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Highway 401

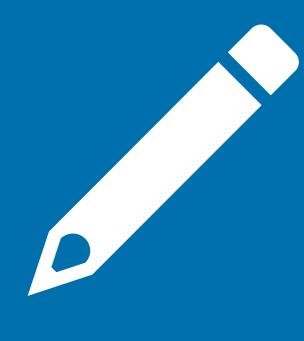
Quinte West

Planning, Preliminary Design, and Class Environmental Assessment Study

GWP 4027-18-00







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 2

The purpose of this PIC is to present and gather your feedback on the:

- Study background and information presented to date
- Evaluation of the alternatives
- Preliminary design for the Preferred Plan
- Potential environmental impacts and proposed mitigation measures

Other information related to this PIC that is available on the project website includes:

- A PDF copy of this presentation
- A PDF copy of the Preferred Plan



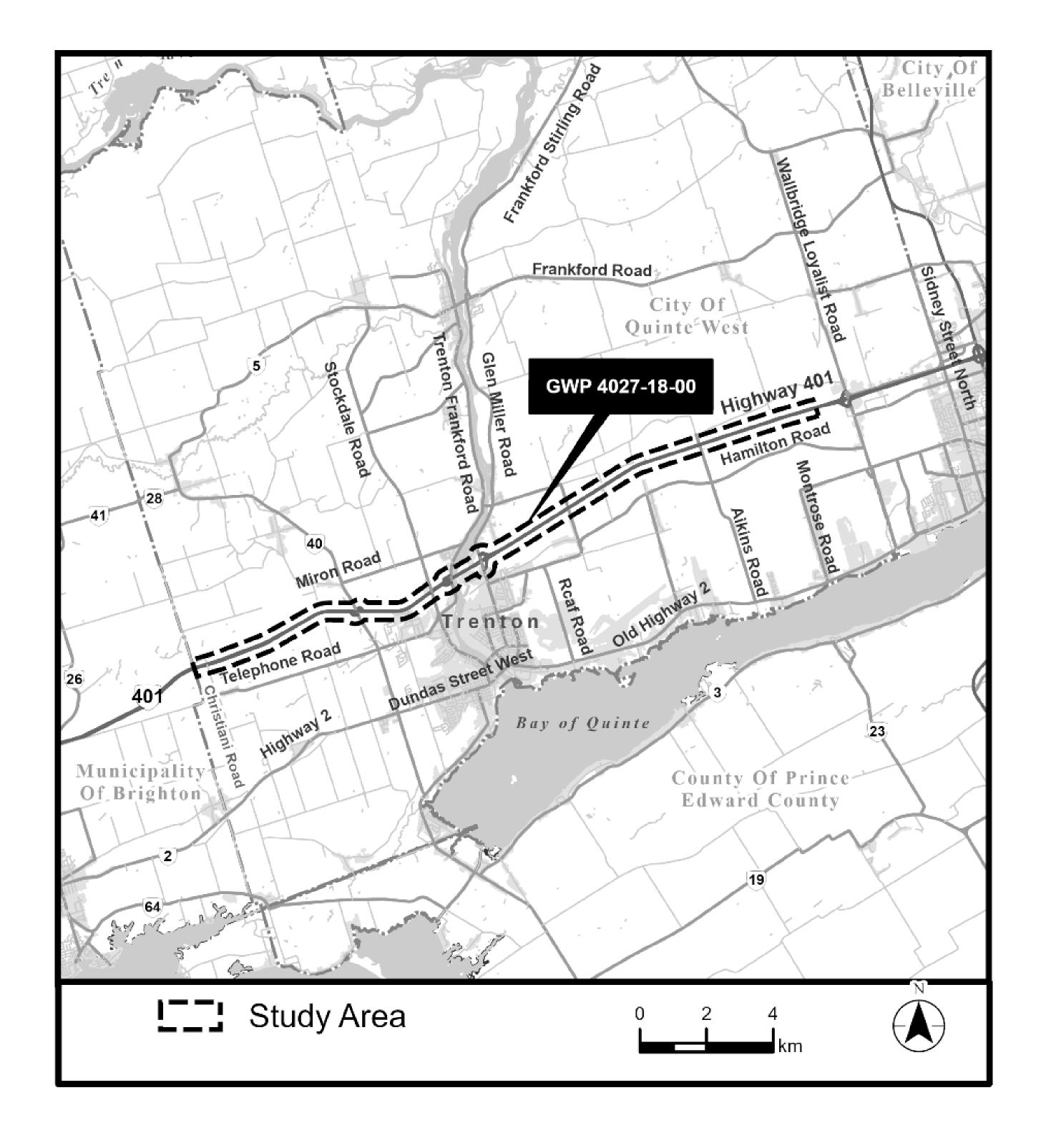


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About the Project

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 0.4 km west of Christiani Road to 1 km west of Wallbridge Loyalist Road (approximately 20 km) which includes the following:

- Replacement and/or rehabilitation of bridges and structural culverts
- Interchange modifications at Wooler Road, Trenton Frankford Quinte West 33 and Glen Miller Road
- Establishing the Highway 401 future footprint for interim
 6-lanes and ultimate 8-lanes
- Commuter parking lot expansions or relocations



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 the structures along it, was built in the 1950s and 1960s. Locally, Highway 401 connects the communities of Quinte West to Belleville and Brighton.

As part of this study, the project team has reviewed existing conditions, developed and evaluated alternatives, identified appropriate improvements, and developed 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).



Challenges and Opportunities

The purpose of this 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 has been initiated to address the following challenges and opportunities:

Challenges

- Many of the bridges and culverts in the study area are nearing the end of their service life and will require rehabilitation and/or replacement in the near future
- The existing Highway 401 platform cannot accommodate the traffic staging required to rehabilitate or replace the bridges and structural culverts

Opportunities

- The study will assess the existing bridges and culverts in the study area and develop appropriate rehabilitation or replacement strategies to maintain the safe operation of the Highway 401 corridor for the current and future planning horizons
- For structural planning purposes the study will establish the future Highway 401 footprint for six and eight lanes, to ensure an appropriate design of the replacement bridges

Environmental Assessment Process

This study was originally initiated under the Class Environmental Assessment for Provincial Transportation Facilities (2000) in 2022, prior to the establishment of the 2024 Class EA, which is approved under the Ontario Environmental Assessment Act for provincial transportation projects of a defined scope and magnitude. This project will continue to follow the 2000 Class EA process.

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.

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

Class Environmental Assessment Process

For Group 'B' Projects

Ongoing Transportation Needs Assessment



Ongoing Public Consultation

Need Identified

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

Future Stages

Detail Design

Construction





Study Commencement Notifications and project website (September 2022)
Newspaper Notice published September 15, 2022



Municipal Advisory Committee Meeting 1 (February 1, 2024)



Public Information Centre 1 (February 22, 2024)



Municipal Advisory Committee Meeting 2 (October 16, 2025)



Public Information Centre 2 (November 5, 2025)



we are here



Transportation Environmental Study Report 30-day public comment period

30-day Minister of Environment, Conservation and Parks Review



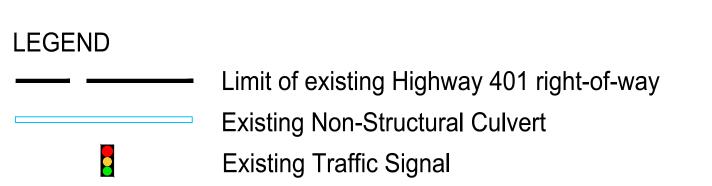
Consultation during Detail Design (timing to be determined)

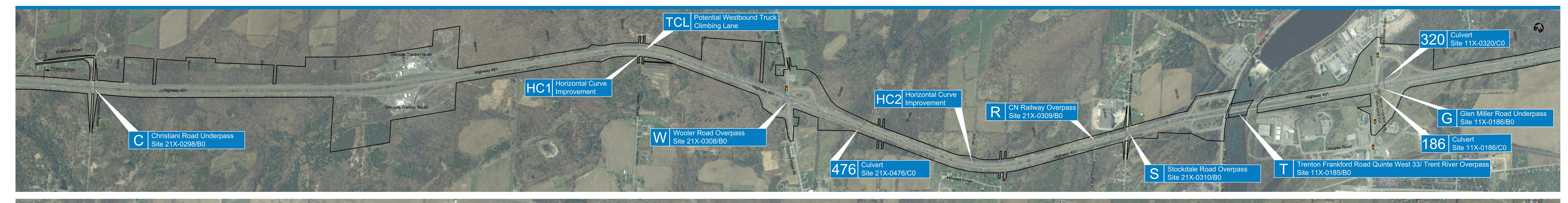


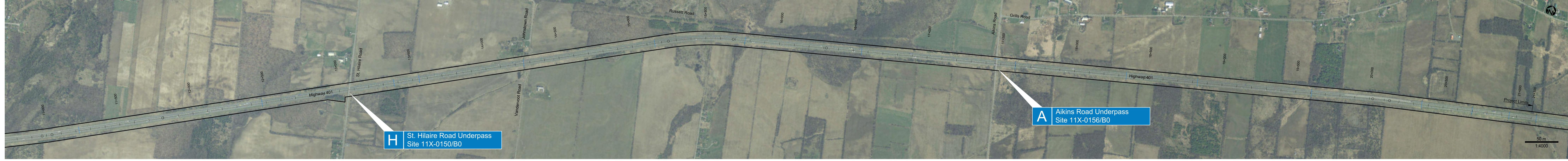
Consultation during Construction (timing to be determined)

Project Overview

Highway 401 Quinte West Planning Study GWP 4027-18-00









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.

The following structures are being assessed:

- Christiani Road bridge over Highway 401
- W Highway 401 bridge over Wooler Road
- R Highway 401 bridge over CN Railway
- Highway 401 bridge over Stockdale Road
- Highway 401 bridge over Trent River / Trenton Frankford Rd Quinte West 33
- Glen Miller Road bridge over Highway 401
- St. Hilaire Road bridge over Highway 401
- Aikins Road bridge over Highway 401



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



Interchange Improvements

Existing interchanges at Wooler Road (County Road 40), Trenton Frankford Road Quinte Road 33, and Glen Miller Road may need to be reconfigured to accommodate the Highway 401 footprint for the interim six lanes and ultimate eight lanes and future transportation needs.



There are three structural culverts (Station 15+716 Murray Township and Stations 10+057 and 20+133 Sidney 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.

Highway 401 Quinte West Planning Study GWP 4027-18-00

Evaluation of Alternatives

A detailed evaluation of alternatives was 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.

Evaluation Process



Identify Criteria

Evaluation Criteria are established through:

- public input
- project needs and requirements
- similar projects
- provincial guidelines
- existing conditions



Weigh Criteria

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



Evaluate Alternatives

The sum of the weighted scores provides a total score for each alternative. This is the basis for ranking the alternatives and, along with a reasoned argument assessment approach, helps to identify the preferred plan



The Highest Scoring Alternative

Evaluation Criteria

The following criteria were used to evaluate the Alternatives. Criteria were refined based on the input received at and following PIC 1, and used to identify the Technically Preferred Plan:

Engineering

Traffic Operations

 Projected Future traffic and Level of Service on Highway 401 and at interchanges

Geometrics & Safety

- Design standards for provincial highways
- Potential for collisions
- Crossing road grades at ramp terminals
- Potential to accommodate Long Combination Vehicles
- Pedestrian and cyclist accommodations

Constructability

- Construction techniques
- Complexity of staging and detours
- Traffic flow operations, including local access and out of way travel

Utilities

Length of impacts to utilities

Social and Cultural Environment

Property

 Approximate number of and areas of private properties potentially impacted

Noise & Air Quality

Proximity to residences

Archaeology

 Impacts to areas of archaeological potential

Built Heritage

Impacts to areas of built and cultural heritage potential

Contamination

Potential to encounter contaminated soils/groundwater

Natural Environment

Terrestrial Ecosystem

- Area of impact to wildlife habitat
- Area of impact to significant trees and vegetation

Species of Conservation Concern, Species at Risk

 Potential to impact Species at Risk and associated habitat

Fish & Fish Habitat

Impacts to watercourses and fish and fish habitat

Designated Areas

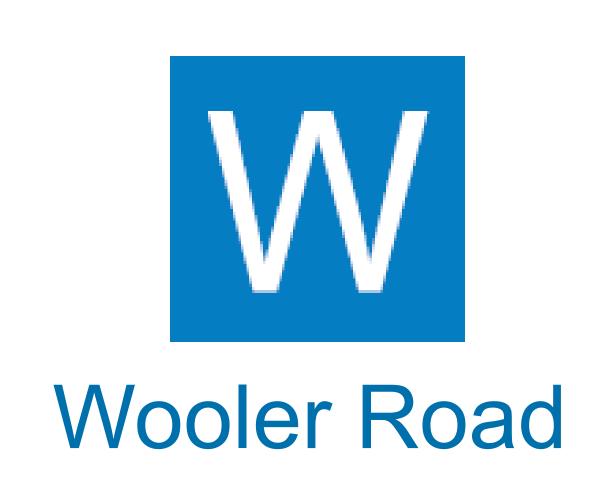
Impacts to Provincially Significant Wetlands

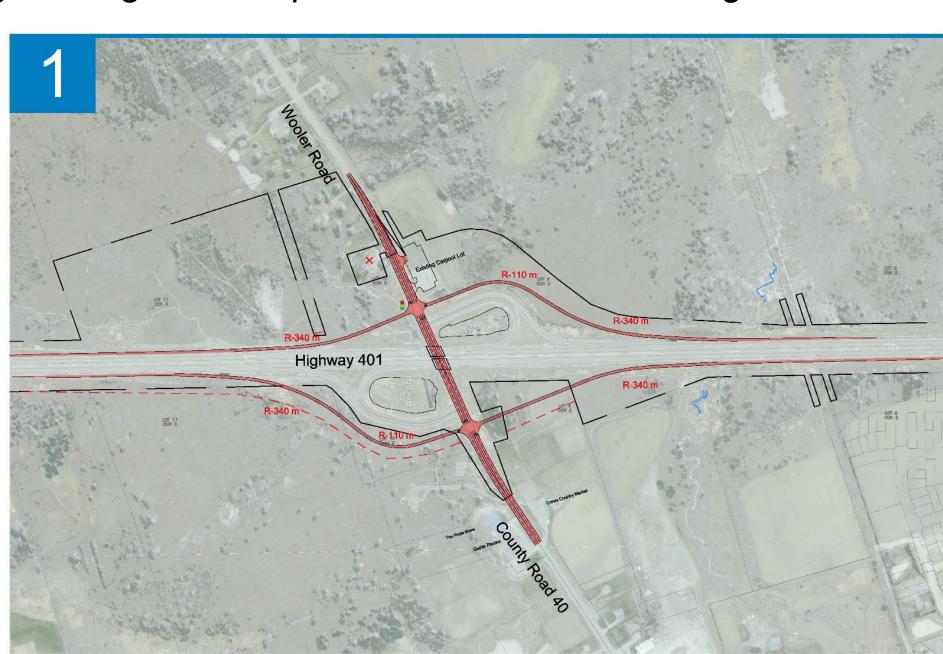


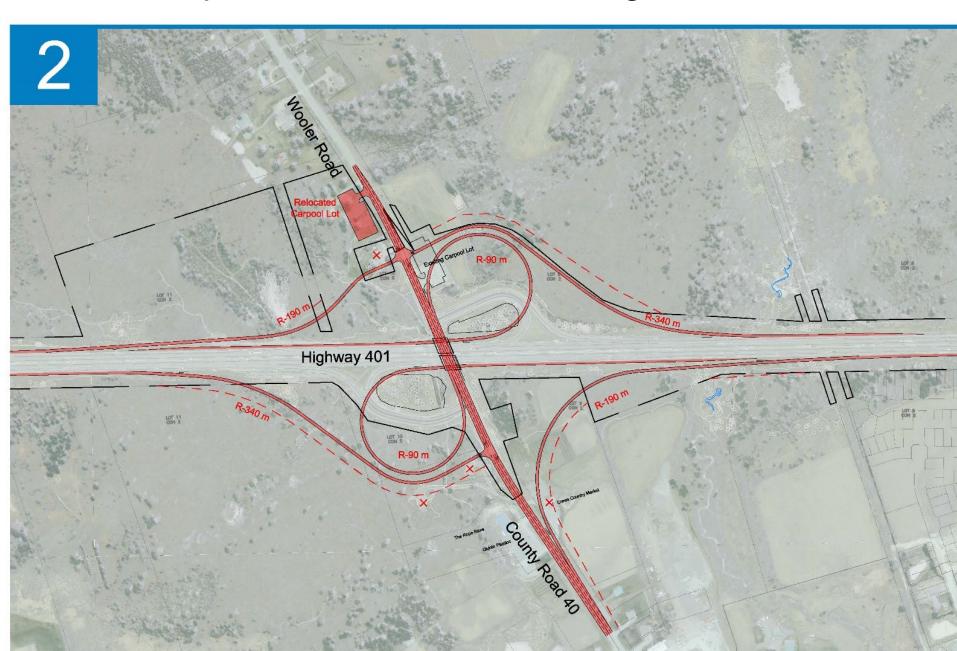


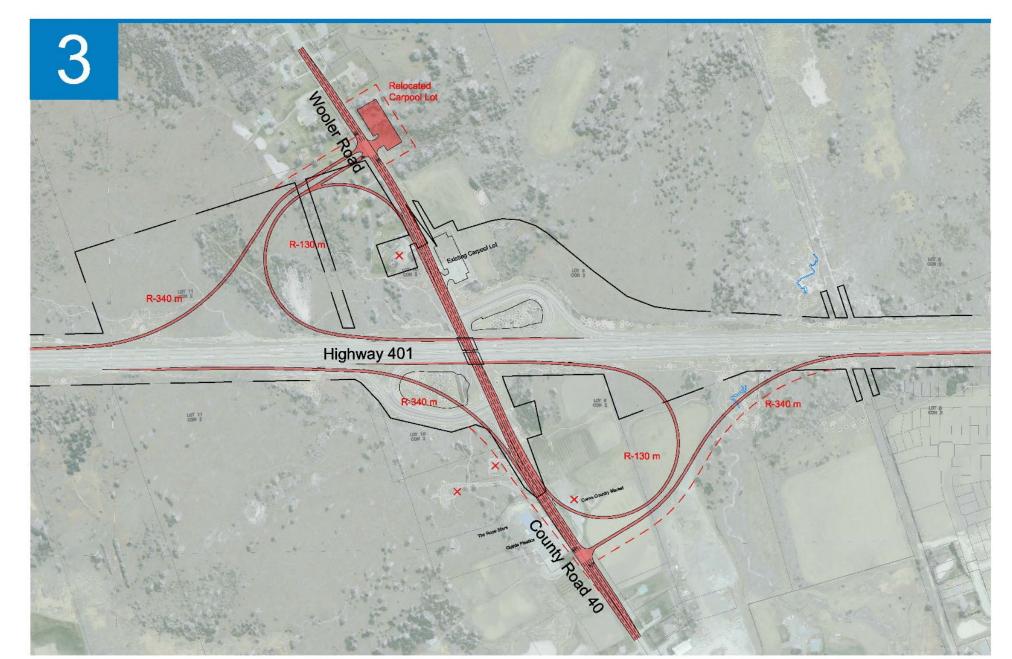
Evaluation of Interchange Alternatives

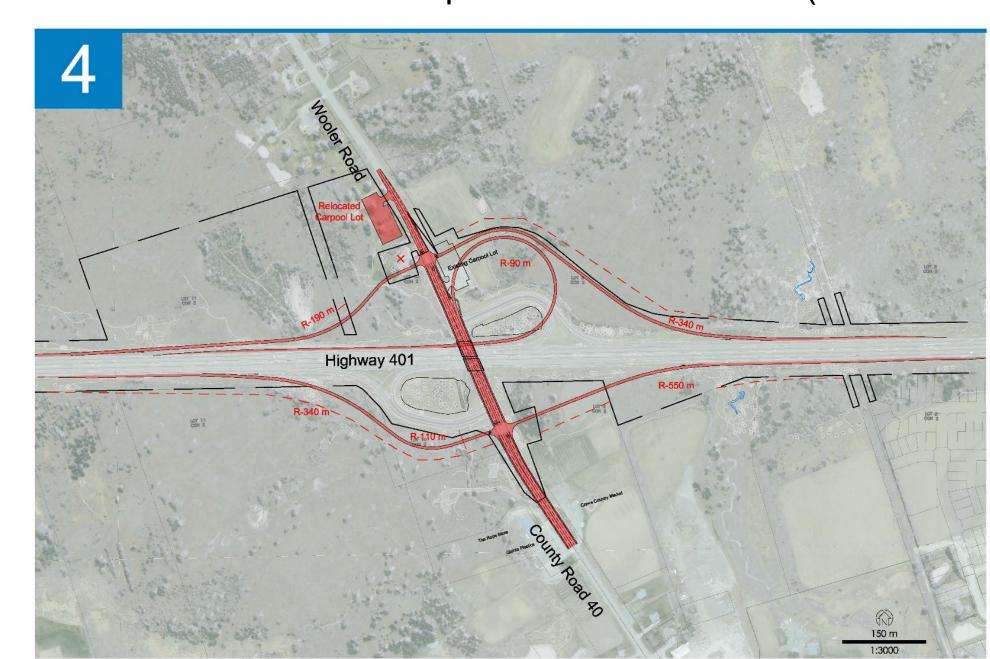
As part of this study, a Value Engineering workshop was undertaken following PIC 1 that led to the development of a new interchange alternative 4).



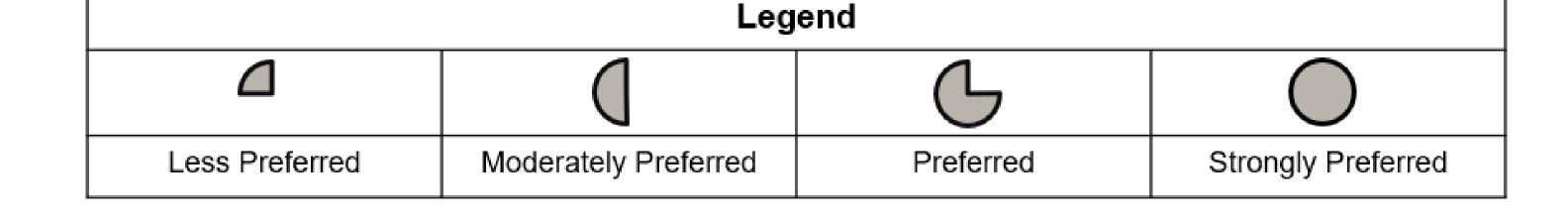








				1:3000
Factor/Criteria	Diamond	Parclo A	Parclo B	Parclo A2/Diamond
Highway Engineering	 Lowest traffic capacity when compared to the other 	 Provides high traffic capacity for the long-term operation 	 Provides high traffic capacity for the long-term operation 	 Provides high traffic capacity for the long-term operation
 Traffic Operations 	alternatives	needs	needs	needs
 Geometrics & Safety 	 Highest number of conflict points between traffic 	 Fewest number of conflict points between traffic movements 	 Fewer number of conflict points between traffic movements 	 Fewer number of conflict points between traffic movements
 Constructability 	movements	 Ramp configuration provides some free-flowing traffic 	 Ramp configuration provides some free-flowing traffic 	 Ramp configuration provides some free-flowing traffic
• Utilities	 Ramp configuration does not provide free-flowing traffic 	movements	movements	movements
	movements	 Intersections are more widely spaced within the interchange 	 E-N/S and W-N ramp radii (130m) do not meet minimum 	• Intersections are more widely spaced within the interchange
	 Intersections are closely spaced within the interchange 	footprint compared to the Diamond configuration	standard of 190 m for a design speed of 130 km/h on	footprint compared to the Diamond configuration
	footprint	 All ramps meet design standards 	Highway 401	 All ramps meet design standards
	All ramps meet design standards	High complexity of traffic staging	 Loop ramp exits on freeways are less desirable than direct 	High complexity of traffic staging
	 Lower complexity of traffic staging 		exit ramps	
			 Intersections are most widely spaced within the interchange 	
			footprint	
			High complexity of traffic staging	
Social & Cultural	Fewest impacts to private property	Fewer impacts to private property compared to Parclo B	Greatest impacts to private property	Fewer impacts to private property compared to Parclo A and
Environment	No business accesses directly impacted	configuration	• Impacts business accesses	Parclo B configurations
 Property 	Fewest impacts to areas containing archaeological	• Impacts business accesses	Greatest impacts to areas containing archaeological potential	No business accesses directly impacted
• Air/Noise	potential	 Greater impacts to areas containing archaeological potential 		• Fewer impacts to areas containing archaeological potential
 Built Heritage 		when compared to the Diamond and Parclo A2/Diamond		compared to the Parclo A and Parclo B configurations
 Archaeology 		configurations		general genera
 Contamination 				
Natural Environment	• Fewest impacts to areas of wildlife habitat, treed areas and	Greatest impacts to areas of wildlife habitat, treed areas and	Greater impacts to areas of wildlife habitat, treed areas and	Fewer impacts to areas of wildlife habitat, treed areas and
 Terrestrial Ecosystem 	SAR habitat	SAR habitat	SAR habitat compared to the Diamond and Parclo	SAR habitat compared to the Parclo A and Parclo B
 Species of Conservation 	of a chapitat	Of a Chapitat	A2/Diamond configurations	configurations
Concern, Species at Risk			/ L/ Diamond Johngaration	
• Fish & Fish Habitat				
Overall Summary	Not Preferred	Not Preferred	Not Preferred	Preferred







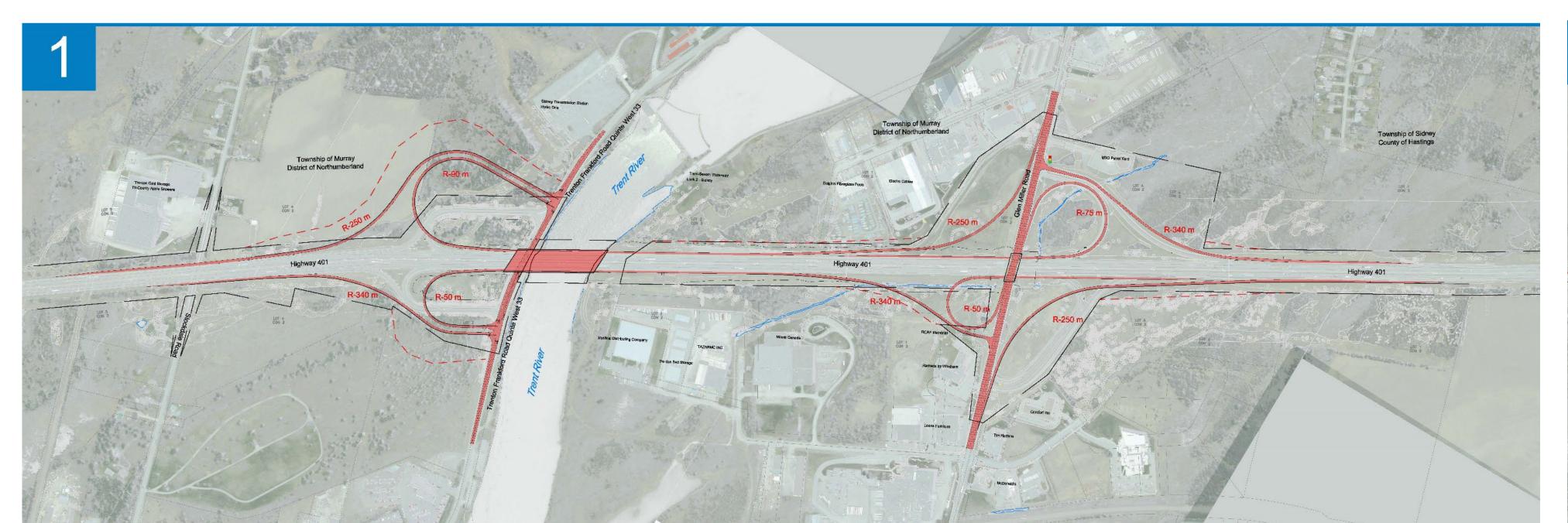


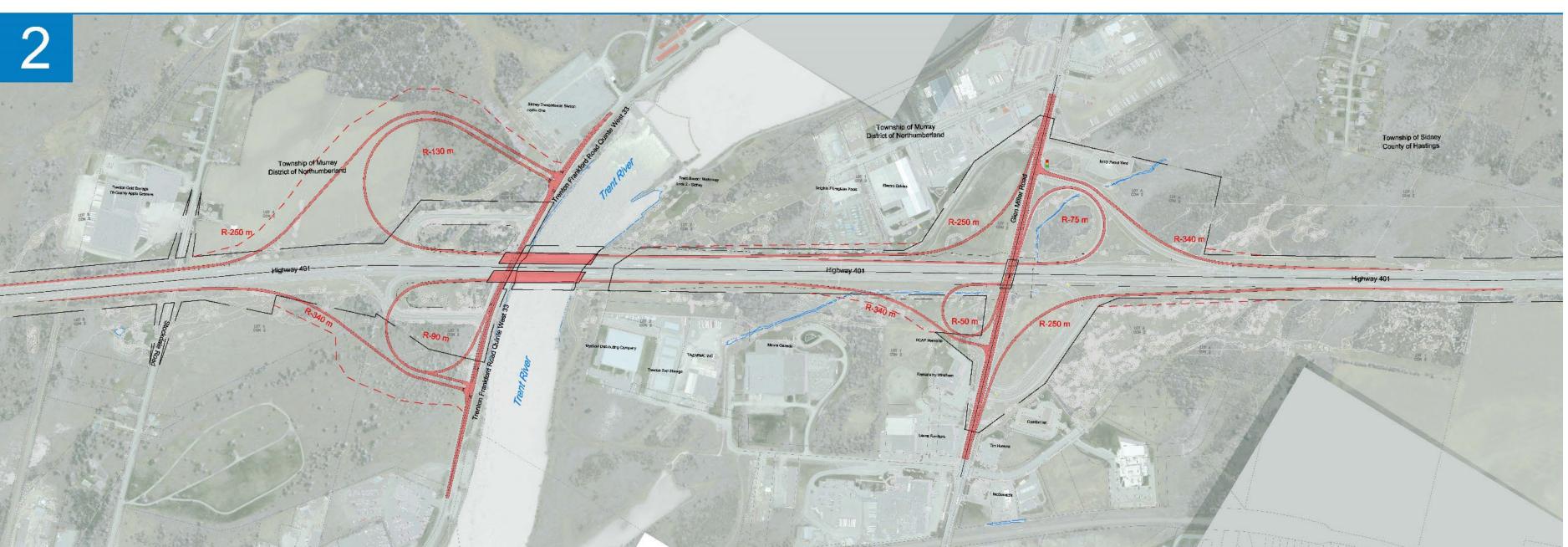
Evaluation of Interchange Alternatives

Please note, the Glen Miller Road interchange configuration is carried forward from a previously completed and approved Class EA. As such, the interchange configurations for Glen Miller are the same for Alternatives 1 and 2 and the evaluation is completed for the Trenton Frankford Quinte West 33 interchange only.

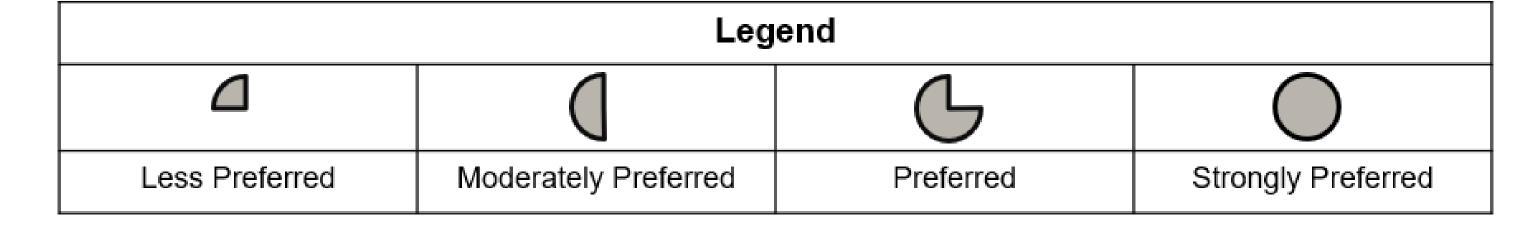


Trenton Frankford Quinte West 33 & Glen Miller Road





Factor/Criteria	Parclo AB2, R-90 m & R-50 m	Parclo AB2, R-130 m & R-90 m	
Highway Engineering	No significant difference in traffic capacity when compared to the other alternative	No significant difference in traffic capacity when compared to the other alternative	
 Traffic Operations 	 Provides less free-flow traffic operations compared to the other alternative 	 Provides more free-flow traffic operations compared to the other alternative due to the direct N-E ramp 	
Geometrics & SafetyConstructability	• The eastbound Highway 401/Trenton Frankford Road Quinte West 33 entrance ramp radius (R-50 m) does not accommodate Long Combination Vehicles	• The eastbound Highway 401/Trenton Frankford Road Quinte West 33 entrance ramp radius (R-90 m) accommodates Long Combination Vehicles	
• Utilities	• E-N/S ramp radii (90 m) does not meet the minimum standards of 190 m for a design speed of 130 km/h on Highway 401	• E-N/S ramp radii (130 m) meets the minimum standard for a design speed of 120 km/h on Highway 401 and is more	
	• N/S-E ramp radii (50 m) does not meet the minimum standard of 90 m for a design speed of 100 km/h on Trenton Frankford Road Quinte West 33	appropriate for a freeway	
		• Intersections are more widely spaced within the interchange footprint	
	 Intersections are closely spaced within the interchange footprint Impacts to utilities, including Hydro One, are anticipated to be less significant than Alternative 2 	• Impacts to utilities, including Hydro One, are anticipated to be more significant than Alternative 1	
Social & Cultural Environment	• Fewer impacts to private property	Greater impacts to private property	
Property	No businesses directly impacted	No businesses directly impacted	
• Air/Noise	• Fewer impacts to areas containing archaeological potential	Greater impacts to areas containing archaeological potential	
 Built Heritage 			
 Archaeology 			
 Contamination 			
Natural Environment • Terrestrial Ecosystem	• Fewer impacts to areas of wildlife habitat, treed areas and SAR habitat	Greater impacts to areas of wildlife habitat, treed areas and SAR habitat	
 Species of Conservation 			
Concern, Species at Risk			
• Fish & Fish Habitat			
Overall Summary	Not Preferred	Preferred	



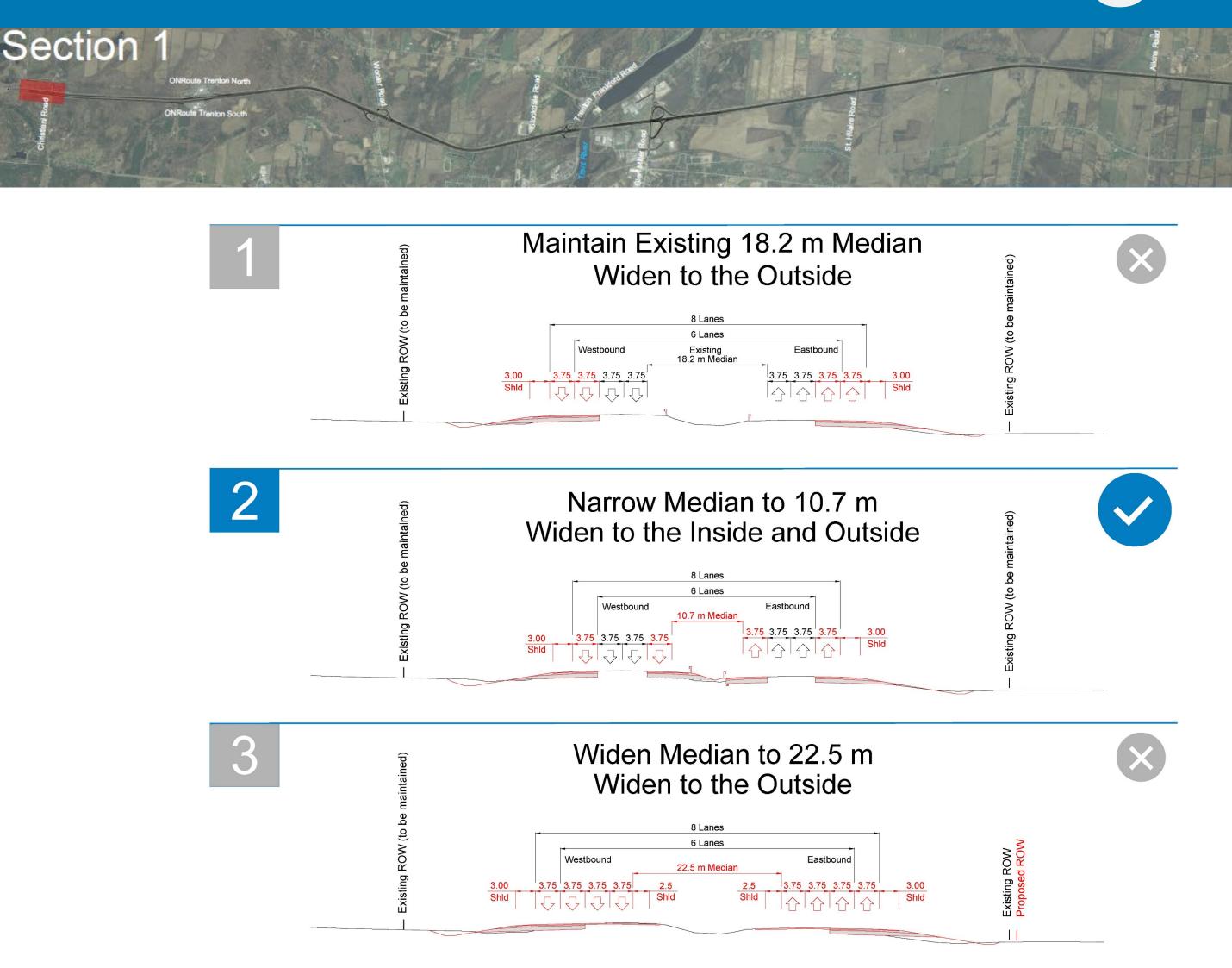






Preferred Highway 401 Cross-Section

Section 2



Alternative 2 (Widen to Inside and Outside), is preferred because:

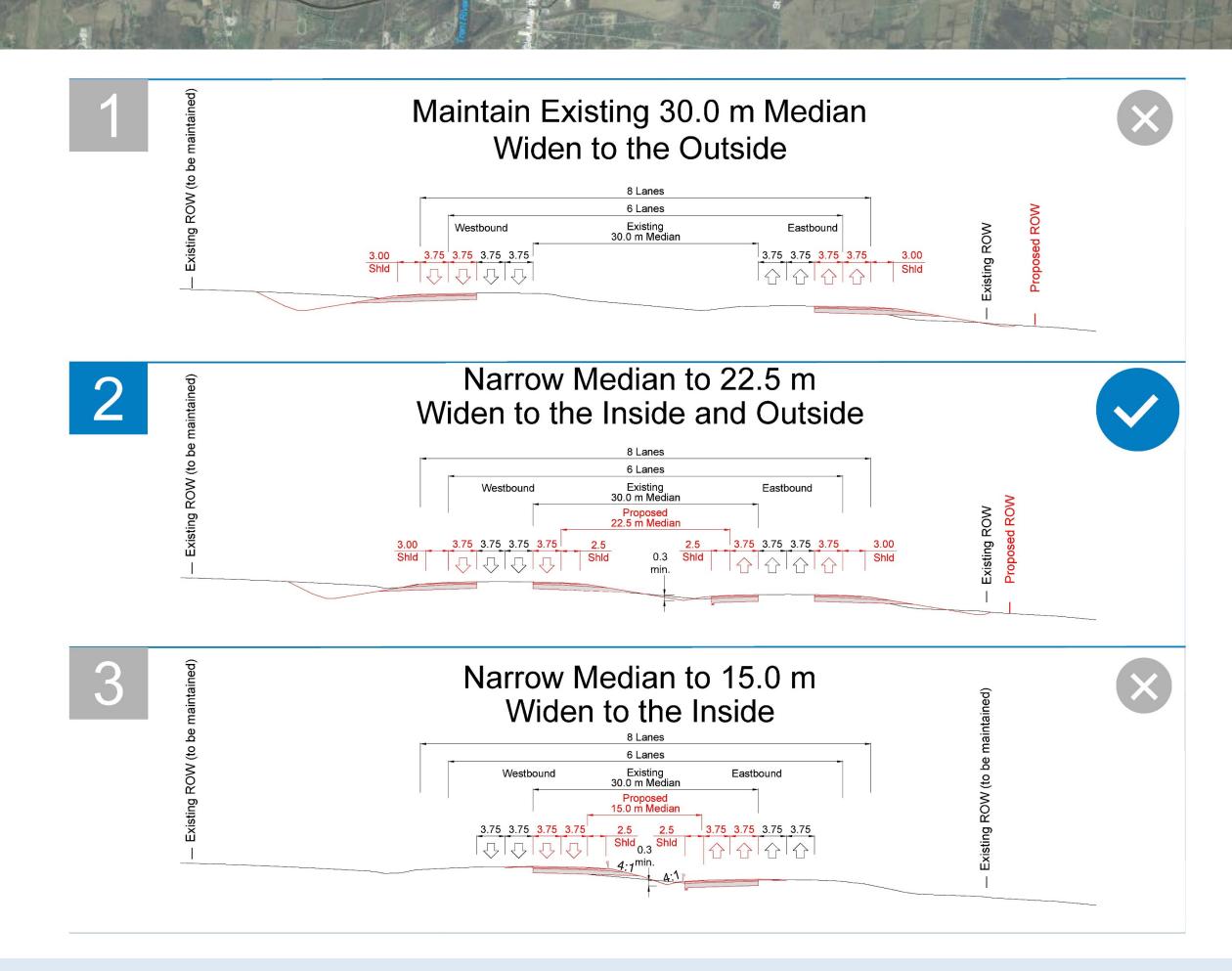
Sections 3 & 5

- Minimizes property, potential environmental impacts and grading outside of the existing highway footprint compared to widening to the outside
- The cross-section is consistent with the Highway 401 cross-section to the west

Maintain Existing Narrow Median Widen to the Outside Narrow Median to 7.5 m Widen to the Inside and the Outside

Alternative 1 (Widen to the Outside), is preferred because:

- Retains the existing median with concrete barrier
- Minimizes impacts to traffic during construction



Alternative 2 (Widen to Inside and Outside), is preferred because:

- Retains open median (no median barrier required)
- Fewer grading and property impacts compared to widening to the outside



Alternative 2 (19.65 m Median & 2.0 m Outside Shoulders), is preferred because:

- Maintains two thru-lanes in each direction on Highway 401 during construction
- Trenton Frankford Road Quinte West 33 interchange ramps remain open during most of construction
- Provides standard bridge deck width

Preferred Bridge Improvements

Bridge improvement alternatives were developed and presented at PIC 1 and then evaluated and the preferred improvements are summarized below:





- A new underpass will replace the existing bridge in the same location
- Christiani Road will be closed over Highway 401 during construction

This alternative is preferred because:

- It retains existing alignment of Christiani Road, which minimizes environmental, property, and utility impacts
- The construction method is faster when compared to staged construction with a single lane of traffic open on crossing road

Railway Overpass

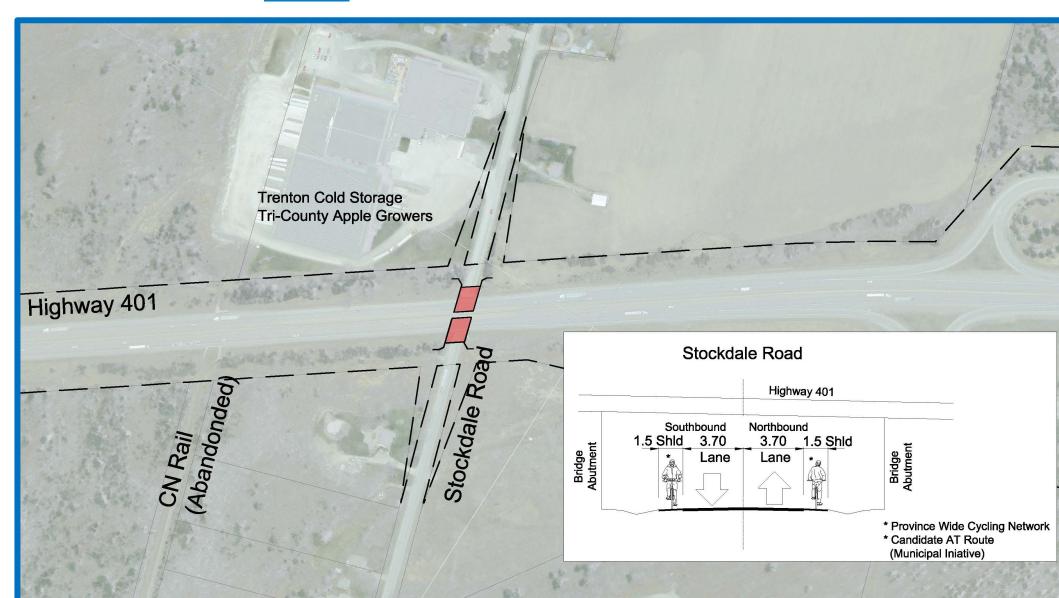


- The CN Rail corridor under Highway 401 is abandoned and not operational
- The bridge will be removed and filled in
- The private property to the north of Highway 401 impedes any potential for recreational crossing purposes at this location

This alternative is preferred because:

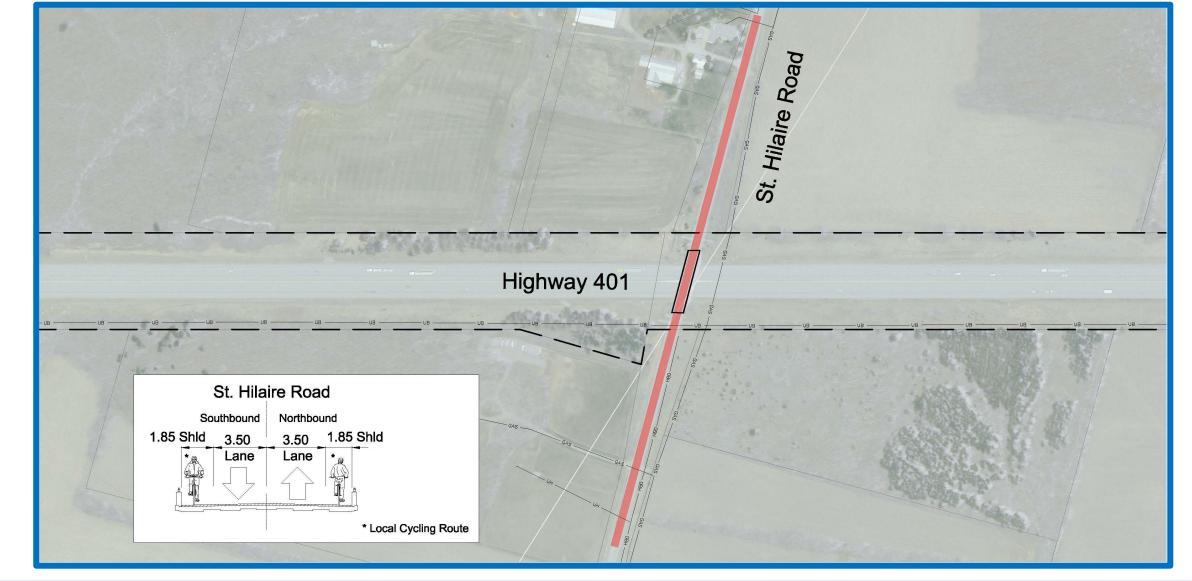
- It has a lower construction and maintenance costs compared to replacing the structure
- It has a shorter construction duration compared to replacing the structure

S Stockdale Road



- A new overpass will replace the existing bridge in the same location
- Stockdale Road will be closed under Highway 401 during construction
- This alternative is preferred because:
- The construction method is faster when compared to staged construction with a single lane of traffic open on crossing road
- The construction staging cost is lower when compared to keeping bridge open during construction

St. Hilaire Road

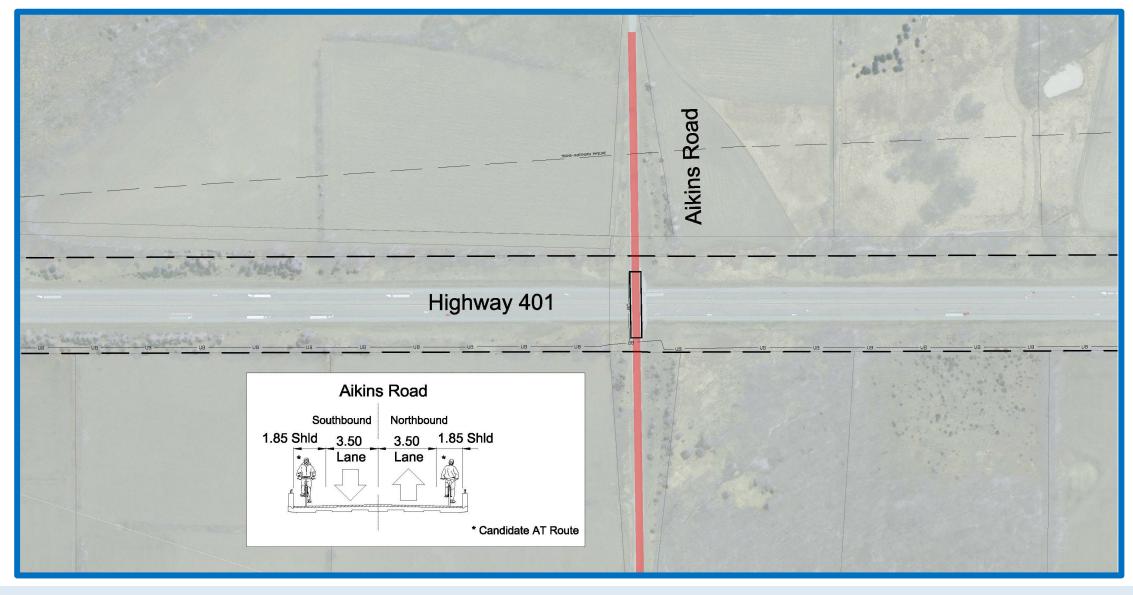


- A new underpass will replace the existing bridge in the same location
- St. Hilaire Road will be closed over Highway 401 during construction

This alternative is preferred because:

- It retains existing alignment of St. Hilaire Road, which minimizes environmental, property, and utility impacts
- The construction method is faster when compared to staged construction with a single lane of traffic open on crossing road

A Aikins Road

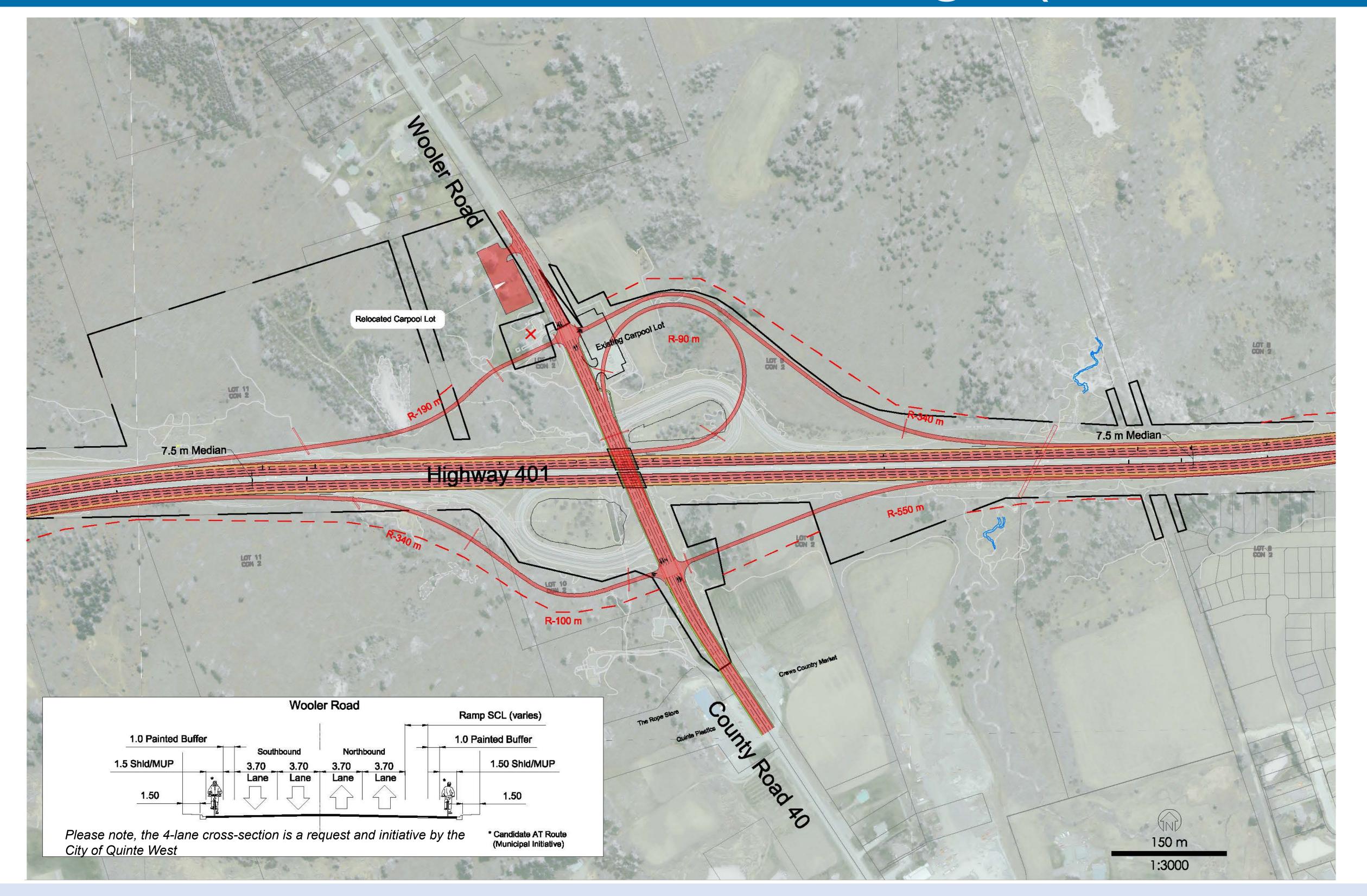


- A new underpass will replace the existing bridge in the same location
- Aikins Road will be closed over Highway 401 during construction

This alternative is preferred because:

- It retains existing alignment of Aikins Road, which minimizes environmental, property, and utility impacts
- The construction method is faster when compared to staged construction with a single lane of traffic open on crossing road

Preferred Wooler Road Interchange (Alternative 4)



The Parclo A2/Diamond is recommended for the Wooler Road Interchange because:

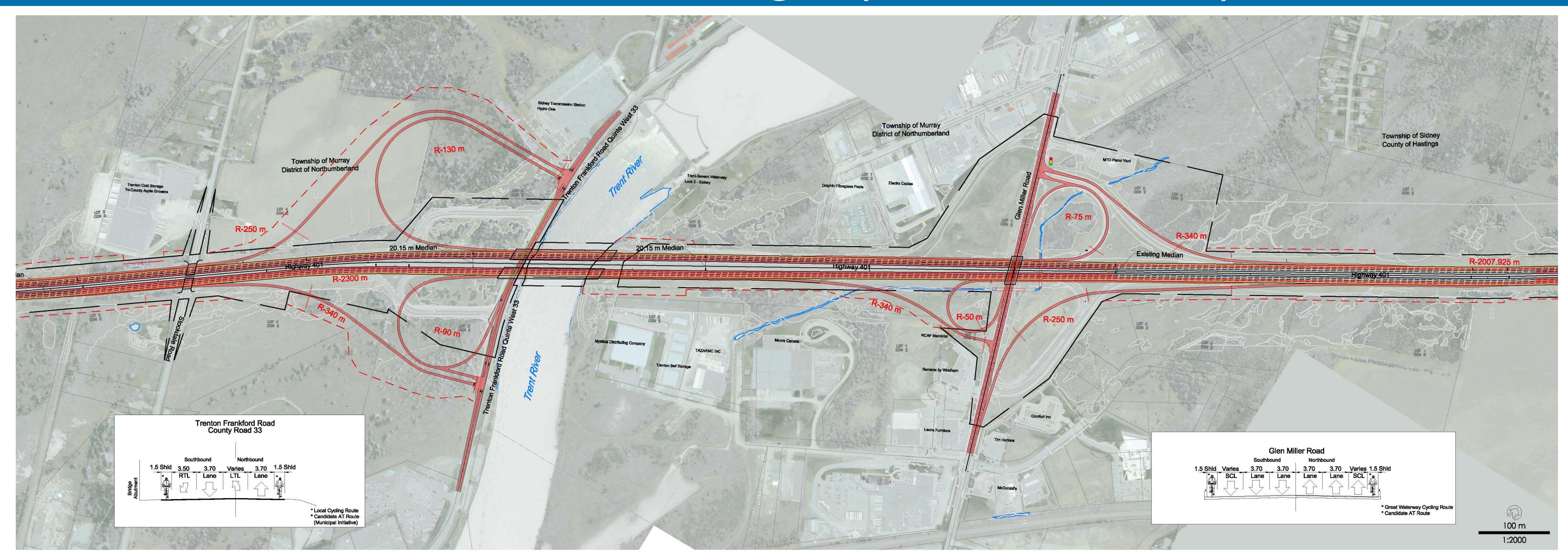
- It provides a high level of service on Highway 401 and at ramp terminals
- It has fewer number of conflict points between traffic movements, when compared to other alternatives
- It provides some free flowing traffic movements
- The intersections are more widely spaced within the interchange footprint, when compared to other alternatives
- It minimizes impacts to property, businesses and the natural environment, when compared to other alternatives







Preferred Trenton Frankford Quinte West 33 & Glen Miller Road Interchange (Alternative 2)



The **Parclo AB2, R-130 m & R-90 m is recommended** for the Trenton Frankford Quinte West 33 Interchange because:

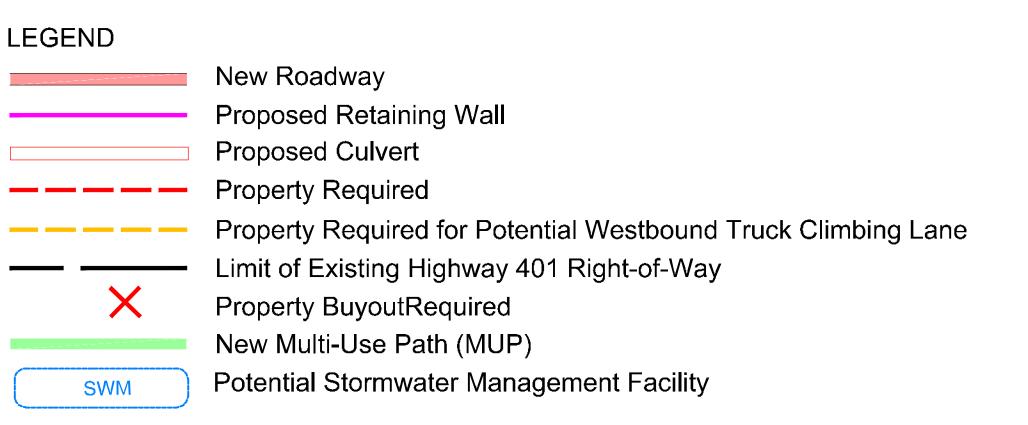
- The larger loop radius (130 m) for the E-N/S ramp is more appropriate for a freeway design speed of 130 km/h
- It provides more free-flow traffic operations compared to the other alternative due to the direct N-E ramp
- The eastbound Highway 401/Trenton Frankford Road Quinte West 33 entrance ramp radius (R-90 m) accommodates Long Combination Vehicles
- More ramps meet design standards compared to other alternatives
- The intersections are more widely spaced within the interchange footprint
- As part of this study, a Value Engineering workshop was undertaken following PIC 1 that led to recommending the removal of the direct N-W ramp at Glen Miller Road and maintaining the N/S-W loop ramp in the ultimate condition. This reduces construction duration and avoids impacts to the Highway of Heroes Memorial and natural heritage features.

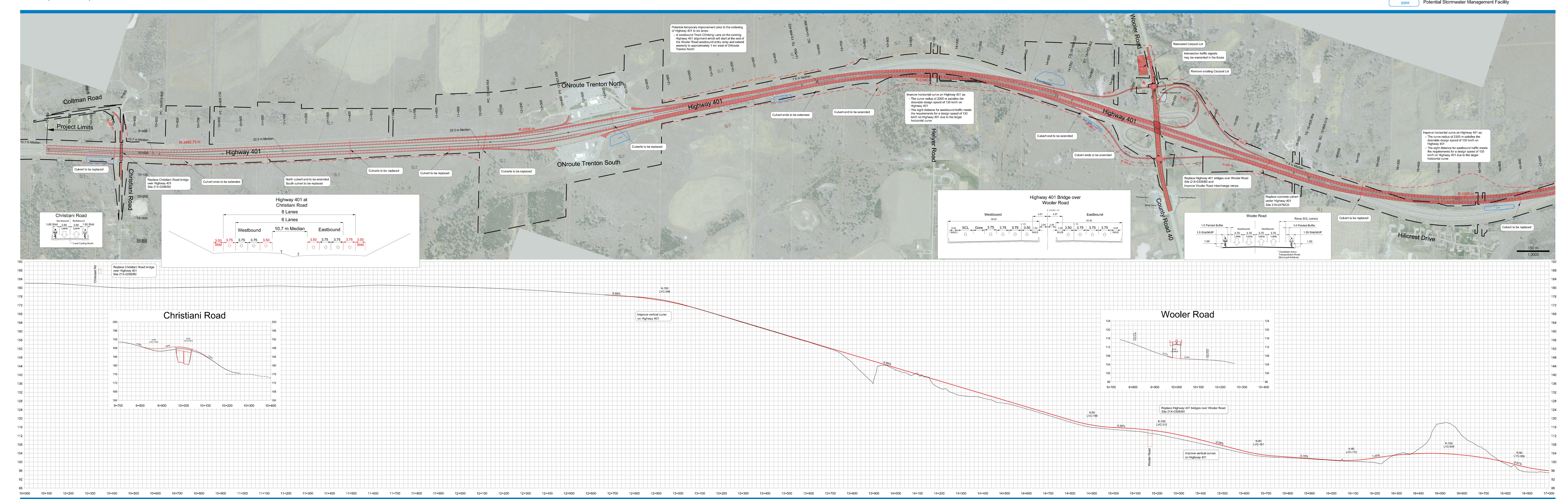




Highway 401 Preferred Plan

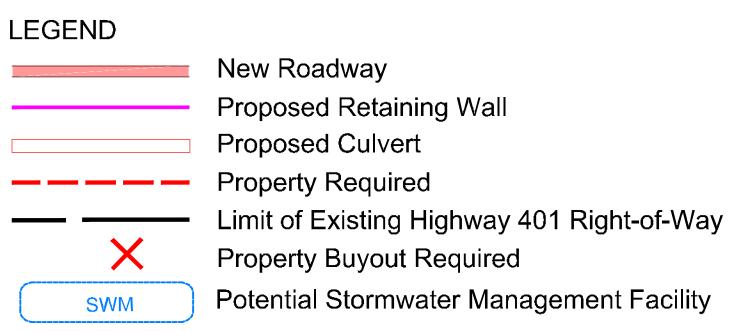
Murray Township Station 10+000 to 17+000

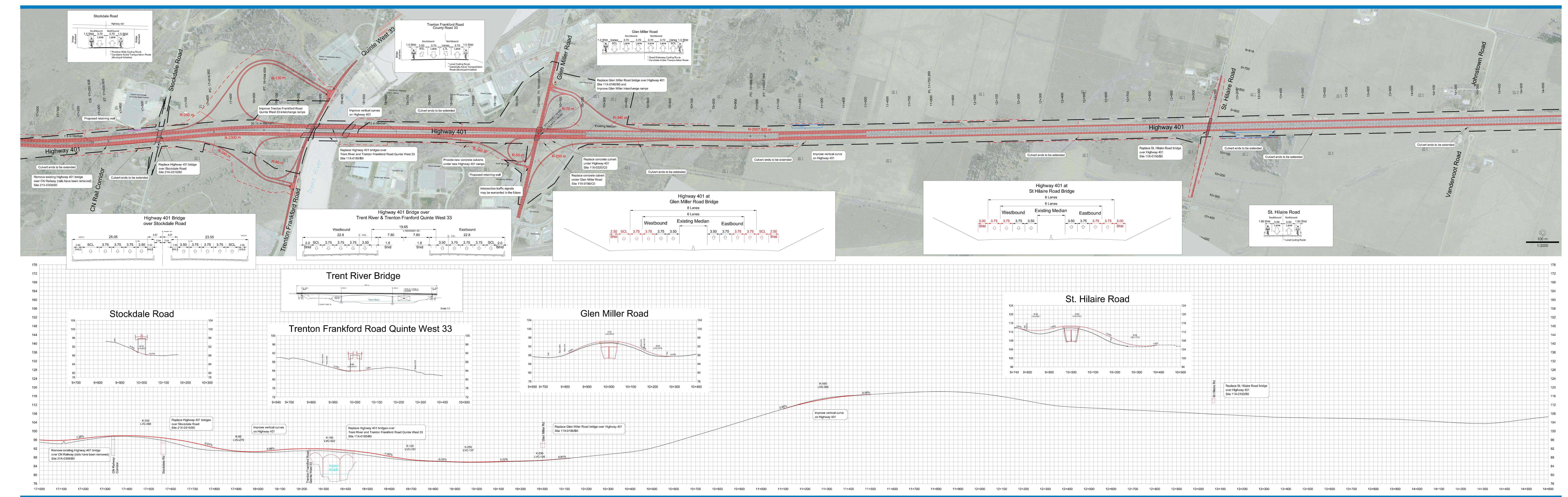




Highway 401 Preferred Plan

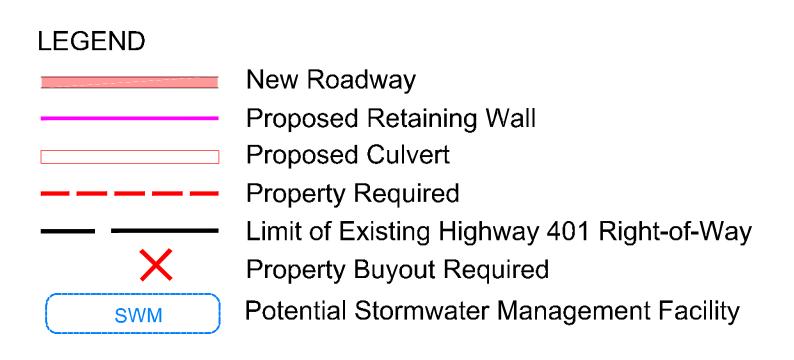
Murray Township Station 17+000 to 19+300 and Sidney Township Station 10+000 to 14+600

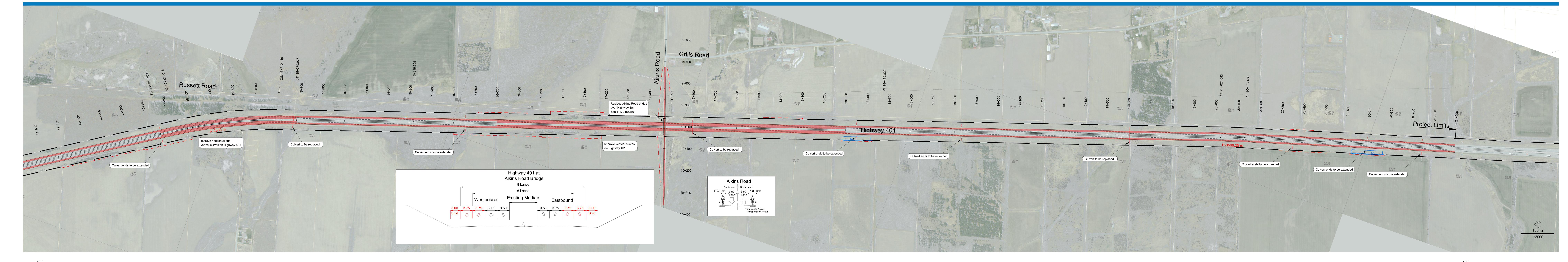


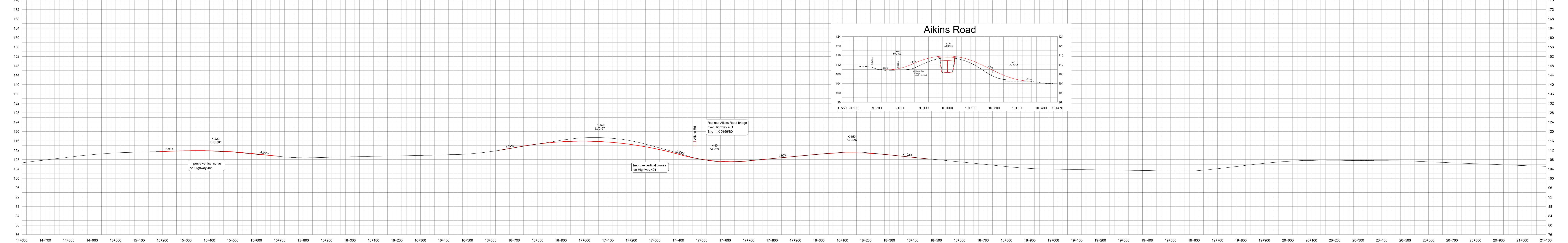


Highway 401 Preferred Plan

Sidney Township Station 14+600 to 21+099







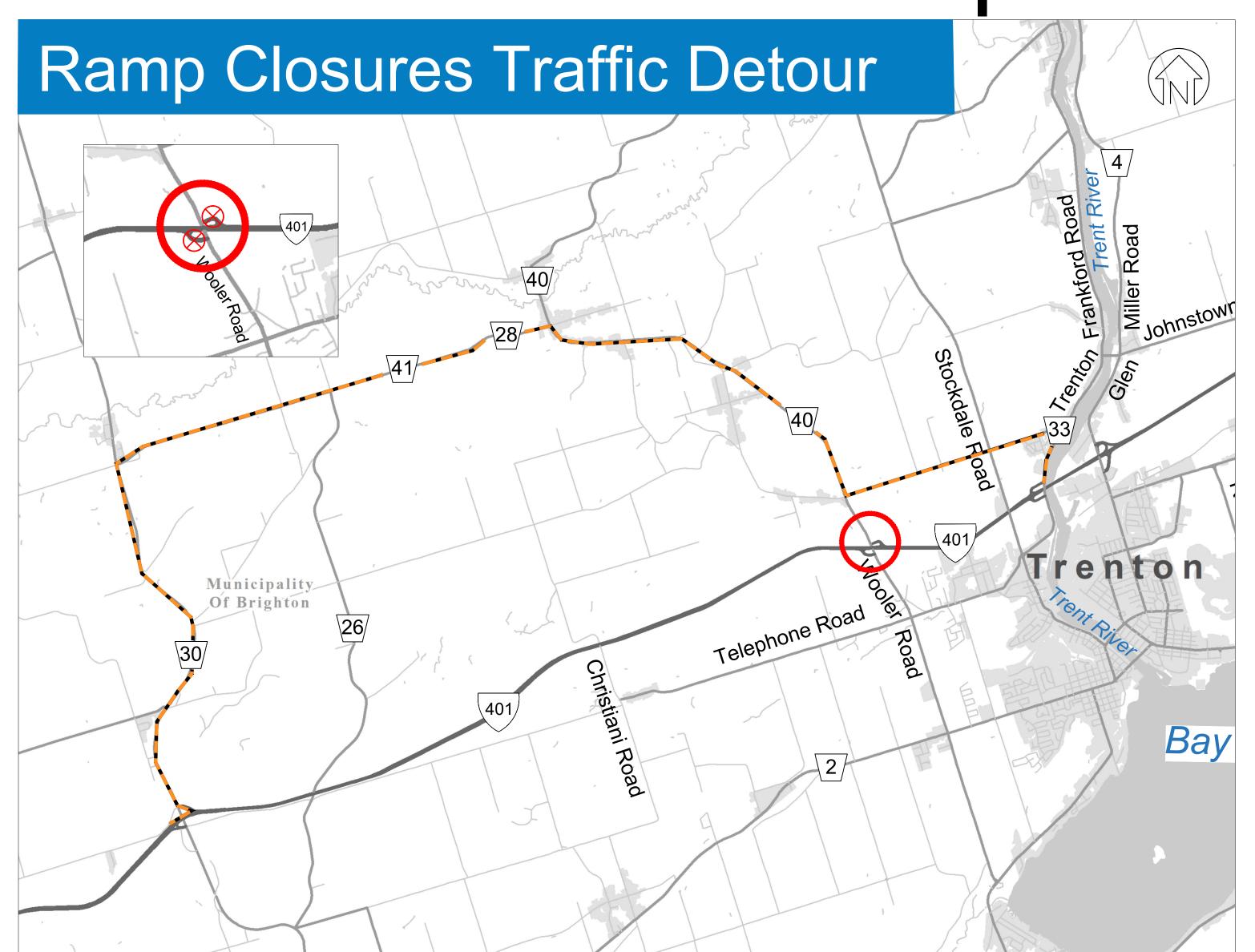
Highway 401 Detours

Note: Highway 401 will require overnight closures to traffic (approx. 12-18 hours for each closure) for the demolition of each existing bridge over the highway and potential girder placement for each new bridge. Detour routes for the closure of Highway 401 for the four underpass bridge locations and for the closure of ramps at three interchanges, are shown below. Additional potential detours for temporary interchange ramp closures may be required. The final detour routes will be confirmed in consultation with the affected municipalities. Duration and number of closures will be finalized during Detail Design, the timing of which is unknown.

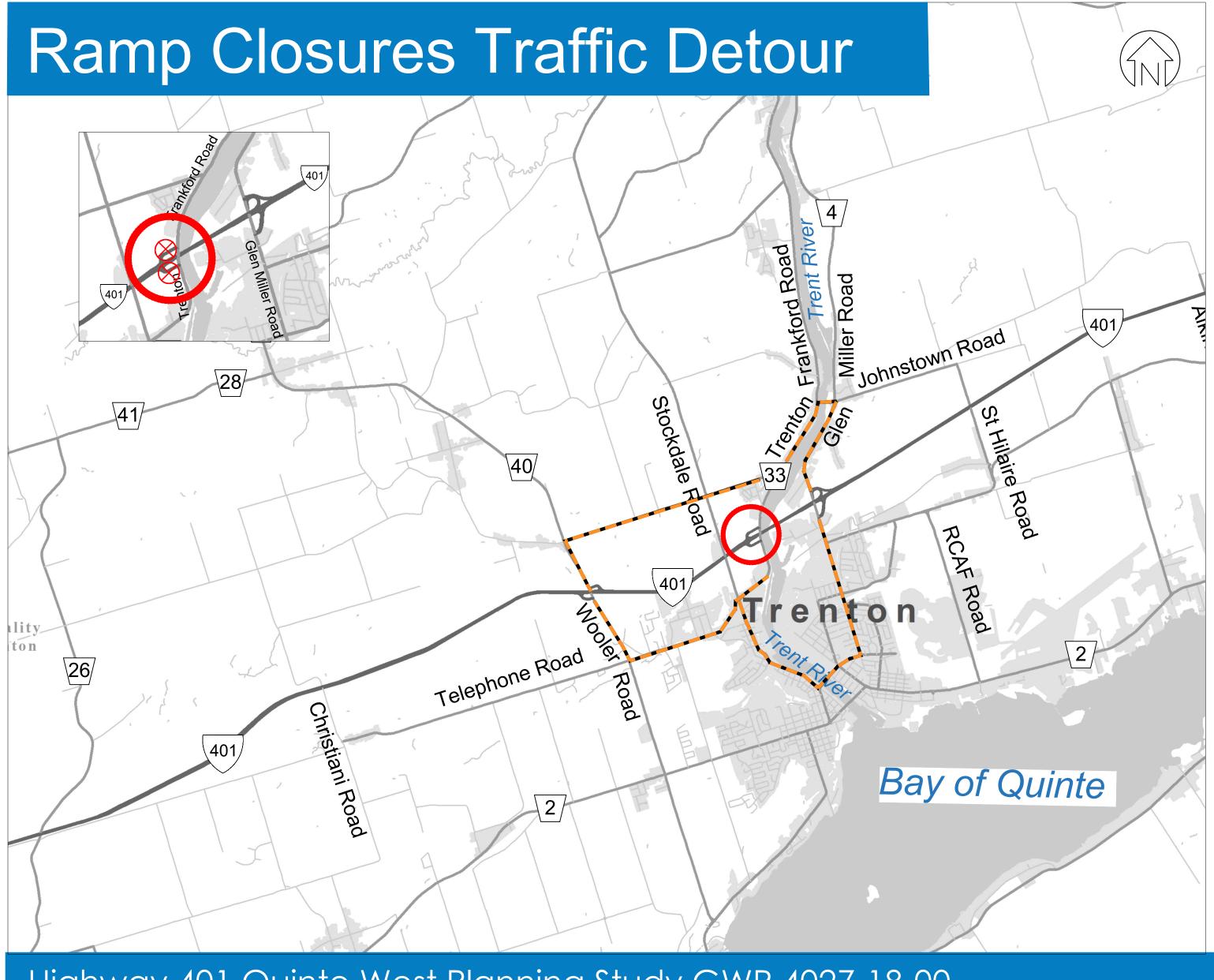
LEGEND

- Highway ClosureClosure Location
- Closure LocationProposed Detour Route

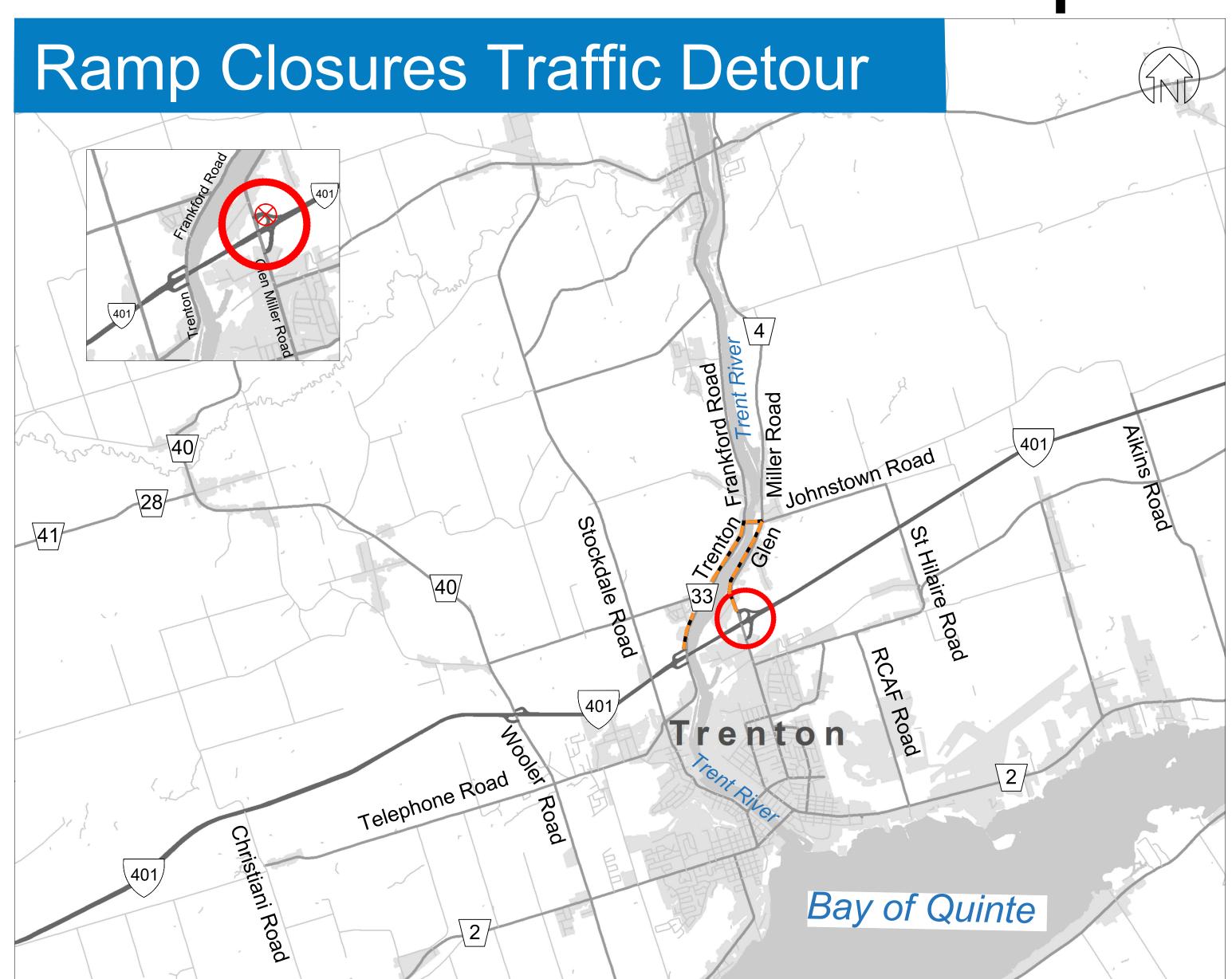
Wooler Road Ramps



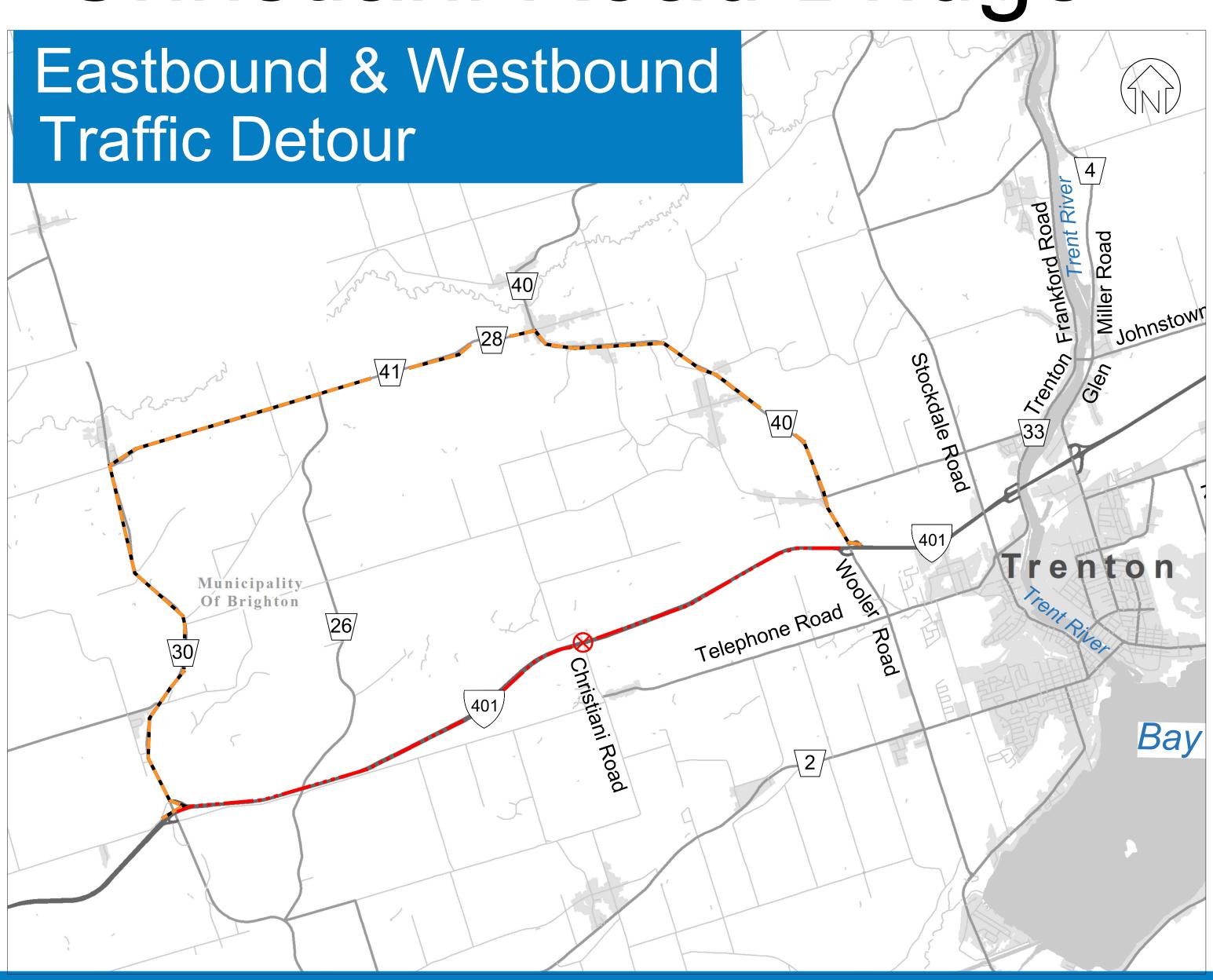
Quinte West 33 Ramps



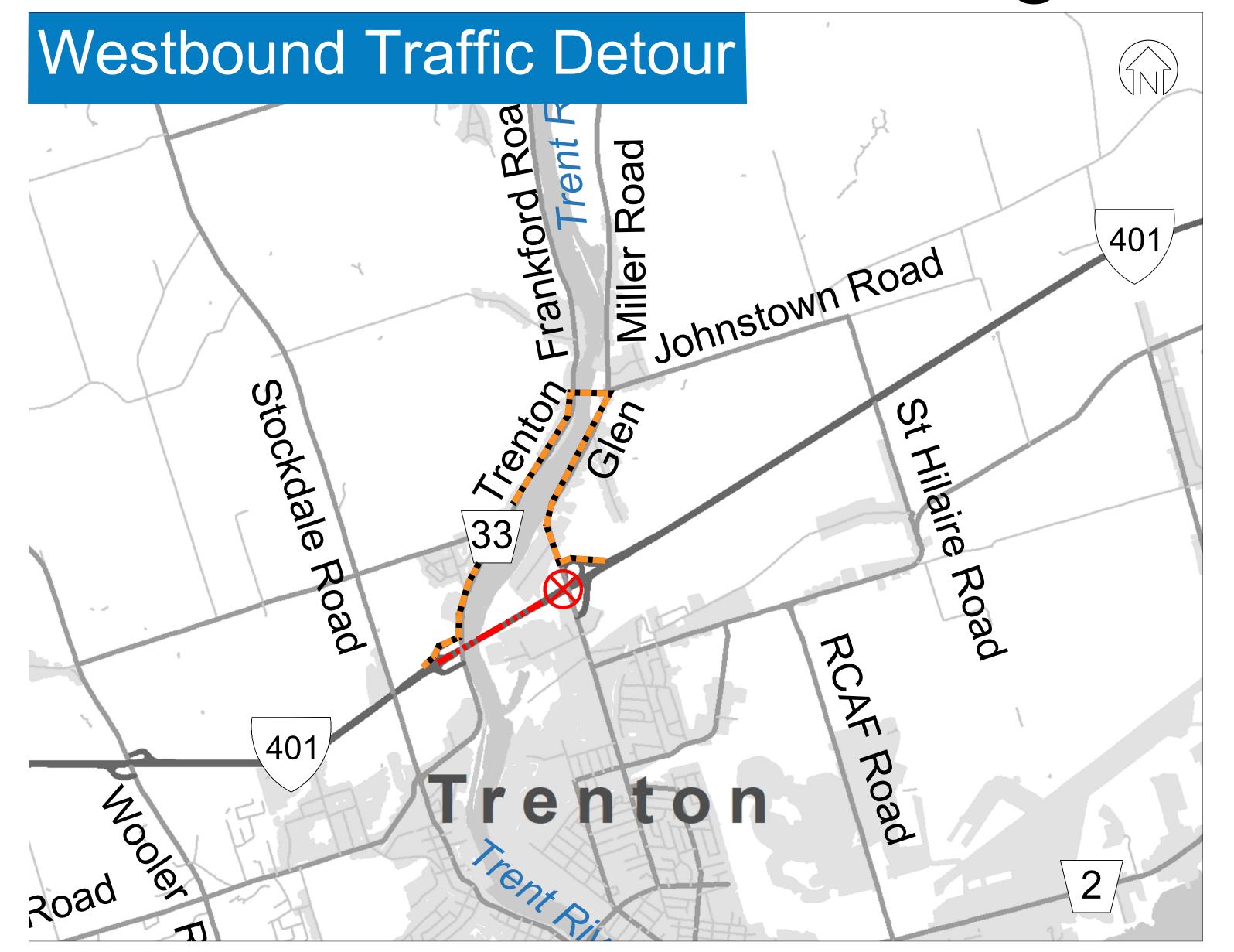
Glen Miller Road Ramps



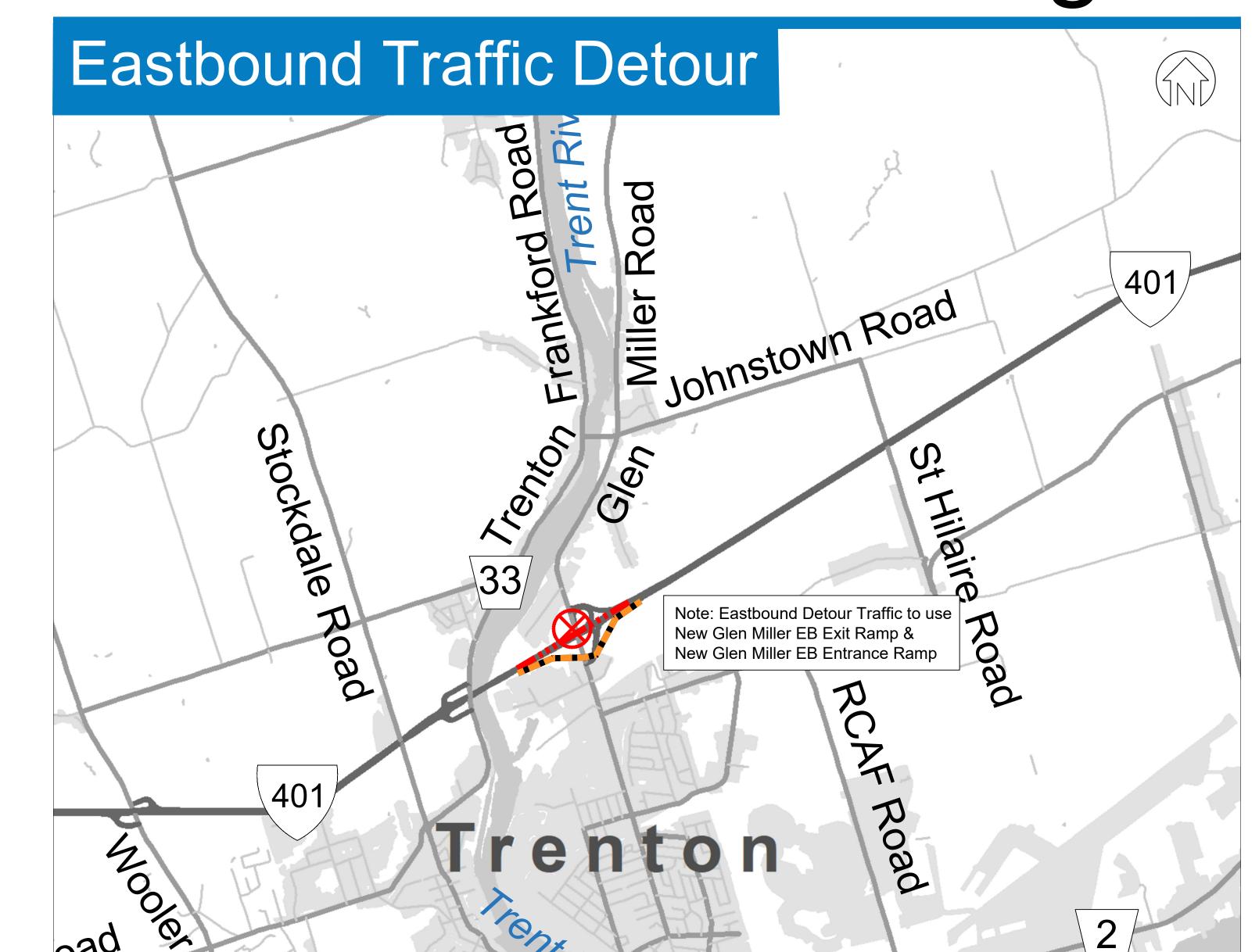
Christiani Road Bridge



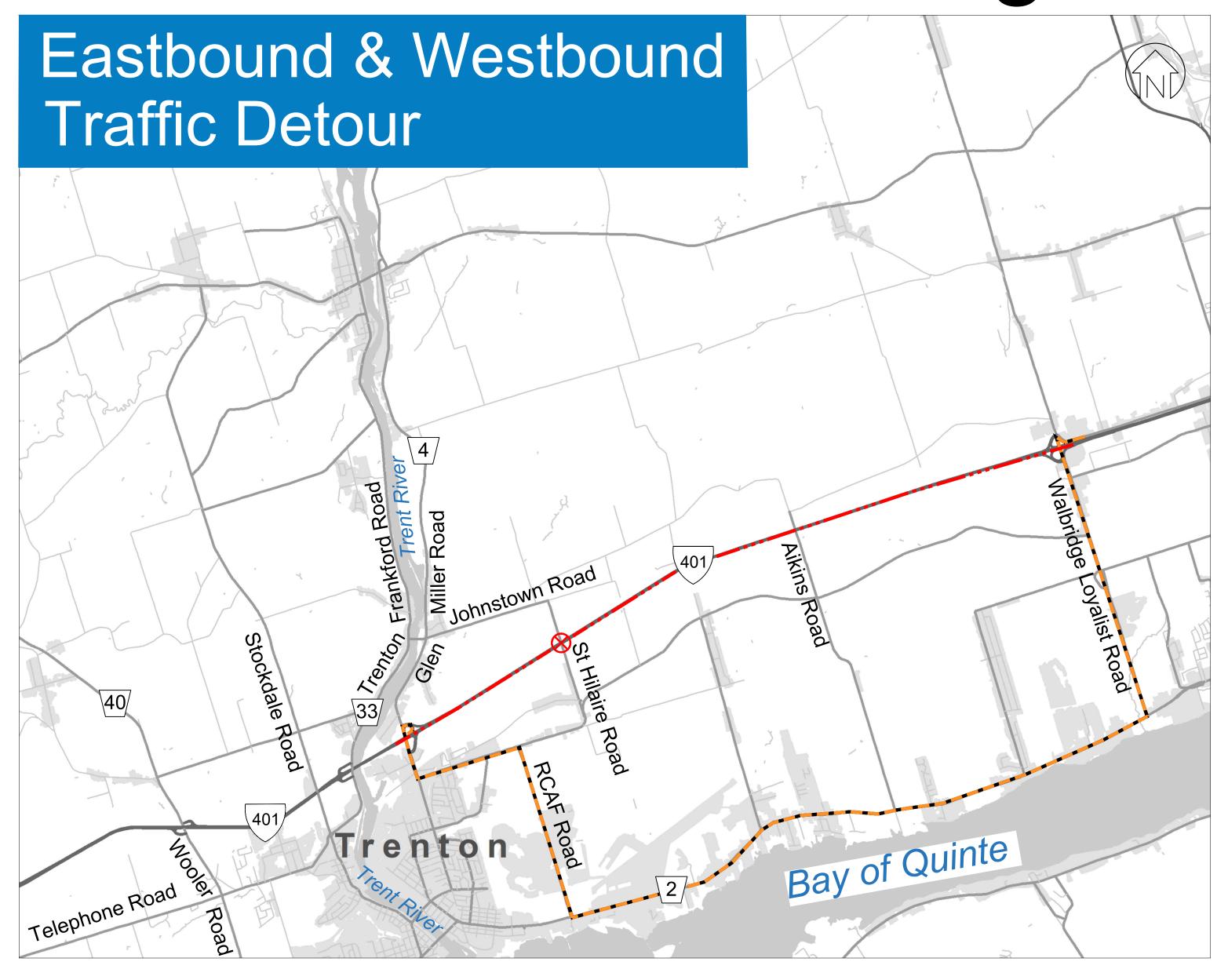
Glen Miller Road Bridge



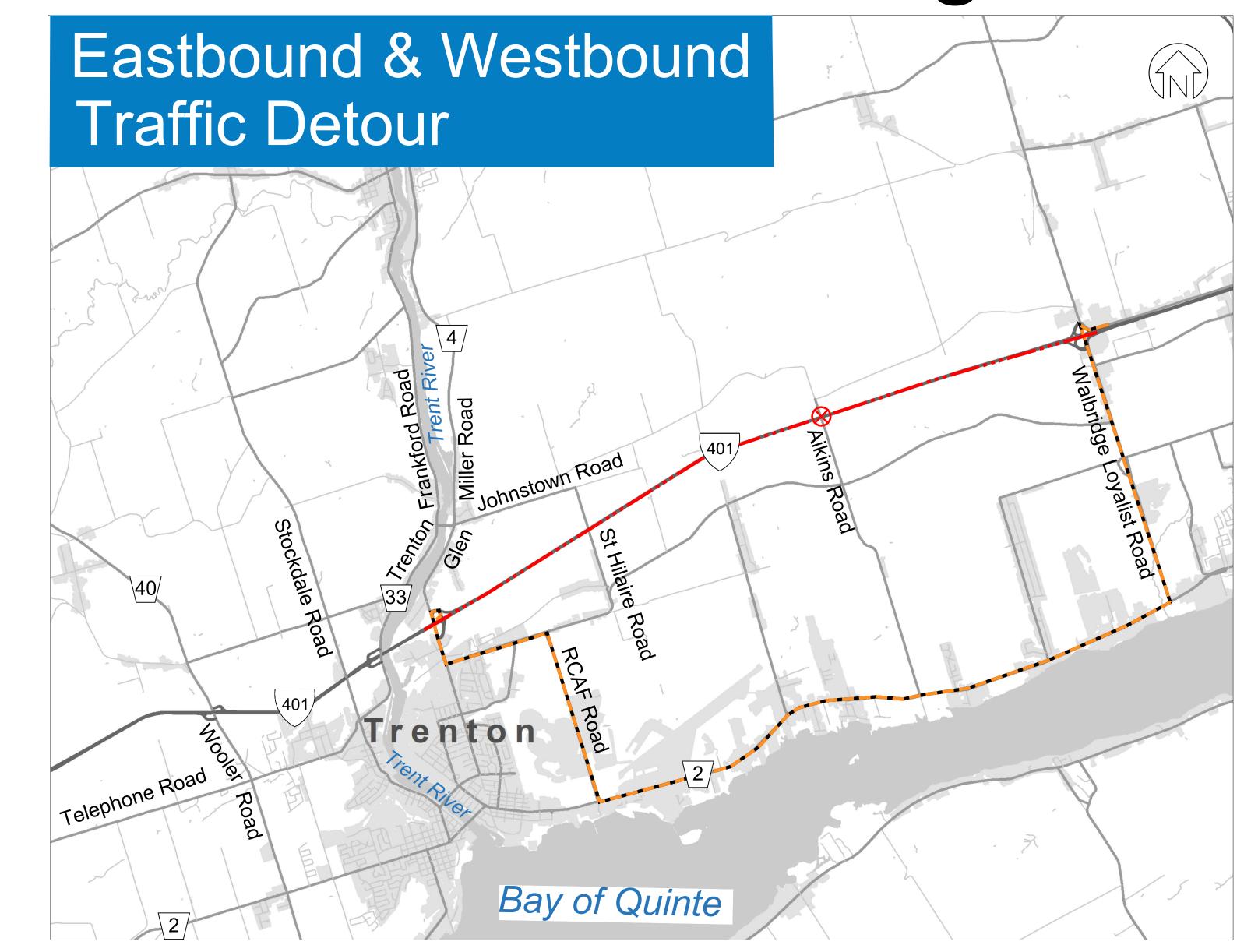
Glen Miller Road Bridge



St. Hilaire Road Bridge



Aikins Road Bridge



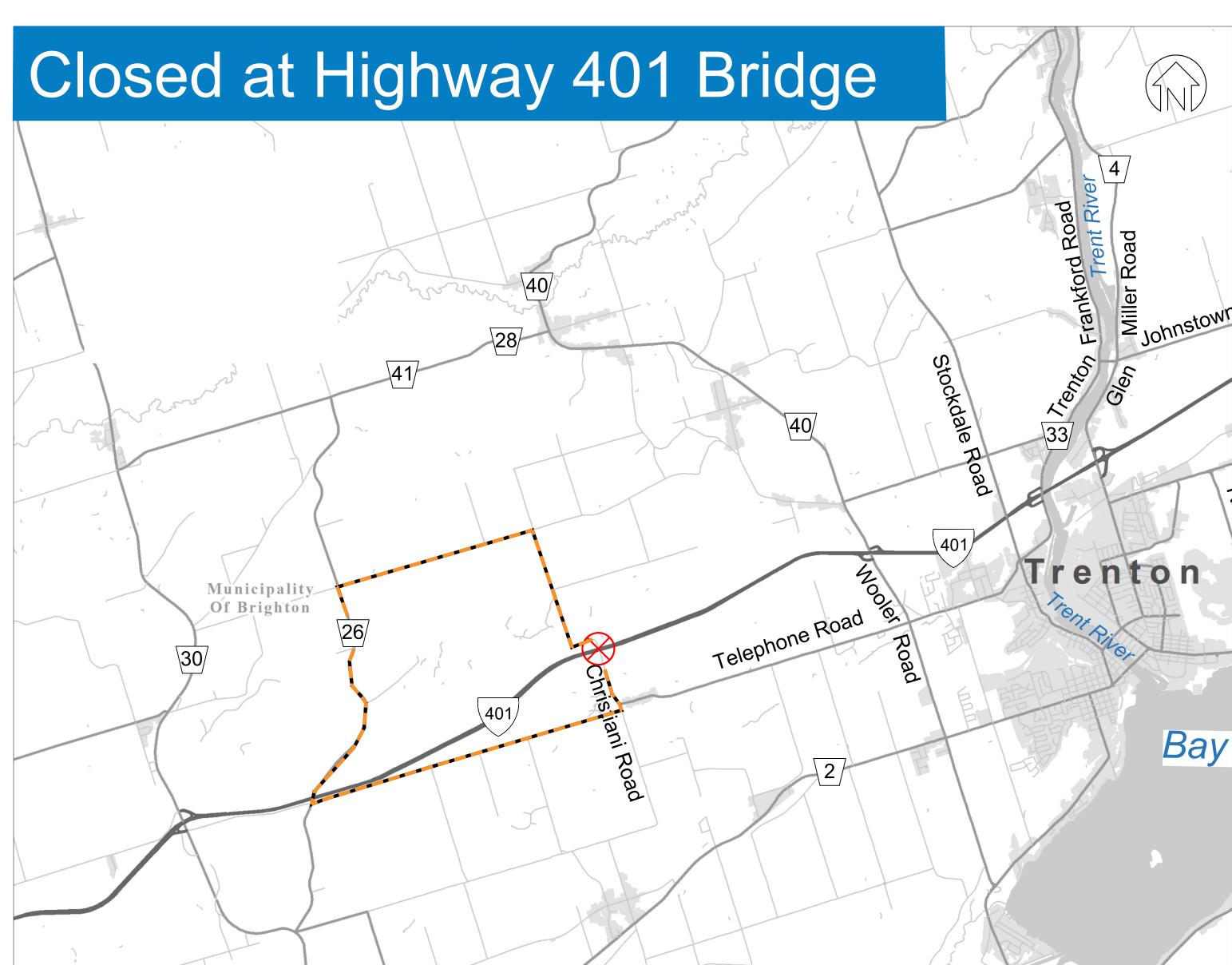
Crossing Road Detours

Note: Detour routes for local traffic for the bridge demolition and construction of new bridge may be required. The final detour routes will be confirmed in consultation with the affected municipalities. Duration of closures will be finalized during Detail Design, the timing of which is unknown.

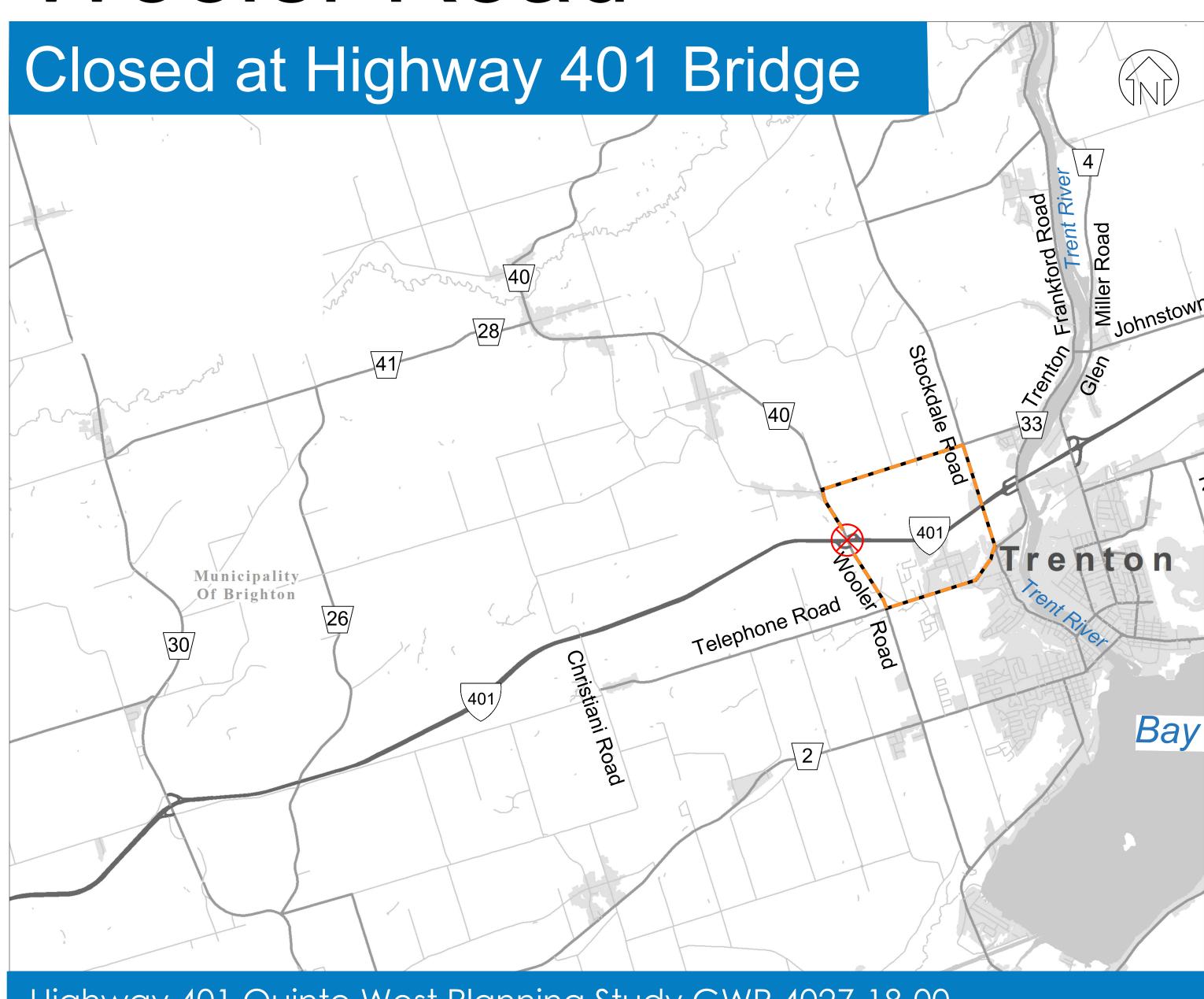
LEGEND

Bridge Closure LocationProposed Detour Route

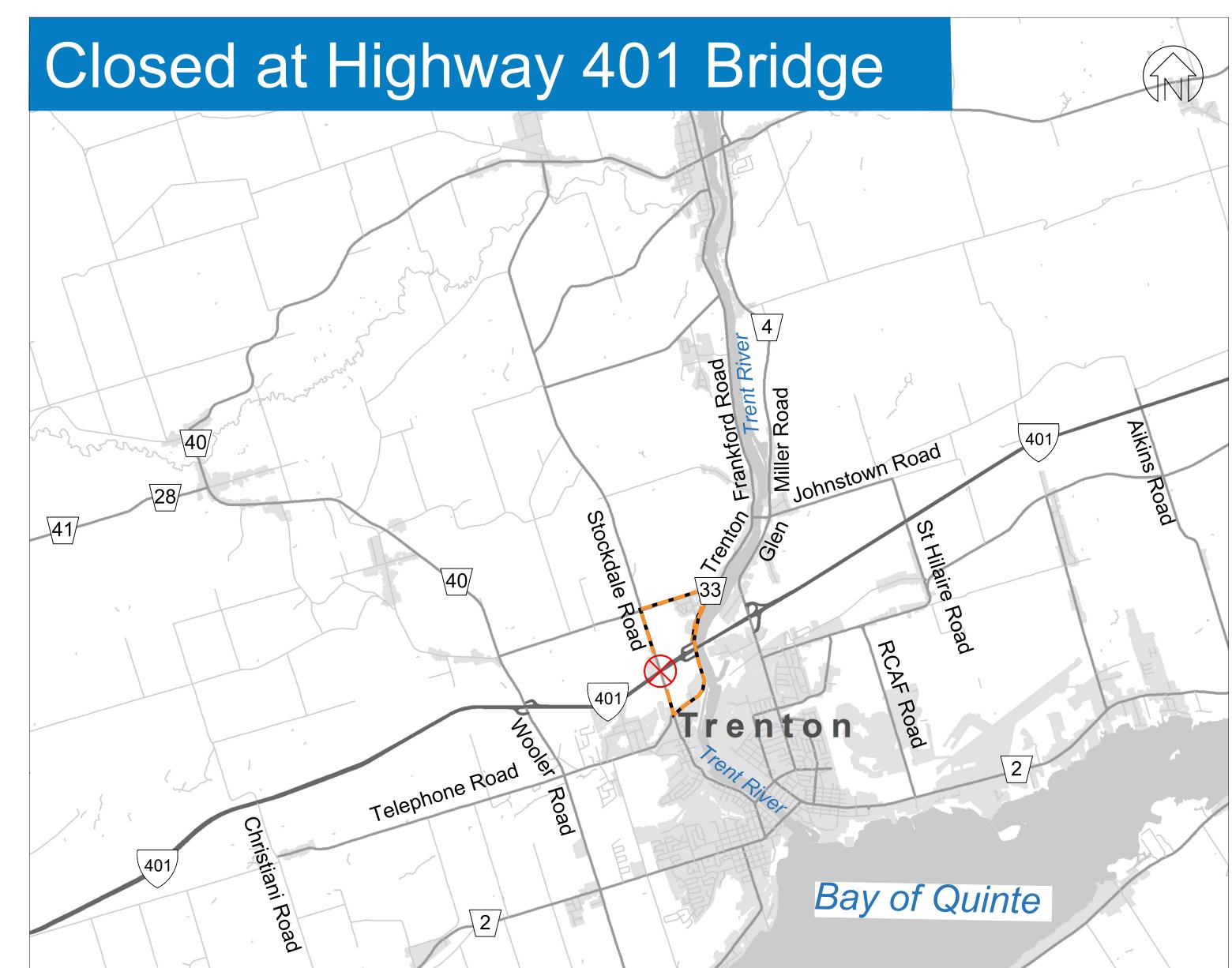
Christiani Road



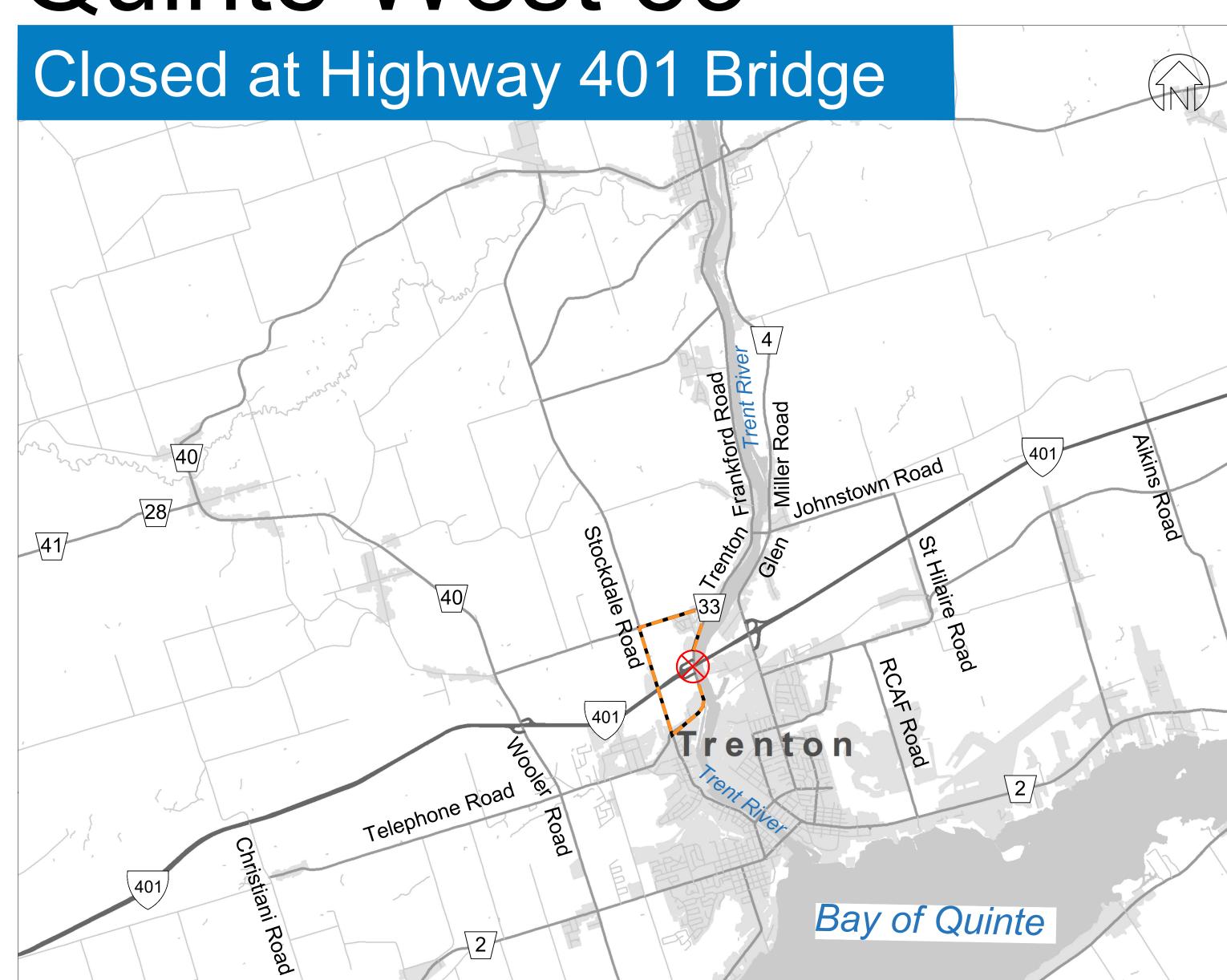
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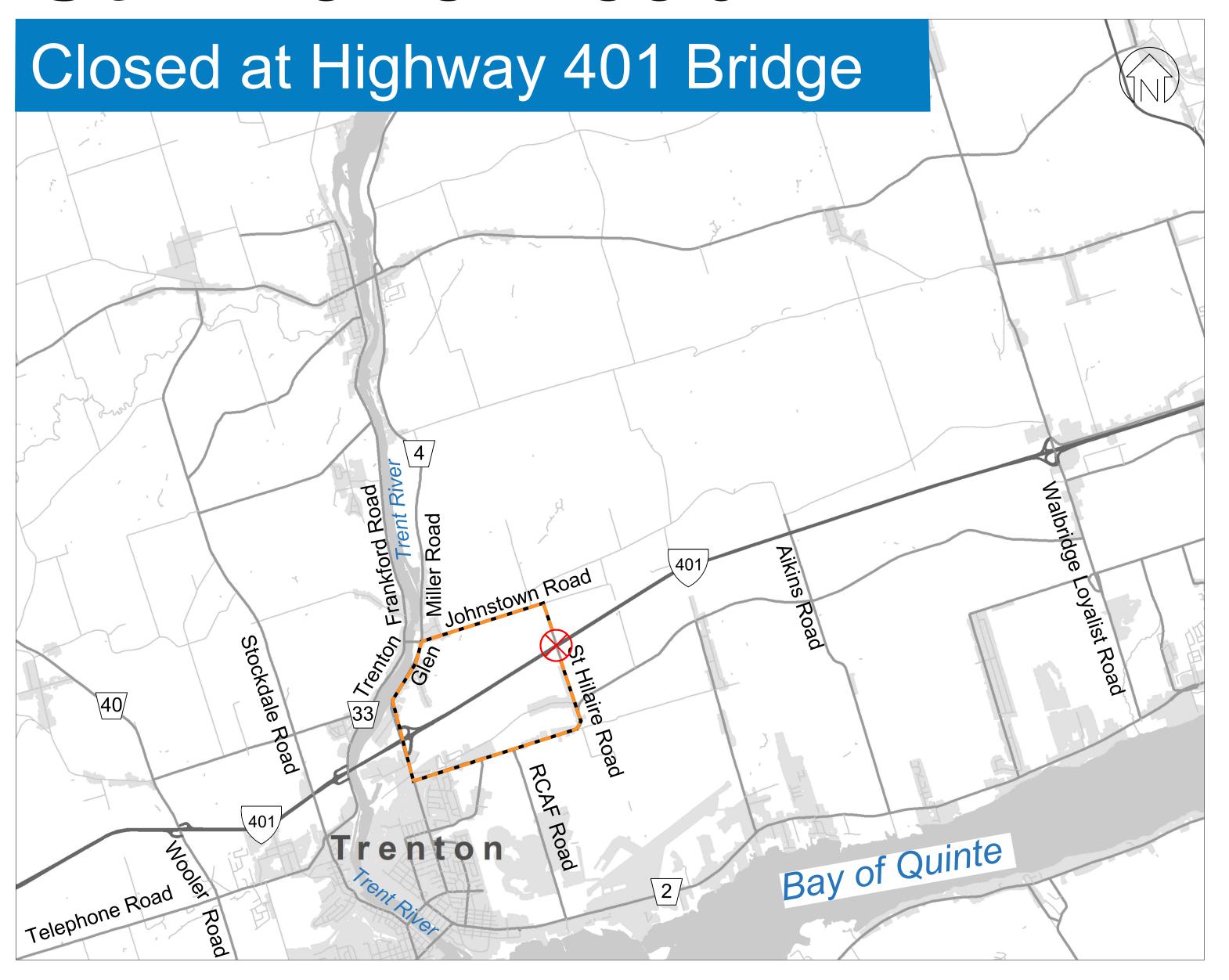
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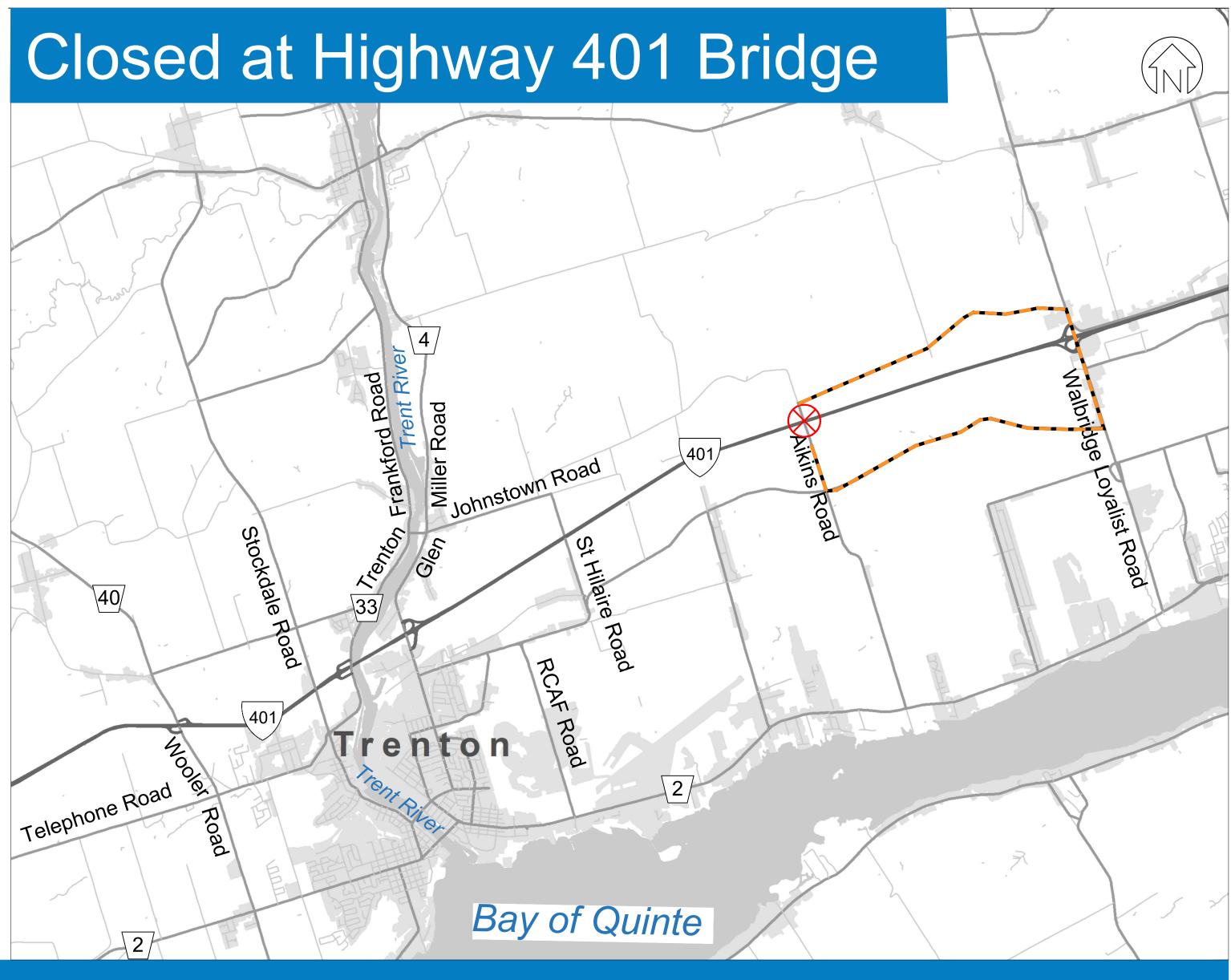
Quinte West 33



St. Hilaire Road



Aikins Road

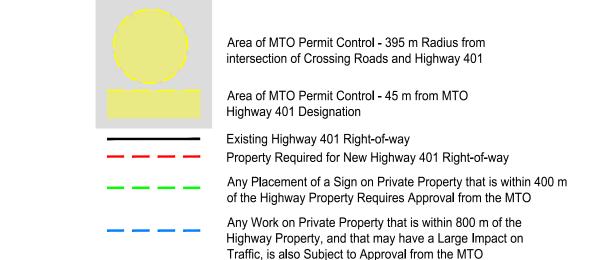


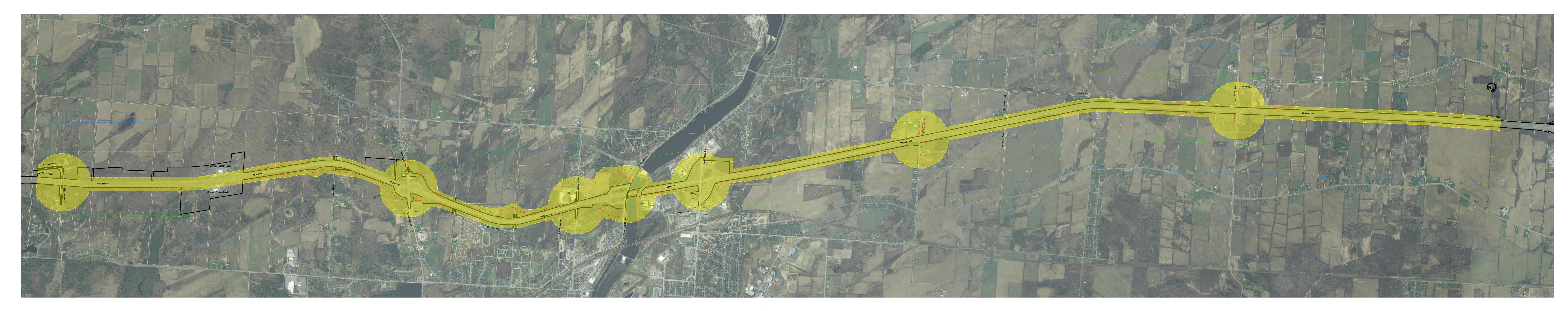
Highway 401 Quinte West Planning Study GWP 4027-18-00

Stanted

Area within MTO Permit Control

Highway 401 Quinte West Planning Study GWP 4027-18-00





Highway 401 Quinte West Planning Study GWP 4027-18-00

Potential Impacts and Proposed Mitigation Measures

As part of the Public Information Centre 1 consultation, the project team received a number of comments including potential noise impacts from Highway 401 alternatives, Highway 401 expansion not required for current traffic volumes, impacts to property and farmland, and consideration for wildlife passages. The comments have been considered as part of the evaluation of alternatives and as part of the proposed mitigation measures. Impacts resulting from this project will be minimized to the extent possible. Investigations are ongoing and will continue during Detail Design to help confirm environmental impacts, refine mitigation measures, and support obtaining required permits and approvals.



Archaeological & Built Heritage Resources

A Stage 1 Archaeological Assessment was completed and it identified areas with potential for archaeological resources. A Stage 2 Archaeological Assessment will be undertaken for areas identified as retaining archaeological potential during Detail Design. Properties having cultural heritage value have been identified. Direct impacts to these properties are not anticipated, although impacts will be confirmed during detail design



Property

Potential impacts to private property are an important factor and component of the evaluation of alternatives. The project team will work to minimize impacts to private properties to the extent possible.

Potentially affected property owners have been contacted directly by the project team.



Noise Impacts

The potential changes in traffic noise associated with the Preferred Plan is currently being reviewed. A Noise Assessment is being completed in accordance with Provincial guidelines to determine if measures are required to mitigate potential increases in traffic noise (i.e., noise wall, landscaping, etc.). The results of the assessment will be documented in the TESR and made available for a comment

period.



Traffic Operations

Construction activities are expected to impact traffic operations.
Advanced notification will be provided to affected residents in advance of construction activities. Staging Plans will be finalized during detail design. Staging Plans will be finalized in consultation with municipalities and emergency service providers.



Natural Environment

Trees and vegetation will need to be removed and impacts will be minimized to the extent possible. A landscape design plan is being developed to identify opportunities for new plantings. Targeted species surveys will be completed during future studies. Mitigation measures to protect wildlife will be identified. The Highway of Heroes planting areas and planted trees will not be impacted by the Preferred Plan.

Next Steps

Following this Public Information Centre, the next steps in the Class EA process include:

- ✓ Review, consider and respond to comments received
- ✓ Confirm the Recommended Plan
- ✓ Confirm the potential impacts and proposed mitigation measures
- ✓ Prepare the Transportation Environmental Study Report (TESR)
- ✓ Issue Notice of Study Completion and file TESR for 30-day public comment period



Thank you for attending

Your input is important

3 ways to provide your comments:



Fill out a comment sheet and place it in the box



Email: comments@hwy401quintewest.ca



Contact the Project Team:

Nevena Gazibara
Senior Environmental Planner
Stantec Consulting Ltd.
200-835 Paramount Drive
Stoney Creek ON L8J 0B4

Tel: 905-381-3249

Email: comments@hwy401quintewest.ca

Gregg Cooke, P.Eng.
Project Manager
Stantec Consulting Ltd.
200-835 Paramount Drive
Stoney Creek ON L8J 0B4

Tel: 905-381-3227

Email: comments@hwy401quintewest.ca

Lee Collins, P.Eng.
MTO Project Engineer
Ministry of Transportation Eastern Region
1355 John Counter Boulevard, Postal Bag 4000
Kingston ON K7L 5A3

Tel: 613-583-6752

Email:comments@hwy401quintewest.ca

We would appreciate receiving your comments by December 5, 2025