

Part 1 – Study Introduction

1. Welcome everyone and thank you for attending this virtual Public Information Centre. In light of COVID-19 and associated physical distancing requirements for the foreseeable future, PIC #1 is only being hosted online. Today, we will be discussing the Planning, Preliminary Design and Class Environmental Assessment Study for Highway 401 improvements from Colborne to Brighton. The presentation slides will be available in PDF on the project website: www.Highway401colbornebrighton.ca, and methods to provide comments to the Project Team will be discussed later in the presentation. Please note that closed captioning can be turned on using the CC icon in the lower panel.
2. The purpose of today's presentation is to share the Project Team's findings to date and collect input and feedback on:
 - i. Existing conditions, including environmental, transportation and traffic;
 - ii. Evaluation criteria; and
 - iii. Proposed alternatives.
3. The Ontario Ministry of Transportation has retained WSP to undertake this study. Since the bridges and structural culverts within the study area are nearing their service life, this study will identify long term improvements within this area. Improvements to the study area will include:
 - i. The rehabilitation or replacement of bridges and structural culverts;
 - ii. Establishing the future Highway 401 footprint for the interim six lanes and ultimate eight lanes so that the structures can be appropriately designed; and
 - iii. Commuter parking lot improvements at County Road 30.
4. This study will:
 - i. Review existing conditions (including natural environmental, cultural heritage, transportation, and traffic);
 - ii. Develop and evaluate alternatives;
 - iii. Identify appropriate improvements; and
 - iv. Develop environmental protection/mitigation measures.A Preferred Plan will be confirmed and designated at the completion of the study.
5. There are two studies adjacent to this project. Directly to the west of this project's study limits, The Highway 401 Study from Cobourg to Colborne is ongoing. The County Road 30 Interchange Environmental Assessment Study was completed in 2005 and separates this project's study area into two. This previous study did not include improvements to the carpool lot at County Road 30 other than a new entrance due to improvements to Telephone Road at this location. The expansion of this carpool lot is included in this study.
6. This study is following the environmental planning process for Group 'B' projects under the MTO's Class Environmental Assessment for Provincial Transportation Facilities. Feel free to pause the video to view where we are in the study process, as well as future key

milestones.

7. The public is encouraged to provide input at any point during this project. On this slide you can see a few of the many external agencies that have been consulted and all of the Indigenous communities that have been engaged from the onset of this project.
8. Consultation to date has included issuing of the Notice of Commencement for the project in July 2020 and the first of two Municipal Advisory Committee meetings held in December 2020 to provide key municipal stakeholders an introduction to the project. Participants included members of emergency services, municipal staff and the conservation authority. The second Municipal Advisory Committee Meeting will take place in Summer 2021 to seek input on the preferred plan. Future opportunities for public consultation include Public Information Centre #2 and the filing of the Transportation Environmental Study Report (TESR), anticipated to take place in Fall 2021 and Winter 2022, respectively.
9. The study area for the project is outlined in red on the map displayed. This slide, as well as the following slide, show the existing environmental conditions within and in close proximity to the study area. This includes: woodlands; watercourses; wetlands; high erosion potential areas; areas of natural and scientific interest; wellhead protection areas; and culvert locations. For reference the wellhead protection areas A are the most vulnerable for groundwater intakes. Feel free to pause on this slide to take a closer look at the natural environment conditions or visit the project website for a full PDF version to zoom in on any areas or features of interest.
10. If you have any comments on additional existing environmental conditions, please let us know using the communication methods that will be outlined towards the end of the presentation.
11. This slide provides an overview of the environmental studies being completed as a part of this project. Specialists are analyzing and gathering existing conditions information for the study area to support field work by consulting with agencies and obtaining background information. A number of reports require an impact assessment, which will be completed once the preferred alternative is selected. Further information on the impact assessment will be presented at PIC #2.
12. The study area for the project is outlined in red. This slide and the following slide show the existing transportation conditions within and in close proximity to the study area. This includes emergency vehicle median crossovers, watercourses, culverts and more. Both slides outline the key challenges or issues that will be faced as a result of the Highway 401 improvements within the study area. Feel free to pause on this slide to take a closer look at the key issues and opportunities or visit the project website for a full PDF version to zoom in on any areas or features of interest.
13. Feel free to pause on this slide to take a closer look at the existing transportation conditions on this slide.

14. In summary, the challenges that exist in the current area are related to the bridges and structural culverts nearing the end of their service lives and the existing Highway 401 platform being unable to accommodate the traffic staging required to rehabilitate/replace the bridges and structural culverts. Opportunities exist to establish the future Highway 401 footprint for six and eight lanes, to ensure an appropriate design of the replacement bridges.
15. This slide and the following slide outline the two predominant Highway 401 cross-sections found within the study area: these are closed median sections, and open median sections. Closed median sections have a median barrier that separates the two directions of traffic and prevents errant vehicles from crossing the median. Open median sections have wide shallow ditches for errant vehicles to slow down and stop prior to encountering vehicles moving in the opposing direction. Open median sections can also contain emergency vehicle median turnarounds which can play an important role in the selection of alternatives. This slide also shows the location of both of these cross-section types throughout the study area.
16. For a closed median section, the highway can only be widened by adding lanes to the outside. For an open median section, the highway can be widened by adding lanes to the inside or outside. If the median width is less than 22.5 m, then median barrier is required to prevent errant vehicles from crossing the median. Median barrier can present problems from a maintenance perspective, as the barrier can be challenging to repair or replace if it is struck by an errant vehicle. Feel free to pause the video to read more about closed median sections and open median sections.
17. This slide outlines the locations of drumlins and areas of soil with high erosion potential located within or in close proximity to the study area. With erodible soil, flatter slopes are required for any earth cuts and fill slopes, which may result in larger property impacts.
18. After evaluating several planning alternatives, the Project Team recommends that the option of an improved provincial transportation facility be carried forward for further consideration. This recommendation would allow for the optimization of movement and capacity of people and goods on Highway 401 through the project limits. Feel free to pause the video to view the other planning alternatives that were considered.

Part 2 – Alternatives Screening Process & Highway 401 Future Widening Alternatives

19. The Project Team developed a number of crossing road bridge replacement alternatives for each crossing road location at Herley Road, Lake Road and County Road 26, as well as for the structural culverts in the study area. The Project Team also developed a number of different alternatives for the future widening of Highway 401. Following the development of alternatives, the Project Team screened each alternative by looking at key advantages and disadvantages to determine if an alternative should be carried forward for further development and analysis. These next sets of slides will show the alternatives developed and the screening process completed to come to the short-list of alternatives to be evaluated further.

20. This image shows Highway 401 in the study area divided into seven sections based on key features and site conditions within each highway section. Feel free to pause the video here to read about each section. The next set of slides will go through the alternatives for future widening of Highway 401 by section, the screening process, and recommendation for carrying each alternative forward. The timing of the future widening is currently unknown.
21. Section 1 of the highway extends from the west study limit to 1.6 km west of Lake Road. For this section, two alternatives were screened. This first alternative includes widening Highway 401 to the inside only for both the interim (6-lane) and ultimate (8 lanes) cross sections. This alternative is recommended to not be carried forward as it precludes maintaining the existing median turnarounds in the ultimate condition and also requires double median barriers which is not desirable from a safety and maintenance perspective.
22. This second alternative for Highway 401 Section 1 includes widening to the inside for the interim (6-lane) condition and then widening to the outside for the ultimate (8-lane) condition. This alternative is recommended to be carried forward as it allows for the two existing emergency median turnarounds to be accommodated for both the interim and ultimate conditions and no median barriers would be required.
23. Section 2 of the highway extends from 1.6 km west of Lake Road to 0.4 km west of Lake Road. For Section 2 of Highway 401 three alternatives were screened. This first alternative includes widening Highway 401 to the inside only for both the interim (6-lane) and ultimate (8 lane) cross sections. This alternative is recommended to be carried forward as it carries the lowest cost, minimizes the large fill that would be required south of the highway where there is a large depression in the terrain, and minimizes property and potential environmental impacts.
24. Alternative 2 for Section 2 includes widening Highway 401 to the inside for the interim (6-lane) condition and then widening to the outside for the ultimate (8-lane) condition. This alternative is recommended to be carried forward for further study. It may require a large fill south of the highway, however this alternative avoids the use of median barriers.
25. Alternative 3 for Section 2 includes widening Highway 401 to the north (i.e. widening westbound to the outside and eastbound to the inside). This alternative is recommended to be carried forward for further study. This alternative has greater property and environmental impacts to the north, however it avoids the use of median barriers and minimizes the large fill to the south.
26. Section 3 of the highway extends from 0.4 km west of Lake Road to 1.3 km east of Lake Road. For Section 3 of Highway 401 three alternatives were screened. This first alternative includes widening Highway 401 to the outside only and widening the median shoulders. This alternative is recommended to be carried forward as it improves the sight distance on the curves to the design standard, and costs less and requires less complex construction than the other alternatives. It also minimizes impacts to property

and Crandall Road.

27. Alternative 2 for Section 3 includes widening Highway 401 to the outside only and implementing 1200m radius curves to improve the existing sight distance on the curves as compared to the existing curves. This alternative is recommended to be carried forward for further study because it improves the existing highway geometry. This alternative will be further evaluated to assess the potential impacts and benefits.
28. Alternative 3 for Section 3 includes widening Highway 401 to the outside only and implementing 1700 m radius curves to improve the existing sight distance on the curves and improve the curves to the desirable standard. This alternative is recommended to be carried forward for further study because it improves the existing highway geometry. This alternative will be further evaluated to assess the potential impacts and benefits.
29. As a result of the highway widening through Section 3, that was presented in the previous 3 slides, the existing Crandall Road may be impacted and may require realignment. There are three potential Crandall Road realignments shown here. These alternatives will undergo further development and evaluation in combination with the preferred Highway 401 widening through this section. Details of the evaluation will be presented at PIC #2.
30. Section 4 of the highway extends from 1.3 km east of Lake Road to 2.8 km east of Lake Road. For Section 4 of Highway 401, one alternative was screened. As the existing cross section is a narrow median with concrete barrier, the only alternative is to widen to the outside. This alternative is recommended to be carried forward as the preferred alternative.
31. Section 5 of the highway extends from 2.8 km east of Lake Road to the west study limit of the County Road 30 study (which was completed under a previous EA). For Section 5 of Highway 401, four alternatives were screened. This first alternative includes widening Highway 401 to the inside only. This alternative is recommended to not be carried forward due to double barriers being required in the median which is not desirable from a safety and maintenance perspective. Additionally, a retaining wall may be required in the median because there is a large grade difference between east- and west-bound traffic and limited space in the median to grade the slope and provide a ditch.
32. Alternative 2 for Section 5 includes widening Highway 401 to the inside in the Interim (6-lane) condition, and widening the Westbound lanes to the inside and the Eastbound lanes to the outside in the Ultimate (8-lane) condition. This alternative is recommended to not be carried forward due to double barriers being required in the median as well as the need for a retaining wall to be able to grade the slope and provide ditching in the median.
33. Alternative 3 for Section 5 includes widening Highway 401 to the south. This alternative is recommended to be carried forward as it retains the open median and minimizes the large cuts north of Highway 401.

34. Alternative 4 for Section 5 includes widening Highway 401 to the inside for the interim (6-lane) condition and then widening to the outside for the ultimate (8-lane) condition. This alternative is recommended to be carried forward as it retains the open median and minimizes impacts south of Highway 401.
35. Section 6 of the highway extends from the east study limit of the County Road 30 study (which was completed under a previous EA) to 1.1 km east of County Road 26. For Section 6 of Highway 401, one alternative was screened. As the existing cross section is a narrow median with concrete barrier, the only alternative is to widen to the outside. This alternative is recommended to be carried forward as the preferred alternative.
36. Section 7 of the highway extends from 1.1 km east of County Road 26 to the east study limit. For Section 7 of Highway 401 five alternatives were screened. This first alternative includes widening Highway 401 to the inside only. This alternative is recommended to not be carried forward due to double barriers being required in the median, which is not desirable from a safety and maintenance perspective, and precludes the existing emergency median turnarounds in this section.
37. Alternative 2 for Section 7 includes widening Highway 401 to the inside for the interim (6-lane) condition and then widening to the outside for the ultimate (8-lane) condition. This alternative is recommended to be carried forward for further study as it retains the open median and can accommodate the existing emergency median turnaround.
38. Alternative 3 for Section 7 includes widening Highway 401 to the south. This alternative is recommended to not be carried forward as it results in significant potential property impacts, potential impacts to the natural environment, and high cost.
39. Alternative 4 for Section 7 includes widening Highway 401 is a hybrid of Alternative 2 and 1. This alternative is recommended to be carried forward as it minimizes the large cuts north of the highway and median turnarounds can be accommodated.
40. Alternative 5 for Section 7 includes widening Highway 401 is a hybrid of Alternative 2 and 3. This alternative is recommended to be carried forward as open median can be maintained, the median turnarounds can be accommodated and it minimizes the large cuts north of the highway.
41. This slide provides a summary of the which widening alternatives for Sections 1 through 3 of Highway 401 are recommended for further evaluation.
42. This slide provides a summary of the which widening alternatives for Sections 4 and 5 of Highway 401 are recommended for further evaluation.
43. This slide provides a summary of the recommendations for which widening alternatives for Sections 6 and 7 of Highway 401 will be further evaluated.

Part 3 – Bridge Replacement Alternatives, Detours Options, Culvert Replacement Alternatives, Evaluation Process & Next Steps

44. This image shows the crossing road bridges locations at Herley Road, Lake Road and County Road 26. The following slides will discuss the bridge replacement alternatives at each crossing road, the screening process and the alternatives to be carried forward to the short-list.
45. For the Herley Road bridge replacement, four alternatives were screened. This first alternative includes replacing the bridge to the west of the existing bridge. This alternative is recommended to be carried forward as it allows Herley Road to remain open during construction. The disadvantages of this alternative include potential property and environmental impacts, access impacts on the southwest side, and higher costs due to the realignments of both the roadway and the Honey Road intersection as well as the increased staging complexity and longer construction duration.
46. The second Herley Road bridge replacement alternative includes replacing the bridge to the east of the existing. This alternative is recommended to be carried forward as it allows Herley Road to remain open during construction. The disadvantages of this alternative include potential property and environmental impacts, and higher costs due to the realignments of both the roadway and the Honey Road intersection as well as the increased staging complexity and longer construction duration.
47. The third Herley Road bridge replacement alternative includes replacing the structure on the existing alignment which would require a temporary road closure. This alternative is recommended to be carried forward as it minimizes property impacts, minimizes potential environmental impacts, reduces construction duration, has a better alignment and lower cost than Alternatives 1 & 2.
48. The fourth Herley Road bridge replacement alternative includes permanently removing this crossing as it is in close proximity to Percy Street. This alternative is recommended to not be carried forward due to the travel impacts for emergency services, local residents, and those accessing the water storage tank.
49. For Lake Road bridge replacement three alternatives were screened. This first alternative includes replacing the bridge to the west of the existing structure. This alternative is recommended to not be carried forward as it results in property impacts, potential natural environment impacts, a less desirable crossing road geometry, lower compatibility with Highway 401 widening alternatives, and inferior geometry at the Lake Road and Crandall Road intersection.
50. The second Lake Road bridge replacement alternative includes replacing the bridge to the east of the existing structure. This alternative is recommended to not be carried forward as it results in property impacts, potential natural environment impacts, a less desirable crossing road geometry, lower compatibility with Highway 401 widening alternatives, inferior geometry at the McDonald Road and Lake Road intersection, and

required extension of Crandall Road.

51. The third Lake Road bridge replacement alternative includes replacing the existing bridge on the existing alignment, which would require a temporary road closure. This alternative is recommended to be carried forward as it minimizes property impacts, minimizes potential environmental impacts, provides a more desirable cross road geometry, has higher compatibility with Highway 401 widening alternatives, and maintains existing geometry at the Crandall Road intersection.
52. For the County Road bridge replacement, seven alternatives were screened. This first alternative includes replacing the bridge to the far west of the existing bridge. This alternative is recommended to not be carried forward as it results in significant property impacts on the northwest side of the crossing and is relatively higher in cost.
53. The second County Road 26 bridge replacement alternative includes replacing the structure to the west of the existing bridge. This alternative is recommended to be carried forward as it allows County Road 26 to remain open during construction, has less property impacts than other alternatives, minimizes the realignment of Telephone Road, and improves the existing horizontal curves. Compared to Alternatives 6 and 7 which are also being carried forward for further study, Alternative 2 has higher property and environmental impacts due to the required road realignments.
54. The third County Road 26 bridge replacement alternative includes replacing the bridge just west of the existing bridge with a curved structure. This alternative is recommended to not be carried forward since the Telephone Road realignment is greater than Alternatives 1 and 2 and has greater environmental impact. It is also moderate in cost relative to other alternatives, and the curved bridge increases the complexity of the design and construction.
55. The fourth County Road 26 bridge replacement alternative includes replacing the bridge just west of the existing bridge with a straight structure. This alternative is recommended to not be carried forward since the Telephone Road realignment is greater than Alternatives 1 and 2 and has greater environmental impact. It is also moderate in cost relative to the other alternatives.
56. The fifth County Road 26 bridge replacement alternative includes replacing the bridge just east of the existing structure. This alternative is recommended to not be carried forward since the Telephone Road realignment is greater than Alternatives 1 and 2 and has greater environmental impact. It is also moderate in cost relative to the other alternatives.
57. The sixth County Road 26 bridge replacement alternative includes replacing the bridge on the existing alignment, resulting in a temporary road closure during construction. This alternative is recommended to be carried forward as it maintains the existing alignment of Telephone Road, and minimizes potential environmental impacts and property impacts.

58. The seventh County Road 26 structure replacement alternative includes replacing the structure on the existing alignment with temporary single lane traffic control during construction. This alternative is recommended to be carried forward as it allows County Road 26 to remain open during construction, maintains the existing alignment of Telephone Road, and minimizes potential environmental and property impacts. It is also a relatively low cost compared to the other alternatives.
59. This slide provides a summary of which Crossing Bridge Replacement Alternatives are recommended for further evaluation.
60. The existing bridges that cross over Highway 401 at Herley and Lake Roads cannot be taken down in parts and must be demolished all at once. Demolition of the bridges, as well as some aspects of the new bridge construction, will require short-term detours of Highway 401 traffic onto the emergency detour route, as shown on the map in this slide. The demolition of these two bridges will not be completed at the same time, and the timing of replacements as well as the number and duration of closures will be confirmed in subsequent design phases.
61. Demolition of the County Road 26 bridge, as well as some aspects of the new bridge construction, will require short-term detours of Highway 401 traffic onto the emergency detour route, as shown on the map in this slide.
62. Replacement of the Herley Road bridge may require temporary closure of Herley/Durham Road, depending on the replacement alternative chosen from the long-list of alternatives previously presented. If the road was closed, traffic would be detoured via Percy Street and/or Lake Road during construction for an estimated duration of 1-2 years. The closure duration will be confirmed in subsequent design phases. To cross Highway 401 via the Percy Street detour is approximately 6 km longer (or 6 additional minutes of travel time) as shown in purple, compared to the existing route shown in green. The detour via Lake Road is not shown because it requires more out-of-way travel, but it does provide an alternate detour option. Please note that this is subject to traffic volume and road conditions.
63. Replacement of the Lake Road underpass may require temporary closure of Lake Road. Traffic would be detoured via Herley Road and/or County Road 30 during construction. To cross Highway 401 via the Herley Road detour is approximately 10-12 km longer (or 10-12 additional minutes of travel time) for the two possible routes shown in purple, compared to the existing route shown in green. The detour via County Road 30 is not shown because it requires more out-of-way travel, but it does provide an alternate detour option. Please note that this is subject to traffic volume and road conditions.
64. One of the County Road 26 bridge replacement alternatives (Alternative 6 presented previously) would require temporary closure of County Road 26. If this alternative were selected, traffic would be detoured via County Road 30 and County Road 41 during construction. To cross Highway 401 from the County Road 30 and County Road 26 junction to Point B, which is slightly south of Carman Road, is approximately 13 km longer (or 13 additional minutes of travel time) compared to the existing route shown in

green. Please note that this is subject to traffic volume and road conditions.

65. This slide shows the four structural culverts within the study area that will require replacement because the culverts are approaching the end of their service lives.
66. There are three alternatives for replacing existing culverts. Alternative 1 is to replace with a new culvert using the open cut method, which involves opening the ground to the depth required to replace the culvert. Alternative 2 is to replace with a new culvert using a trenchless method, which involves using a machine to cut a hole underground horizontally without disturbing the ground surface. Alternative 3 is to replace the existing culvert with a bridge, where a large structure is needed. It is recommended to carry forward all three alternatives for further consideration.
67. A detailed evaluation of alternatives will be carried out to identify an improvement plan that is cost-effective, addresses structural needs, provides safe operations and provides reasonable local access, while minimizing impacts to the natural, social and cultural environments. This slide details the four main steps to the analysis and evaluation process. The following slide provides greater detail on the preliminary evaluation criteria identified for this project. Feel free to pause the video to read more about the analysis and evaluation process.
68. The Project Team will consider the evaluation criteria related to the Natural Environment, Socio-Economic Environment, and Cultural Heritage Environments, as well as transportation and technical considerations during the evaluation process. Feel free to pause the video to read more about the preliminary evaluation criteria and let us know if additional evaluation criteria should be included.
69. There are some property impacts anticipated along the Highway 401 corridor due to the future widening. There is also potential for property impacts due to the crossing road bridge replacements and local road realignments/modifications. Property owners will be notified if their property is impacted between Public Information Centre 1 and 2. Design and property requirements will be refined as the project progress and final property impacts will be included in the Transportation Environmental Study Report upon completion of the Preliminary Design Environmental Assessment Study.
70. This slide shows the potential carpool lot expansion at County Road 30. The expansion of the lot may occur in a phased approach over time and will take place within the surrounding existing MTO property. Further details will be developed as the project progresses.
71. Following today's presentation, the Project Team will review all feedback and respond to all comments received. Information collected will assist in further analysis and evaluation to select a preferred plan. The Project Team will also seek input on the preferred plan from the Municipal Advisory Committee in a second meeting in Summer 2021, as well as notify anticipated impacted property owners and arrange meetings as necessary. The preferred alternatives will be presented at the next Public Information Centre, scheduled

for approximately Fall 2021.

72. Thank you for your time and participation. We hope you enjoyed today's presentation. All of the information presented today is available at the project website – www.highway401colbornebrighton.ca. If you have any comments or feedback, feel free to let us know by using the contact information listed here.
73. Please note that information collected during this study will be used to assist the Ministry of Transportation in meeting the requirements of the Ontario *Environmental Assessment Act* and will be used in accordance with the *Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments will become part of the public record.
74. Thank you for attending Public Information Centre #1.