Trust's *Ontario Heritage Plaque Guide*;
- *Ontario Historical Plaques* website;
- Ontario Genealogical Society's online database for known cemeteries/burial sites;
- Parks Canada's *Canada's Historic Places* website;
- Parks Canada's *Directory of Federal Heritage Designations*;
- Canadian Heritage River System; and,
- United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites.

The assessment was for above ground resources only, that are over 40 years old, which is a guiding principle used by the Ministry of Heritage, Sport, Tourism and Culture, for the preliminary identification of cultural heritage resources. It should be noted that resources older than 40 years are not necessarily considered to have cultural heritage value, and conversely, resources which are younger than 40 years old, may still hold cultural heritage significance.

The area has a mixed land use history in the main settlement area and predominantly agricultural uses surrounding it, which date back to the early nineteenth century. Based on a review of federal registers and municipal and provincial inventories, one identified feature with cultural heritage value was identified within the study area. Following the field review, a further 16 resources were identified as having value.

The 17 identified cultural heritage resources were identified within or adjacent to the two study areas. Of these, eight of the resources are built heritage resources (BHR) and nine are cultural heritage landscapes (CHL). Of these, four CHLs and five BHR's are located in the In-town study area and six CHL's and three BHR's are in the Bypass study area. One of the CHL's (the Victoria rail trail) appears in both study areas.



The sites are made up of a variety of different cultural heritage resources that are historically, architecturally, and contextually associated with land use patterns in the City of Kawartha Lakes and more specifically representative of the early settlement of the communities of Baddow and Fenelon Falls.

**Table 4.1** includes a list of the identified cultural heritage resources within and/or adjacent to the two study areas. Cultural heritage landscapes are identified as CHL and built heritage resources are identified as BHR.

**Table 4.1: Identified Cultural Heritage Resources**

| Feature ID   | Location                                  | Resource Type        | Heritage Recognition               | Description/ Comments   |
|--------------|---|----------------------|------------------------------------|---|
| <b>CHL 1</b> | 19 Somerville 3 <sup>rd</sup> Concession  | Farmstead            | Identified during field review     | Nineteenth century farmstead  |
| <b>CHL 2</b> | Trent-Severn Waterway                     | Waterway and Locks   | National Historic Site             | Trent-Severn Waterway National Historic Site; Fenelon Falls Lock 34   |
| <b>CHL 3</b> | 165 Somerville 3 <sup>rd</sup> Concession | Farmstead            | Identified during the field review | Nineteenth or early-twentieth century farmstead   |
| <b>CHL 4</b> | 211 Somerville 3 <sup>rd</sup> Concession | Farmstead            | Identified during the field review | Nineteenth or early-twentieth century farmstead   |
| <b>CHL 5</b> | 903 Northline Road                        | Farmstead            | Identified during the field review | Nineteenth century farmstead  |
| <b>CHL 6</b> | 902 Northline Road                        | Farmstead            | Identified during the field review | Nineteenth century farmstead  |
| <b>CHL 7</b> | Victoria Rail Trail                       | Former Rail Corridor | Identified during the field review | Currently in use as a recreational trail; the alignment follows the path of the historical Victoria Railway |
| <b>CHL 8</b> | 589 and 595 County Road 8                 | Farmstead            | Identified during the field review | Nineteenth or early-twentieth century farmstead   |
| <b>CHL 9</b> | 84 Concession Road                        | Cemetery             | Identified during the field review | Fenelon Falls Cemetery  |
| <b>BHR 1</b> | 72  | School               | Identified during the field review | Former school house currently used as a community centre  |
| <b>BHR 2</b> | 208                                       | Church               | Identified during the field review | Baddow Baptist Church   |
| <b>BHR 3</b> | 269                                       | Church               | Identified during the field review | Nineteenth century church   |
| <b>BHR 4</b> | 94 Sturgeon Point Road                    | Farmstead residence  | Identified during the field review | Nineteenth century farmstead  |
| <b>BHR 5</b> | 29 Elgin Street                           | Residential          | Identified during the field review | Vernacular residence  |
| <b>BHR 6</b> | 69 Concession Road                        | Residential          | Identified during the field review | Vernacular residence  |
| <b>BHR 7</b> | 34 Concession Road                        | Residential          | Identified during the field review | Vernacular residence  |
| <b>BHR 8</b> | 207 Francis Street East                   | Residential          | Identified during the field review | Vernacular residence  |

The most significant cultural heritage landscapes are the Trent-Severn Waterway (which is a National Historic Site) and the Victoria Rail Trail. The others consist of farmsteads, a cemetery, a school, churches and residential buildings. Once a technically preferred detailed design for an undertaking is identified, the cultural heritage resources within and adjacent to the study area will be evaluated to determine impacts, significant and mitigation. Various works associated with infrastructure improvements have the potential to affect cultural heritage resources in a variety of ways, and as such, appropriate mitigation measures for the undertaking will need to be considered depending on the potential for impacts.

The preliminary Cultural Heritage Resource Assessment Existing Conditions report completed by ASI can be found in **Appendix D**.

## 4.8 Planning Policy and Land use

### Provincial Policy Statement

The Provincial Policy Statement (PPS) (2014) provides policy direction related to land use planning in Ontario. The PPS is to be referred to for all planning matters according to Section 3 of the Planning Act. Relevant policies from the PPS that have been considered in this study include the following:

- 1.6.1** *Infrastructure*, electricity generation facilities and transmission and distribution systems, and *public service facilities* shall be provided in a coordinated, efficient and cost-effective manner that considers impacts from climate change while accommodating projected needs;
- 1.6.4** *Infrastructure* and *public service facilities* should be strategically located to support the effective and efficient delivery of emergency management services;
- 1.6.7.1** *Transportation systems* should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs;
- 1.6.7.2** Efficient use shall be made of existing and planned *infrastructure*, including through the use of *transportation demand management* strategies, where feasible;
- 1.6.7.5** Transportation and land use considerations shall be integrated at all stages of the planning process;
- 1.6.8.1** Planning authorities shall plan for and protect corridors and rights-of-way for *infrastructure*, including transportation, transit and electricity generation facilities and transmission systems to meet current and projected needs;
- 2.1.1** Natural features and areas shall be protected for the long term;
- 2.2.1** Planning authorities shall protect, improve or restore the *quality and quantity of water* by: d) maintaining linkages and related functions among *groundwater features, hydrologic functions, natural heritage features and areas*, and *surface water features* including shoreline areas;

**2.6.1** *Significant built heritage resources and significant cultural heritage landscapes shall be conserved;*

**2.6.2** *Development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved.*

## City of Kawartha Lakes Official Plan

The City of Kawartha Lakes Official Plan (2012), as amended, is the overarching policy document for the entirety of Fenelon Falls<sup>1</sup>. The Official Plan (OP) contains some key goals and policy direction related to the provision of infrastructure to enhance the transportation system. Some of the key objectives outlined in Part D of the OP state that the City will “maintain and enhance the level of service consistent with the social integrity, economic costs, demand and growth projections while ensuring environmental integrity.” This speaks to providing new infrastructure to ensure the continuity of an acceptable level of service in Fenelon Falls and the surrounding area, without compromising other policy objectives related to the environment, economy and social policies. Other related policy objectives include providing and improving hard services such as sidewalks and roads, develop a transportation system strategy which emphasizes safety, convenience and efficiency, and ensure the road network is in coordination with the Provincial Highway System, ensure the continual maintenance, improvement and development of roads which minimizes the disruption to residential neighbourhoods and results in a derived benefit for all residents.

The transportation policies in the Official Plan also state that where feasible, “pedestrian and bicycle networks will be integrated into transportation planning to ... provide safe, comfortable travel (and) provide linkages between intensification areas.”

With regards to Provincial Highways, the OP states that “all development proposals located adjacent to or within the permit control area of the MTO must obtain MTO approval prior to any construction being undertaken.” Given that one of the potential solutions involves a bypass which directs traffic onto Highway 35, consideration must be given to the OP’s provincial highway policies.

## Fenelon Falls Secondary Plan

The Fenelon Falls Secondary Plan (2015) was incorporated into the City of Kawartha Lakes Official Plan following direction in 2011 to create area specific plans for the City’s five settlement areas. The Secondary Plan provides policies on “growth management, intensification and housing, economic development, community facilities, parks and open spaces and trail systems, downtown development, sustainable

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<sup>1</sup> It is acknowledged that portions of the Official Plan are under appeal to the Ontario Land Tribunal, including the General Amendment no. 13, and the Fenelon Falls Secondary Plan – but the documents have been adopted by Council and represent Council’s intent, so the discussion of the Official Plan is on this premise. As a result of the appeals, the Official Plan of the former Village of Fenelon Falls remains in effect.

development, urban design, natural heritage, cultural heritage, transportation and parking, servicing and land use.”

The Secondary Plan’s vision for Fenelon Falls is for it to “grow as an inclusive community, preserve existing recreation areas, provide affordable housing for its residents and become a healthy and sustainable destination for people to live, work and play.” To achieve this vision, the Secondary Plan has identified a number of key issues and opportunities to be addressed. The Secondary Plan identifies that Fenelon Falls experiences a significant increase in its population during the summer months due to tourism and cottagers. The plan further states that this makes the downtown area quite busy. The Secondary Plan specifically states that this “places strains on infrastructure, in particular the local roads. These seasonal pressures need to be factored into the infrastructure planning in Fenelon Falls.”

In regards to transportation, the Secondary Plan states that the existing trails and cycling network should be improved and expanded to meet projected demands. It also specifically states in 31.4.2.7.4 that a “future crossing of the Fenelon River ... shall be determined through a Class Environmental Assessment.”

### **Fenelon Falls Downtown Revitalization Plan**

The Downtown Revitalization Plan covers the area along Lindsay Street and Colborne Street between Bond Street in the north and West Street in the south, extending outwards to include Water Street, May Street, Market Street and Francis Street. The Revitalization Plan covers the existing bridge crossing and also the Helen and Lindsay Street intersection.

The Downtown Revitalization Plan does not make any specific reference to providing a new bridge crossing, nor to provide upgrades to the existing bridge crossing. It does however provide a series of overarching goals that the plan wants to achieve. This includes creating a livable barrier-free community, developing a robust business community, increasing the volume of consumers, and ensuring that the community remains a tourism destination to name a few.

Improving the existing traffic conditions in Fenelon Falls can help achieve these goals.

### **Fenelon Falls Corridor Study**

The Fenelon Falls Corridor Study (2016) covers the area along Lindsay Street and Colborne Street, from 500m south of Lindsay and West Street to where County Road 121 intersects with Northline Road and County Road 8. The Corridor Study was developed to address current operating and development pressures to determine where there is potential to improve the corridors operations. The Corridor Study was a Schedule B Class EA. The Study identified traffic capacity as one of the key problems in the City. The Study aimed to “identify deficiencies and provide improvements to the roadway cross-section, sidewalks, signage, intersections and road geometry.”

## 5.0 Second Crossing Alternative Solutions

The alternative solutions to address the problems and opportunities were developed following Phase 2 of the Municipal Class EA process. The process involved identifying a long list of potential solutions and consulting on those with stakeholders, agencies and the public to generate a refined list of solutions for evaluation. The alternative solutions assessed represent a list of reasonable and feasible options.

### 5.1 Do Nothing (Option 1)

“Do Nothing” is the baseline option against which the other alternative solutions are assessed. Do nothing would maintain the existing road network as it is today. Traffic congestion issues would continue and network capacity constraints would remain unaddressed. Do nothing includes the rehabilitation of the existing bridge in Fenelon Falls, including improvements to pedestrian crossings; however, bridge expansion is not included. This alternative would provide no improvements or relief to the traffic issues, yet remains an option should none of the other identified alternatives be appropriate.

### 5.2 Bridge Expansion (Option 2)

Option 2 presents the potential to expand the existing bridge to address traffic issues. Expanding the existing bridge would provide an opportunity to determine whether modifications to the existing lanes on the bridge would sufficiently address the traffic issues.

Regarding southbound movement, it has been noted that congestion and vehicles are observed southbound over the bridge approaching the Helen Street intersection. While there are three southbound lanes on the bridge approaching the intersection, the storage lanes for southbound right-turn and southbound left-turns are short and queues spill over into the southbound through lane choking off all southbound movement. The longest queue is generated by the southbound left-turn demand. The southbound left-turn storage lane can only be extended by widening the bridge. This would allow southbound through traffic to proceed past the left turn queue. Consideration of this option would only be supported if it provides better traffic flow through the Helen Street and Lindsay Street intersection.

Regarding northbound movement, northbound on Lindsay Street there are two northbound lanes south of the bridge, with a single lane continuing over the bridge. North of the bridge the road (Colborne Street) includes one northbound lane and one on-street parking lane. Widening the bridge specifically for two northbound lanes is not recommended as it would not provide additional corridor capacity since only one downstream travel lane is provided on Colborne Street; a widened bridge would create a northbound bottleneck where the two lanes converge on Colborne Street into the single travel lane. Northbound improvements can be potentially achieved by better coordinating the traffic signals on Colborne Street at Francis Street.

Expanding the existing bridge would require the removal of the Jersey barrier and physical changes to the actual bridge structure to accommodate lane expansion or an additional lane. Expansion of the existing bridge would require shifting and improving the pedestrian crossing as well. This option requires engaging Parks Canada to determine the appropriate process for Federal oversight and environmental approval.

### 5.3 In-Town Second Bridge Crossing (Option 3)

A second bridge crossing in town was identified as an alternative in the scope of work for this study and through consultation with the community. There are various locations where a second crossing could be located. Through consultation, a series of potential locations were identified. Options were narrowed down to four preliminary alignments based on community input and environmental constraints. These are illustrated in **Figure 5.1**. The alignments are conceptual and are not intended to show exact location or geometry. Refinements to the preferred alignment would be required if one of the options is recommended. The alignments illustrated are for initial assessment to determine if a second in-town bridge crossing is reasonable and feasible.



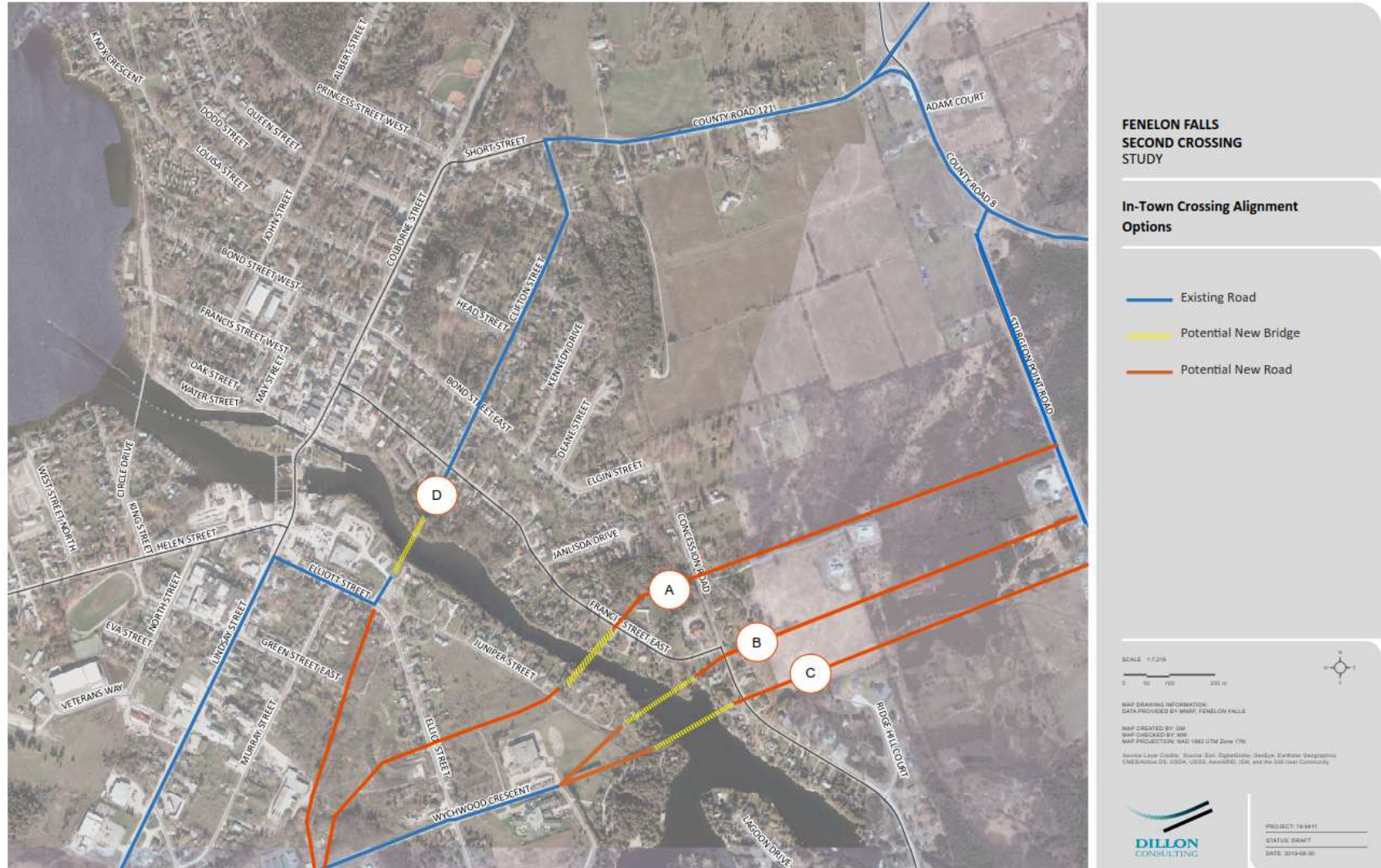


Figure 5.1: In-Town Second Bridge Crossing, Preliminary Alignment Options

## Wychwood Crescent (Option 3 – A, B, C)

Three alternative in-town crossing options were identified using Wychwood Crescent as the main route to connect a new crossing of Fenelon River. The three routes provide options that consider bridge design requirements, as well as the need to minimize impacts to the Trent Severn Waterway and to existing land uses.

The bridge locations for each option attempt to facilitate a connection to existing roads on either side of the crossing. The location of the potential crossings (A, B, C) were initially identified based on transportation and structural engineering considerations. Bridge locations were informed by the MTO Structural Planning Guideline (2003) to determine the bridge length, height and depth, as well as the required spans. The crossing locations were also influenced by the topography of the land and the width of the river crossing.

In conjunction with this, the road layouts for the connecting roads to and from the crossings were considered based on design standards for Ontario roads and highways. A review of road curvatures was completed to identify if curvatures were capable of supporting anticipated traffic volumes and speeds. A radius of 300m was used to determine the road curvatures as this is typical for similar designs. While there was an opportunity to reduce this radius as the speed limit around the school and residential areas would be lower, the team selected the maximum curvature size to determine the extents of potential impacts.

In all options for a Wychwood Crescent connection – at the west end of Wychwood Crescent, where it intersects with West Street South – Wychwood Crescent would need to be extended through private property to connect with County Road 121. Property acquisition would be required for this connection.

Each of the Wychwood Crescent options is presented below.

### OPTION A

Option A travels along Wychwood Crescent to Industrial Park Drive and then diverts north passing through private property and natural areas, crossing Ellice Street and travelling behind Langton Public School. The route then crosses Juniper Street to connect to a new bridge crossing over the Fenelon River/Trent-Severn Waterway. The bridge would consist of a three-span bridge with no pillars in the water or on the banks of the waterway. A three-span bridge is required due to the topographical changes on either side of the crossing since the northern side of the crossing has a higher elevation than the southern side. Once across the water, Option A continues across Francis Street, and then continues east, across Concession Road, before connecting with Sturgeon Point Road and travelling north to reconnect with County Road 121. Option A would require property acquisition, clear cutting of natural areas, new intersections at local road crossings and the provision of new roads.

### OPTION B

Option B travels along Wychwood Crescent, passing Langton Public School and the Revera Fenelon Court Long Term Care Home. Option B continues straight to the edge of the water before turning northeast and crossing the Trent-Severn at an angle where the crossing length is shorter. This bridge would require a three-span bridge. Pillars would need to be placed at the water's edge due to the crossing width. Once



across the water, Option B crosses Concession Road and continues east to meet with Sturgeon Point Road before travelling north to reconnect with County Road 121. Option B would require property acquisition, clear cutting of natural areas, new intersections at local road crossings, and the construction of new roads.

#### OPTION C

Option C travels the entire length of Wychwood Crescent and continues straight across the Trent-Severn. Option C is the longest water crossing option of Options A, B, and C. It would require a three-span bridge with pillars at the water's edge. Once across the Trent-Severn, Option C travels east to connect with Sturgeon Point Road before turning north to reconnect with County Road 121. Option C would require property acquisition, clear cutting of natural areas, new intersections at local road crossings and the construction of new roads.

### Clifton Street (Option 3 – D)

The Clifton Street option would include a new bridge connecting Clifton Street on either side of the Fenelon River by creating a single span bridge that connects Elliot Street to Francis Street following the existing right of way that is protected for the local hydro corridor. No new roads would be required for this option; however, the existing right of way on Clifton Street is not wide enough and road expansion would be needed. This would require easements from existing properties along the length of Clifton Street and would impact the hydro substation at Clifton and Elliot Street. Some full property acquisition would also be necessary at the bridge location. On the south side of the crossing, there are multiple options for how traffic could connect to the new bridge. Traffic could use the existing road network to connect with County Road 121. Some road widening of Elliot Street and Ellice Street would likely be required in the areas connecting directly to the new bridge. This would require property easements. Another option would be to construct a new road connecting north-south between Elliot Street and Wychwood Crescent. If this new connection was built, Wychwood would need to be extended west through private property to connect with County Road 121. Property acquisition would be required for this connection.

## 5.4 Bypass Crossing (Option 4)

An alternative to the in-town crossings is bypassing Fenelon Falls entirely. For those travelling to and from areas that are outside of Fenelon Falls who have no other choice but to travel through the community, this option provides them with an alternative route. The bypass route assessed in this study was previously identified in the City's 2006 Haul Route Study. **Figure 5.2** presents the bypass route for assessment. Traveling from south to north, the new bypass route is north along Highway 35 (west side of Cameron Lake), then continues through Rosedale, and then turns right along Concession Road 3; it then continues east along Concession 3 and would need a new three-span bridge across the Burnt River, connecting Concession Road 3 to County Road 121 on the east side of the Burnt River.



Figure 5.2: Bypass Route (Option 3)

Highway 35 would not require any changes or modifications. Concession Road 3 would need to be stripped and repaved with appropriate shoulders and intersections and improvements to culverts and drainage.

Similar to the in-town second crossing options, the bridge length, depth and span were determined based on the MTO Structural Planning Guideline (2003). In this case, the bridge would not require piers in the water but does require added spans to address slopes and connections to the existing grading of Concession Road 3. As a result, a three-span bridge would be needed due to the topography and the floodplain, and it would have the following implications:

- There is an existing right of way over the Burnt River at Concession 3 but this right of way is not wide enough for a full three-span bridge, so the right of way would require expansion;
- The local access roads that run north-south along the Burnt River to provide access to private properties would need to be reconfigured at the intersections with Concession Road 3. These roads include Brook Road, River Road, Riverbank Road and Cedarplank Road. The reconfiguration of these roads at Concession Road 3 would need to be designed based on sight lines and bridge design requirements;
- The existing public access boat launch on the west side of the Burnt River would need to be relocated; and,
- There would be impacts to private property along the Burnt River where the bridge would be located.

Consideration would also need to be given to the Burnt River. Unlike the Trent-Severn, this is not a historic waterway, but it does have a significant floodplain. Any new crossing would need to consider floodplain impacts.

## 5.5 Traffic Improvements (Option 5)

Option 5 included a review of the existing traffic operations to identify options that would address the immediate issues at the Helen Street and Lindsay Street intersection. Five local operational improvements were explored:

- Traffic light signal changes;
- Access control;
- Additional capacity;
- Network reconfiguration; and
- Roundabout.

For each of the above operational improvements, a series of variations were also assessed as well as combinations of the potential improvements. Over 25 various sub-options were considered. Additional analysis was undertaken considering the applicability of roundabouts in the corridor as well as school bus operations given the high school bus service required in the area.

Under the MCEA manual, some modifications to existing roads or intersections do not require detailed environmental assessment. An adjustment to an existing intersection or road that is focused on improving

traffic flow and does not change the use or capacity of a road falls under the Schedule A or A+ project list in the MCEA manual. Of the options explored under traffic improvements, modifications to intersection turning lanes, access control, some network reconfiguration and traffic light signal changes would be Schedule A or A+. For Schedule A and A+ projects the municipality is responsible for advancing these projects to meet applicable road design standards and regulations. For Schedule A+ projects the municipality is also responsible for informing property owners and community members in the study area of the work.

**Appendix E: Traffic Improvements Analysis** provides detailed documentation of existing traffic operations and the analysis of the long list of traffic improvement options that were considered (analysis of traffic light signal changes, access control changes, added capacity options and network reconfigurations was completed). Through the analysis, an optimal traffic improvements option was identified which constitutes Option 5 of the alternative solutions. A summary of the components of Option 5 is presented below.

Option 5 is illustrated in **Figure 5.3** and includes the improvement of vehicle circulation at the intersection of Lindsay Street and Helen Street by:

1. Restricting select movements at the Helen Street and Lindsay Street intersection, including;
  - a. Making the Tim Hortons / Sobeys access on Lindsay Street a right-in and right-out access only. This includes: removing the southbound left turn from the bridge; removing the eastbound straight through from Helen Street; removing the westbound straight through; and, making it impossible to complete the westbound left turn from the access driveway. All other movements at the intersection would remain.
2. Adding a new signalized intersection at Elliot Street and Lindsay Street to accommodate the diverted traffic that results from the changes in item #1. This would include a southbound left turn lane on Lindsay Street to access Elliot Street. More traffic would need to use Elliot Street to access either the Tim Hortons or the Sobeys;
3. Coordinating signal timing between intersections to manage flow;
4. Adding a westbound left turn lane on Elliot Street at the Lindsay Street intersection (as shown in **Figure 5.4**). This would be coordinated with the current plans that the City has for upgrading Elliot Street. The City's current plans for Elliot Street include adding a left turn queue lane for the Tim Hortons drive thru; and,
5. Resurfacing and improving the leg of Clifton Street north of Elliot Street that currently provides the back access route to the Sobeys site. This includes adding a stop sign on Clifton Street. Improvements are required in order to allow more traffic to use that access location off of Elliot Street.

As documented in **Appendix E**, the consideration of a roundabout at the intersection of Helen Street and Lindsay Street was assessed. A roundabout would need to be a two-lane roundabout to ensure that traffic could continue to flow. This option would require substantial land acquisition from properties surrounding the intersection as the current dimensions of the intersection are not sufficient to accommodate a two-lane roundabout. As such this was not carried forward as a reasonable and feasible alternative solution.



### Traffic Analysis Results

- At the intersection of Helen Street and Lindsay Street there will now be two southbound through lanes that will get vehicles through the intersection with less green-time which allows for more green-time to be given for the eastbound left turns from Helen Street north onto the bridge.
- Southbound left turns are better accommodated at Elliot Street with fewer conflicts (T-intersection) and less impact on other turning movements at Helen Street and Lindsay Street.
- Requires improvements to Elliot Street
- Additional improvements to this would be for Tim Hortons and/or Sobeys to acquire additional adjacent property for a new entrance on Elliot Street.

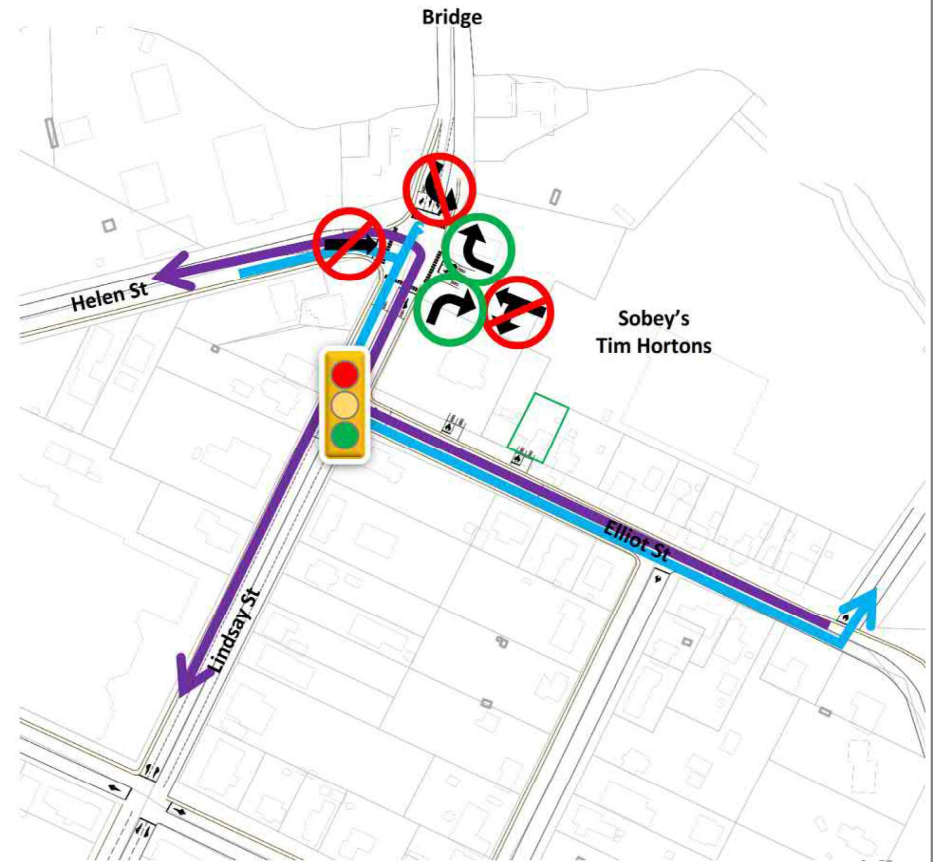


Figure 5.3: Traffic Improvements (Option 5)

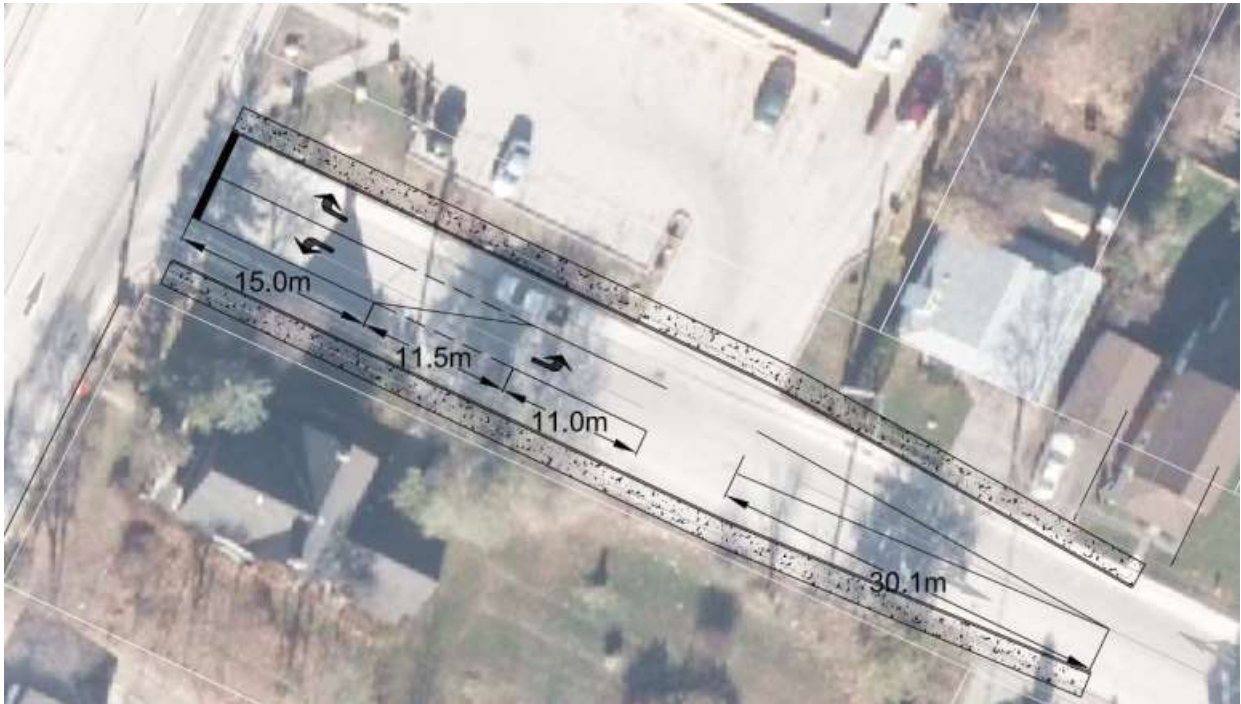


Figure 5.4: Elliot Street modifications at Lindsay Street

## 5.6 Consultation Input on Solutions Development

A component of identifying and assessing the potential solutions to the traffic issues in Fenelon Falls, was factoring in the feedback received during consultation with the public and stakeholders. The feedback received was helpful in identifying and refining the potential solutions. The following sections provide a high level summary of how input was considered in the solutions development and refinement. **Appendix A: Frequently Asked Questions** provides a more thorough record of the questions and comments received on the options and how they have been considered or addressed.

### Existing Bridge Expansion

A bridge expansion was one of the first options raised through consultation. Comments identified the need for bridge repairs and highlighted this as an opportunity to expand the bridge as part of rehabilitation work. It was noted that expansion should be considered as a way to accommodate a larger storage lane for southbound left turning vehicles. This could potentially open up space for through traffic travelling southbound to continue unimpeded. Feedback included the need to improve the pedestrian crossing on the bridge and recommendations that the bridge also be expanded to provide pedestrian crossings on both sides of the bridge.

The suggestion to explore adding additional storage on the bridge to address the issues created by this intersection was incorporated into the analysis. The suggestion to improve the pedestrian connections on

both sides of the bridge was provided to the City for consideration in the bridge rehabilitation project. That suggestion was carried forward. The City is currently undertaking the bridge rehabilitation and this will now include adding pedestrian connections on both sides of the bridge.

## Second In-Town Crossing

### WYCHWOOD CRESCENT (OPTIONS A, B AND C)

During the first PIC, one of the activity stations required attendees to identify on a map the potential places where a second crossing could be located. The information gathered at this station helped the project team in identifying in-town crossing options. Of all those considered, crossings at Clifton Street and along Wychwood were the most popular. The project team then used this information to create some preliminary options for considerations.

The next meeting the project team had was at the stakeholder workshop. At this meeting, the project team presented the results of the StreetLight data analysis completed for the traffic study, which identified where traffic that crossed the existing bridge was travelling to and from. Prior to the stakeholder workshop, the bypass was identified as one of the preferred options. However, the feedback received during the stakeholder workshop stated that more consideration should be given to the in-town options as the bypass would only remove 20-30% of traffic. It was stated that Clifton Street would not likely be a viable option due to property impacts and the extent of residential properties impacted. It was suggested that more options be considered along Wychwood Crescent connecting to Sturgeon Point Road.

Prior to the second PIC, three options were prepared for potential crossing locations at Wychwood Crescent. These were based on the suggestions during the stakeholder workshop and also the drawings provided during the first PIC. The project team also factored in other considerations, such as sensitive land uses, water crossing widths, topographical concerns and property impacts.

Feedback received during the second PIC raised concerns with Wychwood Crescent, due to the impacts it would likely have on the school and the long term care facility. There were also concerns raised about property impacts and cost. However, there was still a large portion of attendees who felt that an in-town option would be necessary to improve the conditions in Fenelon Falls for the long term. All three options were therefore shortlisted for evaluation.

## Bypass

Throughout consultation there has been mixed support for a bypass option, the location of which has been controversial. For many, a bypass is seen as an opportunity to reduce some of the traffic congestion in town and provide an alternative route around the community for those who do not wish to stop in Fenelon Falls. Some community members also supported a bypass as an option to be implemented more quickly than a second in-town bridge crossing with fewer residential property impacts. Interest in expediting the bypass to provide a near term improvement to traffic issues was expressed. Further, stakeholders and community members in town identified a preference to have trucks use the bypass as a haul route in accordance with the 2006 Haul Route Study rather than driving through Fenelon Falls. However, community members

located in the vicinity of the bypass have expressed opposing opinions – a new bypass would impact the property owners who reside along the bypass route and would have environmental impacts to natural areas and the floodplain along the Burnt River. These concerns were raised by Burnt River and Baddow community members. Residents in the vicinity of the bypass identified alternative existing routes that are less well known, such as Mitchells Bridge and North Line Road, as options to support for a bypass rather than constructing a new bridge over the Burnt River at Concession Road 3. Given the wide range of input received for the bypass, further study was recommended.

## Traffic Improvements

During the stakeholder and public meetings, several traffic improvements were suggested as ways to alleviate the traffic problems in town. This included evaluating ways to control access to Tim Hortons and Sobeys and looking at the traffic light timing at Helen and Lindsay Street to add longer left-turn green times. There were also issues raised with the Tim Hortons drive thru queueing which can spill onto Elliot Street and onto Lindsay Street.

When the traffic improvement Option 5 was presented, stakeholders and the public expressed a desire to better understand the impacts of the traffic improvements. As a result, the project team undertook a Synchro model analysis of potential traffic improvements. This included exploring the identified traffic improvements from the stakeholder workshops as well as assessing turning restrictions for intersections, access control for the gas station and expanding storage lanes for turning movements. This effort further refined the recommendations.



## 6.0 Evaluation of Alternative Solutions

Once the alternative solutions were confirmed, the team completed an evaluation to identify the potential impacts of the solutions. A comparative assessment was completed in order to make recommendations for next steps. As a first step in the evaluation process, a screening was completed to identify if any of the alternative solutions could be removed from the list as either: (i) not effective at addressing the problems and opportunities; or, (ii) not supported by the City and community to pursue due to the extent of impacts.

### 6.1 Initial Screening of Alternatives

**Table 6.1** provides details on two of the alternative solutions that were screened out and not carried forward for evaluation.

**Table 6.1: Alternative Solutions Screening**

| Alternative Solution   | Rationale for Screening Out  |
|--|--|
| <b>Do Nothing (Option 1)</b>                                   | This option was screened out as the southbound left-turn at the Helen and Lindsay Street intersection is forecasted to be 'at capacity' by 2031 and has been identified by the City and the community as an issue that needs to be addressed. In the do nothing solution, the roadway will not be operating at an acceptable level of efficiency or level of service by 2031. While it would not be over capacity, any roadway that is at capacity is determined to require some sort of improvement to allow it to continue to operate efficiently. As such, the Do Nothing option is not considered an appropriate option as retaining the status quo will result in the existing issues increasing in the future.   |
| <b>Second In-town Crossing via Clifton Street (Option 3-D)</b> | Based on consultation with the community and discussion with City staff, Option 3-D (in-town crossing, Clifton Street) was screened out due to the significant property impacts to all of the residents along Clifton Street. On the northern side of Fenelon River, a total of 79 properties would be impacted since the road would need to be widened and easements placed on the properties. Of these 79 properties, 21 would require a full acquisition as the physical structure (house) would be impacted by the road widening. The bridge would also transform the full length of the road from a minor local residential street to a collector level road with conflicting residential uses, including safety issues related to the number and location of driveways.<br><br>Parks Canada also identified concerns with this location given the proximity to the existing Lock to the west. Protected view lines were raised as an issue by Parks Canada which could result in needing to raise the bridge and increase its footprint. |

Following the screening of alternatives, it was determined that the in-town traffic improvements solution (Option 5) does not need further evaluation beyond the Synchro modelling assessment completed in **Appendix E: Traffic Improvements Analysis**. The modelling found that the traffic improvements identified as Option 5 would result in improved traffic flow through the Helen and Lindsay Intersection and would allow the road to function below capacity, reducing the capacity constraints identified for 2031. Given that the traffic improvements qualify as Schedule A and Schedule A+ MCEA projects, additional assessment is not needed in this study.

Implementation of the traffic improvements would not preclude implementation of a second in-town crossing, bypass or expansion of the existing bridge. The in-town traffic improvements could be completed in combination with one of the other solutions which would fully address the 2031 capacity concerns and further growth beyond that timeframe.

Based on the screening of the alternative solutions, three alternative solutions are carried forward for evaluation:

1. Bridge Expansion (Option 2);
2. Second In-Town Crossing (Option 3, Wychwood alignments A, B, C); and,
3. Bypass (Option 4).

## 6.2 Alternative Solutions Evaluation Approach

Each of the alternative solutions were evaluated against a series of criteria in order to understand the potential impacts and opportunities of each solution. The evaluation criteria were organized under six criteria groups that include:

- Transportation;
- Social environment;
- Natural environment;
- Cultural environment;
- Technical; and,
- Cost.

**Table 6.2** presents the results of the comparative evaluation. For the second in-town crossing, the Wychwood alignments were evaluated as a whole rather than each one individually. This is because future study can confirm the exact alignment of a second crossing at Wychwood. The impacts between the alignments are all relatively similar when considered as a comparison with a bypass or an existing bridge expansion. If a Wychwood crossing is preferred, further study and refinement of the exact alignment would be needed.

In conducting a comparative evaluation, the evaluation criteria were considered of equal importance. Options were compared to one another, identifying preferences for options with the least impact or the

greatest benefit for each criterion. Where impacts are identified, the ability to mitigate the impacts was noted. Following the comparative evaluation, input on the evaluation considered through consultation is presented in **Section 6.4**. The trade-offs between the options are subsequently summarized in **Section 6.5**.

## 6.3 Alternative Solutions Evaluation Table

**Table 6.2** presents the results of the comparative evaluation.

Table 6.2: Evaluation Table

| Evaluation Criteria   | Period of Effect | Option 2: Bridge Expansion   | Option 3: Second In-town Crossing, Wychwood  | Option 4: Bypass   | Conclusions / Preferences  |
|---|------------------|--|--|--|--|
| Transportation  |                  |  |  |  |  |
| 1 Potential to alleviate traffic congestion by addressing traffic volumes travelling through downtown (change in # of vehicles) | Operation        | Expanding the existing bridge will not result in any reduction in traffic volume travelling through town.  | The addition of a second in-town crossing will provide an alternative option for local and through traffic to travel through the town. The in-town option will not remove traffic volume from the overall town but instead it will split traffic between Lindsay Street and Wychwood Crescent. Traffic volume along Lindsay Street is anticipated to be reduced by approximately 40-50%. | The bypass will provide an opportunity for vehicles to travel around Fenelon Falls for those not intending to use the services in town. Based on the traffic analysis, this will likely result in a reduction of up to 20% of vehicle traffic in town. The Bypass will also serve as a haul route for trucks, which will reduce up to an additional 10% of traffic from the town. The Bypass will alleviate congestion along Lindsay Street, but will not remove as much traffic as a second in-town crossing. | Options 3 and 4 will reduce the number of vehicles travelling through downtown (Lindsay Street and Colborne Street). Both options are suitable as they would result in enough reduction of traffic to improve traffic congestion issues for the foreseeable future. The second in-town crossing at Wychwood would be slightly better as it would divert more traffic than a bypass but the capacity issues do not need that level of network duplication. As such the bypass is considered just as good.<br><br><b>Similarly Preferred: Second In-town Crossing and Bypass</b> |
| 2 Potential to alleviate traffic congestion by addressing traffic flow (change in how vehicles move through area)               | Operation        | A bridge expansion will have a minimal impact on traffic flow. The traffic analysis showed that the southbound left-turn queue continues to grow beyond any length of storage lane on the bridge. This will eventually block the through traffic. As a result, there would only be marginal improvements to traffic flow and very little during peak periods for the southbound left-turn. | The second in-town crossing will reduce the amount of traffic travelling along Lindsay Street. This reduction in vehicles will improve the traffic flow as there will be fewer cars trying to travel through the centre of town. Having an additional crossing in town will split the flow of traffic.   | The bypass will result in 20-30% of traffic being removed from the existing crossing, as per the findings in the Streetlight traffic analysis. This reduction in traffic will result in an improvement to traffic flow as there will be fewer vehicles trying to navigate through the centre of town.  | Options 3 and 4 will both reduce the volume of traffic travelling through the downtown area (Colborne Street) of Fenelon Falls enough to allow for a better flow of traffic over the existing bridge. The In-town crossing will improve the flow the most, although the Bypass will improve the flow enough to reduce congestion.<br><br><b>Similarly Preferred: Second In-town Crossing and Bypass</b>  |

| Evaluation Criteria  | Period of Effect        | Option 2: Bridge Expansion   | Option 3: Second In-town Crossing, Wychwood   | Option 4: Bypass   | Conclusions / Preferences  |
|--|-------------------------|--|---|--|--|
| 3 Potential to impact local and surrounding road network   | Construction, Operation | <p>Once completed, the bridge expansion would have no impacts on the surrounding road network as the function would not change.</p> <p>During construction, the bridge expansion will require extensive works to the existing bridge for it to be widened. This would involve reducing the bridge to one lane during construction, which may span a number of years. This restriction would have impacts to the surrounding area as the traffic issues would be exacerbated due to the restrictions on the bridge. With no other crossing option, this would cause significant traffic volumes and congestion during construction. This impact would be temporary.</p> | <p>A second in-town crossing that utilizes Wychwood would result in significant impacts to the local road network in Fenelon Falls. New intersections would need to be created where Wychwood Crescent meets County Road 121 and also where the new road network on the eastern side of the crossing would meet Sturgeon Point Road. Further, there would be numerous new intersections created depending on the connecting roads used for the bridge. The In-town crossing will also impact the local network as it will create additional traffic volume along the streets it is on and the streets it will intersect.</p> <p>During construction there will be significant impacts to the local and surrounding road network. Access to local residences along Juniper, Francis Street, Concession Road and Sturgeon Point Road will need to be maintained. In some cases, a temporary bypass route may need to be developed where construction blocks access to residences that don't have a secondary route they can use to ensure access is maintained.</p> | <p>The bypass will impact the local and surrounding road network as it will add additional traffic volume along Highway 35 and Concession Road 3.</p> <p>The creation of a new crossing over the Burnt River will also impact the roads running along the Burnt River (Cedarplank Road, Riverbank Road, River Road and Brook Road) as these will need to tie in to Concession Road 3 where the new bridge will be located. This can be done and would be completed as part of construction.</p> <p>During construction, there will be impacts to these roads along the Burnt River, particularly River Road and Riverbank Road as their access may be restricted. A temporary bypass route may need to be built.</p> | <p>All of the options present significant construction impacts that would affect the local roads and surrounding road network. During operation, traffic volumes would increase on local roads for Option 3. Option 3 would see the greatest impact to the local street network with road widenings and new intersections. Option 4 would result in fewer impacts to the local road network as it would primarily be Concession Road 3 that would have permanent operational impacts to traffic.</p> <p><b>Preliminary Preferred: Bypass</b></p> |
| 4 Potential to address future traffic growth   | Operation               | The bridge expansion has limited potential to address future traffic growth as the option would primarily address the left-turn congestion on the bridge and would not add to the overall network capacity.  | Option 3 would provide added network capacity in Fenelon Falls to serve future traffic growth in the area over a long period of time.   | Option 4 will provide added network connectivity for the region surrounding Fenelon Falls. Diverting traffic to the bypass will provide room for future growth in the system within Fenelon Falls and provide a new link for the surrounding area.   | <p>Options 3 and 4 both have the potential to address future traffic growth; however, Option 3 provides the greatest advantage as growth is directed to the town and less so to the surrounding region.</p> <p><b>Preliminary Preferred: Second In-town Crossing</b></p>   |
| 5 Potential to alleviate commercial and heavy vehicles travelling through downtown Fenelon Falls | Construction, Operation | The bridge expansion will not remove any heavy or commercial vehicles from the downtown area. It also doesn't provide any heavy vehicles with an alternative route.  | <p>A new In-town crossing will create a new route for commercial and heavy vehicles to travel along, which will result in fewer trucks travelling through the main downtown area along Colborne Street.</p> <p>Commercial and heavy vehicles would be alleviated from downtown Fenelon Falls, unless they need to make a delivery in town that requires they pass through downtown.</p>   | The Bypass route will act as a new haul route, as identified in the 2006 Haul Route Study. Long haul trucks would be directed to the haul route. Commercial and heavy vehicles would be alleviated from downtown Fenelon Falls, unless they need to make a delivery in town that requires they pass through downtown. (Note: Truck traffic would impact the residents along the bypass which is identified under Social Environment criterion.)  | <p>Only Options 3 and 4 will provide a viable alternative to the current route for heavy vehicle and commercial traffic. The Wychwood crossing will still continue to direct heavy vehicles through Fenelon Falls, but it will remove them from the downtown Fenelon Falls area. The Bypass completely removes heavy vehicle traffic from the downtown area.</p> <p><b>Preliminary Preferred: Bypass</b></p>   |

| Evaluation Criteria   | Period of Effect        | Option 2: Bridge Expansion  | Option 3: Second In-town Crossing, Wychwood   | Option 4: Bypass   | Conclusions / Preferences   |
|---|-------------------------|---|---|--|---|
| 6 Potential to impact or enhance pedestrian and cycling network                                 | Operation, Construction | Expanding the existing bridge will involve creating a new pedestrian crossing. The existing pedestrian crossing is narrow and prone to flooding, so a new pedestrian crossing would enhance the existing pedestrian and cycling network in Fenelon Falls.   | The creation of a new crossing In-town will create more opportunities for cyclists and pedestrians. The new crossing and connecting roads would be designed to correspond with the City's urban road cross-section, meaning it will have a multi-use pathway along one side of the road.  | The Bypass route will create a new connection across the Burnt River which cyclists and pedestrians can use and which could be connected to the Victoria Rail Trail just east of the Burnt River. However, the bypass may also pose a crossing challenge for the Victoria Rail Trail at Concession Road 3. Design work would be required to identify a safe pedestrian/cycling crossing of Concession Road 3 which could possibly include an underpass. This would have impacts to the area.   | Option 3 provides the greatest potential to improve the pedestrian and cycling network. While the existing bridge expansion would improve the existing pedestrian and cycling infrastructure, it does not enhance the overall network.<br><br><b>Preliminary Preferred: Second In-town Crossing</b>   |
| 7 Potential to impact or improve EMS connections (i.e. ingress and egress into and out of town) | Operation, Construction | The additional storage capacity will result in a better flow of traffic across the bridge during non-peak periods and could assist in improving some EMS connections, but the volume of traffic will not be reduced. Additionally, during construction, EMS services will only have a single lane bridge and so potential impacts to EMS connections could arise.   | A second in-town crossing will provide an alternative route for EMS vehicles to take to respond to emergencies. The new in-town crossing will also reduce the amount of traffic on the main route through town and with less volume, EMS connections will be improved.  | The Bypass will reduce the volume of traffic travelling through the downtown area. This reduction in traffic volume will create better opportunities for EMS connections. There will still only be one in-town crossing but the reduction in volume in-town from the bypass will improve EMS connections.  | All three options will improve connections for EMS. The new in-town crossing will result in the greatest improvement to address EMS connections by provided a nearby added route. However, through consultation with EMS, the City has been clear that there have been no issues raised with EMS service in Fenelon Falls. As such, there are no preferences related to EMS.<br><br><b>No Preference.</b> |
| 8 Potential to improve pedestrian safety  | Operation, Construction | A bridge expansion will provide an opportunity to improve the existing pedestrian crossing. The current bridge rehabilitation program is improving the pedestrian crossings both for connectivity, safety and experience. As such, the bridge expansion would result in no added improvement during operation.<br><br>During construction, identifying a safe pedestrian crossing will be important to maintain connectivity. | A new in-town crossing that connects to Wychwood Crescent has the potential to negatively impact pedestrians on all the local connecting roads. Currently the local streets only receive local traffic. Traffic along Wychwood also serves the local elementary school and long term care home. Increasing traffic on these routes could increase the risk to pedestrians and vulnerable road users (children and seniors). | The bypass route has the potential to negatively impact pedestrians in the bypass area as people use the local connecting roads along the Burnt River to walk, jog, cycle and dog walk. However, the pedestrian volumes are low as this is only for recreational used. On the other hand, a bypass has the potential to improve the pedestrian safety in Fenelon Falls. The bypass will reduce the number of heavy vehicles that travel through the downtown, thereby reducing the chance of pedestrian/vehicle conflicts and improving both real and perceived pedestrian safety overall. | The Bypass will not improve safety for pedestrians/recreational users in the bypass area, but it will reduce the number of vehicles in town. This would support a safer pedestrian environment in town with a reduction in conflict potential in an area where there are more vulnerable road users.<br><br><b>Preliminary Preferred: Bypass</b>  |

| Evaluation Criteria   | Period of Effect        | Option 2: Bridge Expansion   | Option 3: Second In-town Crossing, Wychwood   | Option 4: Bypass   | Conclusions / Preferences   |
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| <b>Social Environment</b>                                   |                         |  |   |  |   |
| 9 Potential to impact existing and planned residential uses | Operation, Construction | <p>A bridge expansion would not result in any impacts to existing or planned residential properties.</p> <p>During construction, there may be additional impact to residential properties as there will be an increase in traffic trying to cross the bridge due to lane closures. This could create additional traffic and noise on side streets.</p> | <p>Option 3 will result in significant impacts to existing and planned residential uses. Property easements would be required to accommodate widenings of connecting roads. Property acquisition/expropriation would be required to accommodate the bridge crossing. In total, there would be between 26 and 29 properties where easements are required and between 9 and 10 properties that would need to be acquired/expropriated out right to make way for the crossing.</p> <p>Depending on the route selected for local road connections to/from the bridge crossing, there may be additional property acquisition of easements.</p> <p>During construction, there would be further impacts to residential properties. Access to some properties may be restricted during construction. Temporary detour routes would need to be constructed to allow for continued access to properties in various circumstances.</p> | <p>The bypass will require the acquisition/expropriation of between 4 and 5 properties in the area of the new Burnt River bridge. It is anticipated that the bypass will not require much in the way of easements on Concession Road 3 as the existing right-of-way is wide enough. Concession 3 would need to be resurfaced. There is the potential that additional properties may be impacted adjacent to the bridge where the local roads need to reconnect with Concession Road 3. If this option is progressed further, local road connection would need further consideration and design.</p> <p>During construction, there will be impacts to existing properties. Access to some of the properties along the Burnt River may be restricted and a temporary detour may be needed to allow for continued access to properties.</p> <p>No impacts are anticipated for future proposed residential uses.</p> | <p>Expanding the existing bridge will impact the least number of residential properties. The bypass will impact fewer properties and residential uses than the second in-town crossing.</p> <p><b>Preliminary Preferred: Bridge Expansion</b></p> |



| Evaluation Criteria  | Period of Effect        | Option 2: Bridge Expansion   | Option 3: Second In-town Crossing, Wychwood  | Option 4: Bypass  | Conclusions / Preferences  |
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| 10 Potential to impact land values                           | Operation               | <p>The expansion of the existing bridge does not align with any of the features identified in the Municipal Property Assessment Corporation (MPAC) valuation model. This is not to say there won't be impacts, as a bridge expansion could lead to access improvements for businesses, but this is difficult to model.</p>   | <p>The potential for to private property and land values were determined with help from the MPAC valuation model. Certain features are considered to impact property values and are listed on their website. It is not possible to understand the actual dollar-value impacts to property value based on the options without a full property assessment and, therefore, only the presence of potential variables has been included to determine whether there is a potential to impact values.</p> <p>Increase in traffic patterns as well as the presence of easements can have property value impacts according to MPAC. Option 3 will result in easements (between 26 and 29 properties). Additionally, the option will likely increase traffic volume along Wychwood Crescent by 40-50%. This will affect property values on increased traffic routes.</p> | <p>The same MPAC valuation model for Option 3 is applied for Option 4. Increase in traffic patterns as well as the presence of easements can have property value impacts according to MPAC. Option 4 could result in some easements. Additionally, the option will likely increase traffic volume Concession Road 3. This will affect property values on increased traffic routes.</p> <p>As the Burnt River is a relatively quiet cottage/rural area, the presence of a new traffic connection may also impact property values for those located in close proximity to the new connection. This would need to be further assessed to identify specific dollar-value impacts.</p> | <p>While it is not possible calculate a full property value impact assessment at this time given the level of detail available for the options, it is possible to determine whether any of the options have any of the characteristics that MPAC has determined to be influential in impacting property values.</p> <p>Of the three options, the second in-town crossing has the highest potential for impact, as it requires the most easements and will change the volume of traffic along the most local roads. The Bypass option has the second highest potential as the volume of traffic along Concession Road 3 will increase and there may some easements required for local road connections. The existing bridge expansion perhaps has the least potential impact.</p> <p><b>Preliminary Preferred: Bridge Expansion</b></p> |
| 11 Potential to impact existing and planned local businesses | Operation, Construction | <p>A bridge expansion would likely have significant impacts to local businesses during construction. With construction likely taking a couple of years, the traffic issues in Fenelon Falls would deteriorate further, meaning fewer people would be travelling through Fenelon Falls during this time period.</p> <p>Long term, the bridge expansion would likely result in some improved traffic flow through town, although the traffic volume would continue to increase with time, meaning local businesses may continue to experience the same challenges in the future.</p> | <p>A second in-town crossing would keep traffic travelling to the Fenelon Falls area, meaning the Town and local businesses would still benefit from visitors travelling through the area.</p> <p>There would be no major impacts to local business during construction either, as construction would not be occurring along the main street.</p>  | <p>The bypass will divert traffic around Fenelon Falls. There would likely be fewer visitors travelling through the Town. As such, there is the possibility that local businesses would get fewer customers. However, the experience in downtown Fenelon Falls would likely improve, meaning there is also the likelihood that people visiting will spend more time in Fenelon Falls and more people will make trips to local shops as there wouldn't be as many traffic issues. No impacts would be anticipated during construction.</p>   | <p>Option 3 will keep traffic travelling into the downtown area, while also addressing the traffic issues. This will result in the best outcome for local businesses.</p> <p><b>Preliminary Preferred: Second In-town Crossing</b></p>   |

| Evaluation Criteria   | Period of Effect        | Option 2: Bridge Expansion   | Option 3: Second In-town Crossing, Wychwood  | Option 4: Bypass   | Conclusions / Preferences   |
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| 12 Potential to impact institutional and recreational uses (i.e. schools, healthcare, parks, boating) | Operation, Construction | <p>No impacts are anticipated during operation.</p> <p>During construction, a bridge expansion would not have any direct impact on institutional uses, however it will result in an increase in traffic which will affect the operations of the high school on Lindsay Street and any other institutional uses (such as the community centre). This is because travel times will increase due to the closure of lanes on the bridge during construction.</p> | <p>Option 3 would result in impacts to some institutional uses along Wychwood Crescent. The existing school and long-term care home will experience disruption during construction. During operation, the school and long-term care home will experience traffic impacts.</p> <p>There are no anticipated impacts to recreational uses except for the elementary school yard during construction or operation and the waterway will remain open.</p>   | <p>The Bypass will result in no impacts to institutional uses during operation or construction.</p> <p>Recreational uses will be impacted included the Burnt River for boating traffic and the cottage experience for those cottages near the new bridge. In addition, the Victoria Rail Trail and the snowmobile trail on Concession Road 3 would be impacted during construction. During operation the Victoria Rail Trail may require some adjustments but generally all of these uses will be able to continue similar to the current condition.</p> | <p>Option 2 would have construction impacts to institutional and recreational uses but these would be temporary in nature. Options 3 has construction and operation impacts to recreational and institutional uses. Option 4 has construction and operation impacts to recreational uses.</p> <p><b>Preliminary Preferred: Bridge Expansion</b></p> |
| 13 Compatibility with City planning policies and projects (e.g. Downtown Revitalization Plan)         | Operation               | A bridge expansion would potentially align with the City’s proposed Downtown Revitalization Plan, as it may work in conjunction with the proposed improvements to Colborne Street as well as with the proposed traffic improvements to Helen and Lindsay Street.   | The second in-town crossing aligns with the vision of the Fenelon Falls Secondary Plan (under appeal) as it provides an opportunity for the community to grow and assists in creating a healthy and sustainable destination for people. It helps to create a more pleasant downtown experience while also addressing future growth issues within the community. The Secondary Plan also recommends enhancing active transportation opportunities and recommends the creation of a second crossing, which this option provides. | The Bypass aligns with the direction of the Fenelon Falls Secondary Plan (under appeal). It preserves the existing In-town area and promotes a healthy and sustainable community as it removes heavy vehicles from town and reduces the overall volume of traffic, while continuing to allow the town to grow. It also aligns with the City’s strategic directions as well as the City’s 2006 Haul Route Study.  | <p>All options align with the City’s planning policies.</p> <p><b>No preference.</b></p>  |
| 14 Potential for economic benefits  | Operation, Construction | The bridge expansion will result in minimal changes to the local economy during operation but may improve the overall experience for those using the main downtown area. During construction, businesses may experience economic impacts due to the closure of lanes on the bridge.  | An additional crossing located In-town will still direct traffic to travel into the Fenelon Falls area. The second crossing would allow for some traffic to continue around the town rather than travel through it which will reduce the amount of congestion travelling through the main downtown area. This has the potential to improve the experience in the main downtown area as there will be a reduction in the volume of vehicles in the main downtown area, but it also keeps any visiting business in-town.         | <p>The bypass will reduce the amount of traffic travelling through Fenelon Falls. This has the potential to improve the downtown experience as it will be easier to access the businesses in Fenelon Falls.</p> <p>There is however the possibility that Fenelon Falls will experience less traffic and as a result less business than with the other options as some traffic will be diverted around Fenelon Falls entirely.</p>  | <p>All three options have the potential to provide economic benefits to the town. A second crossing in-town provides the greatest opportunity for economic benefits.</p> <p><b>Preliminary Preferred: Second In-town Crossing</b></p>   |
| 15 Potential to impact views and vistas   | Operation               | The existing bridge expansion would result in no impacts to views.   | Option 3 will all result in impacts to the views along the Fenelon River and Trent-Severn Waterway, a National Historic Site.  | The Bypass crossing would impact views along a small portion of the Burnt River.   | <p>The creation of a new In-town crossing or a Bypass crossing would result in impacts to the views looking up and down the two waterways that they cross.</p> <p><b>Preliminary Preferred: Bridge expansion</b></p>  |

| Evaluation Criteria  | Period of Effect        | Option 2: Bridge Expansion  | Option 3: Second In-town Crossing, Wychwood   | Option 4: Bypass   | Conclusions / Preferences  |
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| 16 Potential for air emissions to impact local air quality | Operation, Construction | <p>During construction local air quality will be impacted by dust, odour and construction vehicle fumes that will result from the work. There will be specific Parks Canada requirements for controlling dust and runoff around the Trent Severn during construction to minimize impacts. Local air quality will also be affected by traffic congestion during construction. Potential receptors include commercial receptors on the north and south sides of the bridge as well as residential receptors on the north and south sides of Fenelon River, adjacent to Lindsay Street and Colborne Street. The impacts will be localized and temporary. A dust and odour management plan will be required prior to construction.</p> <p>During operations there will be little change to air quality as a result of the bridge expansion.</p> | <p>During construction local air quality will be impacted by dust, odour and construction vehicle fumes that will result from the work. A dust and odour management plan will be required for construction to minimize impacts. There will be specific Parks Canada requirements for controlling dust and runoff around the Trent Severn during construction of the bridge itself to minimize impacts. In addition to typical road construction dust, air emissions impacts would arise from demolition of existing buildings and from soil excavation prior to construction of the bridge. Soil excavation impacts would need to be confirmed through the completion of a sub-surface geo-environmental report that would include borehole investigations to identify soil conditions and contaminants. Materials in the existing buildings would require assessment prior to demolition to identify if there is the presence of asbestos or other monitored materials. Construction management plans will need to address any building materials that may be contaminated or contain asbestos.</p> <p>Potential receptors include residential receptors on the north and south sides of Fenelon River and on local roads adjacent to the alignment. The impacts will be localized and temporary.</p> <p>During operations, local air quality along the new crossing route would be impacted by the increased traffic and associated dust. The air quality in Fenelon Falls and the broader surrounding airshed for the region is not anticipated to measurably change. This project is intended to address existing traffic flow through the area and is not being planned as a new opportunity to add more traffic to the region that would change the conditions in the regional airshed.</p> | <p>During construction local air quality will be impacted by dust, odour and construction vehicle fumes that will result from the work. A dust and odour management plan will be required for construction to minimize impacts. In addition to typical road construction dust, air emissions impacts would arise from demolition of existing buildings and from soil excavation prior to construction of the bridge across the Burnt River. Soil excavation impacts would need to be confirmed through the completion of a sub-surface geo-environmental report that would include borehole investigations to identify soil conditions and contaminants. Materials in the existing buildings would require assessment prior to demolition to identify if there is the presence of asbestos or other monitored materials. Construction management plans will need to address any building materials that may be contaminated or contain asbestos.</p> <p>Potential receptors include residential receptors on the east and west sides of the Burnt River and along Concession Road 3. The impacts will be localized and temporary. Air quality impacts would be less significant for the bypass than those for a second in-town crossing.</p> <p>During operations, local air quality along the bypass route would be impacted by the increased traffic and associated dust. The air quality in the broader airshed for the region is not anticipated to measurably change. This project is intended to address existing traffic flow through the area and is not being planned as a new opportunity to add more traffic to the region that would measurably change the conditions in the regional airshed.</p> | <p>The bridge expansion option is preferred given that it would result in less excavation, less impacts to existing buildings that would require demolition and a smaller overall construction footprint that Options 3 and 4.</p> <p><b>Preliminary Preferred: Bridge expansion</b></p> |

| Evaluation Criteria            | Period of Effect        | Option 2: Bridge Expansion  | Option 3: Second In-town Crossing, Wychwood   | Option 4: Bypass  | Conclusions / Preferences   |
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| 17 Potential for noise impacts | Operation, Construction | <p>Construction noise, including ground vibration, will result from the expansion work. Potential receptors include commercial receptors on the north and south sides of the bridge as well as residential receptors on the north and south sides of Fenelon River, adjacent to Lindsay Street and Colborne Street. Noise bylaws will need to be adhered to in order to limit impacts.</p> <p>Once operational, the noise levels should not change in a measurable way as there will be little change in the overall traffic.</p> | <p>Construction noise, including ground vibration, will result from the expansion work. Potential receptors include residential receptors on the north and south sides of Fenelon River and on local roads adjacent to the alignment. Noise bylaws will need to be adhered to in order to limit impacts. Vibration from the construction of the bridge piers and footings will impact adjacent residents. Advanced warning of this construction will be necessary to inform potential receptors of the work. This will be temporary and localized.</p> <p>A second in-town crossing will add traffic to Wychwood Crescent and the local roads connecting to the bridge. This will result in an increase in local noise levels from additional vehicles along the route. This includes noise impacts to the elementary school and the long-term care facility on Wychwood Crescent. In addition, heavy vehicles might be more likely to use the second crossing in order to avoid downtown. As such, there will be additional noise produced from trucks.</p> <p>The noise from traffic traveling through downtown (Colborne Street) will be reduced as there will be fewer heavy trucks and more consistent movement of vehicles during peak periods.</p> | <p>Construction noise, including ground vibration, will result from the expansion work. Potential receptors include residential receptors on either side of the Burnt River and along Concession Road 3. Noise bylaws will need to be adhered to in order to limit impacts. Vibration from the construction of the bridge piers and footings will impact adjacent residents. Advanced warning of this construction will be necessary to inform potential receptors of the work. This will be temporary and localized. The impacts will be less than those for Option 3.</p> <p>A bypass will address traffic to Concession Road 3. This will result in an increase in local noise levels from additional vehicles along the route. This includes impacts from heavy vehicles as the bypass would function as a haul route. As such, there will be additional noise produced from trucks.</p> <p>The noise from traffic traveling through downtown (Colborne Street) will be reduced as there will be fewer heavy trucks and more consistent movement of vehicles during peak periods.</p> | <p>Construction noise will increase for all options. During operations, increased noise will be experienced at sensitive receptors for both Options 3 and 4. Option 2 would not improve local noise levels in downtown Fenelon Falls.</p> <p><b>Preliminary Preferred: Bridge expansion</b></p> |

| Evaluation Criteria                                  | Period of Effect        | Option 2: Bridge Expansion  | Option 3: Second In-town Crossing, Wychwood  | Option 4: Bypass   | Conclusions / Preferences   |
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| <b>Natural Environment</b>                           |                         |   |  |  |   |
| 18 Potential to impact surface water and groundwater | Operation, Construction | <p>During construction there is potential for the bridge expansion to impact surface water and surface water runoff. This will require a runoff management plan and review with Parks Canada to limit impacts to the Trent Severn. All alternatives will alter the existing storm drainage pattern locally given the change in permeable surface area. The options all require improvements to the storm system along the impacted roadways. However, the bridge expansion has the least impact potential.</p> <p>There is limited potential for the bridge expansion to impact groundwater compared to the other options. Groundwater management during construction is required to ensure Source Water Protection is maintained. There will be no operational impacts to groundwater.</p> | <p>During construction, Option 3 will impact surface water and surface water runoff. This will require a runoff management plan and review with Parks Canada to limit impacts to the Trent Severn. All alternatives will alter the existing storm drainage pattern locally given the change in permeable surface area. The options all require improvements to the storm system along the impacted roadways. Option 3 will result in the greatest impacts to surface water quality and quantity given the extent of roadworks.</p> <p>During construction, Option 3 has the potential to impact groundwater, particularly during bridge construction. There is the potential that dewatering will be needed but this cannot be confirmed without a geo-environmental study. Groundwater management during construction is required to ensure Source Water Protection is maintained. Water crossings of small tributaries will need to be managed on the north side of Fenelon River to ensure that there are no groundwater impacts. Design work would need to confirm that there will be no operational impacts to groundwater.</p> | <p>During construction, Option 2 will impact surface water and surface water runoff. This will require a runoff management plan. All alternatives will alter the existing storm drainage pattern locally given the change in permeable surface area. The options all require improvements to the storm system along the impacted roadways. Runoff from the Burnt River bridge will need to be controlled to limit impacts to the Burnt River. This includes reducing the potential impacts of salting during winter seasons.</p> <p>During construction, Option 2 has the potential to impact groundwater, particularly during bridge construction as it is anticipated that dewatering will be needed given the water table and flood plain in the area. The extent of dewatering will need to be confirmed through a geo-environmental study. Groundwater management during construction is required to ensure Source Water Protection is maintained, particularly given that local properties are serviced by well water. Water crossings of small tributaries will also need to be managed on the length of Concession Road 3. Design work would need to confirm that there will be no operational impacts to groundwater.</p> | <p>All options have the potential to impact surface water and groundwater. The bridge expansion would have the lowest degree of impact.</p> <p><b>Preliminary Preferred: Bridge expansion</b></p> |

| Evaluation Criteria  | Period of Effect        | Option 2: Bridge Expansion   | Option 3: Second In-town Crossing, Wychwood   | Option 4: Bypass   | Conclusions / Preferences  |
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| 19 Potential to impact soils, including contaminated sites     | Operation, Construction | <p>There is the potential for soils to be impacted through erosion or contamination if any additional works are done to expand the bridge. The existing bridge is in close proximity to a gas station and multiple historic commercial uses which have the potential for contamination. Geo-environmental investigation would be required along the footprint of the expansion to identify the presence of contamination and the extent of potential effects. Mitigation would be required to deal with contaminated soils and minimize impacts.</p> <p>There is the potential for contamination through fuel spills from construction vehicles. A construction management plan would need to include approaches to minimize this potential and address potential spill cleanup.</p> | <p>There is the potential for soils to be impacted through erosion or contamination from construction vehicles in the development of any bridge. However, it is unlikely that the area of the bridge crossing would have contaminated soils given the historic uses in the area that have been associated with residential activity. The area of the second crossing alignment has been previously disturbed so a geo-environmental investigation would be required along the footprint of the alignment to identify the presence of historic contamination.</p> <p>Soil excavation and removal for the bridge piers and footings would need to ensure that there would be no impacts to the stability of the Fenelon River banks. Option 3 presents the greatest potential for complication related to river bank stability given the topography of the area and the length of spans required for the crossing. Potential impacts would need to be addressed through design.</p> <p>There is the potential for contamination through fuel spills from construction vehicles. A construction management plan would need to include approaches to minimize this potential and address potential spill cleanup.</p> | <p>There is the potential for soils to be impacted through erosion or contamination from construction vehicles in the development of any bridge. However, it is unlikely that the area of the bypass would have contaminated soils given the passive historic uses in the area.</p> <p>Soil excavation and removal for the Burnt River bridge piers and footings would need to ensure that there would be no impacts to the stability of the Burnt River banks. Although Option 4 presents a less complicated bridge design than Option 3, there is still challenging topography in the area and the presence of a significant floodplain. The bridge spans would need to be confirmed through further design work to limit bridge impacts to the river banks and soils.</p> <p>There is the potential for contamination through fuel spills from construction vehicles. A construction management plan would need to include approaches to minimize this potential and address potential spill cleanup.</p> | <p>All options have the potential to impact soils. However, the bypass has the least potential for existing contaminated soils given historic uses in the various study areas.</p> <p><b>Preliminary Preferred: Bypass</b></p>   |
| 20 Potential to impact watercourse crossings and water quality | Operation, Construction | <p>All options have the potential to impact watercourses and water quality. Options 2 and 3 have the greatest potential given the length of the bridge crossings and likely need for in-water works. The Burnt River crossing will be smaller in scale with no piers placed in the water. As such there would be less potential for impacts to water quality or watercourse crossings. There is potential for run off however and as such mitigation would be required. Along the length of Concession Road 3 there are smaller tributaries that the existing road crosses. Through resurfacing, improvements to culverts would be possible to improve existing watercourse crossing conditions along Concession Road 3.</p>   |   |  | <p>All options have the potential to impact watercourses as they all require bridges, and therefore there is the potential to impact watercourses and water quality. The bypass however has the least potential for impacts.</p> <p><b>Preliminary Preferred: Bypass</b></p>   |
| 21 Potential to impact floodplain                              | Operation, Construction | <p>The banks of the Trent-Severn are all considered part of the Fenelon River flood plain. Any bridge expansion or new bridge over the Fenelon River has the potential to impact the floodplain; however, Kawartha Conservation and Parks Canada did not identify concerns with the existing flood plain that could not be mitigated through design work.</p>  | <p>The Burnt River flood plain is extensive and floods regularly. Significant flooding has been experienced in the last five years. The bridge design will need to limit impacts to the flood plain and runoff to adjacent properties. Specific approaches to address the flood plain would need to be identified in the next steps should a bypass be identified as preferred.</p>   |  | <p>All options have the potential to impact a flood plain but the Option 4 is certainly more challenging. Impacts would need to be assessed further for all options through design work.</p> <p><b>Preliminary Preferred: Bridge expansion and Second In-town Crossing</b></p> |

| Evaluation Criteria  | Period of Effect        | Option 2: Bridge Expansion   | Option 3: Second In-town Crossing, Wychwood   | Option 4: Bypass   | Conclusions / Preferences   |
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| 22 Potential to impact terrestrial habitat, woodlands and wildlife | Operation, Construction | Option 2 has the least potential to impact wildlife and terrestrial habitat. There would be no impacts to woodlands. Wildlife associated with the Trent-Severn Waterway would be impacted during construction. This would be temporary and localized. Given the presence of the existing bridge, there will be minimal changes to wildlife conditions through an expansion.  | <p><b>Appendix B: Ecological Land Classification and Candidate Significant Wildlife Habitat Mapping</b> identifies the potential areas of impact for the second crossing that could impact woodlands and wildlife. There are a total of 17 separate Ecological Land Classification (ELC) communities in the In-town study area, 10 being natural and 7 cultural. ELC was based on aerial imagery only however as a majority of the land is privately owned. Additionally, 44 species of plant were identified in the in-town study area.</p> <p>16 Species of Conservation Concern were identified as potentially occurring in the in-town study area. Of these, 11 have been identified as having potential habitat. The in-town study area has certain habitat types that have the potential for wildlife to reside. The only wildlife sighted during the field work are considered common and secure in Ontario. Impacts to woodlands and wildlife would be greatest in Option 3 given that new clearing and interruption of natural corridors would be required for the connecting roads to the new bridge. Given disturbance in the surrounding area of Fenelon Falls, these features provide important natural corridors for wildlife where alternatives are limited. Compensation and mitigation would be necessary to reduce impacts and offset impacts that cannot be avoided.</p> | <p><b>Appendix B: Ecological Land Classification and Candidate Significant Wildlife Habitat Mapping</b> identifies the potential areas of impact for the bypass that could impact woodlots and wildlife. There are 17 identified ELC communities in the bypass Study area, 11 of which are natural and 6 being cultural. In addition there are 34 plant species which were also identified in the bypass study area, including American Larch, Eastern Hemlock and Black Spruce.</p> <p>16 Species of Conservation Concern were identified as potentially occurring in the bypass area. Of these, 13 have been identified as having potential habitat. The bypass study area has certain habitat types that have the potential for wildlife to reside. The only wildlife sighted during the field work are considered common and secure in Ontario.</p> <p>Although there are greater woodlands and natural areas in the bypass study area, the bypass would not result in new roads cutting through woodlands as the route would utilize the existing right of way for Concession Road 3.</p> | <p>Option 2 has the least potential to disrupt woodlands and wildlife given existing conditions.</p> <p><b>Preliminary Preferred: Bridge expansion</b></p>  |
| 23 Potential to impact Species at Risk (SAR)                       | Operation, Construction | No SAR were identified during the desktop research and the field investigations. The area has the potential for SAR to be present based on the results of the background review, but through the field studies no species were identified. Targeted species surveys were not conducted and would be needed if this option is preferred.  |   |  | No preference given the information available.  |
| 24 Potential to impact aquatic habitat and wildlife                | Operation, Construction | Expanding the existing bridge has the potential to impact aquatic habitat and wildlife should there be any alterations to the existing structures / pillars or the addition of any new structures in the water. Given the falls and lock system, in-water work is likely required. Species and habitat that could be impacted include turtles and turtle wintering areas. This would need to be confirmed in design and appropriate mitigation plans prepared. | Any work across or within the Fenelon River has the potential to impact aquatic habitat and wildlife. Species and habitat that could be impacted include turtles and turtle wintering areas. There is potential that Option 3 would have the greatest impact aquatic habitat and wildlife due to the length of the water crossing and potential requirements for in-water work. This would need to be confirmed in design and appropriate mitigation plans prepared.  | Any work across or within the Burnt River has the potential to impact aquatic habitat and wildlife. Species and habitat that could be impacted include turtles and turtle wintering areas. The bridge design would not include in-water work and as such this option has fewer potential impacts to aquatic habitat and wildlife than Option 3.  | <p>Options 2 and 3 crossing the Trent-Severn have the greatest potential to impact aquatic habitat and wildlife. Option 4 does not propose in water works and would have the least potential for impacts to aquatic habitat and wildlife.</p> <p><b>Preliminary Preferred: Bypass</b></p> |



| Evaluation Criteria         |  | Period of Effect        | Option 2: Bridge Expansion  | Option 3: Second In-town Crossing, Wychwood  | Option 4: Bypass   | Conclusions / Preferences   |
|-----------------------------|--|-------------------------|---|--|--|---|
| 25                          | Potential to impact Provincially significant wetlands  | Operation, Construction | There are no identified Provincially significant wetlands located in the in-town study area.  | There are no Provincially significant wetlands located near the Burnt River or along Concession Road 3. However, there is an unevaluated wetland identified along the Burnt River that would require additional study and may be impacted by the bridge crossing. Based on a wetlands evaluation and field study, mitigation plans would be required if Option 4 proceeds.   |  | No options impact any Provincially significant wetlands; however there is wetland potential along the Burnt River that requires further assessment.<br><br><b>Preliminary Preferred: Bridge expansion and Second In-town Crossing</b> |
| <b>Cultural Environment</b> |  |                         |   |  |  |   |
| 26                          | Potential for effect on current and traditional uses of land by Indigenous people                                    | Operation, Construction | The study areas have been documented as historically important waterways for Indigenous people. Indigenous relationships with the land and watercourses span many generations in the study area. This is particularly true for the Trent-Severn Waterway which acted as an important travel, trade, hunting and settlement route. There are limited current traditional uses in the study area but Indigenous stewardship on lands and waterbodies in the region is an important element of Indigenous reconciliation and self-determination. As such, no preference for an option can be identified without further input from Indigenous communities. Efforts were made during the study to connect with Indigenous communities but no specific interests were identified beyond keeping Indigenous communities informed of archaeological work if a new crossing is pursued. |  |  | No preference given current information.  |
| 27                          | Potential to impact the Trent Severn National Heritage Site  | Operation, Construction | The existing bridge is connected to Lock 34 of the Trent Seven Waterway that is a designated National Historic Site protected by Parks Canada. A bridge expansion will require work to be carried out directly adjacent to the Lock. In-water work will be required to expand the bridge. Impacts to the Lock will need to be avoided and mitigation and approvals would need to be determined in consultation with Parks Canada. Mitigation would include construction monitoring.   | A second in-town crossing will have an impact on the Trent Severn Waterway. A second bridge will likely require work along the banks of the Trent Severn and may even include in-water works. Impacts would include visual impacts to the cultural heritage landscape. Impacts to the Trent Severn will need to be avoided and mitigation and approvals would need to be determined in consultation with Parks Canada. Mitigation would include construction monitoring.   | There will be no impacts on the Trent-Severn National Historic Site.   | Only the Bypass route poses no potential for impacts to the Trent Severn National Historic Site.<br><br><b>Preliminary Preferred: Bypass</b>  |
| 28                          | Potential for effect on cultural heritage features and landscapes outside of the Trent-Severn National Historic Site | Operation, Construction | Beyond the impacts identified under criterion #27, there is one identified cultural heritage feature near the existing bridge at 13 Lindsay Street, which is located on the east side of the Lindsay Street at the south end of the bridge. The building is currently used as the office space for RWH Home and Cottage Design and Construction. This is not a designated heritage building. While impacts are not anticipated for this structure, it is in close proximity to where construction would be operating. Identification of impacts would need to be examined based on a more refined design. Mitigation would be required and may include construction monitoring.   | There are 5 identified built heritage resources within the In-town study area for the Wychwood crossing options. These include 4 historical residential buildings and 2 historical farmsteads. These are all located on the northeastern side of the Trent-Severn where the future crossing would connect. Refinement of the design and alignment for a second in-town crossing would be needed to confirm potential heritage impacts and approaches for mitigation.<br><br>There is also an historical cemetery near Concession Road that would need to be avoided. The second crossing would not directly impact the historical Victoria Rail Trail which is nearby. | There are 5 identified historical farmsteads along the bypass route. There is also an historical school and two historical churches. None of these properties are located close to the Burnt River. Given that there is no road widening proposed to accommodate the new route, none of these properties will be physically impacted. The Victoria Rail Trail crosses Concession Road 3 on the eastern side of the Burnt River. The trail connection needs to be preserved. Concession Road 3 has already disrupted the heritage feature. As such, there would be minimal additional disruption. Refinement of the design for the bypass would be needed to confirm potential heritage impacts and required mitigation approaches. | The Bypass option has the least potential for impacts to the identified cultural heritage features.<br><br><b>Preliminary Preferred: Bypass</b>   |

| Evaluation Criteria   | Period of Effect        | Option 2: Bridge Expansion  | Option 3: Second In-town Crossing, Wychwood   | Option 4: Bypass  | Conclusions / Preferences   |
|---|-------------------------|---|---|---|---|
| 29 Potential for effect on archaeological features                  | Operation, Construction | <p>There are no identified archaeological features within the footprint of the expansion due to previous disruption in the area. Also, as the existing bridge occurs on disturbed land and across a low/wet area, the footprint of the expansion is unlikely to require a Stage 2 assessment. This depends on the extents of the expansion.</p> <p>For the adjacent study area to the bridge, a property inspection has determined that the in-town study area exhibits archeological potential. These lands would require a Stage 2 archeological assessment if the bridge expansion extends onto previously undisturbed land, including along the banks of the Trent Severn Waterway where historical settlements were present. Parts of the study area that have experienced deep and extensive land disturbance, low and wet conditions and slopes in excess of 20 degrees, do not require further archeological assessments. Given the National Heritage Status, it is possible that Parks Canada may require a Stage 2 assessment for review.</p> | <p>There is an archeological site, identified by NEAA (2011) within the study area, which has an outstanding requirement for a Stage 3 archeological assessment. This site is referred to as BdGq-19 in the Stage 1 archeological report by ASI. The site is located close to Sturgeon Point Road. Road alignments could be directed to avoid this site if necessary.</p> <p>The Fenelon Falls cemetery on Concession Road was also identified as a feature that should be avoided. Any work within 10m of the cemetery would require a Stage 3 cemetery investigation.</p> <p>There are a further 5 registered archeological sites within 1km of the in-town study area but not within the potential alignment. However, a property inspection has determined that the in-town study area exhibits archeological potential. These lands would require a Stage 2 archeological assessment if Option 3 proceeds. Parts of the study area that have experienced deep and extensive land disturbance, low and wet conditions and slopes in excess of 20 degrees, do not require further archeological assessments.</p> | <p>The portion of the bypass route that follows Concession Road 3 is previously disturbed and would not require further archeological assessment. However, the area along the Burnt River would require a Stage 2 survey as the land has not previously been assessed, and is not disturbed.</p> <p>There are no identified archeological sites within the area.</p>  | <p>The bypass has the least potential to impact archaeological features and would require the least Stage 2 work.</p> <p><b>Preliminary Preferred: Bypass</b></p>     |
| <b>Technical</b>  |                         |   |   |   |   |
| 30 Potential to impact existing and planned utilities and servicing | Operation, Construction | <p>Expansion of the existing bridge has the greatest potential to impact utilities and servicing that currently runs along the bridge. This includes water/wastewater and hydro. The falls includes a power generating station on the south side of the bridge. This has the potential to be impacted during construction. Additional design work would be required to identify potential impacts to the power generating station and potential mitigation measures. This requires added approvals, consultation with Hydro One and construction monitoring.</p>  | <p>Option 3 would have moderate impacts to existing servicing and utilities given that the local roads would need to be upgraded which would impacts existing infrastructure in the rights of way. Design work would be required to better understand potential impacts and advance mitigation plans. There is a hydro corridor crossing of the Fenelon River at the foot of Juniper Street that would need to be avoided and/or integrated into the crossing design. This requires consultation with Hydro One.</p>  | <p>There would be minimal impacts to utilities and services along the bypass. There are local hydro power lines along Concession Road 3 that would need to be integrated/considered in the road resurfacing and design. Local properties are serviced by onsite wells and septic that would not be impacted along the route except where expropriation/acquisition of sites would occur at the Burnt River.</p> | <p>Option 4 has the least potential for impacts given the minimal existing utilities and servicing in the study area.</p> <p><b>Preliminary Preferred: Bypass</b></p> |

| Evaluation Criteria                                  | Period of Effect        | Option 2: Bridge Expansion   | Option 3: Second In-town Crossing, Wychwood  | Option 4: Bypass  | Conclusions / Preferences   |
|--|-------------------------|--|--|---|---|
| 31 Ease/complexity of implementation and maintenance | Operation, Construction | <p>Expanding the existing bridge would be difficult to implement. Expansion would require that the piers supporting the bridge be widened to accommodate the additional lanes required. It is possible that this can be avoided by cantilevering supports off the side of the bridge, however this would require inserting supports into the side of the existing structure to support the weight. This would require significant in-water work that is complex and has safety challenges to be managed. Constructing an expansion adjacent to the falls, the power generating station and the lock would result in long and slow construction timelines in order to safely complete work. Evening closures of the entire bridge may be needed at certain times. Given the nature of the surrounding built up area, there would also be more constraints for construction staging areas that would require coordination. The construction complexity would add to the cost.</p> <p>The complexity of maintenance would be more challenging for Option 2 given the built up area and the fact that there would not be an alternative crossing option in town if the bridge needed to be closed. This would mean that maintenance work would likely take longer in order to keep some bridge capacity available for through traffic.</p> | <p>A second in-town bridge crossing would be technically challenging to construct regardless of the precise alignment for a variety of factors. The most significant challenge for construction is the change in land elevation between the southern side of the Trent-Severn and the northern side. The construction of the bridge and road connections would therefore require cutting into the land on the northern side so that the elevation of the crossing and road is not too steep. This would require bank stabilization and retaining walls. Several new intersections would need to be either built or reconfigured to accommodate the roads connecting to the bridge. Alignments of existing roads would need to be reviewed to ensure the road geometry is sufficient to accommodate the necessary speeds and the turning radius of long haul trucks.</p> <p>There may also be the need for piers to be erected in the Trent Severn waterway to accommodate the new bridge. The piers would likely be erected close to the water's edge, but this still creates technical difficulties for construction and in-water works. Given the nature of the surrounding built up area, there would also be more constraints for construction staging areas that would require coordination, although this would not be as challenging as the construction staging for Option 2. Limiting noise (including vibration) and dust impacts to adjacent residents would be challenging and would require consistent monitoring.</p> <p>The complexity of maintenance for Option 3 would be more challenging than Option 4 but less challenging than Option 2. The improvement from Option 2 is that there would now be an alternative crossing option in town if the bridge needed to be closed for maintenance. This would be true for both the existing bridge maintenance and the second in-town crossing. This would mean that maintenance work could be completed more quickly.</p> | <p>The Bypass would be relatively easy to construct compared to Options 2 and 3. There are some topographical challenges present along Concession Road 3 leading to the Burnt River but these are not unique to the area. One advantage is that Concession Road 3 is straight and does not pose geometric challenges for alignment. The biggest challenge would be construction in the flood plain along the Burnt River but this will not cause any difficulties in constructing a new bridge, so long as the bridge itself is above the high water mark and construction avoids flood seasons.</p> <p>There will be some design challenges for integrating the local access road intersections with Concession Road 3 but these would be resolved in design and are unlikely to be construction challenges. Limiting noise (including vibration) and dust impacts to adjacent residents would be challenging and would require consistent monitoring.</p> <p>There would be less complexity for maintenance as the facility would be smaller than Options 2 or 3 and can be closed during maintenance periods. It would be necessary to avoid seasonal flooding in the area in order to complete maintenance.</p> | <p>The in-town bridge options are technically more challenging to construct and maintain than the bypass.</p> <p><b>Preliminary Preferred: Bypass</b></p> |

| Evaluation Criteria                                | Period of Effect        | Option 2: Bridge Expansion   | Option 3: Second In-town Crossing, Wychwood  | Option 4: Bypass   | Conclusions / Preferences  |
|--|-------------------------|--|--|--|--|
| <b>Cost</b>  |                         |  |  |  |  |
| 32 Capital cost to implement and maintenance costs | Operation, Construction | <p>Expanding the bridge would be costly. Although it does not require any property acquisition, or the creation of any new roads, it would require other associated costs. This includes creating new piers, potential cantilever design, traffic management plans, and permits from Parks Canada for the Trent Severn crossing and from Hydro One for the proximity to the generating station. Construction around the Lock would increase costs to limit impacts. Challenges related to safety also increase costs as contractors charge a premium for this work. Given the fact that the bridge would need to maintain some level of service for through traffic, the construction would also take longer than Option 4 which would contribute to costs. The costs of constructing Option 2 have the potential to be similar to the costs of constructing the bypass Option. Although there would be minimal property easements for Option 2, the complex construction approach and duration of construction would increase costs.</p> <p>The construction cost risk profile for Option 2 is higher than that for Option 4. This is because there are more potential elements that could go wrong when working on the existing structure. The potential for construction costs to escalate is high. This would require a significant contingency to make sure that cost escalations can be addressed.</p> <p>Maintenance costs would require an increase to the existing maintenance budget for the existing crossing. Given that the City already has maintenance dollars earmarked for the bridge, the increase in maintenance costs would be lower than maintenance costs for Options 3. The City's budget for facilities maintenance would increase by a similar amount in Options 2 and 4.</p> | <p>The cost of a new in-town crossing would vary based on the alignment identified, but the in-town crossing is expected to be the most expensive option. This would be because of property acquisition, easements, road widening, road upgrades, creating new intersections, road cutting, constructing a new bridge and permits for work across the Trent-Severn. Option 3 has the potential to be tens of millions in cost and would likely be 1.5 to 2 times more expensive than Options 2 or 4.</p> <p>Maintenance costs would be the highest for Option 3 given that new roads would be constructed that would add to the City's maintenance requirements beyond just the bridge maintenance. The extent of new facilities for maintenance would be the greatest for Option 3.</p> | <p>The bypass option is anticipated to be similar in cost to Option 2. The costs associated with property acquisition and impacts to property values would be less than those for Option 3. The cost to construct the bridge would be less than Option 3 and the associated road upgrades required on Concession Road 3 would be significantly less than building new local road connections as required in Option 3.</p> <p>Given the study area conditions, the construction cost risk profile for Option 4 is less than Option 2 or 3. This is because once the design is confirmed and the necessary studies are complete, including geotechnical work, there would be fewer opportunities for construction issues to arise. The study area has fewer unknown constraints. As such the risk associated with the potential for escalating costs is lower.</p> <p>Maintenance costs for the bypass would be less than Option 3 and similar to or slightly more than Option 2. The actual maintenance of the bypass bridge would be less costly than maintenance associated with Option 2; however, a bypass would be adding a new facility to the City's budget for structure maintenance. The existing in-town crossing would continue to require maintenance as well. The maintenance costs would not be as extensive as those for Option 3.</p> | <p>Option 3 would be the most expensive to implement and maintain and would be the least preferred. Option 4 would have a similar construction cost range to Option 2 but would have fewer risks for cost escalation during construction. Maintenance costs would be slightly higher for Option 4 than Option 2 but would not be as challenging as maintenance for Option 2.</p> <p><b>Preliminary Preferred: Bypass</b></p> |

## 6.4 Consideration of Public and Stakeholder Input related to Preliminary Evaluation Results

Input on the evaluation criteria and results was provided to the study team from the public, stakeholders and agencies throughout the study. Support was fairly split between alternative solutions given the various impacts of each option.

Some stakeholders and members of the public supported the implementation of a new bypass route to address the issues in Fenelon Falls. This was largely due to the fact that a bypass route would not result in negative impacts to the town of Fenelon Falls and it would remove traffic from the in-town area, particularly truck traffic. However, this input came from people who were not impacted by the bypass themselves and not residing in or property owners of land that would be impacted by the bypass. There were concerns raised by Fenelon Falls' residents that the bypass would not divert enough traffic from town. Input from residents and property owners in the area of the bypass was focused on not supporting a bypass to proceed. Impacts to residents, properties, natural environment, wildlife, recreation, floodplain and quality of life for those living or cottaging in the Burnt River or Baddow areas were all concerns raised regarding the bypass. The relocation of traffic, and in particular, truck traffic from town to Burnt River was a concern raised multiple times.

A new in-town crossing was supported by some stakeholders and residents during the consultation process. The creation of a new In-town crossing was seen to be the most effective way to address all of the traffic related concerns now and related to future growth. Support for a second in-town crossing included the potential for the solution to support the ongoing growth and development of Fenelon Falls. Input was received that a future second crossing in town would be needed at some point and that if it is not built now it will just need to be revisited years from now. However, some residents also identified concerns with the impacts of a second in-town crossing. These impacts included the increase in traffic that would result along local residential roads and near vulnerable populations including children at the elementary school and seniors at the long term care home. There were concerns raised regarding the preliminary locations of a second bridge. Issues were raised regarding property impacts, impacts to the Trent-Severn and impacts to sensitive woodlands and natural areas. Based on the feedback received during the second PIC, Wychwood Crescent Option A was the option most supported as it had the least impacts to the Trent-Severn and directed traffic away from the entrance to the school. Some residents and stakeholders suggested that if a second bridge is not built in town in the near term, the City should take steps to protect a future right of way for a second crossing in the future so that the space is available to build a second crossing and the impacts don't increase.

The proposal to expand the existing bridge was also supported by members of the public and key stakeholders (including the Revitalization Committee). There was some level of concern raised over the existing condition of the bridge and suggestions were provided for the bridge to be widened as part of its rehabilitation. It was stated by some stakeholders that a bridge expansion would be the most effective way of dealing with the traffic issues while keeping business in town. However, once the stakeholders and public

saw the results of the traffic study which demonstrated that expanding the existing bridge would only move the congestion onto Colborne Street, the support subsided for the expansion solution.

Traffic improvements were also presented to the public and stakeholders as something that would be included regardless or even in the absence of some implementation of one of the short list alternative solutions. It was generally agreed that the Helen Street and Lindsay Street intersection has a number of challenges, and there was agreement that measures should be implemented to improve the traffic conditions at this intersection regardless of a second bridge crossing or bypass being implemented. Improvements to the timing of traffic signals was the most preferred traffic improvement option, with support also being given to changing the access points to Sobeys and Tim Hortons. The greatest concern raised by the community and stakeholders regarding the existing traffic was related to the Tim Hortons. There was significant commentary on why the Tim Hortons site is designed the way it is and the issues associated with the drive thru. Many suggestions were received to redesign or relocate the Tim Hortons to address traffic impacts. Concerns were also raised related to business impacts to the gas station if modifications to the Helen Street and Lindsay Street intersection are made. This included concerns regarding changing turning movement permissions.

Overall, consultation input was divided across all of the options. It was agreed by all that Fenelon Falls requires a solution to traffic congestion, yet it remains unclear what the preferred public and stakeholder option is in relation to the most effective solution. Implementing a second in-town crossing was generally seen as the best long-term solution, but with the most up-front costs and impacts. It was also acknowledged that the project would require capital dollars and could not be funded by development charges unless significant added growth comes to Fenelon Falls.

During the later stages of consultation for the study in 2020 and 2021, community members in the Baddow and Burnt River areas identified that there is an existing bridge over the Burnt River called Mitchells Bridge, located south of Concession Road 3 connecting Northline Road across the Burnt River. Residents suggested that this could be used as a bypass more frequently and that improved signage would be needed to direct people to the route as it is relatively unknown. This was added to recommendations for consideration for the City.

The range of issues raised through consultation can be examined in **Appendix A: Frequently Asked Questions**.

## 6.5 Summary of Evaluation Results

The three options present different impacts and benefits to the Town of Fenelon Falls. Although there are many criteria that are assessed in the full evaluation table, there are some key differentiators between the three options. These are summarized in **Table 6.3: Evaluation Summary Table**. As a reminder, Option 1 was Do Nothing and removed from consideration as it does not address the problem and opportunities. It is important to note that to benefits and impacts identified in the analysis are preliminary and would need refinement based on additional study and design work to confirm exact impacts, mitigation and opportunities for improvement.



**Table 6.3: Evaluation Summary Results**

| Evaluation Summary Results |   |   |   |
|----------------------------|---|---|---|
|                            | Option 2: Existing Bridge Widening  | Option 3: Second Bridge Crossing via Wychwood Crescent  | Option 4: Bypass via Baddow   |
| <b>Summary of Benefits</b> | <ul style="list-style-type: none"> <li>• Little to no impacts to private property</li> <li>• Maintains the existing transportation network</li> <li>• Maintains visitors travelling through town</li> <li>• Encourages use of existing infrastructure which would have fewer maintenance costs in the long term</li> </ul>  | <ul style="list-style-type: none"> <li>• Fully addresses the traffic issue by providing an additional crossing in-town</li> <li>• Supports local businesses by keeping traffic in town but reduces congestion on the main street which supports Downtown Revitalization</li> <li>• Greatest opportunity to create a long-term solution to Fenelon Falls</li> <li>• Provides new opportunities to enhance pedestrian and cycling connections</li> <li>• Creates better connections for EMS vehicles</li> </ul>   | <ul style="list-style-type: none"> <li>• Has fewer property impacts than Option 3</li> <li>• Diverts enough traffic to address the traffic volume issues in town</li> <li>• Does not impact any cultural heritage features or National Historic Sites</li> <li>• Removes heavy truck traffic from downtown</li> <li>• Is the least technically complex option to implement and has the lowest risk for cost escalation during construction</li> </ul> |
| <b>Summary of Impacts</b>  | <ul style="list-style-type: none"> <li>• Do not address the traffic problem during peak periods, would provide some minimal relief</li> <li>• Technically challenging to construct with impacts to existing traffic</li> <li>• Will require a federal EA permit</li> <li>• Impacts a National Historic Site</li> <li>• Will result in the least overall traffic improvements to the area</li> </ul> | <ul style="list-style-type: none"> <li>• Significant impacts to private property through easements and acquisition/expropriation</li> <li>• Impacts to adjacent land uses, including sensitive residential uses along the new route</li> <li>• Impacts a National Historic Site</li> <li>• Technically challenging to construct due to topographical issues, land use constraints and a wide water crossing</li> <li>• Highest cost</li> <li>• Has the potential to impact cultural heritage sites</li> <li>• Has the potential to impact natural environment features</li> </ul> | <ul style="list-style-type: none"> <li>• Impacts to private property through property acquisition/expropriation will be required</li> <li>• Impacts to adjacent land uses, including sensitive residential uses along the new route</li> <li>• Does not improve network connectivity within Fenelon Falls</li> <li>• Has the potential to impact natural environment features</li> </ul>  |



## 6.6 Overall Alternative Solutions Recommendations

Based on the evaluation of the options and the input from the public and stakeholders, the bypass option has been identified as the solution to be carried forward for further study. It is **recommended that further study of the bypass be completed** in addition to **implementing the in-town traffic improvements** described in Section 5.5. Although the extent of impacts needs to be confirmed through further work, the bypass: has fewer potential impacts than a second in-town bridge crossing; will divert a sufficient amount of traffic to reduce congestion in Fenelon Falls; will improve the experience of downtown Fenelon Falls; provides an alternative route for heavy vehicles to travel around the town; and, is less expensive than Option 3 with fewer construction cost risks than Option 2. While an expansion of the existing bridge would have fewer overall impacts and would slightly improve traffic flow during regular weekday hours, it would not reduce the volume of traffic travelling along Lindsay Street and Colborne Street, particularly during peak summer weekend periods. A bridge expansion would likely only shift the existing traffic problem during peak periods to another point in town further north on Colborne Street.

Further work will be required to demonstrate the effectiveness of a bypass option and to confirm the potential impacts and mitigation options. This would be done by completing a Schedule C MCEA process that includes phases 3 and 4 of EA study. Through this process additional studies will need to be undertaken including geotechnical study, floodplain analysis, bridge design options, Stage 2 archeological study, further cultural heritage screening, and detailed environmental field work.

## 7.0 Conclusions and Recommendations

Based on the work completed for this study from 2019 through 2021, the following recommendations are being made to the City:

1. The City should progress designs for traffic improvements at the Helen Street and Lindsay Street intersection and at the Elliot Street and Lindsay Street intersection. This includes upgrading Elliot Street and Clifton Street to improve the rear access to the Sobeys from Clifton Street. This does not require further environmental assessment but should include ongoing consultation and communication with local property owners and businesses. In August 2021, notification via letter was mailed to all property owners in the vicinity of the traffic improvements to inform them of the recommendations.
2. The City should monitor traffic in Fenelon Falls once the improvements under item #1 are made before progressing to implement other solutions.
3. While the City advances item #1 above, the City should further study the Bypass Solution to assess impacts, identify mitigation requirements and identify bridge design options to minimize impacts. Schedule C MCEA work is needed for the bypass to assess impacts in more detail before a recommendation on whether or not to proceed to implementation is made.

4. The City should complete existing bridge rehabilitation and improve the pedestrian connections on the existing bridge. This work is underway.
5. The City should identify ways to work with Tim Hortons on the current drive-thru traffic issues. This includes identifying potential options for on-site circulation improvements, access improvements or overall relocation.
6. The City should continue to monitor growth in Fenelon Falls that would support the need for a second in-town bridge crossing. The City needs to advance the work of the Growth Strategy to understand the long term growth potential for Fenelon Falls, including Transportation Management Plan. This work should consider the long term impacts of COVID on population growth and travel patterns in the area and identify if a second in-town bridge will be needed in the long term to service future growth.
  - a. If the City identifies a long term need for a second crossing, the right of way location for such a crossing should be identified and protected for future implementation.
7. The City should review signage and wayfinding for the Mitchells Bridge (Northline) Route that current exists. This is an underutilized opportunity for an existing bypass. It is unlikely that the Mitchells Bridge route would provide an adequate haul route for trucks in its current state, but it could provide some relief to peak period through traffic.

This report does not include a recommendation to build either a bypass or a second in-town crossing. Further work is required before a final recommendation on those solutions can be made.

This study focuses on what can be done through improvements to the transportation network. Land use changes could be reviewed by the City separately to consider how modifications to land use may address some of the traffic issues. The Helen and Lindsay Street intersection includes a number of land uses which act as destinations for residents and visitors. As a result, these land uses attract a lot of traffic and as such, contribute to the traffic volume and traffic flow issues in Fenelon Falls.