hwy401mallorytowntobrockville.ca

Highway 401

Mallorytown to Brockville

Planning, Preliminary Design, and Class Environmental Assessment Study

GWP 4011-22-00
Public Information Centre 1
April 23, 2025

Ontario Stantec

Highway 401 Planning Study from Mallorytown to Brockville (GWP 4011-22-00)

Sign In

Chat with Project Team

Fill out a comment sheet

Let us know if you have any accessibility needs

Welcome to Public Information Centre 1

The purpose of this Public Information Centre (PIC) is to present and gather your feedback on the:

- Study overview and the process being followed
- Background information on the need for the improvements
- Bridge and structural culvert rehabilitation/replacement alternatives, interchange alternatives, and future Highway 401 footprint for six and eight lanes alternatives that will be evaluated as part of this project
- Existing conditions in the study area (i.e., natural, social, economic, and cultural)
- Evaluation process and evaluation criteria
- Answer questions about the study

The PIC displays can also be viewed on the project website and comments can be submitted at: hwy401mallorytowntobrockville.ca

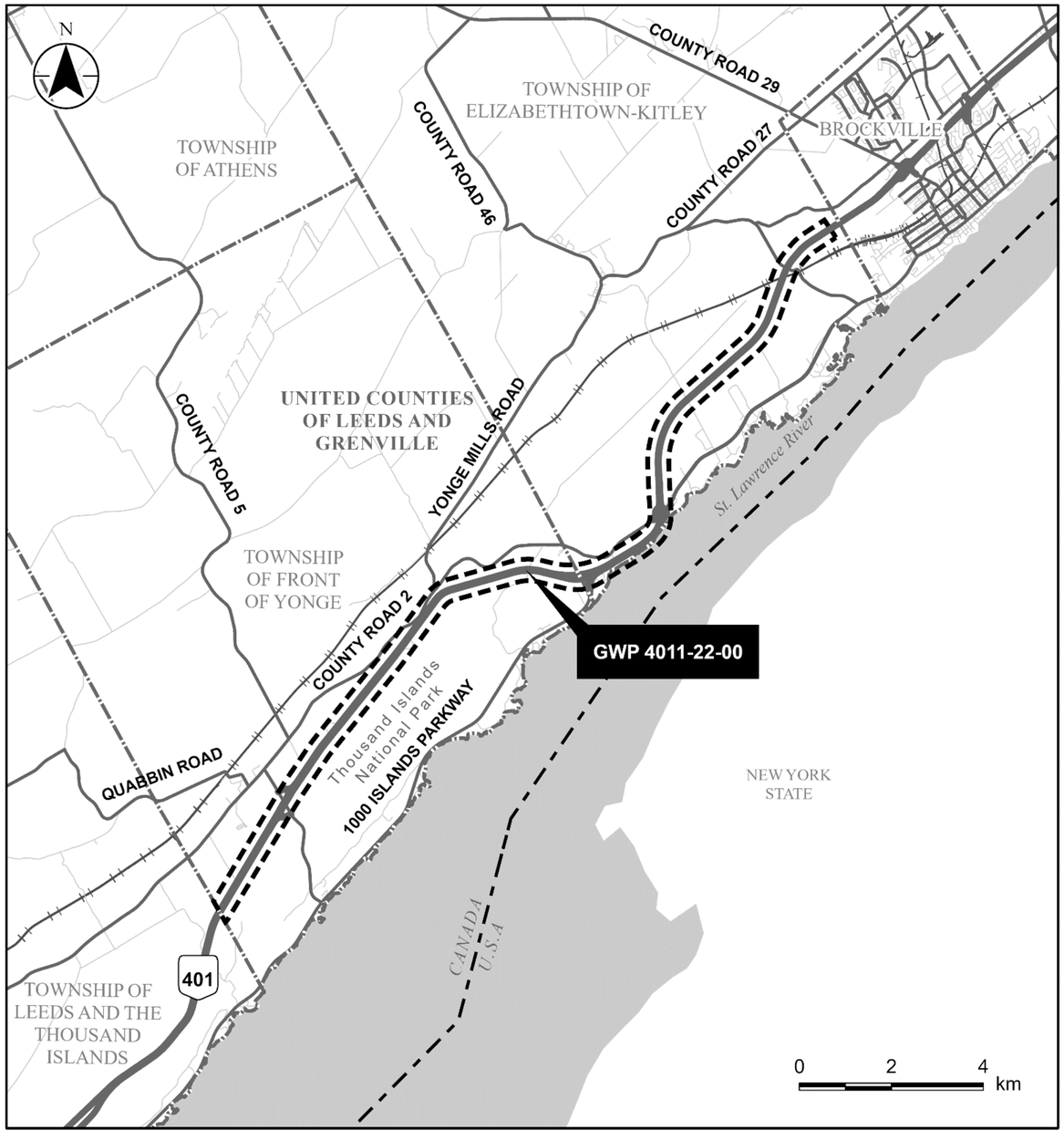
About The Project

The Ontario Ministry of Transportation (MTO) has retained Stantec Consulting Ltd. to undertake a Planning, Preliminary Design, and Class Environmental Assessment (Class EA) Study on Highway 401 for the replacement and rehabilitation of bridges and culverts, interchange modifications, and identifying the future Highway 401 footprint for an interim six lanes and ultimate eight lanes, from 2.8 km west of the Mallorytown Road Interchange to 2.1 km west of the Stewart Boulevard interchange (approximately 21.6 km), in the Townships of Elizabethtown-Kitley and Front of Yonge, in the United Counties of Leeds and Grenville.

The purpose of the study is to identify a Recommended Plan that addresses current and future transportation needs in the study area as part of the Ministry's ongoing review of safety and operational needs for the provincial highway network.

Highway 401 is a controlled-access 400-series provincial highway that connects southwestern Ontario (Windsor) to Quebec, a total of 830 km. The highway, and with structures along it, was built in the 1950s and 1960s.

As part of this study, the project team will be reviewing existing conditions, developing and evaluating alternatives, identifying appropriate improvements, and developing environmental protection and mitigation measures. At the completion of the study, a recommended plan for the Highway 401 study area will be confirmed and designated (i.e. protected).



ADJACENT STUDIES

This study builds off of a previously completed Highway 401 Planning Study in Brockville adjacent to this study area to the east and aligns with the future highway footprint identified as part of this adjacent study. Additional information for this study is available at: www.highway401brockville.ca

There are also several other studies adjacent or in close proximity to this study area including:

- **Highway 401 Planning Study East of Brockville (GWP 4111-22-00)** - For more information, please visit: hwy401eastofbrockville.ca
- **Highway 401 Improvements from 1 km west of Highway 15 to 1 km east of Highway 2/King Street (GWP 4049-22-00)** - For more information, please visit: Hwy401KingstontoGananoque.ca
- **Highway 401 Improvements from Belleville to Kingston** - For more information please visit: Hwy401BellevilletoKingston.ca
- **Highway 401 Planning Study from 1 km east of Highway 2 / King Street to 2.7 km west of Mallorytown (border of Front of Yonge Township), GWP 4050-22-00** - For more information please visit: hwy401gananoquetomallorytown.ca

Class Environmental Assessment Process

Group ‘B’ Projects

Environmental Assessment Process

This study is being carried out under the requirements of the Class Environmental Assessment for Provincial Transportation Facilities and Municipal Expressways (2024), which is approved under the Ontario Environmental Assessment Act for provincial transportation projects of a defined scope and magnitude.

The MTO Class EA process is an approved process for highway planning, design, and construction projects. The study is following a Group ‘B’ process, which includes major improvements to existing provincial transportation facilities.

In 2019, modernization of the MTO Class EA (2000) was initiated to optimize the Class EA process by removing redundancies and expediting planning to facilitate a more streamlined implementation process. Amendments to the Class EA were approved in December 2023 and February 2024, and Class EA was renamed the Class Environmental Assessment for Provincial Transportation Facilities and Municipal Expressways (2024). As part of the amendments, the EA process is now complete at the end of Preliminary Design, following the 30-day comment period for the Notice of Completion.

As part of the new MTO Class EA (2024), Preliminary Design is the primary opportunity to provide feedback on the project. Opportunities for meaningful consultation in future stages of the project will be minimal.

At the end of the study, a Transportation Environmental Study Report (TESR) will be prepared and made available for a 30-day comment period.

Ongoing Transportation Needs Assessment

Need Identified

Ongoing Public Consultation

Preliminary Design

Data Collection
Review available background information and conduct field investigations as required to identify existing conditions in the study area

Generate & Evaluate
Develop preliminary design alternatives to address structural needs, improve the highway safety and operations, and consider potential impacts to the existing natural, social, and cultural environment to identify a preferred plan

Select
Identify the preferred plan and mitigation measures to address potential impacts

Refine
Complete preliminary design of the preferred plan including a potential implementation strategy

Report
Document the process leading to the preferred plan

Clearance
The Class EA requirements are met, and the project is cleared to proceed to detail design

Consultation during Preliminary Design

- Notifications and project website
- Municipal Technical Advisory Committee Meeting 1 – October 16. 2024
- Municipal Technical Advisory Committee Meeting 2 – April 7, 2025
- Public Information Centre 1 **- We Are Here**
- Municipal Technical Advisory Committee Meeting 3
- Public Information Centre 2 – Spring 2026
- Municipal Technical Advisory Committee Meeting 4
- Notice of Completion - Transportation Environmental Study Report
  30-day comment period (tentatively scheduled for Summer 2026)

Future Stages

Detail Design

- Consultation during Detail Design

Construction

- Consultation during Construction

Problems And Opportunities

The purpose of the study is to identify a recommended plan that addresses current and future transportation needs in the study area as part of the Ministry's ongoing review of safety and operational needs for the provincial highway network. This study will include reviewing existing conditions, developing and evaluating alternatives, identifying a preferred plan, and developing environmental protection/mitigation measures. Identifying the footprint for the future interim and ultimate Highway 401 corridor will allow the Ministry to implement improvements efficiently in a cost-effective manner, minimizing throw-away costs while improving traffic operations.

This study has been initiated to address the following problem and opportunities:

Problem

- Many of the structures in the study area are nearing the end of their service life and require rehabilitation or replacement
- The existing Highway 401 platform cannot accommodate the traffic staging required to rehabilitate or replace the structures in the study area
- The existing interchanges require improvements to accommodate the structural rehabilitations or replacements, the ultimate footprint of Highway 401, and to address the current and future operational and geometric conditions

Opportunities

- Develop appropriate rehabilitation or replacement strategies to maintain the safe operation of the highway corridor for the current and future planning horizons
- Identify the ultimate footprint for the Highway 401 corridor to address current and future transportation needs
- Develop appropriate interchange improvement alternatives to accommodate the structural rehabilitations or replacements, the ultimate footprint of Highway 401 and to address current and future operational and geometric needs

Alternatives To The Undertaking

The Class EA requires that 'reasonable alternatives' be considered to address identified problems. This involves two levels of analysis. The Alternatives to the Undertaking considers a broad range of alternatives that could address the project needs. Once the best alternative is selected, the Alternative Methods of Carrying out the Undertaking can be studied.

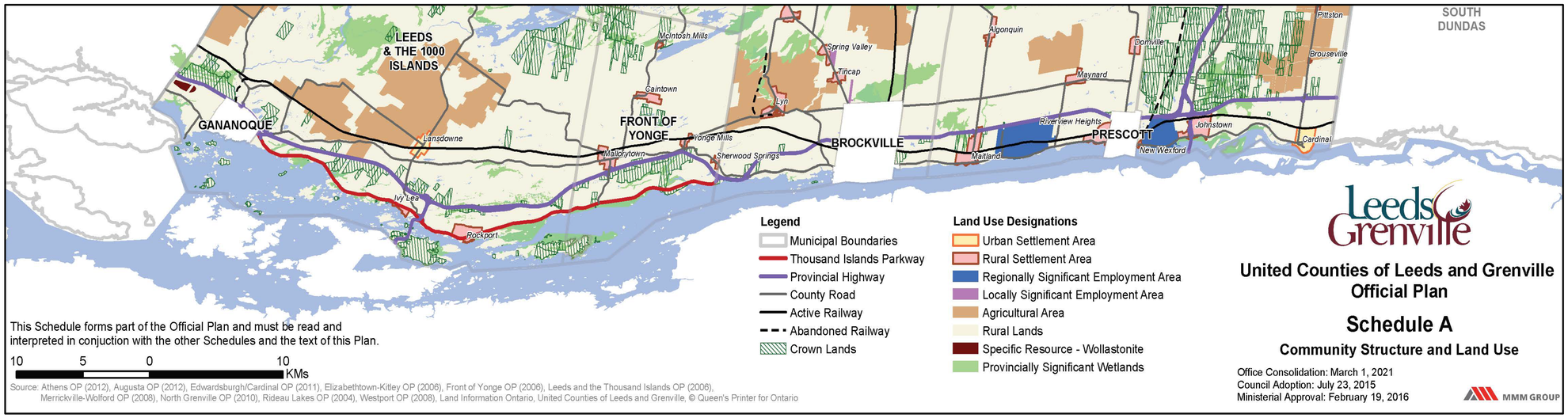
The Alternatives to the Undertaking identified for this study are listed below.

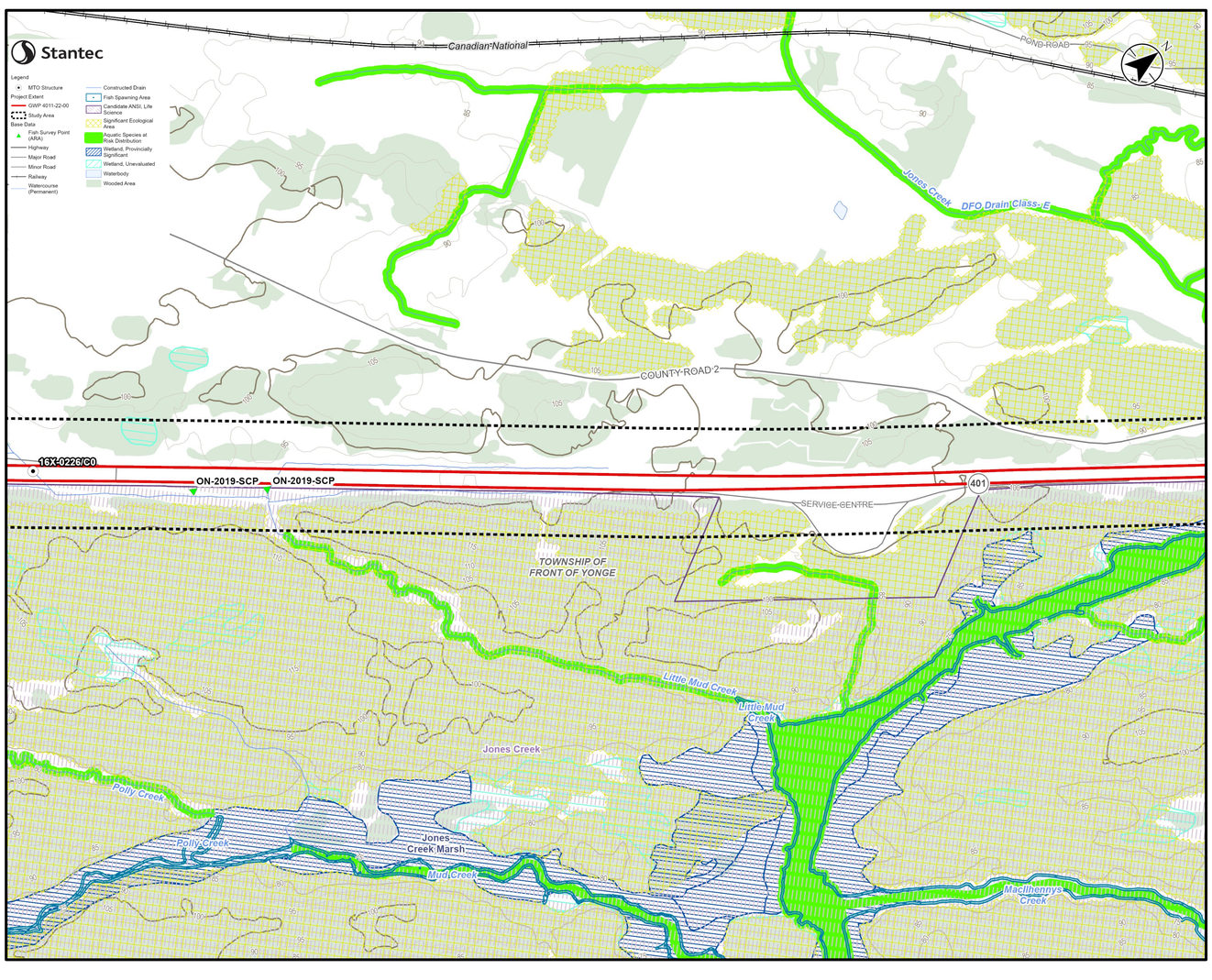
Alternatives to the Undertaking	Does it address the problems?
Do Nothing Rehabilitate existing bridges and culverts or replace existing structure with no accommodation for the Highway 401 footprints for interim six and ultimate eight lanes. The configuration of the existing interchanges would be maintained.	**Does not** address structural replacement needs and anticipated future growth needs. Do not carry forward. ☒
Transportation Demand Management (TDM) TDM shifts demand on the highway network by shifting demands to the time periods outside of the critical congestion periods and shifts demand to alternative modes of transportation.	**Does not** address structural replacement needs. Do not carry forward. ☒
Improve Adjacent Road Systems Expansion of existing municipal and regional road networks.	**Does not** address structural replacement needs. Do not carry forward. ☒
Improved Provincial Transportation Facility Replace existing bridges and culverts to accommodate the Highway 401 footprints of interim six and ultimate eight lanes. Modify configuration of existing interchanges.	**Addresses** structural replacement needs and anticipated growth needs. **Carry forward.** ☑
New Provincial Transportation Facility New Highway 401 alignment to the north between Jones Creek and Hallecks Road.	**Does not** address structural replacement needs. Do not carry forward. ☒

Existing Study Area Conditions

Existing land uses within the study area include:

- Residential/rural
- Agricultural
- Forested lands
- National Park
- Commercial





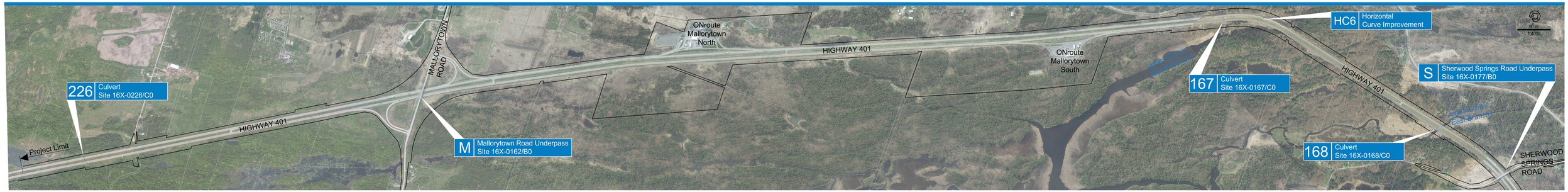
Key natural environment features within and adjacent to the study area include:

- Thousand Islands National Park
- Frontenac Arch Biosphere
- Jones Creek Marsh
- Provincially Significant Wetlands
- Records of aquatic and terrestrial Species at Risk
- Significant Ecological Areas
- Candidate Life Science Area of Natural and Scientific Interest (ANSI)

Project Overview

Study Area Existing Conditions and Improvements Alternatives Plan

LEGEND
Limit of existing Highway 401 right-of-way
Existing Structural Culvert



Bridge Improvements

The bridges within the study area are approaching the end of their service life and will need to be replaced. The new bridges will need to accommodate the future Highway 401 footprint for interim six lanes and ultimate eight lanes.

> for more details, see *Bridge Improvement Alternatives*

The following structures are being assessed:

- M Mallorytown Road bridge over Highway 401
- S Sherwood Springs Road bridge over Highway 401
- T1 T2 Thousand Islands Parkway (Crystal Beach) bridge over Highway 401 Eastbound Lanes
- 2 County Road 2 bridge over Highway 401
- L Highway 401 bridge over CN Railway & Highway 401 bridge over Lyn Road

Highway 401 Improvements

The study includes establishing the future Highway 401 footprint for the interim six lanes and ultimate eight lanes.

> for more details, see *Highway 401 Alternatives (Sections 1-5)*

HC *Horizontal Alignment Improvement Alternatives*

Interchange Improvements

Existing interchanges at Mallorytown Road (County Road 5), Thousand Islands Parkway, and County Road 2 may need to be reconfigured to accommodate the Highway 401 footprint for the interim six lanes and ultimate eight lanes and future transportation needs.

> for more details, see:

- M *Mallorytown Road (CR 5) Interchange Alternatives*
- T1 T2 *Thousand Islands Parkway Interchange Alternatives*
- 2 *County Road 2 Interchange Alternatives*

Drainage Improvements

There are four structural culverts (Stations 15+064, 18+240 and 19+915 Yonge Township) and (Station 16+809 Elizabethtown-Kitley Township), which are approaching the end of their service life and will need to be rehabilitated or replaced. The culverts will need to accommodate the future Highway 401 footprint for interim six lanes and ultimate eight lanes.

>for more details, see: *Drainage Improvements Plan*

- 226 Culvert 16X-0226/CO
- 168 Culvert 16X-0168/CO
- 167 Culvert 16X-0167/CO
- 236 Culvert 16X-0236/CO

Existing Structure Conditions

Site 16X-0162/B0

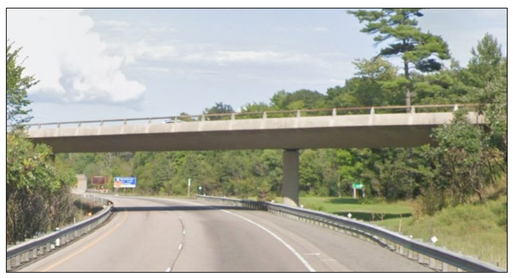
Mallorytown Road (County Road 5) Underpass

- Circular voided slab structure
- Constructed in 1967, rehabilitated in 2010 and minor rehab currently underway
- Spans over four lanes of Highway 401 and one interchange ramp lane on the north and one interchange ramp lane on the south
- Accommodates two lanes of traffic on Mallorytown Road
- Structure in good to fair condition
- Exposed concrete components exhibit areas of deterioration, including relatively large spalls on soffit as well as spalls and delaminations on piers and abutments

Site 16X-0177/B0

Sherwood Springs Road Underpass

- Circular voided slab structure
- Constructed in 1968 and last rehabilitation in 2011
- Spans over four lanes of Highway 401
- Accommodates two lanes of traffic on Sherwood Springs Road
- Structure in good to fair condition
- Exposed concrete components exhibit areas of deterioration, including delaminations and spalls on soffit, piers and abutments



Site 16X-0178/B0

Crystal Beach Underpass (Thousand Islands Parkway)

- Circular voided slab structure
- Constructed in 1967 and last rehabilitation in 2012
- Spans over two eastbound lanes of Highway 401
- Accommodates one lane of traffic on Thousand Islands Parkway
- Structure in good condition
- Exposed concrete components exhibit areas of deterioration, including delaminations and spalls on soffit

Site 16X-0114/B0

County Road 2 Underpass

- Rigid frame structure
- Constructed in 1959 and last rehabilitation in 1990
- Spans over four lanes of Highway 401 and one interchange ramp lane on the north
- Accommodates four lanes of traffic on County Road 2
- Structure in good to fair condition
- Exposed concrete components exhibit areas of deterioration

Site 16X-0117/B0

CNR Overhead

- Rigid frame structure
- Constructed in 1958 and last rehabilitation in 2011
- Spans over rail line and carries four lanes of Highway 401
- Structure in good condition
- Exposed concrete components exhibit areas of deterioration

* The Hallecks Road structure is not within the scope of this study. It was recently replaced and can accommodate the future Highway 401 footprint.

Existing Structure Conditions (Continued)

Site 16X-0118/B0

Lyn Road Overpass

- Rigid frame structure
- Constructed in 1958 and last rehabilitation in 2023
- Carries four lanes of Highway 401
- Spans over two lanes of traffic on Lyn Road
- Structure in good condition
- Exposed concrete components exhibit areas of deterioration, especially at construction joints

Site 16X-0226/C0

Culvert (2.2 km east of Mallorytown Road)

- Open footing rigid frame culvert
- Constructed in 1970
- Carries four lanes of Highway 401
- Culvert in good to fair condition
- Exposed concrete components exhibit areas of deterioration
- Watermain is attached to culvert soffit near east wall

Site 16X-0167/C0

Jones Creek Culvert (West Branch)

- Concrete arch culvert
- Constructed in 1967
- Carries four lanes of Highway 401
- Culvert in good condition with small areas of deterioration
- Footings are exposed in a few locations

Site 16X-0168/C0

Jones Creek Culvert (East Branch)

- Box culvert (rigid frame)
- Constructed in 1968
- Carries four lanes of Highway 401
- Culvert in good condition
- Exposed concrete components exhibit areas of deterioration

Site 16X-0236/C0

Culvert (1.1 km west of Lyn Road)

- Box culvert (rigid frame)
- Constructed in 1959
- Carries four lanes of Highway 401
- Culvert in fair to good condition with areas of deterioration

* The study will consider various alternatives for the Jones Creek (West Branch) Culvert, including alternatives that can improve wildlife movement.

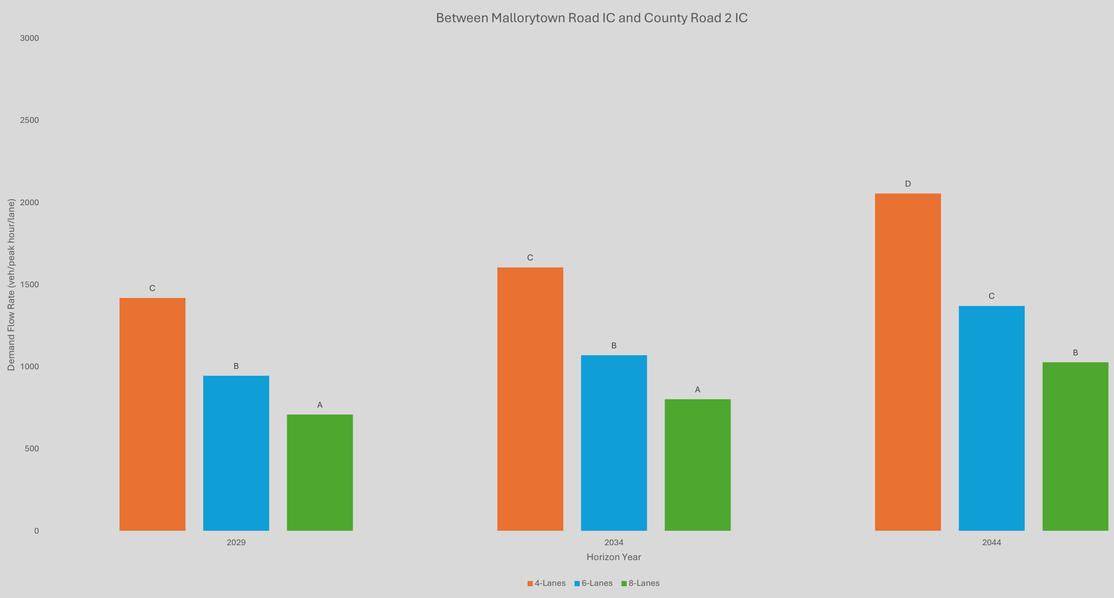
Highway 401 Existing and Future Traffic Conditions

As part of this Planning and Preliminary Design Study, a traffic study is being undertaken to determine existing and future traffic conditions. One of the measurements considered as part of the traffic modelling study is Level-of-Service (LOS), which is a measure of the free flow of traffic on a highway.
The six Levels-of-Service are described below:

Level of Service (LOS)	Description
A	Free flow with high speeds and low volumes
B	Reasonably free flow, but speeds are starting to be restricted
C	Stable flow, but drivers have less freedom to choose their own speeds
D	Approaching unstable flow, and drivers have little freedom to choose their own speeds
E	Traffic is operating near capacity, and there's little room to maneuver between lanes
F	Traffic is breaking down and flowing unstably due to a bottleneck

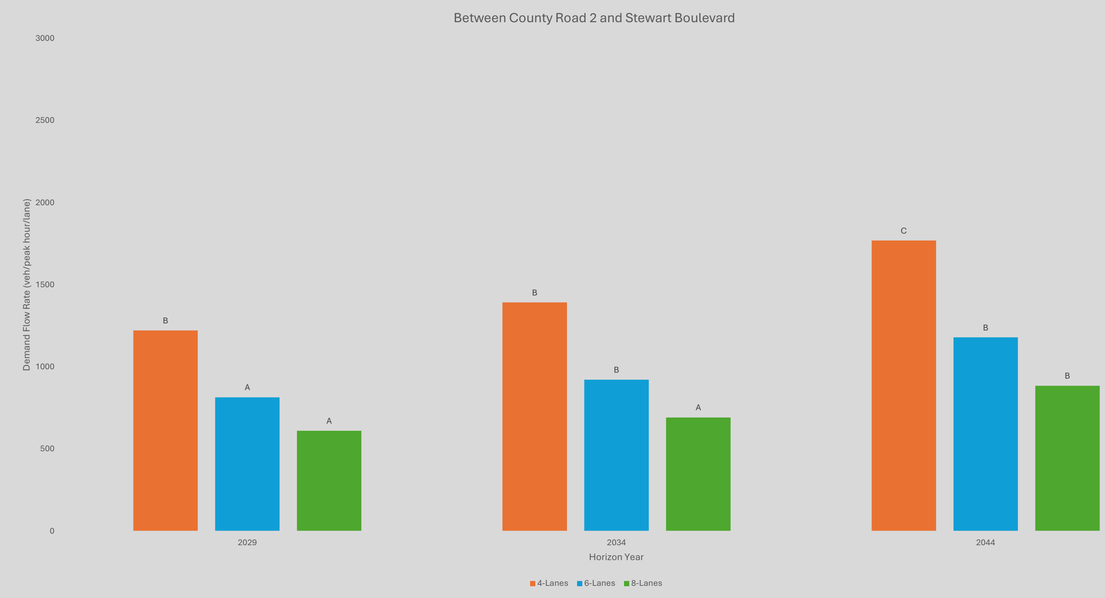
Mallorytown Road Interchange (IC) to County Road 2 IC

- Highway 401 is currently operating at a good level of LOS "**B**" between Mallorytown Road IC and County Road 2 IC
- By 2044, mainline segment is expected to perform at LOS "**D**" with existing Highway 401 footprint (4-lanes)



County Road 2 Interchange (IC) to Stewart Boulevard

- Highway 401 is currently operating at a good level of LOS "**B**" between County Road 2 IC and Stewart Boulevard IC
- By 2044, mainline segment is expected to perform at LOS "**C**" with existing Highway 401 footprint (4-lanes)



Highway 401 Alternatives

Cross-Section Improvements

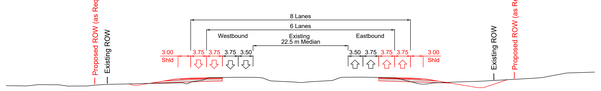
A range of alternatives for widening Highway 401 from existing four lanes to interim six lanes and ultimate eight lanes have been developed. A preliminary screening has been carried out to identify the alternatives that should be carried forward for further consideration.

Carried-forward ✓ Screened-out ✗

LEGEND
- Existing roadway
- New roadway

Sections 1, 3 & 4

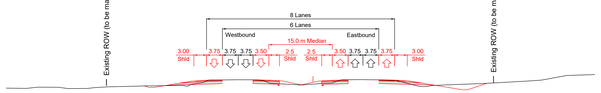
1 Maintain Existing 22.5 m Median Widen to the Outside ✓



Advantages
- Retains open median (no median barrier required)
- Minimizes impacts to traffic during construction

Disadvantages
- Requires more grading outside of the existing highway footprint
- Requires more property and potential environmental impacts compared to other alternatives
- Higher cost compared to Alternative 2

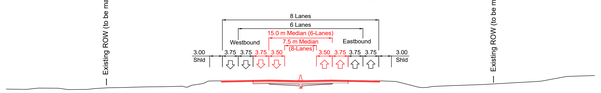
2 Narrow Median to 15.0 m Widen to the Inside and Outside ✓



Advantages
- Fewer grading impacts compared to Alternative 1
- Fewer property and potential environmental impacts compared to Alternative 1
- Lower cost compared to Alternative 1

Disadvantages
- Requires high tension four cable guide rail median barrier, which is less desirable than an open median for maintenance and safety
- Requires more complicated traffic staging compared to Alternative 1

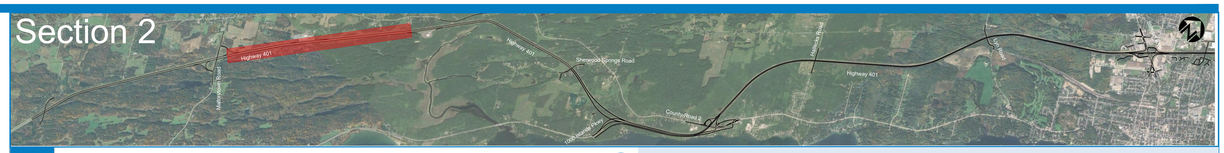
3 Narrow Median to 7.5 m Widen to the Inside ✓



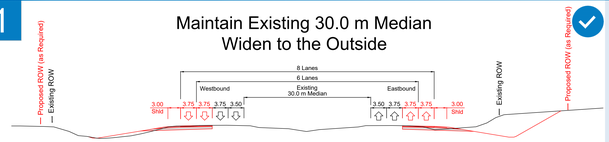
Advantages
- Minimizes property and environmental impacts
- Minimizes grading outside of the existing highway footprint

Disadvantages
- Requires more complicated traffic staging compared to other alternatives
- Higher cost compared to other alternatives
- Requires closing the existing emergency median turnarounds

Section 2



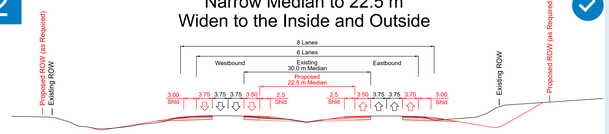
1 Maintain Existing 30.0 m Median Widen to the Outside ✓



Advantages
- Retains open median (no median barrier required)
- Minimizes impacts to traffic during construction

Disadvantages
- Requires more grading outside of the existing highway footprint
- Requires more property and potential environmental impacts compared to other alternatives
- Higher cost compared to Alternative 3

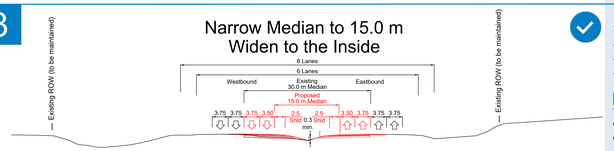
2 Narrow Median to 22.5 m Widen to the Inside and Outside ✓



Advantages
- Retains open median (no median barrier required)
- Fewer grading impacts compared to Alternative 1
- Fewer property impacts compared to Alternative 1

Disadvantages
- Requires more complicated traffic staging compared to Alternative 1
- Requires more property and potential environmental impacts compared to Alternative 3
- Higher cost compared to other alternatives

3 Narrow Median to 15.0 m Widen to the Inside ✓

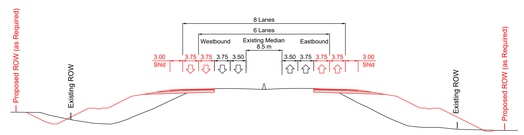


Advantages
- Minimizes property and environmental impacts
- Minimizes grading outside of the existing highway footprint
- Lower cost compared to other alternatives

Disadvantages
- Requires most complicated traffic staging
- Requires high tension four cable guide rail median barrier, which is less desirable than an open median for maintenance and safety

Section 5

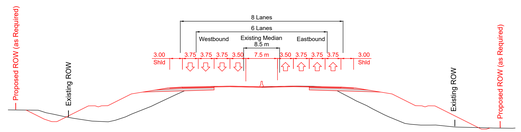
1 Maintain Existing Narrow Median Widen to the Outside ✓



Advantages
- Retains the existing median with concrete barrier
- Minimizes impacts to traffic during construction
- Lower cost compared to Alternative 2

Disadvantages
- Requires grading outside of the existing highway footprint
- Requires more property and potential environmental impacts compared to Alternative 2

2 Narrow Median to 7.5 m Widen to the Inside and the Outside ✗



Advantages
- Provides standard median width with concrete barrier (7.5 m)
- Fewer property and potential environmental impacts compared to Alternative 1

Disadvantages
- Requires more complicated traffic staging compared to Alternative 1
- Requires reconstruction of the median including concrete barrier
- Higher cost compared to Alternative 1

20 m
1:400

Stantec

Mallorytown Road (County Road 5)

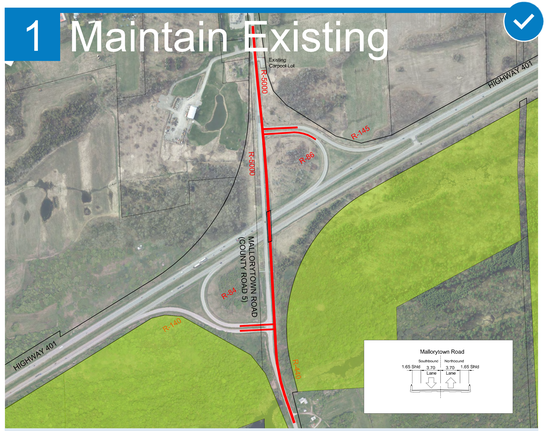
Interchange Alternatives (New Bridge East of Existing)

A range of interchange alternatives for improving access to and from Highway 401 have been developed. A preliminary screening has been carried out to identify the alternatives that should be carried forward for further consideration.

Carried-forward ✓ Screened-out ✗

LEGEND
- New roadway
- Property required
- Limit of existing Highway 401 right-of-way
- Parks Canada Lands

1 Maintain Existing ✓



Parclo A-2

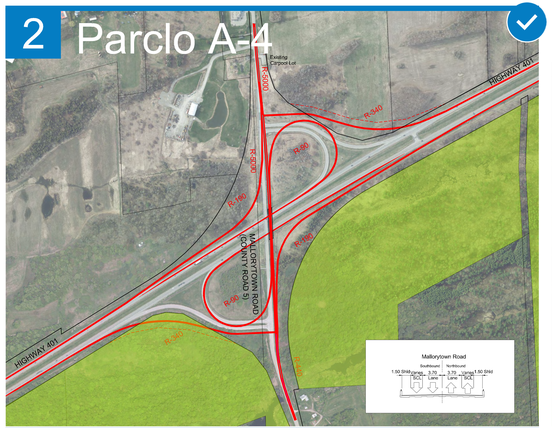
Advantages

- Standard interchange configuration in Ontario
- Requires less property and potential environmental impacts compared to other alternatives
- Maintains existing carpool lot
- Lower cost compared to other alternatives
- No property impacts
- No impacts to Parks Canada Lands

Disadvantages

- Lower traffic capacity compared to Parclo A-4 configuration
- Potential for left-turn conflicts and potential for higher collision severity
- The Highway 401 exit ramp radii do not meet the minimum design standard for a design speed of 130 km/h

2 Parclo A-4 ✓



Parclo A-4

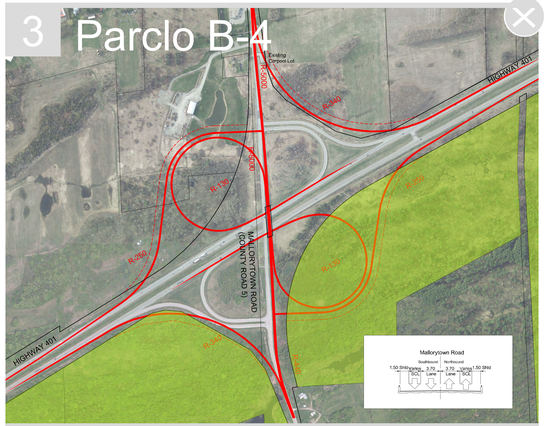
Advantages

- Standard interchange configuration in Ontario
- Higher traffic capacity compared to Parclo A-2 and Diamond configuration
- Maintains existing carpool lot
- Eliminates left-turn movements from Mallorytown Road to Highway 401 entrance ramps
- Less impacts to Parks Canada Lands compared to Diamond and Parclo B-4 configuration

Disadvantages

- Requires more property impacts compared to Parclo A-2 interchange configuration
- Higher cost compared to Parclo A-2 and Diamond configuration
- Requires 3 partial property acquisitions

3 Parclo B-4 ✗



Parclo B-4

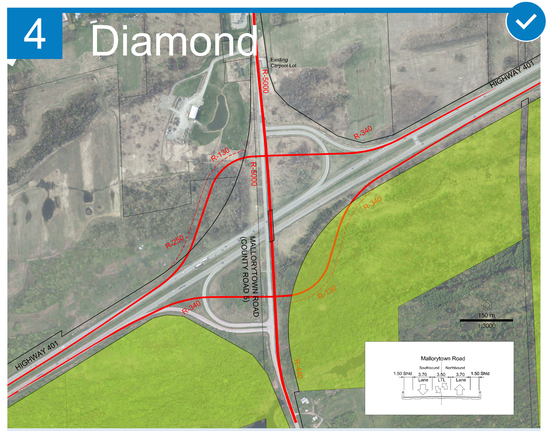
Advantages

- Standard interchange configuration in Ontario
- Higher traffic capacity compared to Parclo A-2 and Diamond configuration
- Eliminates left-turn movements from Mallorytown Road to Highway 401 entrance ramps

Disadvantages

- Loop exit ramps on freeways are less desirable than direct ramps
- Requires more property and potential environmental impacts compared to Diamond and Parlco A-2 configurations
- Requires relocation of existing carpool lot
- Requires 6 partial property acquisitions
- Greatest anticipated impacts to Parks Canada Lands compared to other alternatives
- Higher construction cost compared to other alternatives

4 Diamond ✓



Diamond

Advantages

- Standard interchange configuration in Ontario
- Maintains existing carpool lot
- Lower cost compared to Parclo A-4 configuration

Disadvantages

- Lower traffic capacity compared to Parclo A-4 configuration
- Potential for left-turn conflicts and potential for higher collision severity
- Requires 3 partial property acquisitions
- Greater anticipated impacts to Parks Canada Lands compared to Parclo A-2 and Parclo A-4 configuration

LEGEND
- ✓ Carried-forward
- ✗ Screened-out

Bridge Replacement Alternatives

A range of reasonable alternatives for replacing the existing bridge have been developed. A preliminary evaluation has been carried out to identify the preferred bridge replacement alternative.

Do Nothing

✗ Does not address structural replacement needs.

Replace Bridge on New Alignment to the East

✓ Replacement on a new alignment to the east was selected as the preferred option because:

- It minimizes impacts to Parks Canada Lands (approximately 0.87 hectares required in the southwest quadrant) compared to a new alignment to the west
- It minimizes impacts to utilities compared to a new alignment to the west, notably to the Hydro One aerial utilities located along the west side of Mallorytown Road
- The new bridge can be constructed with minimal impacts to traffic.

Replace Bridge on Existing Alignment

✗ Replacement on the existing alignment was screened out because replacement of the bridge would require the closure of the crossing road and significant impacts to traffic.

Replace Bridge on New Alignment to the West

✗ Replacement on a new alignment to the west was screened out because:

- It has more significant impacts to Parks Canada Lands (approximately 1.32 hectares required in the southwest quadrant) compared to a new alignment to the east
- It has more significant impacts to utilities compared to a new alignment to the west, notably to the Hydro One aerial utilities located along the west side of Mallorytown Road.

Stantec

HC6 Horizontal Curve #6

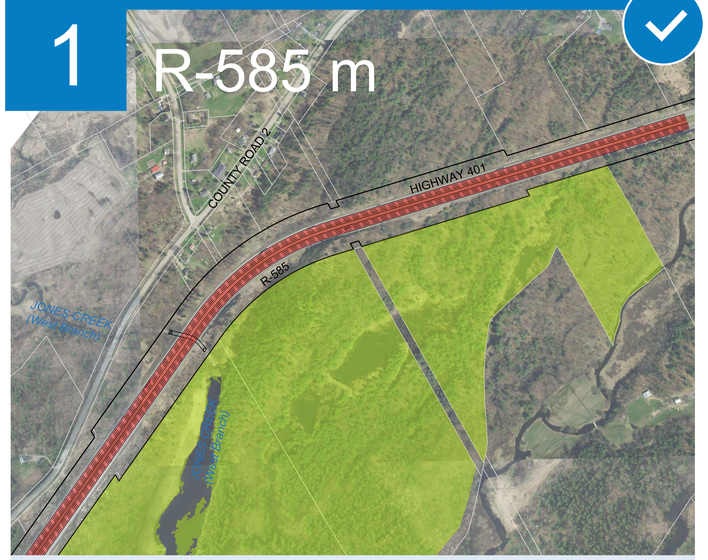
Highway Alignment Improvement Alternatives

A range of alternatives for improving the horizontal alignment of Highway 401 have been developed. A preliminary screening has been carried out to identify the alternatives that should be carried forward for further consideration.

Carried-forward ✓ Screened-out ✗

LEGEND
- New roadway
- Property required
- Limit of existing Highway 401 right-of-way
- Parks Canada Lands

1 R-585 m ✓



Description

- Maintain existing R-585 m horizontal curve
- Widen Highway 401 to the inside and provide standard median shoulder widths of 3.35 m
- Replace the existing culvert at Jones Creek (West Branch) with a new culvert or bridge

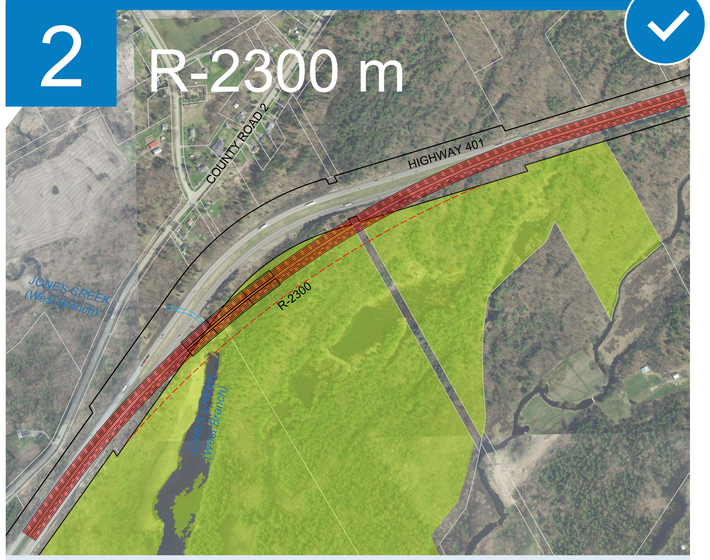
Advantages

- Minimizes property and potential environmental impacts compared to other alternatives
- Minimizes grading outside of the existing highway footprint compared to other alternatives
- Lower construction cost compared to other alternatives
- Minimizes impacts to traffic during construction compared to other aternatives
- Minimizes impacts to Jones Creek (West Branch)
- No impacts to Parks Canada Lands

Disadvantages

- Existing horizontal curve radius (R-585 m) does not meet the minimum standard for a design speed of 130 km/h
- Sight distance for westbound traffic only meets the requirements for a design speed of 90 km/h
- Requires complicated staging due to the deep excavation of existing Highway 401 to replace the existing culvert
- Requires extensive roadway protection (shoring) to facilitate the deep excavations

2 R-2300 m ✓



Description

- Improve horizontal curve to R-2300 m
- Widen Highway 401 to the inside and provide standard median shoulder widths of 3.35 m
- Replace the existing culvert at Jones Creek (West Branch) with a new 270 m long bridge

Advantages

- Sight distance for eastbound & westbound traffic meets the requirements for a design speed of 130 km/h
- Horizontal curve radius (R-2300 m) exceeds the minimum standard for a design speed of 130 km/h
- New structure at Jones Creek (West Branch) can be constructed with minimal impacts to Highway 401 traffic
- A new bridge spanning the Jones Creek (West Branch) valley provides a new wildlife crossing opportunity of Highway 401

Disadvantages

- Requires more property and potential environmental impacts compared to Alternative 1
- Requires more grading outside of the existing highway footprint compared to Alternative 1
- Higher construction cost compared to other alternatives
- Impacts Parks Canada Lands on the south side of Highway 401
- Poor soils on the south side of Highway 401 are not suitable for high embankments
- Requires a long bridge (270 m) to cross Jones Creek (West Branch) and to minimize the height of approach embankments

3 R-1850 m ✓

Description

- Improve horizontal curve to R-1850 m
- Widen Highway 401 to the inside with standard eastbound median shoulder width of 3.35 m and wider 4.6 m westbound median shoulder to meet the required sight distance
- Replace the existing culvert at Jones Creek (West Branch) with a new 68 m long bridge

Advantages

- Horizontal curve radius (R-1850 m) exceeds the minimum standard for a design speed of 130 km/h
- Sight distance for eastbound & westbound traffic meets the requirements for a design speed of 130 km/h
- Minimizes impacts to Jones Creek (West Branch) compared to Alternative 2
- New highway alignment avoids wetland on south side of Highway 401 at Jones Creek (West Branch)
- A new bridge spanning the Jones Creek (West Branch) valley provides a new wildlife crossing opportunity of Highway 401
- No impacts to Parks Canada Lands

Disadvantages

- Requires a wider westbound median shoulder (4.6 m) to achieve the required sight distance for a design speed of 130 km/h
- Requires more property and potential environmental impacts compared to other alternatives
- Requires more grading outside of the existing highway footprint compared to other alternatives
- Higher construction cost compared to Alternative 1
- Requires a new crossing of Jones Creek (East Branch)

S Sherwood Springs Road

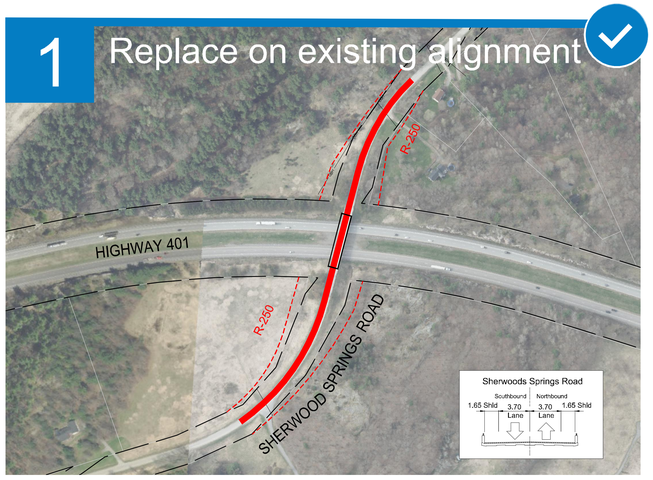
Bridge Improvement Alternatives

A range of alternatives for replacing this bridge have been developed. A preliminary screening has been carried out to identify the alternatives that should be carried forward for further consideration.

Carried-forward ✓ Screened-out ✗

LEGEND
- New Roadway
- New Structure
- Property Required
- Limit of Existing MTO Right-of-way

1 Replace on existing alignment ✓



Bridge closed with detour

Advantages

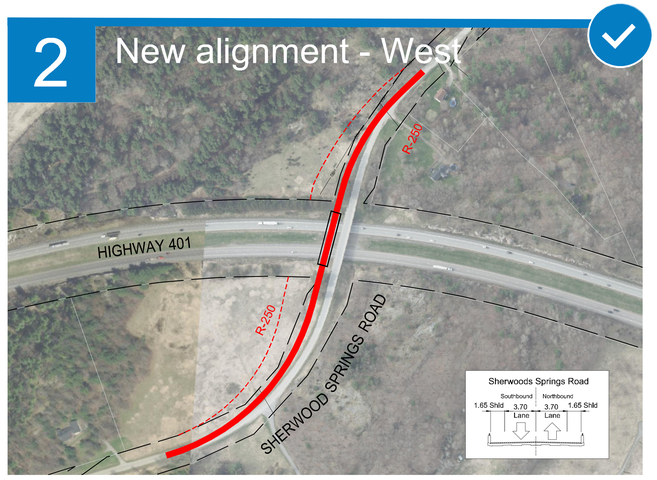
- Maintains existing alignment of Sherwood Springs Road
- Less property required compared to Alternatives 2 and 3
- Shorter anticipated construction duration compared to replacing on new alignment
- Significantly lower cost compared to replacing on new alignment

Disadvantages

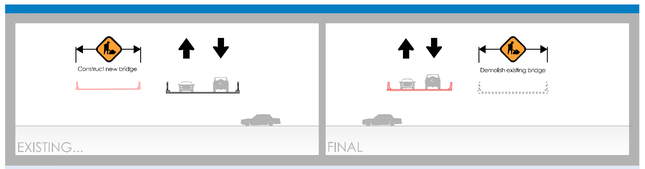
- Impacts 2 hydro poles on the west side of Sherwood Springs Road
- Introduces up to 11 km of out-of-way travel to cross Highway 401 via detour route

Note: The final detour route will be confirmed in consultation with the affected municipalities.

2 New alignment - West ✓



Bridge open with two lanes



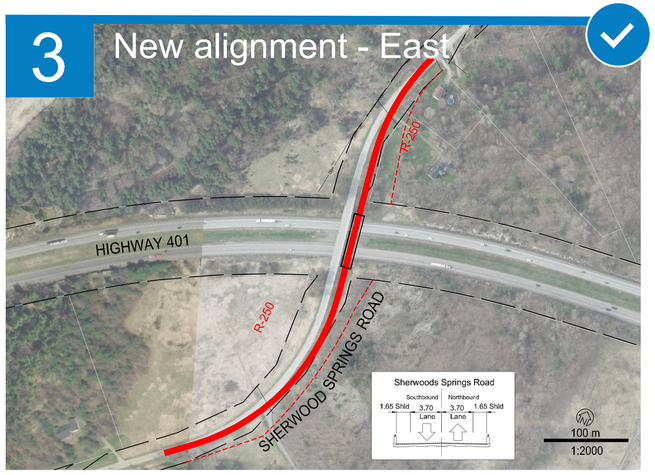
Advantages

- Maintains access across Highway 401 during construction with minimal impacts to traffic

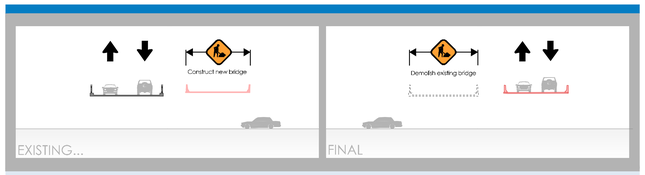
Disadvantages

- Requires alignment shift on Sherwood Springs Road
- Requires more property compared to Alternatives 1 and 3
- Impacts 3 hydro poles on the west side of Sherwood Springs Road
- Significantly higher cost compared to replacing on existing alignment
- Longer anticipated construction duration compared to replacing on existing alignment

3 New alignment - East ✓



Bridge open with two lanes



Advantages

- Maintains access across Highway 401 during construction with minimal impacts to traffic
- Does not impact the existing hydro pole line on the west side of Sherwood Springs Road

Disadvantages

- Requires alignment shift on Sherwood Springs Road
- Requires more property compared to Alternative 1
- Impacts 1 hydro pole on the east side of Sherwood Springs Road
- Significantly higher cost compared to replacing on existing alignment
- Longer anticipated construction duration compared to replacing on existing alignment

Do Nothing ✗

Disadvantages

- Does not accommodate short-term or long-term structure needs

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T1 Thousand Islands Parkway

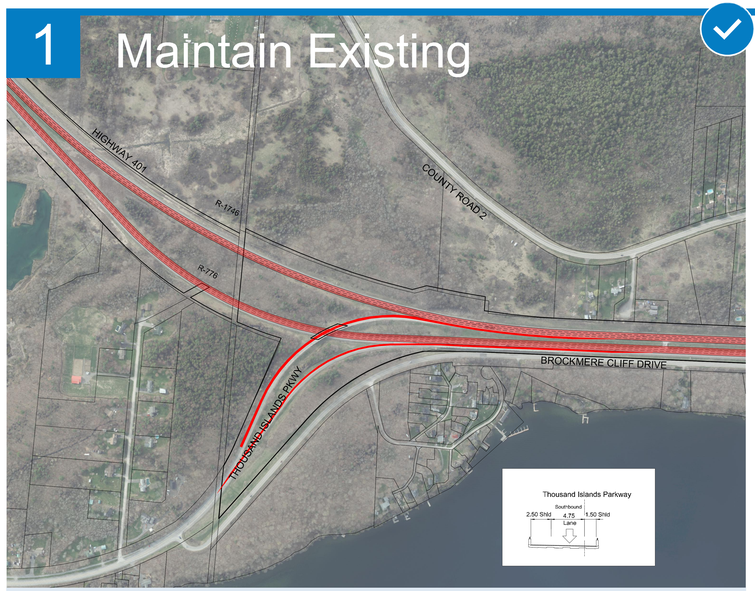
Interchange Alternatives

A range of interchange alternatives for improving access to and from Highway 401 have been developed. A preliminary screening has been carried out to identify the alternatives that should be carried forward for further consideration.

Carried-forward ✓ Screened-out ✗

LEGEND
- New roadway (Initial Phase)
- New roadway (Ultimate Phase)
- Property required
- Limit of existing Highway 401 right-of-way
- Full Property Acquisition

1 Maintain Existing ✓



Description

- Maintains existing ramps to and from the east
- Widen existing Highway 401 Eastbound and Westbound Lanes
- Requires new bridge for Ramp E-S

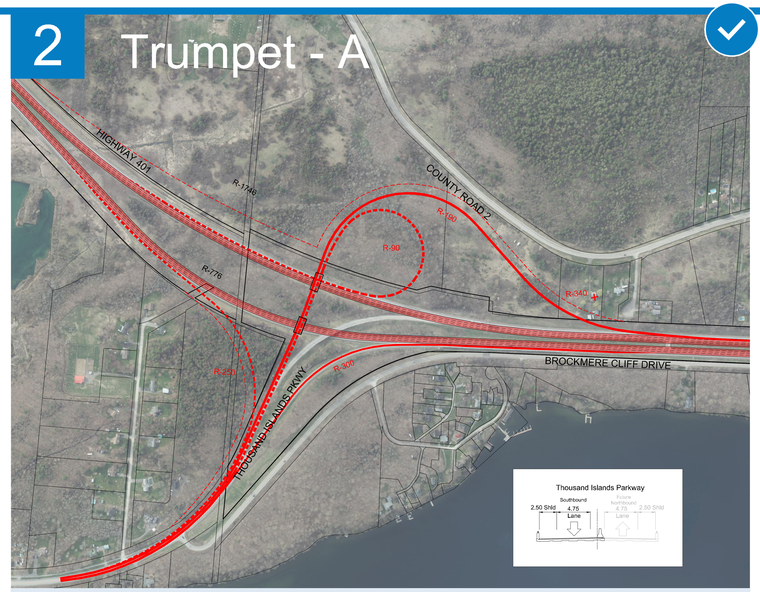
Advantages

- Requires less property and potential environmental impacts compared to other alternatives
- Lower cost compared to other alternatives

Disadvantages

- Does not provide full traffic movements between Highway 401 and Thousand Islands Parkway
- Requires a wider Highway 401 median to the east to maintain the left-exit ramp
- Requires a long-term closure of Ramp E-S
- Does not provide a connection to County Road 2

2 Trumpet - A ✓



Description

- Trumpet - A interchange configuration
- Maintains existing ramps to and from the east (Initial Phase)
- Provides new ramps to and from the west (Ultimate Phase)
- Widen existing Highway 401 Eastbound and Westbound lanes

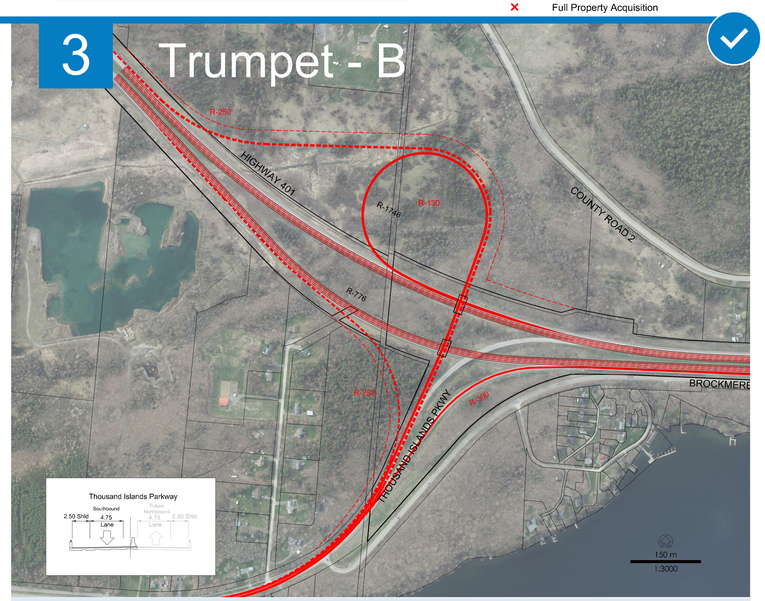
Advantages

- Provides full traffic movements between Highway 401 and Thousand Islands Parkway
- Maintains access from Highway 401 westbound to Thousand Islands Parkway southbound during construction with minimal impacts to traffic
- Provides a high speed exit ramp in advance of the structure
- Requires less property and potential environmental impacts compared to Alternative 3
- Lower cost compared to Alternative 3

Disadvantages

- Does not provide a connection to County Road 2
- Requires one full property acquisition
- Ramp W-S exit radius does not meet the requirements for a design speed of 130 km/h

3 Trumpet - B ✓



Description

- Trumpet - B interchange configuration
- Maintains existing ramps to and from the east (Initial Phase)
- Provides new ramps to and from the west (Ultimate Phase)
- Widen existing Highway 401 Eastbound and Westbound lanes

Advantages

- Provides full traffic movements between Highway 401 and Thousand Islands Parkway
- Maintains access from Highway 401 westbound to Thousand Islands Parkway southbound during construction with minimal impacts to traffic

Disadvantages

- High speed traffic must exit from the freeway on a small radius loop ramp located beyond the structure
- Does not provide a connection to County Road 2
- Requires more property and potential environmental impacts compared to Alternative 2
- Ramp W-S exit radius does not meet the requirements for a design speed of 130 km/h
- Higher cost compared to Alternative 2

HC 9-10

Horizontal Curves #9 & #10

Highway Alignment Improvement Alternatives

A range of alternatives for improving the horizontal alignment of Highway 401 have been developed. A preliminary evaluation has been carried out to identify the alternative that should be carried forward to the Preferred Plan.

Carried-forward ✓ Screened-out ✗

LEGEND
- New roadway
- Property required
- Limit of existing Highway 401 right-of-way

1 R-1845 m & R-585 m ✓

Description
- Maintain existing R-1845 m and R-585 m horizontal curves
- Maintain existing eastbound median shoulder width of 5.4 m

Advantages
- Does not impact MTO Patrol Yard
- Less property and potential environmental impacts compared to other alternatives
- Requires less grading outside of the existing highway footprint compared to other alternatives
- Requires less complicated traffic staging compared to other alternatives
- Lower construction cost compared to other alternatives

Disadvantages
- Existing horizontal curve radius (R-585 m) does not meet the minimum standard for design speed of 130 km/h
- Sight distance for eastbound traffic only meets the requirements for a design speed of 90 km/h
- Existing eastbound median shoulder width exceeds the maximum desirable median shoulder width of 4.6 m
- Significant anticipated impacts to Brockmere Cliff Drive

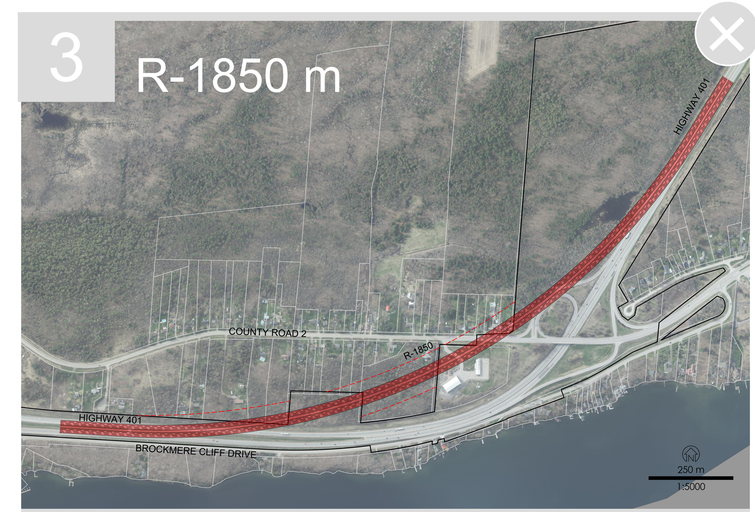
2 R-1850 m & R-950 m ✓

Description
- Improve horizontal curves to R-1850 m and R-950 m
- Provide eastbound median shoulder of 4.6 m to improve sight distance
- Provide standard westbound median shoulder width of 3.35 m

Advantages
- Horizontal curve radius (R-950 m) meets the minimum standard for design speed of 130 km/h
- Improves eastbound sight distance to meet the requirements for a design speed of 100 km/h
- Minimimal anticipated impacts to MTO Patrol Yard
- Less property and potential environmental impacts compared to Alternative 3
- Requires less grading outside of the existing highway footprint compared to Alternative 3
- Lower construction cost compared to Alternative 3

Disadvantages
- Sight distance for eastbound traffic does not meet the requirements for a design speed of 130 km/h
- Requires the replacement of the County Road 2 bridge
- Requires more complicated traffic staging compared to Alternative 3

3 R-1850 m ✗



Description
- Improve horizontal curve to R-1850 m
- Widen Highway 401 to the inside with standard westbound median shoulder width of 3.35 m and wider 4.6 m eastbound median shoulder to meet the required sight distance

Advantages
- Horizontal curve radius (R-1850 m) exceeds the minimum standard for design speed of 130 km/h
- Sight distance for eastbound traffic meets the requirements for a design speed of 130 km/h due to larger horizontal curve and wider westbound median shoulder
- Requires less complicated traffic staging compared to Alternative 2

Disadvantages
- Significant impacts to County Road 2 interchange
- Significant impacts to residential properties on County Road 2
- Significant impacts to MTO Patrol Yard
- Requires more property and potential environmental impacts compared to other alternatives
- Requires more grading outside of the existing highway footprint compared to other alternatives
- Higher construction cost compared to other alternatives
- Requires the replacement of the County Road 2 bridge

2 County Road 2

Interchange Alternatives (New Bridge South of Existing)

A range of interchange alternatives for improving access to and from Highway 401 have been developed. A preliminary screening has been carried out to identify the alternatives that should be carried forward for further consideration.

Carried-forward ✓ Screened-out ✗

LEGEND
- New roadway
- Property required
- Limit of existing Highway 401 right-of-way
- Full Property Acquisition
- Ramp Closure

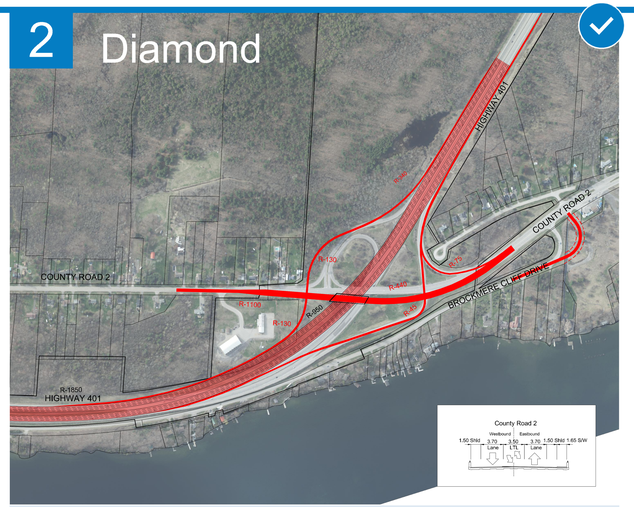
1 Parclo A2/Diamond

Description
- Parclo A-2/Diamond interchange configuration
- County Road 2 realigned with new bridge over Highway 401

Advantages
- Provides free-flow traffic movement from County Road 2 westbound to Highway 401 westbound
- Provides a higher traffic capacity compared to Alternative 2

Disadvantages
- Requires more property and potential environmental impacts compared to other alternatives
- Higher cost compared to other alternatives
- Requires more complicated traffic staging compared to other alternatives

2 Diamond



Description
- Diamond interchange configuration
- County Road 2 realigned with new bridge over Highway 401

Advantages
- Requires less property and potential environmental impacts compared to Alternative 1
- Lower cost compared to Alternative 1
- Requires less complicated traffic staging compared to Alternative 1

Disadvantages
- Lower traffic capacity compared to Alternative 1
- Potential for left-turn conflicts and higher collision severity
- Minor impacts to MTO Patrol Yard when compared to other alternatives

3 Relocate Interchange to Thousand Islands Parkway

Removal of the existing interchange ramps requires a new County Road 2 connection to Highway 401 to the west (See Thousand Islands Parkway Alternatives 4, 5 and 6)

Description
- Relocate the interchange ramps to the Thousand Islands Parkway to the west
- County Road 2 realigned with new bridge over Highway 401

Advantages
- Requires less property and potential environmental impacts compared to other alternatives
- Removal of interchange ramps improves pedestrian access and safety for crossing Highway 401
- Lower cost compared to other alternatives
- Less complicated traffic staging compared to other alternatives

Disadvantages
- Removes access to Highway 401 at this location
- MTO Patrol Yard is not located at an interchange

LEGEND
- ✓ Carried-forward
- ✗ Screened-out

Bridge Replacement Alternatives

A range of reasonable alternatives for replacing the existing bridge have been developed. A preliminary evaluation has been carried out to identify the preferred bridge replacement alternative.

Do Nothing
✗ Does not address structural replacement needs.

Replace Bridge on New Alignment to the North
✗ Replacement on a new alignment to the north was screened out because:
- It impacts more residential properties
- It provides a less desirable horizontal alignment for County Road 2 compared to new alignment to the south

Replace Bridge on Existing Alignment
✗ Replacement on the existing alignment was screened out because replacement of the bridge would require the closure of the crossing road and significant impacts to traffic.

Replace Bridge on New Alignment to the South
✓ Replacement on a new alignment to the south was selected as the preferred option because:
- It minimizes impacts to residential properties
- It provides a better horizontal alignment for County Road 2 compared to new alignment to the north

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T2 Thousand Islands Parkway

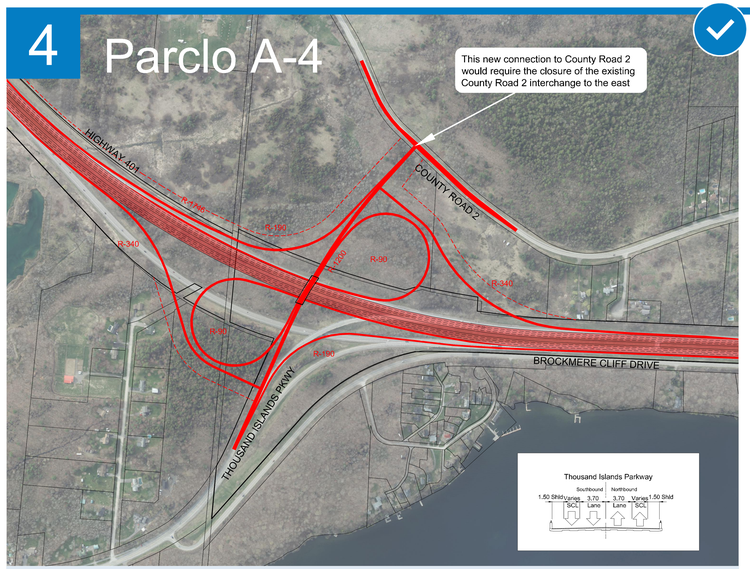
Interchange Alternatives

A range of interchange alternatives for providing access to and from Highway 401 have been developed. A preliminary screening has been carried out to identify the alternatives that should be carried forward for further consideration.

Carried-forward ✓ Screened-out ✗

LEGEND
- New roadway
- Property required
- Limit of existing Highway 401 right-of-way
- Full Property Acquisition

4 Parclo A-4 ✓

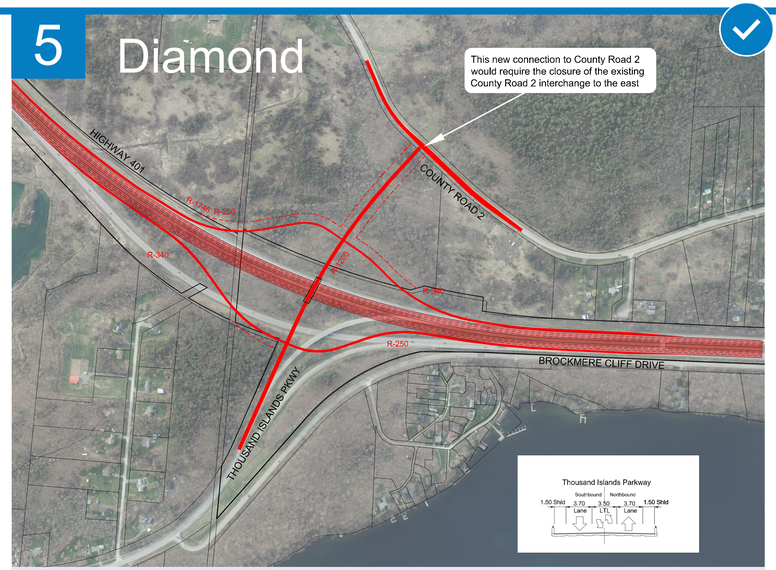


Description
- Requires closure of the existing County Road 2 interchange ramps
- Parclo A-4 interchange configuration
- Provide new ramps to and from the west and a new connection to County Road 2

Advantages
- Provides full traffic movements between Highway 401, Thousand Islands Parkway and County Road 2
- Higher traffic capacity compared to Alternative 5
- Maintains continuous County Road 2 alignment

Disadvantages
- Requires the realignment of the Highway 401 eastbound lanes
- The north ramp terminal intersection is located close to the new County Road 2 intersection
- Requires more property and potential environmental impacts compared to Alternative 5
- Higher cost compared to Alternative 5

5 Diamond ✓

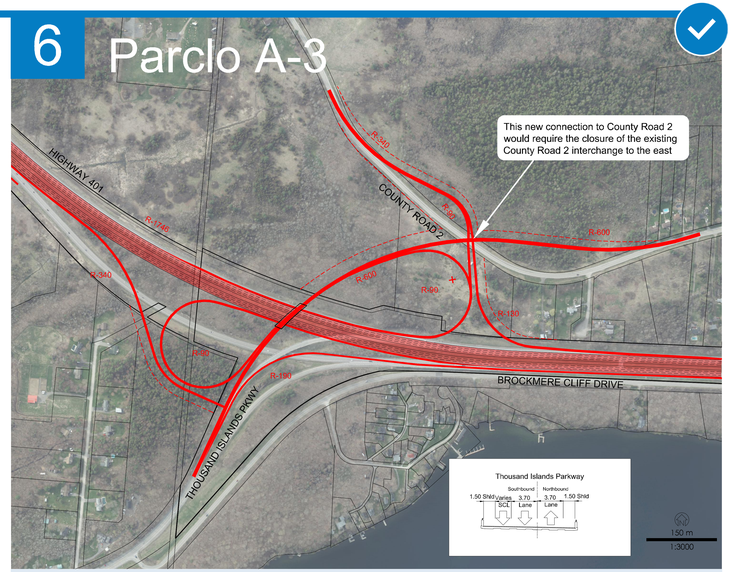


Description
- Requires closure of the existing County Road 2 interchange ramps
- Diamond interchange configuration
- Provide new ramps to and from the west and a new connection to County Road 2

Advantages
- Provides full traffic movements between Highway 401, Thousand Islands Parkway and County Road 2
- Increased intersection spacing between north ramp terminal and County Road 2 compared to Alternative 4
- Requires less property and potential environmental impacts compared to other alternatives
- Lower cost compared to other alternatives
- Maintains continuous County Road 2 alignment

Disadvantages
- Requires the realignment of the Highway 401 eastbound lanes
- Lower traffic capacity compared to other alternatives
- Potential for left-turn conflicts and higher collision severity
- Potential for wrong-way traffic to enter Highway 401

6 Parclo A-3 ✓



Description
- Requires closure of the existing County Road 2 interchange ramps
- Parclo A-3 interchange configuration
- Provide new ramps to and from the west and a new continuous connection to County Road 2

Advantages
- Provides full traffic movements between Highway 401,Thousand Islands Parkway and County Road 2
- Higher traffic capacity compared to Alternative 5
- Provides continuous connection of County Road 2 to Thousand Islands Parkway

Disadvantages
- Requires the realignment of the Highway 401 eastbound lanes
- Requires more property and potential environmental impacts compared to Alternative 5
- Higher cost compared to Alternative 5
- Does not maintain continuous County Road 2 alignment

Stantec

L CN Railway & Lyn Road Bridges

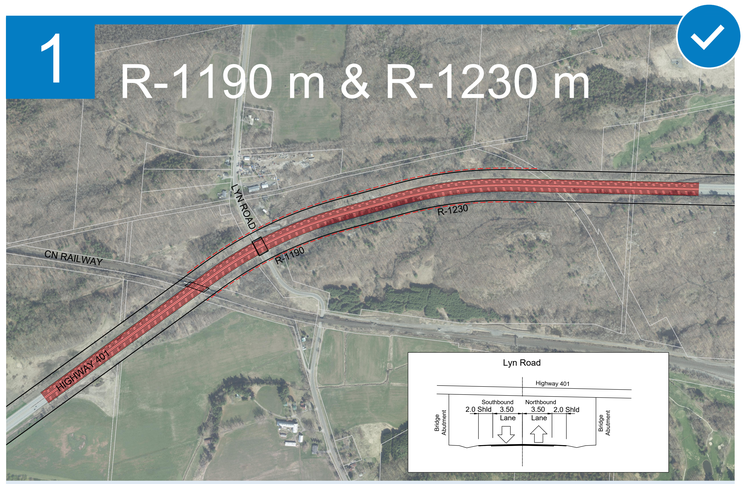
Bridge Improvement Alternatives

A range of alternatives for replacing the CN Railway bridge and the Lyn Road bridge have been developed. A preliminary screening has been carried out to identify the alternatives that should be carried forward for further consideration.

Carried-forward ✓ Screened-out ✗

LEGEND
- New roadway
- Property required
- Limit of existing Highway 401 right-of-way

1 R-1190 m & R-1230 m



Description

- Maintain existing R-1190 m and R-1230 m horizontal curves
- Widen Highway 401 to the outside
- Maintain existing eastbound median shoulder width of 3.9 m
- Increase westbound median shoulder width to 4.6 m

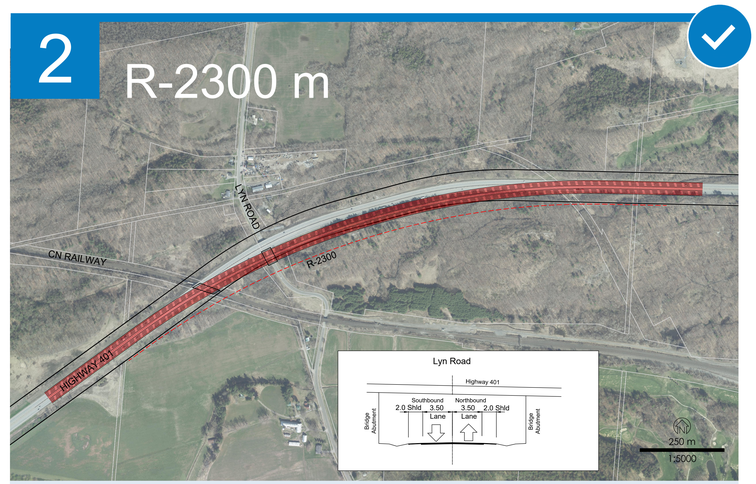
Advantages

- Horizontal curve radii (R-1190 m, R-1230 m) exceed the minimum standard for design speed of 130 km/h
- Less property and potential environmental impacts compared to Alternative 2
- Requires less grading outside of the existing highway footprint compared to Alternative 2
- Lower construction cost compared to Alternative 2

Disadvantages

- Sight distance for westbound traffic at each curve only meets the requirements for a design speed of 110 km/h
- Maintains undesirable broken back curves (two curves in the same direction with a short tangent between them)
- More complicated bridge staging for Lyn Road compared to Alternative 2

2 R-2300 m



Description

- Improve existing alignment with a single R-2300 m horizontal curve
- Widen Highway 401 to the outside
- Provide standard eastbound and westbound median shoulder width of 3.35 m

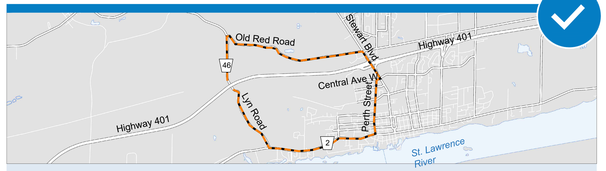
Advantages

- Horizontal curve radius (R-2300 m) exceeds the minimum standard for design speed of 130 km/h
- Sight distance for eastbound & westbound traffic meets the requirements for a design speed of 130 km/h
- Eliminates the undesirable broken back curves
- Less complicated bridge staging for Lyn Road compared to Alternative 1

Disadvantages

- Requires more property and potential environmental impacts compared to Alternative 1
- Requires more grading outside of the existing highway footprint compared to Alternative 1
- Higher construction cost compared to Alternative 1

Lyn Road Closed with Detour during Construction



Advantages

- Shorter construction duration compared to keeping the crossing road open
- Lower construction cost compared to keeping the crossing road open

Disadvantages

- Introduces up to 14.5 km of out-of-way travel for traffic to cross Highway 401 via detour route

Note: The final detour route will be confirmed in consultation with the affected municipalities.

Lyn Road Open during Construction

Advantages

- No out-of-way travel

Disadvantages

- Longer construction duration compared to closing the road
- Requires reduced lane widths and lane shifts on Lyn Road during construction
- Minor delays to traffic during construction
- Higher construction cost compared to closing the road

Drainage Improvements

There are four structural culverts in the study area. The following improvement strategies will be considered:

Replace with new culvert:

- (+) Long-term strategy
- (+) Accommodates interim (6-lane) Highway 401
- (+) Accommodates ultimate (8-lane) Highway 401
- (−) Requires significant excavation and temporary shoring

Replace with bridge:

- (+) Long-term strategy
- (+) Accommodates interim (6-lane) Highway 401
- (+) Accommodates ultimate (8-lane) Highway 401
- (−) Not economical for small embankments

Culvert rehabilitation with extension:

- (−) Not a long-term strategy
- (+) Potential short-term strategy
- (+) Minimizes excavation requirements and traffic disruptions
- (+) Accommodates interim (6-lane) Highway 401
- (−) Does not accommodate ultimate (8-lane) Highway 401

Culvert rehabilitation and retaining walls:

- (−) Not a long-term strategy
- (+) Potential short-term strategy
- (+) Minimizes excavation and traffic disruptions
- (+) Accommodates interim (6-lane) Highway 401
- (−) Does not accommodate ultimate (8-lane) Highway 401

16X-0226/C0

16X-0167/C0
(Jones Creek West Branch)

16X-0168/C0
(Jones Creek East Branch)

16X-0236/C0

Evaluation Process

Identify Criteria

Evaluation Criteria are established through:

- public input
- similar projects
- provincial guidelines
- existing conditions

Weigh Criteria

Each criterion is assigned a weight factor that best reflects its relative importance.

Evaluate Alternatives

All feasible alternatives are measured and given a score based on how well each is judged to satisfy the evaluation criteria

Rank Alternatives

The sum of the weighted scores provides a total score for each alternative. This is the basis for ranking the alternatives and identifying the Preferred Plan

How is the Preferred Plan Selected?

A detailed evaluation of the short-listed alternatives will be carried out to identify an improvement plan that addresses structural and future transportation needs and provides safe operations, while minimizing the impacts to the natural, social and cultural environments. This is accomplished by identifying evaluation criteria along with their relative importance, and then ranking the overall scores of the design alternatives.

The Preferred Plan

The concluding step in the analysis and evaluation process is the selection of a Preferred Plan.

This process includes:

- Reviewing the results of the analysis and evaluation based on specialist work and input received during the study
- Determining which criteria have the most influence on the outcome of the evaluation process
- Considering the sensitivity of the weightings
- Confirming the ranking of the alternatives
- Considering public/stakeholder response to the evaluation process

Preliminary Evaluation Criteria

Engineering

Geometrics & Safety
- Design standards for provincial highways
- Potential for collisions on Highway 401
- Crossing road grades
- Pedestrian and cyclist accommodations

Constructability
- Construction techniques
- Traffic flow and operations, including local access and out-of-way travel

Utilities
- Impacts to utilities

Cost
- Consider total cost including utility relocations and property acquisition

Community

Property
- Impacts to private property

Noise & Air Quality
- Proximity to residences

Built & Cultural Heritage
- Impacts to potential cultural heritage resources

Archaeology
- Impacts to areas of archeological potential

Contamination
- Potential to encounter contaminated soils/groundwater

Groundwater
- Potential to impact groundwater recharge areas and highly vulnerable aquifers

Environment

Terrestrial Ecosystem
- Impacts on wildlife habitat and provincially significant wetlands
- Impacts on significant trees and vegetation

Fish & Fish Habitat
- Impacts to watercourses and fish and fish habitat

Species of Conservation Concern
- Impacts to Species-at-Risk and habitat associated with Species-at-Risk

Designated Areas
- Impacts to Significant Ecological Area
- Impacts to Thousand Islands National Park

Bridge Improvements

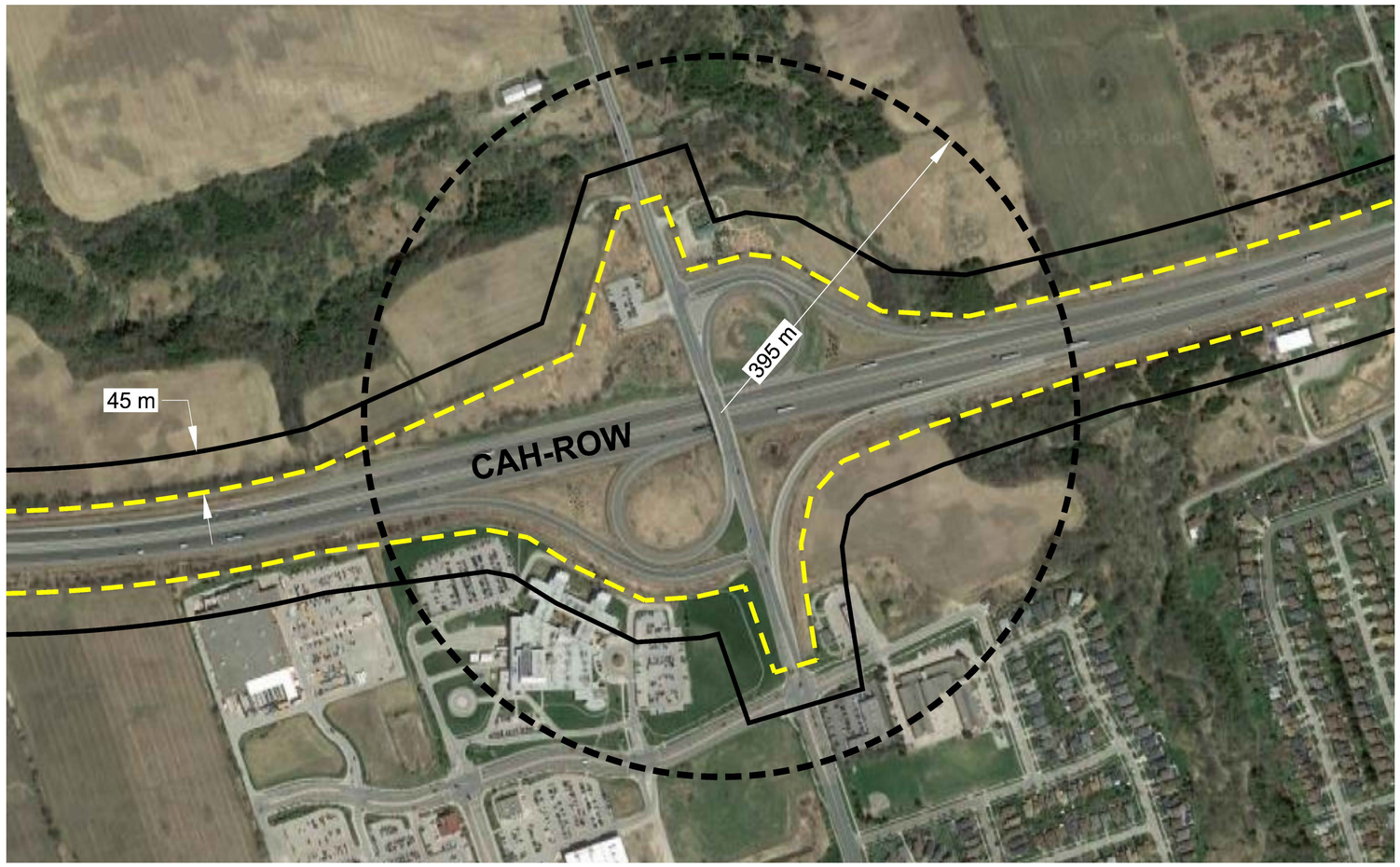
Culvert/Drainage Improvements

Highway Improvements

Designation and MTO Permit Control Areas

Once a Technically Preferred Alternative has been identified, the Ministry of Transportation may designate lands as highway and acquire property prior to EA process completion. A designation enables the Ministry to provide route/corridor protection through the application of development control measures along the corridor and in the vicinity of the designated lands. For more information about highway corridor management, please visit: https://www.ontario.ca/page/highway-corridor-management.

Example of MTO Permit Control Areas: Controlled-Access Highways (CAH)



Any work on private property that is within 45 metres of the highway property or 395 meters from the centrepoint of an intersection or interchange requires approval from the MTO.

Any work on private property that is within 800 metres of the highway property and that may have a large impact on traffic, is also subject to approval from MTO.

For more details on requirements for permits, please visit: https://www.Ontario.ca/page/highway-corridor-management or make an inquiry regarding a specific property: https://www.hcms.mto.gov.on.ca/

Note: Limit of the MTO right-of-way shown on the figure is for illustrative purposes only.

Thank you for participating in this PIC

NEXT STEPS FOLLOWING THIS PIC:

- Review, consider and respond to the comments received
- Complete the detailed evaluation of alternatives in consideration of potential impacts and possible mitigation measures
- Prepare for and hold Public Information Centre 2 to present and gather feedback on the evaluation of alternatives and Preliminary Preferred Plan (tentatively scheduled for Spring 2026)

Ways to provide your comments:

- Fill out a comment sheet and place it in the box
- Email comments@hwy401mallorytowntobrockville.ca
- Contact the Project Team:

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We would appreciate receiving your comments by May 26, 2025

Freedom of Information and Protection of Privacy Act
Comments and information regarding this study are being collected to satisfy the requirements of the Ontario Environmental Assessment Act, and in accordance with the Freedom of Information and Privacy Act. With the exception of personal information, all comments will become part of the public record.