



Preliminary Design and Environmental Assessment for Highway 401 from Cranberry Road to County Road 28 (Ontario Street), Port Hope

STUDY #1 GWP 4005-17-00

Online Public Information Centre #1

LIVE FROM AUGUST 5– SEPTEMBER 2, 2021

www.Hwy401PortHopeEA.com



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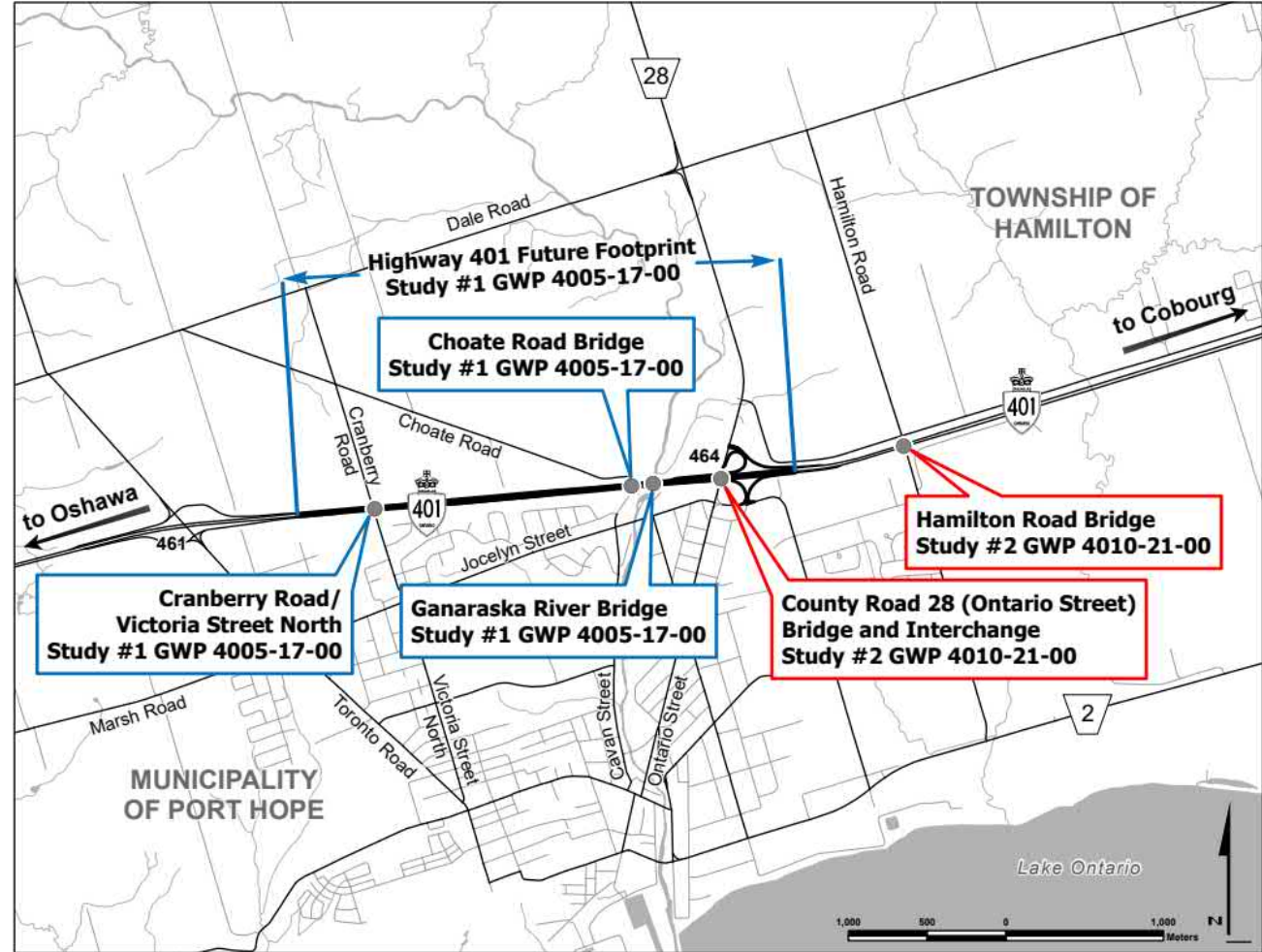
PROJECT DESCRIPTION AND PURPOSE

The Ministry of Transportation (MTO) has retained the services of McIntosh Perry Consulting Engineers Ltd. and LEA Consulting Ltd. Joint Venture (MP-LEA Joint Venture) to carry out the Preliminary Design and Class Environmental Assessment (Class EA) for Highway 401 from 500m west of Cranberry Road to 450m east of County Road 28, including the Cranberry Road bridge, Choate Road bridge, Ganaraska River bridge, Hamilton Road bridge and County Road 28 (Ontario Street) Interchange in Port Hope.

The initial study has been divided into two (2) separate Class EA studies:

STUDY # 1 GWP 4005-17-00 includes structural needs of 3 bridges (Cranberry Road Bridge, Choate Road Bridge and Ganaraska River Bridge) and establishing the eight (8) and ten (10) lane future footprint of Highway 401 from 500m west of Cranberry Road to 450m east of County Road 28 (Ontario Street).

STUDY #2 GWP 4010-21-00 includes future operational long-term needs at the County Road 28 (Ontario Street) interchange, and structural needs of 2 bridges (County Road 28 bridge and Hamilton Road Bridge). Study #2 will be presented as part of a separate consultation process.



The study is being carried out in accordance with the approved environmental planning process for Group ‘B’ projects under the MTO *Class Environmental Assessment (Class EA) for Provincial Transportation Facilities (2000)*.

A **Transportation Environmental Study Report (TESR)** will be prepared to summarize the study process and recommendations. Upon completion, the TESR will be made available for a 30-day public review and comment period.

Upon completion of the 30-day public review period and provided there are no outstanding concerns, the study will be considered to have met the requirements of MTO’s Class EA process.



Consultation and engagement with external agencies, Indigenous communities, and the public at key milestones throughout the study are essential components of the Class EA process. Stakeholders and the public are encouraged to provide input at any point during this project.

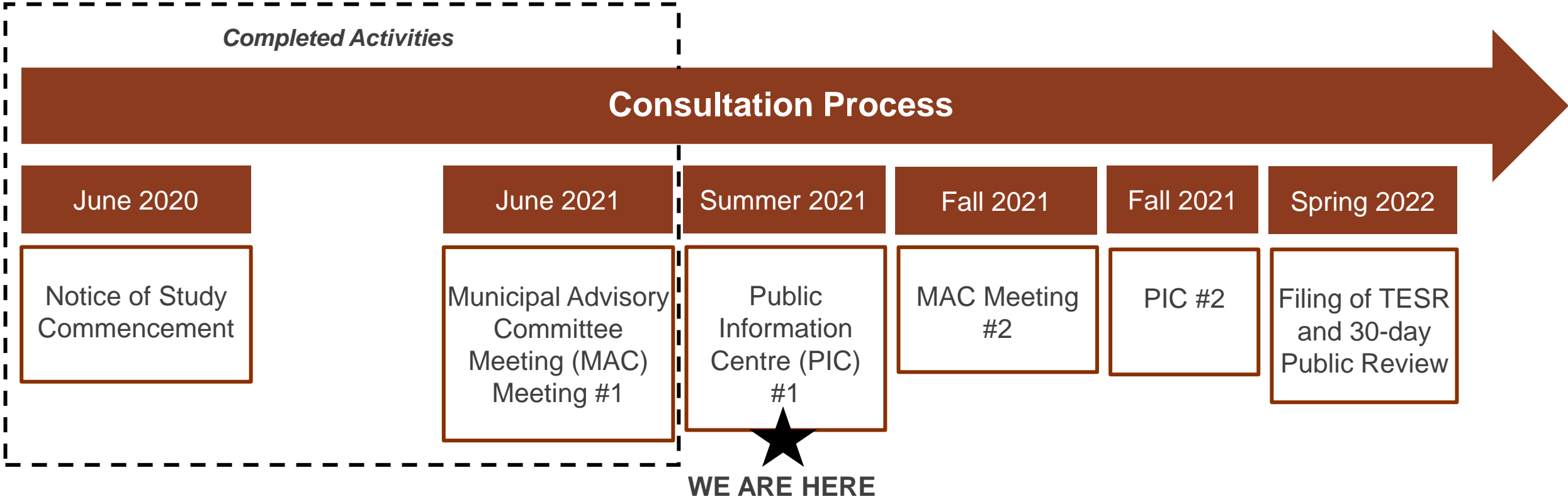
Indigenous Communities that have been consulted with include:

- **Curve Lake First Nation**
- **Alderville First Nation**
- **Mississaugas of Scugog First Nation**
- **Mohawks of the Bay of Quinte First Nation**
- **Beausoleil First Nation**
- **Georgina Island First Nation**
- **Chippewas of Rama First Nation**
- **Métis Nation of Ontario**
- **Williams Treaties First Nations**
- **Hiawatha First Nation**

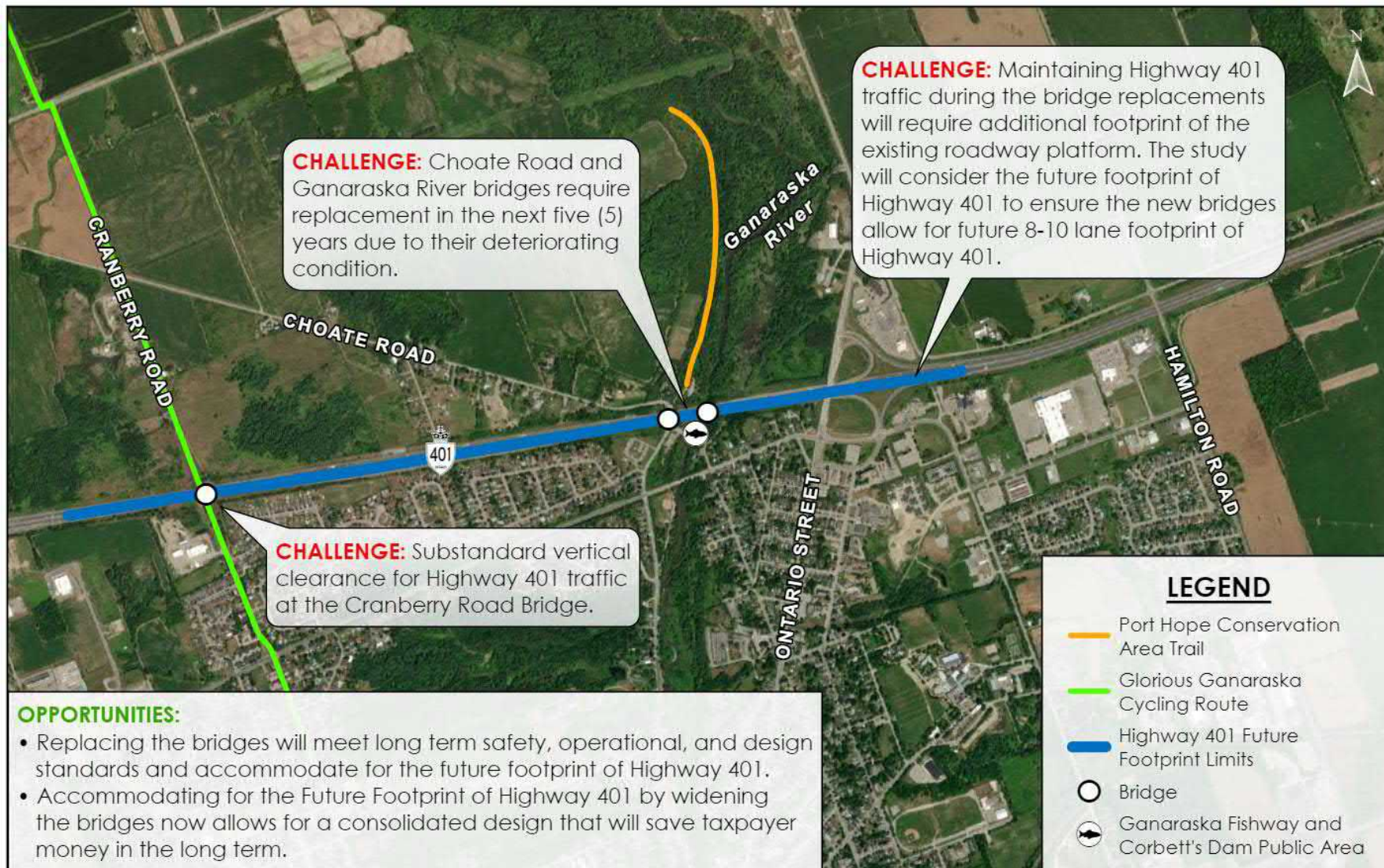
External Agencies that have been consulted with include:

- **Ministry of Environment, Conservation and Parks (MECP)**
- **Ministry of Northern Development, Mines, Natural Resources and Forestry (MNR)**
- **Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)**
- **Infrastructure Ontario (IO)**
- **Ministry of the Environment and Climate Change**
- **Ontario Federation of Agriculture (OFA)**
- **Local Emergency Services (Fire, Paramedic, Police)**
- **Ganaraska Region Conservation Authority (GRCA)**
- **Port Hope Area Initiative (PHAI)**
- **Municipality of Port Hope, Township of Hamilton and County of Northumberland**




Consultation and engagement opportunities that are being conducted at key points throughout the study include:



CHALLENGES AND OPPORTUNITIES



As part of the preliminary design and Class EA process, the Project Team identified and assessed alternatives to the undertaking to ensure that there is reasonable justification to proceed with the project. Planning alternatives considered include:

1	DO NOTHING The bridges and highway would remain 'as is'	NOT RECOMMENDED This alternative does not address the transportation issues within the study area, including the aging bridges that require replacement	
2	BRIDGE/HIGHWAY REHABILITATION	NOT RECOMMENDED This alternative does not accommodate for the Highway 401 future footprint	
3	BRIDGE REPLACEMENT/HIGHWAY FUTURE FOOTPRINT	RECOMMENDED This alternative will address the structural deficiencies at the bridges and will accommodate for the Highway 401 future footprint	

Alternatives one (1) and two (2) were not carried forward as they do not meet the overall project needs (at any location), including accommodating for the Highway 401 future footprint or addressing key operational and structural deficiencies in the long-term. Alternative three (3) is the preferred planning alternative to the undertaking.

STUDY	DATE
Fisheries Impact Assessment	Anticipated Fall 2021
Terrestrial Impact Assessment	Anticipated Fall 2021
Landscape Composition Report	Anticipated Fall 2021
Noise Assessment Report	Anticipated Fall 2021
Erosion and Sediment Overview Risk Assessment Report	Anticipated Fall 2021
Cultural Heritage Assessment	Complete
Archaeology Report	Complete
Designated Substance Survey	Complete
Contamination Overview Study	Complete
Groundwater Assessment Report	Complete

The following slides present the short list alternatives for the Cranberry Road, Choate Road and Ganaraska River bridges as well as for the Highway 401 future footprint. The evaluation criteria that has been identified to help select the design alternatives includes:

Natural Environment

- *Direct and indirect impacts to:*
 - Floodplain
 - Fish and fish habitat
 - Wildlife and Vegetation
 - Species at Risk
 - Groundwater and Surface Water
 - Significant Natural Areas such as the Ganaraska River

Socio Economic Environment

- Impacts to private properties
- Access for local residents, school buses and emergency vehicles
- Noise
- Land use impacts such as at the Port Hope Conservation Area and Corbett's Dam Public Area
- Cycling and Pedestrian impacts
- Impacts to heritage features
- Disturbance of contaminated soils

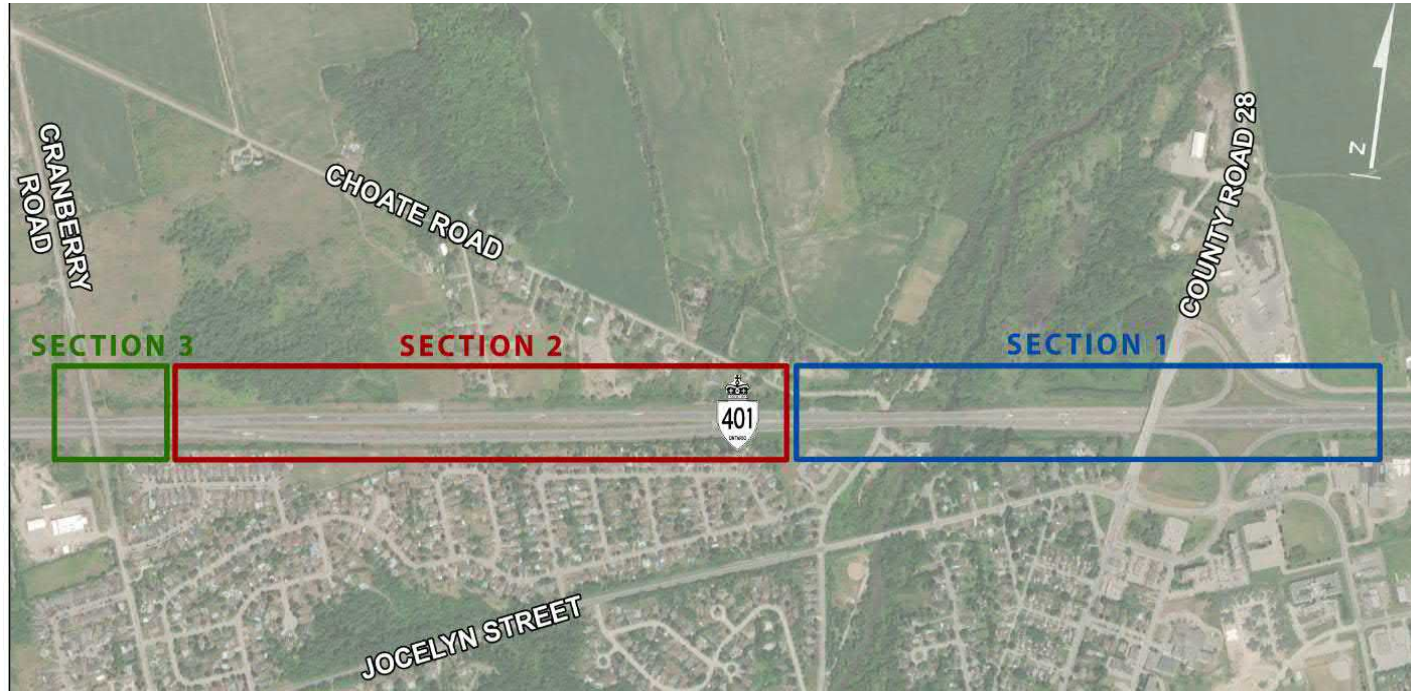
Transportation/Technical Considerations

- Complexity of construction staging
- Construction duration
- Cost
- Delays to emergency services
- Municipal road impacts
- Detour routes
- Traffic disruptions
- Conflict with utilities

HIGHWAY 401 FUTURE FOOTPRINT

HIGHWAY 401 FUTURE FOOTPRINT ALTERNATIVES

Highway 401 in this location is a six (6) lane divided highway with three (3) eastbound lanes and three (3) westbound lanes. The highway has been broken out into three (3) different sections to evaluate alternatives for the future footprint of Highway 401:



Section 3 - 50m west of Cranberry Road to 150m east of Cranberry Road

- Paved median and tall wall barrier.
- Land use includes agricultural and residential uses, as well as the Port Hope Public Works facility.

Section 2 - 150m east of Cranberry Road to 190m west of Choate Road

- Variable width grass/sloping median with grade difference between eastbound and westbound directions.
- Dense residential areas south of the highway

Section 1 - 190m west of Choate Road to 450m east of County Road 28

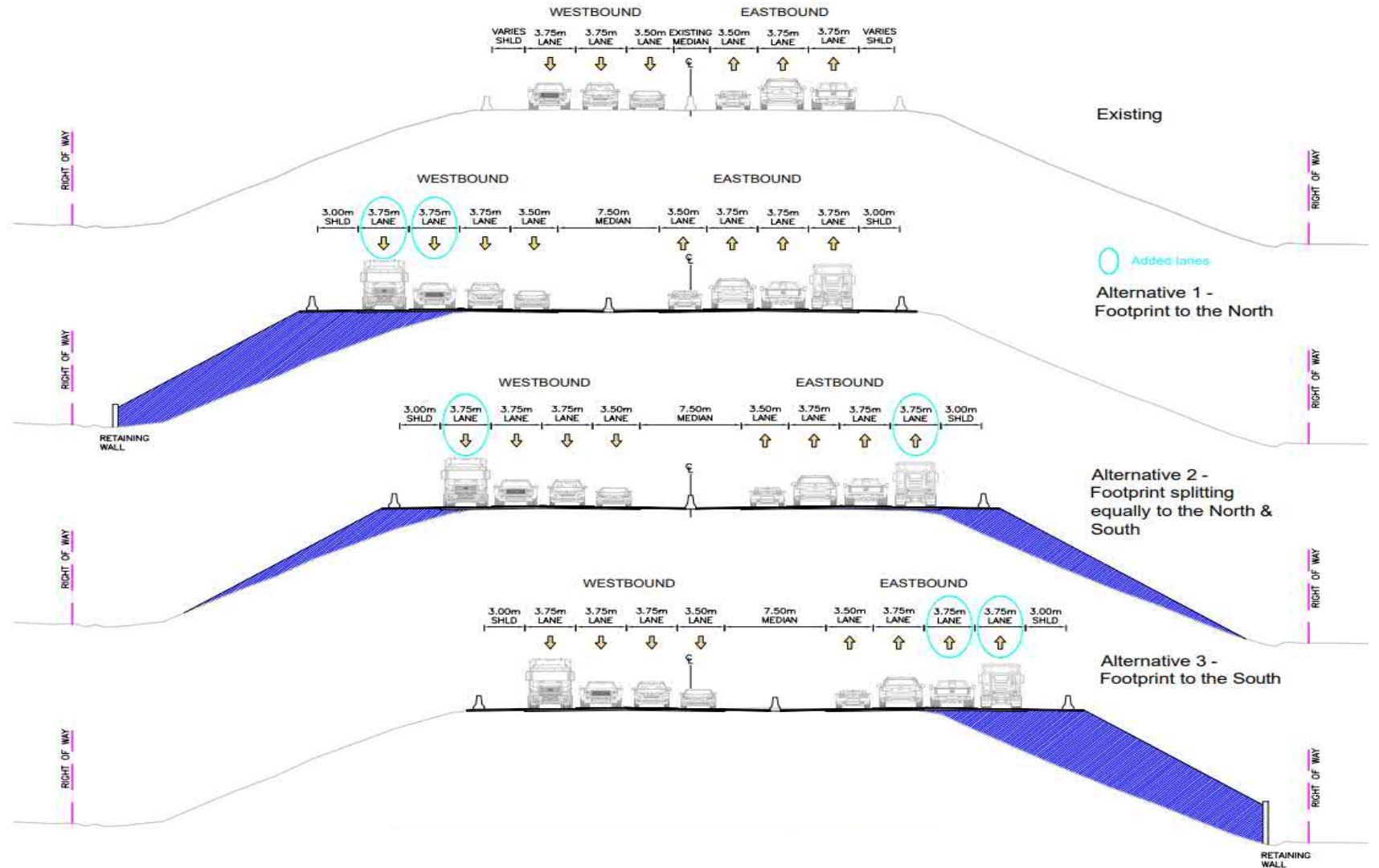
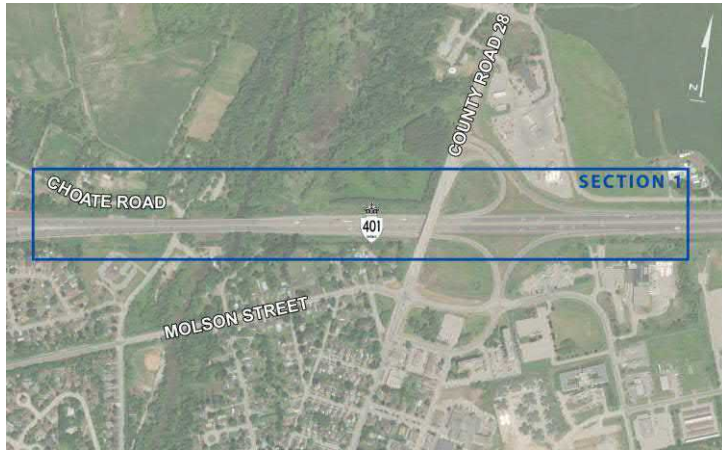
- Paved median and tall wall barrier.
- Land use includes Ganaraska Region Conservation Area and Corbett's Dam Public Area.
- Cultural heritage resources including buildings and landscapes located north and south of the highway.

3 alternatives were considered for each Section for the Highway 401 future footprint:

- 1 Extend Highway 401 fully to the north
- 2 Split the extension for each direction of Highway 401
- 3 Extend Highway 401 fully to the south

HIGHWAY 401 FUTURE FOOTPRINT ALTERNATIVES

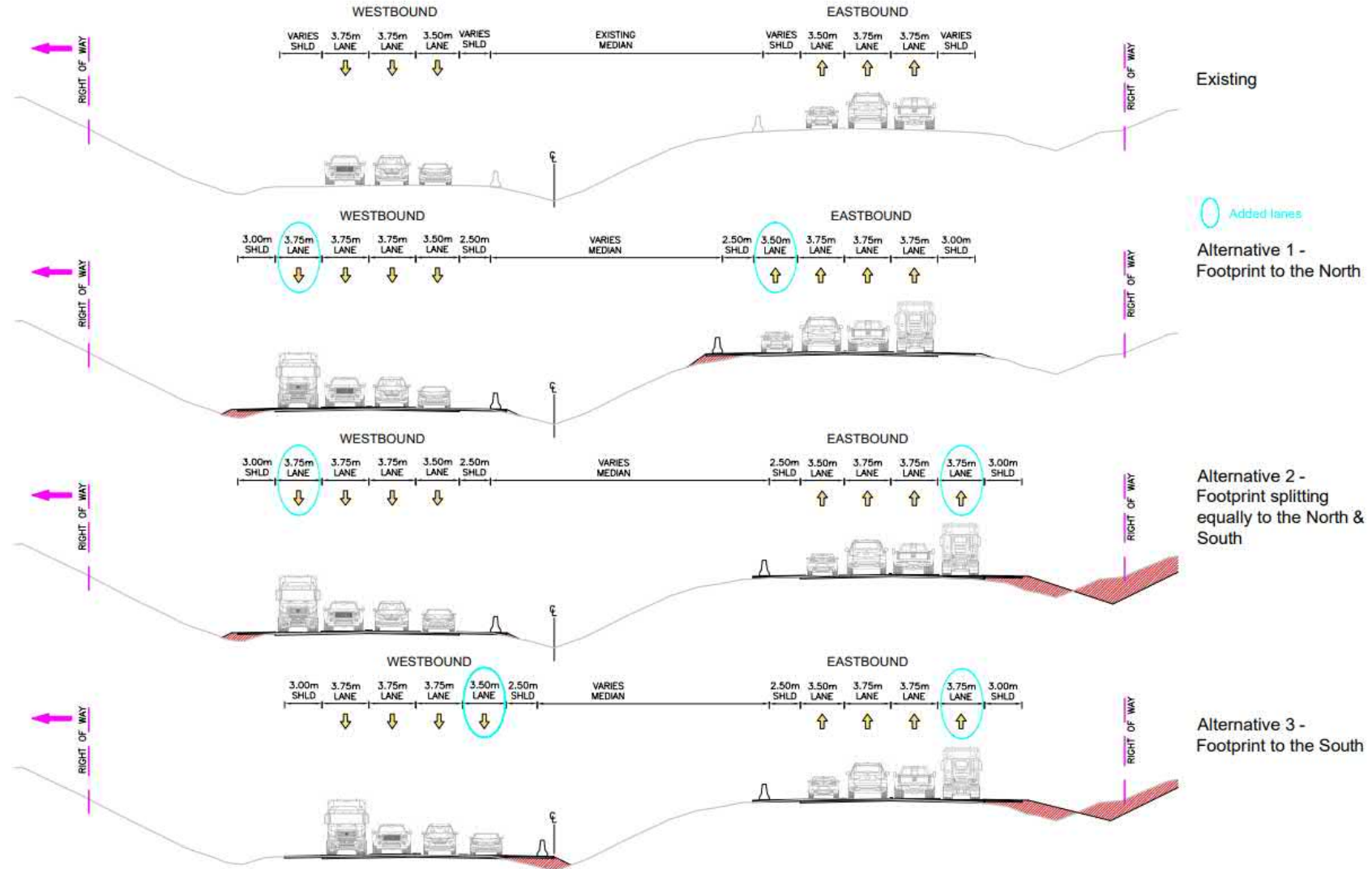
Section 1 (east end) Alternatives:



* SHLD = Road shoulder
Right Of Way = MTO property limit

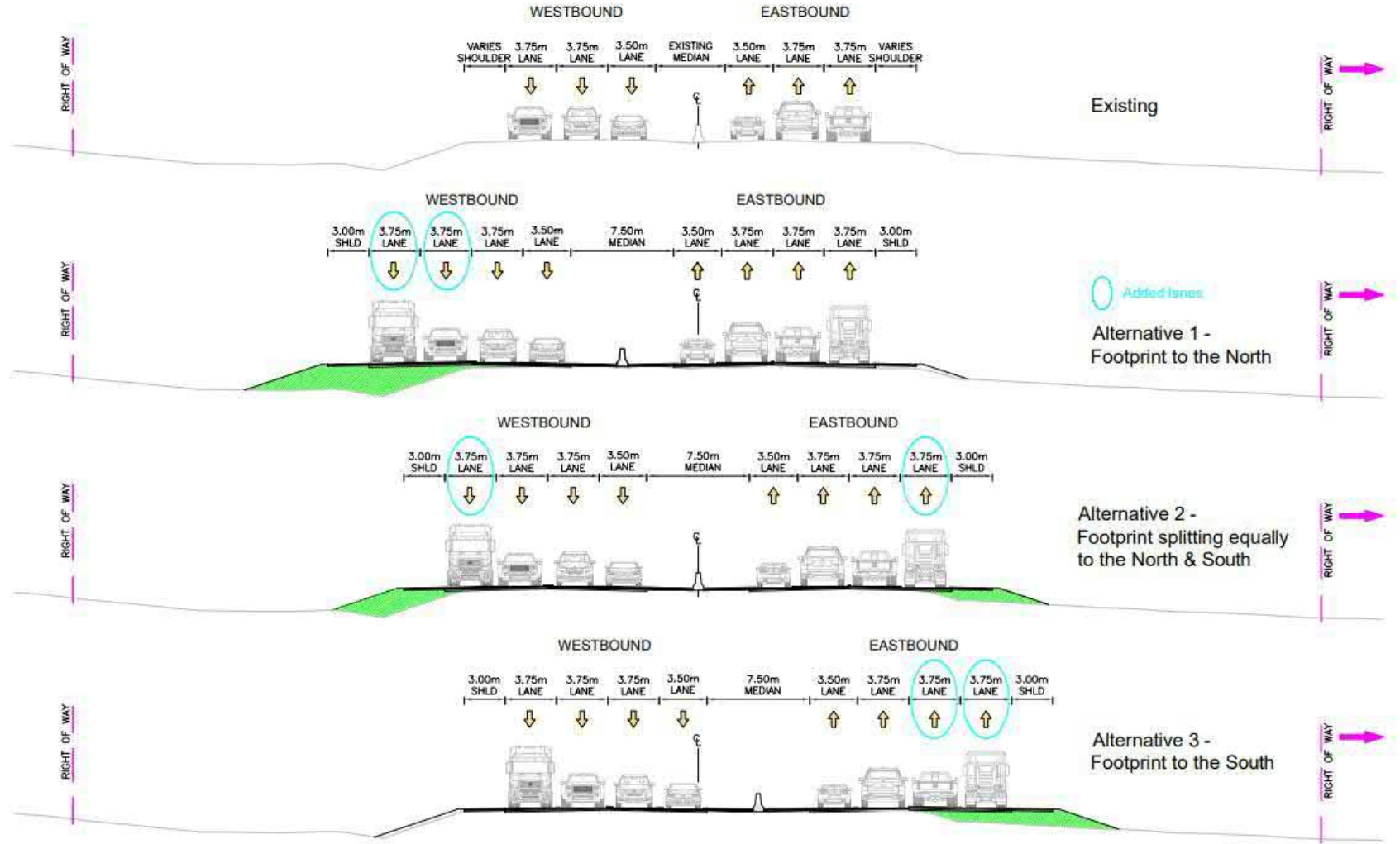
HIGHWAY 401 FUTURE FOOTPRINT ALTERNATIVES

Section 2 (middle) Alternatives:



* SHLD = Road shoulder
 Right Of Way = MTO property limit

Section 3 (west end) Alternatives:



* SHLD = Road shoulder
Right Of Way = MTO property limit

CRANBERRY ROAD BRIDGE

CRANBERRY ROAD BRIDGE EXISTING ENVIRONMENTAL CONDITIONS

Social and Cultural Environment

Archaeology

- Lands adjacent to the Cranberry Road bridge do not contain archaeological significance.

Cultural Heritage

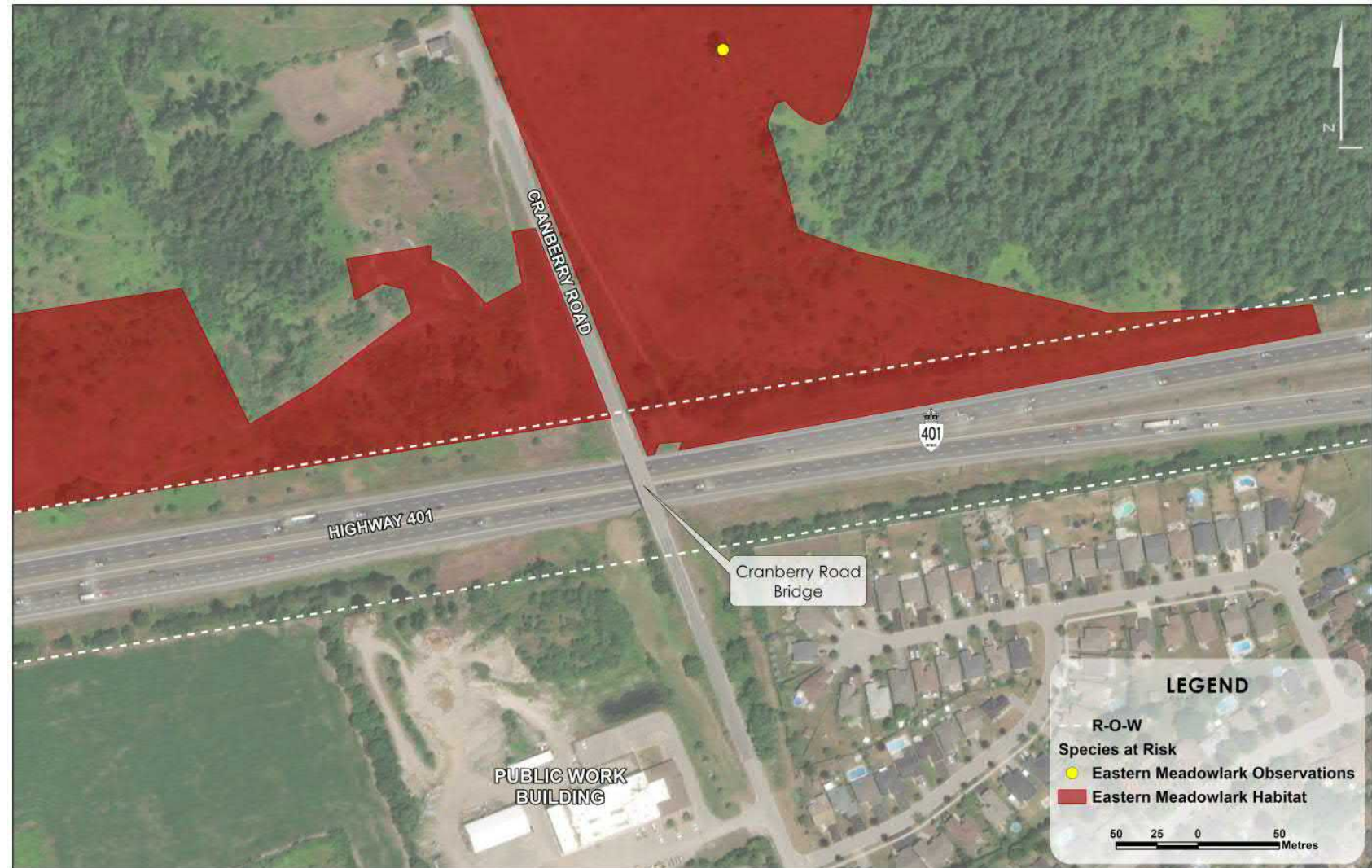
- The Cranberry Road bridge is not a heritage bridge.

Land Use

- Lands surrounding the Cranberry Road bridge are agricultural, institutional and residential.

Natural Environment

- SAR bird (Eastern Meadowlark) was observed.
- No watercourses are found within the study area.



1 Replacement on Existing Alignment
Staged Traffic (Carried Forward) ✓



- Advantages:**
- Low impacts to nearby residents and businesses
 - Lower construction costs associated with embankment reconstruction.
 - Maintains one-lane two-way operation.
- Disadvantages:**
- Throw away and additional construction staging costs
 - Longer construction duration.
- Rationale:** Maintains traffic at the bridge during construction and has a lower impact to residents and businesses in the vicinity of the bridge.

2 Replacement on Existing Alignment
Full Closure (Carried Forward) ✓



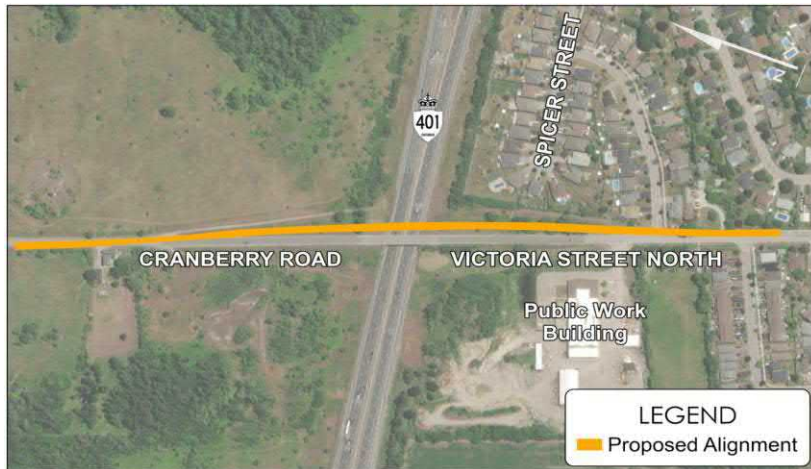
- Advantages:**
- Shorter construction duration.
 - Low construction cost associated with staging.
 - Lower construction costs associated with embankment reconstruction.
- Disadvantages:**
- Increased travel time for commuters and emergency medical services (EMS) due to detour.
- Rationale:** Lower cost, shorter construction duration, and simplifies staging to increase worker safety.

3a Replacement on New Alignment –
West (**Not Carried Forward**) ✗



- Advantages:**
- Maintains two traffic lanes during construction.
- Disadvantages:**
- Larger permanent property acquisition required.
 - Throw away construction cost associated with new alignment.
- Rationale:** Utility impacts and property acquisition needs are higher. Impacts to the Public Works yard are anticipated.

3b Replacement on New Alignment – East **(Not Carried Forward)**



Advantages:

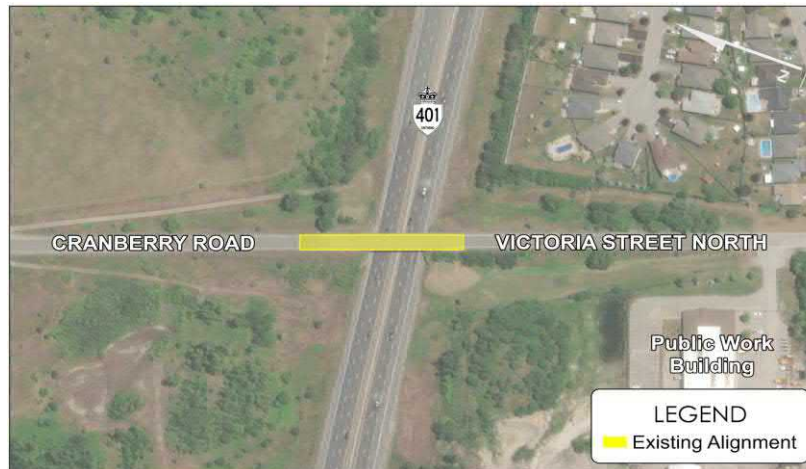
- Maintains two traffic lanes during construction.

Disadvantages:

- Larger permanent property acquisition required.
- Throw away construction cost associated with new alignment.

Rationale: Utility impacts and property acquisition needs are higher. Private property impacts to the homes on the Spicer Street cul-de-sac are anticipated.

4 Accelerated Replacement, Existing Alignment **(Not Carried Forward)**



Advantages:

- Minimal impact to residents and motorists.
- Reduces construction duration.

Disadvantages:

- Temporary property required for staging area.
- High capital cost and high throw away construction cost.

Rationale: Low Annual Average Daily Traffic (AADT) on Cranberry Road does not warrant the high cost associated with this alternative

5 Permanent Closure **(Not Carried Forward)**



Advantages:

- Minimal capital cost.
- No permanent property acquisition required.

Disadvantages:

- Eliminates crossing for local traffic.
- Major impacts to local road network.
- Increased travel time for residents.

Rationale: Cranberry Road is important to the local road network.

CHOATE ROAD BRIDGE & GANARASKA RIVER BRIDGE

CHOATE ROAD BRIDGE & GANARASKA RIVER BRIDGE ENVIRONMENTAL CONDITIONS

Social/Cultural Environment

Archaeology

- Lands adjacent to the bridges do not contain archaeological significance.

Cultural Heritage

- Choate Road and Ganaraska River bridges are not culturally significant.
- There are multiple designated built heritage resources including the Molson Mill.
- The lands directly north and south of Choate Road are Cultural Heritage Landscapes.

Land Use

- Surrounding land uses include the Port Hope Conservation Area, Corbett's Dam Public Area and Fish Ladder, Grace Church, as well as agricultural, natural environment, and residential uses.

Natural Environment

Terrestrial

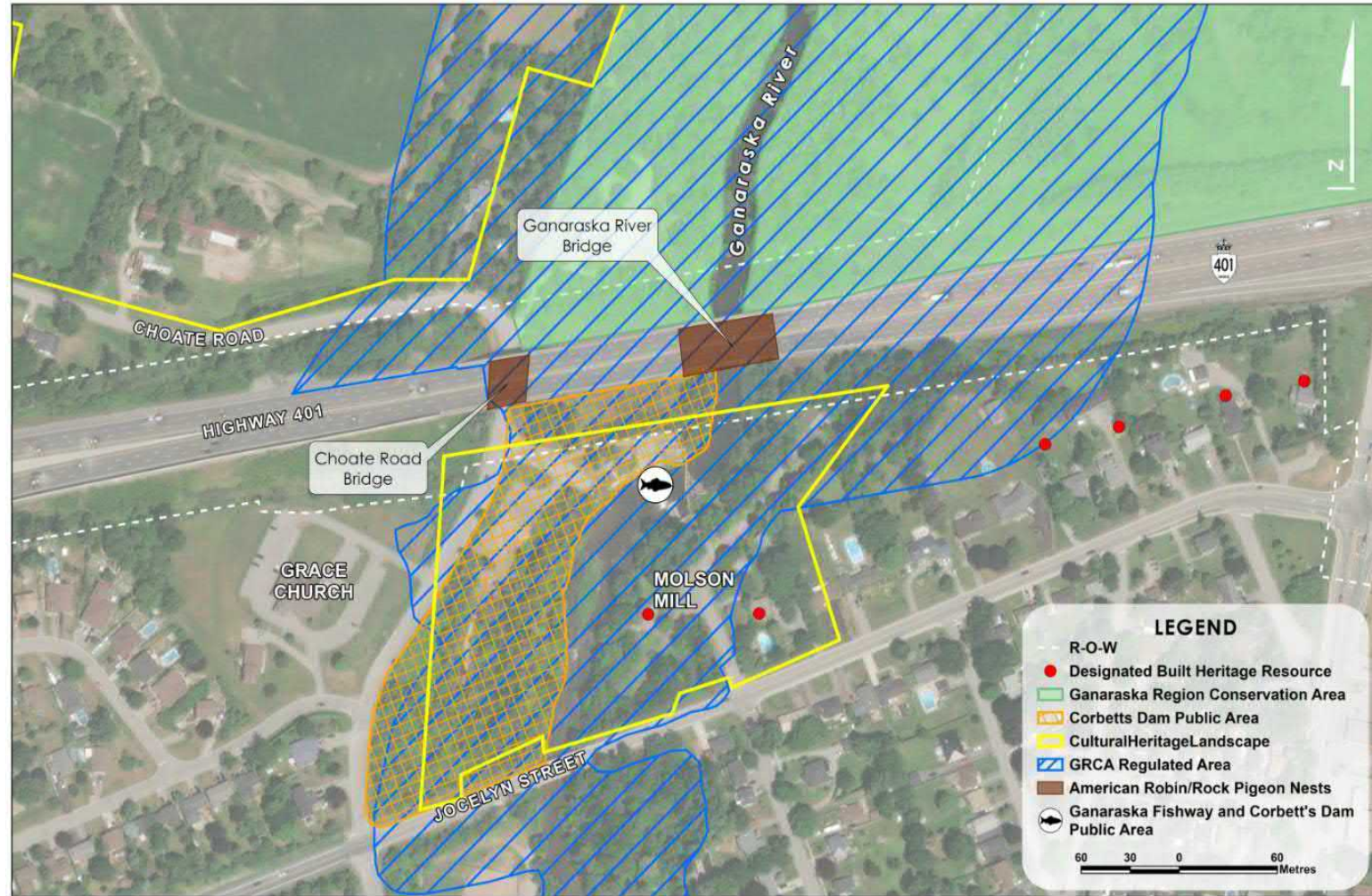
- Migratory bird nesting (American Robin and Rock Pigeon) observed on the bridges.

Fisheries

- Ganaraska River contains Pacific and Atlantic Salmon, Char and cool water sportfish and baitfish species.

Floodplain

- The existing Choate Road is within the floodplain limits



***The GRCA Regulation Limit is used here to show the general extent of the Regulatory flood plain, however, it also includes a 15m buffer beyond the largest regulated hazard**

Existing Vehicular Traffic Volumes:

- Traffic volumes for vehicles, pedestrians and cyclists were observed from June 18 to 24, 2020 at Choate Road, just north of Highway 401.
 - Average daily traffic (ADT) ~ 500 vehicles.
 - Given only ~30-40 houses located on Choate Road north of 401, most of this traffic is likely to be cut-through.

Direction	Daily
Northbound	240
Southbound	260
Total	500

Existing Pedestrian and Cyclist Volumes:

User	Daily
Pedestrians	6
Cyclists	9

**All Alternatives in the following slides maintain active transportation facilities through this corridor.*

CHOATE ROAD BRIDGE & GANARASKA RIVER BRIDGE LONG LIST ALTERNATIVES

1 Replace both Choate Road and Ganaraska River Bridges (Carried Forward)



Advantages:

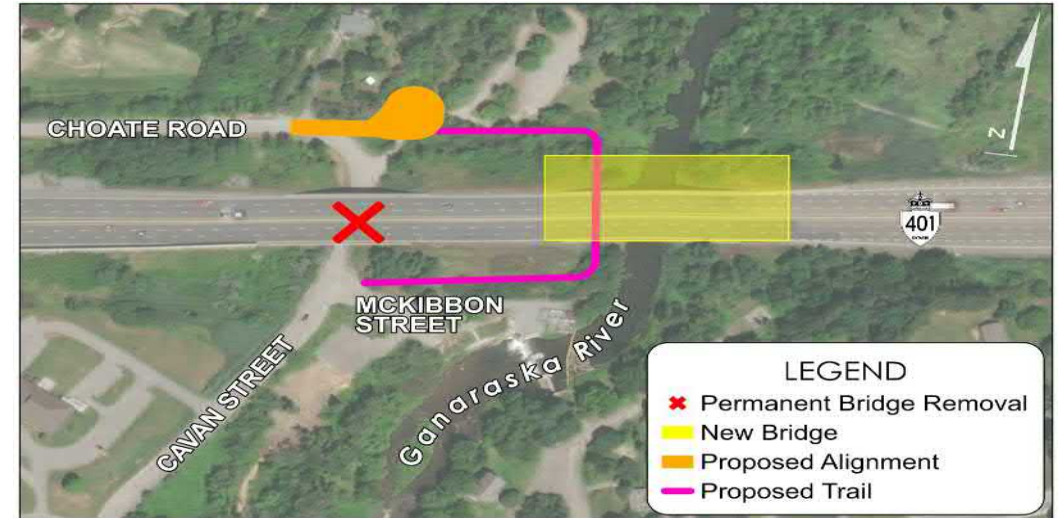
- No property required.
- Low impact to existing transportation network.
- Minor change to existing footprint resulting in negligible impact to flood plain and natural environment.

Disadvantages:

- High complexity construction staging and traffic delays.
- High construction and maintenance cost with two (2) bridges.

Rationale: Maintains existing functional use of existing road network with low impacts to the flood plain and requires no property.

2 Terminate Choate Road with a Cul-De-Sac, Terminate Cavan Street at McKibbon Street, Replace Ganaraska River Bridge (Carried Forward)



Advantages:

- Simple and shorter construction.
- Reduced costs with only one (1) bridge.

Disadvantages:

- Property required from Ganaraska River Conservation Authority and residents.
- High impact to existing transportation network.
- Impacts to the Cultural Heritage Landscape south of the bridges.
- Largest impact to flood plain due to change in existing footprint

Rationale: Replaces one bridge with simple construction staging that will minimize delays to public on Highway 401 with low impacts to the flood plain.

Closure of Choate Road at the Highway 401 Crossing

- Permanently divert traffic to Cranberry Road
- Vehicles travelling east of Ontario Street may divert to Dale Road and then to Ontario Street.

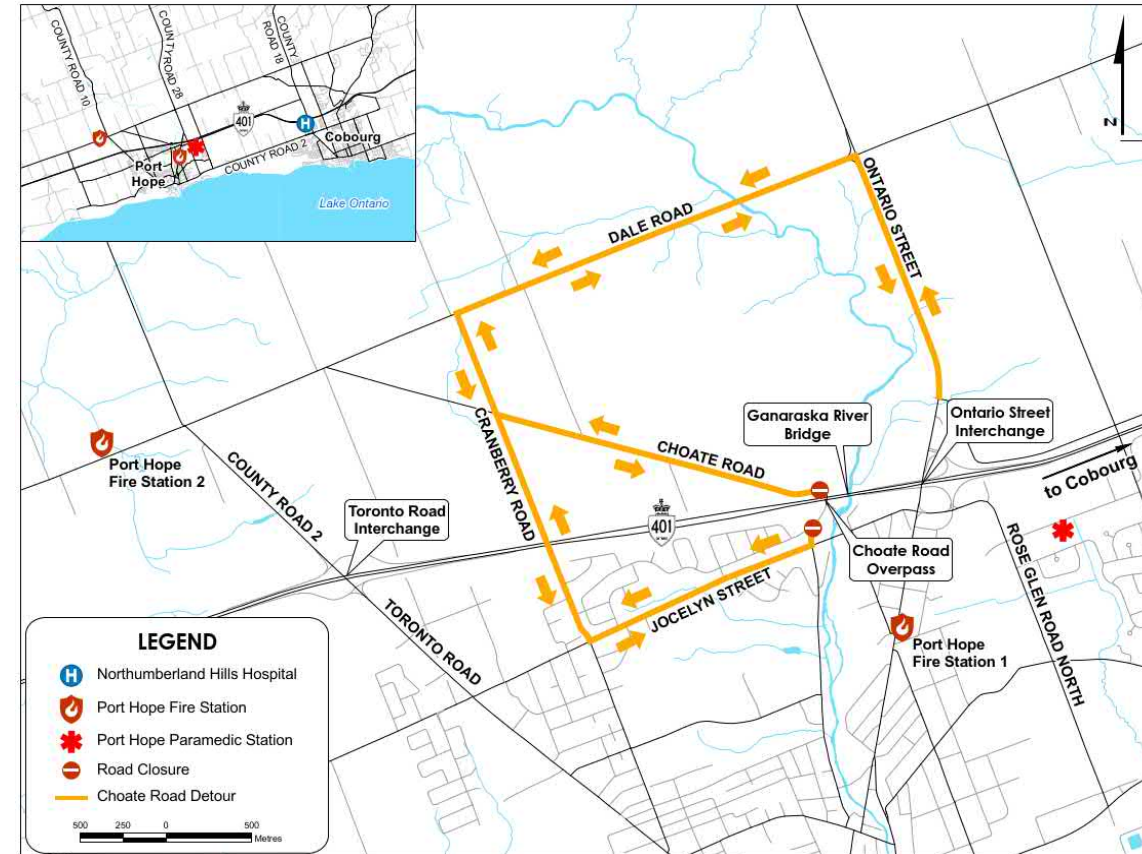
Permanent Impacts to Local Traffic (30-40 residences north of Highway 401)

- 4.5 additional kms
- 5 additional travel minutes (worst case)

Permanent Impacts to Emergency Services

- Up to five (5) minutes additional travel time for emergency services anticipated.
- Actual impacts will vary depending on availability / proximity of emergency services.

Destination	Existing Travel Time	Diverted Travel Time	Delay	Detour Route
Northumberland Hills Hospital	9 min; 10.2 km	13 min; 15.7 km	4 mins	Dale, Ontario
Port Hope Paramedic Station	3 min; 1.8 km	8 min; 6.2 km	5 mins	Cranberry
Port Hope Fire Station No. 1	2 min; 1.3 km	7 min; 5.8 km	5 mins	Cranberry
Port Hope Fire Station No. 2	5 min; 4.4 km	5 min; 4.4 km	0 mins	None



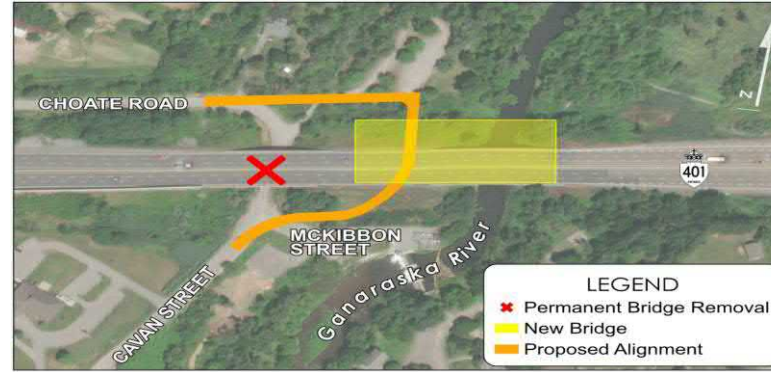
****We would appreciate hearing from you to understand your perspective on the closure of Choate Road to aid us in the determination of the recommended solution for this location.***

CHOATE ROAD BRIDGE & GANARASKA RIVER BRIDGE LONG LIST ALTERNATIVES

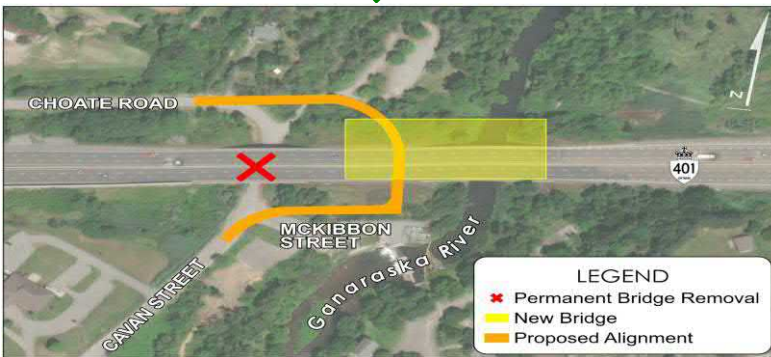
3a Replace Ganaraska River Bridge and Realign Choate Road with a Curved Alignment Carried Forward



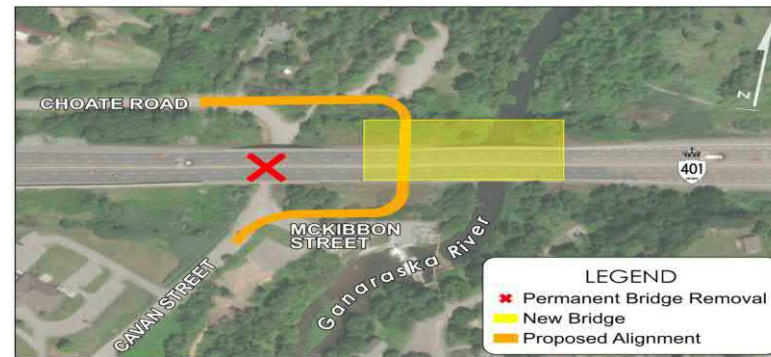
3b Replace Ganaraska River Bridge and Realign Choate Road with a T- intersection to the North Carried Forward



3c Replace Ganaraska River Bridge and Realign Choate Road with a T-intersection to the South Carried Forward



3d Replace Ganaraska River Bridge and Realign Choate Road with a Tangent Alignment Carried Forward



Advantages:

- Simple construction staging.
- Low impact to existing transportation network.
- Replacing one (1) bridge only.

Disadvantages:

- Permanent property required.
- Retaining wall required north and south of the right-of-way.
- Realignment of municipal road.
- Potential impacts to the Cultural Heritage Landscape south of the bridges for access and parking.
- Larger change to footprint resulting in higher impact to flood plain and natural environment.

Rationale: Realignment maintains existing functional use of existing road network with replacing one (1) bridge and requires simple construction staging that will minimize public delays on Highway 401 during construction.

SUMMARY - SHORT LIST ALTERNATIVES



Cranberry Road Bridge

Alternative **1** – Replacement on Existing Alignment – Staged Traffic.

Alternative **2** – Replacement on Existing Alignment – Full Closure.



Choate Road Bridge & Ganaraska River Bridge

Alternative **1** – Replace Both Choate Road and Ganaraska River bridges in place.

Alternative **2** – Terminate Choate Road; Replace Ganaraska River bridge.

Alternative **3a, 3b, 3c, 3d** – Realign Choate Road under Ganaraska River bridge.



Highway 401 Future Footprint

To be determined for PIC #2.

The project is being split into two separate EA studies:

STUDY # 1 GWP 4005-17-00 includes structural needs of 3 bridges (Cranberry Road Bridge, Choate Road Bridge and Ganaraska River Bridge) and establishing the eight (8) and ten (10) lane future footprint of Highway 401 from 500m west of Cranberry Road to 450m east of County Road 28 (Ontario Street).

- PIC 1 (present short list of alternatives) Summer 2021
- PIC 2 (present Technically Preferred Alternative) Fall 2021
- File TESR for public review Spring 2022

STUDY #2 GWP 4010-21-00 includes future operational long-term needs at the County Road 28 (Ontario Street) interchange, and structural needs of 2 bridges (County Road 28 bridge and Hamilton Road Bridge).

- PIC 1 (present short list) Fall 2021
- PIC 2 (present TPA) Winter 2022
- File TESR for Public Review Spring 2022

IF YOU WOULD LIKE MORE INFORMATION, PLEASE CONTACT:

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Please submit any questions or comments to the contacts listed above or via the project website
by September 2nd, 2021

For more information, please visit the project website at:

www.Hwy401PortHopeEA.com