

ONLINE PUBLIC INFORMATION CENTRE (PIC) **Highway 417 Midtown Bridge Replacements** **Detail Design and Environmental Assessment Study** **(GWP 4173-15-00)**

The purpose of this online PIC is to provide stakeholders and the public with an introduction to the study and an opportunity to review and comment on the proposed works, anticipated environmental effects and proposed mitigation measures.

The Ministry of Transportation (MTO) has retained WSP to undertake this study.

As part of this online PIC, you will have a chance to review:

An introduction to the current Detail Design study and project background

The steps in the Environmental Assessment (MTO Class EA) process

Existing conditions within the study area

A description of the Recommended Plan, including proposed construction & traffic staging

Anticipated environmental effects & proposed mitigation measures

Next steps

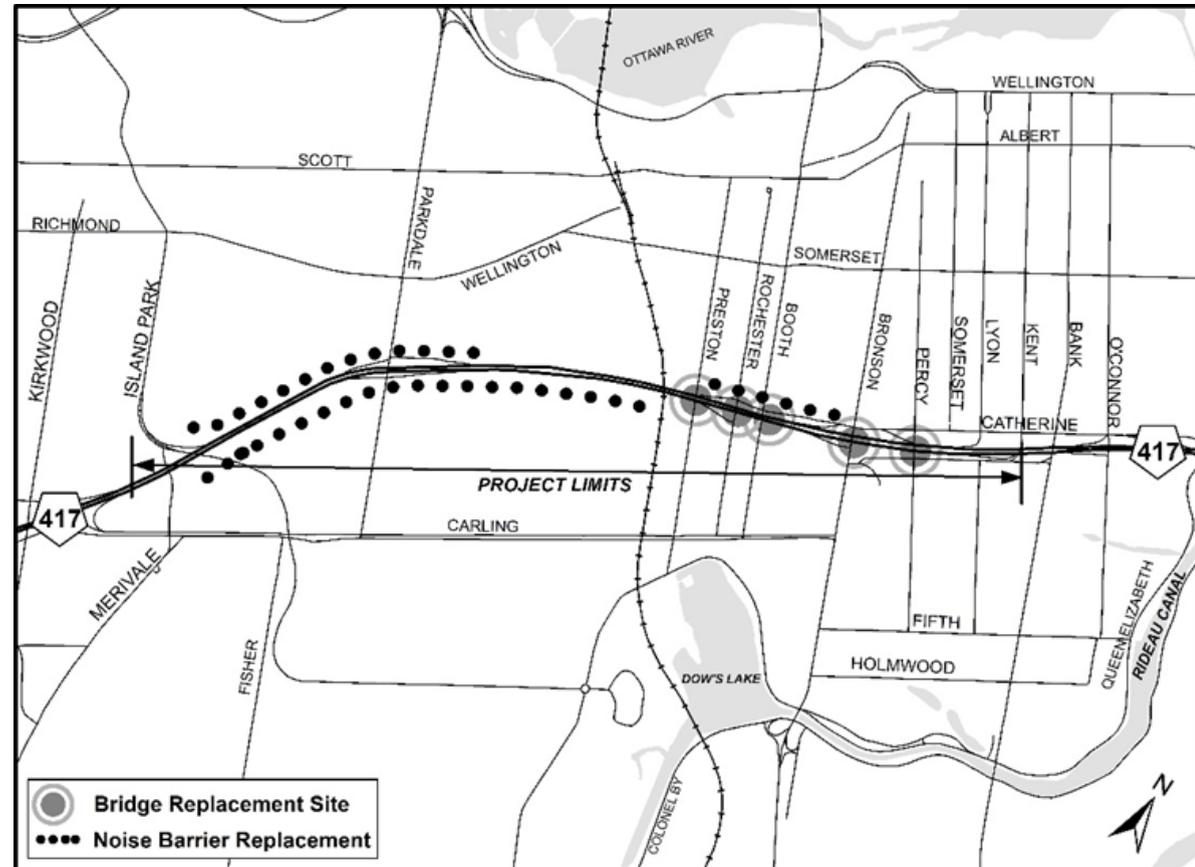
Please share your opinions with us and submit any questions or comments via the [project website Contact page](#).

A member of the Project Team will respond to you directly.

PROJECT DESCRIPTION

This Detail Design study involves the following components:

- ▶ Replacement of the Preston Street Bridge, Rochester Street Bridge, Booth Street Bridge, Bronson Avenue Bridge and Percy Street Bridge structures using rapid replacement construction techniques;
- ▶ Preparation of temporary secured construction staging areas for the bridge replacement activities, including construction of the new bridge structures within these areas;
- ▶ Construction operations on City streets to prepare the bridge sites, and to provide the rapid replacement equipment with access from the construction staging areas to the bridge sites;
- ▶ Replacement of existing noise barriers on Highway 417 at the following locations:
 - ▶ On the north side, from Island Park Drive to east of Parkdale Avenue;
 - ▶ On the north side, from the Rochester Street westbound on-ramp, east to Bronson Avenue;
 - ▶ On the south side, from Island Park Drive to west of the O-Train Bridge;



- ▶ Demolition of 458 Catherine Street (former A1 Mini Storage facility) and construction of an earth embankment across the limits of the existing retaining wall at this site;
- ▶ Implementation of Queensway Context Sensitive Design recommendations related to structural design elements, noise barriers, fencing, and landscaping, where applicable;
- ▶ Construction of related works including: tall wall median concrete barrier and drainage improvements from the O-Train Bridge to the Kent Street Bridge; retaining walls; illumination; overhead and ground-mounted signage; utility relocations; and roadside protection, as required;
- ▶ Coordination of construction activities with the following two MTO Detail Design and Class EA studies:
 - ▶ WP 4089-07-01 Bronson Avenue Interchange Improvements,
 - ▶ GWP 4057-12-00 New Noise Barrier Retrofits; and
- ▶ Traffic management for construction staging and the rapid replacement operations is being coordinated with the City of Ottawa.

PROJECT BACKGROUND

Preliminary Design Study (2016)

In 2016, MTO completed a Preliminary Design and Environmental Assessment study for the Highway 417 Midtown Bridges (GWP 4075-11-00) to define a bridge management plan for 23 bridges (12 sites) on Highway 417 from Holland Avenue to O'Connor Street. The study made recommendations for rehabilitation or replacement strategies for each bridge site. The Preliminary Design and Environmental Assessment Study was carried out in accordance with the approved environmental planning process for Group 'B' projects under the MTO Class EA, and was documented in a TESR which received environmental clearance in April 2016 (BTE and Morrison Hershfield, 2016).

Construction staging areas were determined during the Preliminary Design based on proximity to existing bridge sites and size of property. However, the intent was that further refinement of staging area locations would be required during Detail Design based on property negotiations, site conditions, constructability, and other factors.

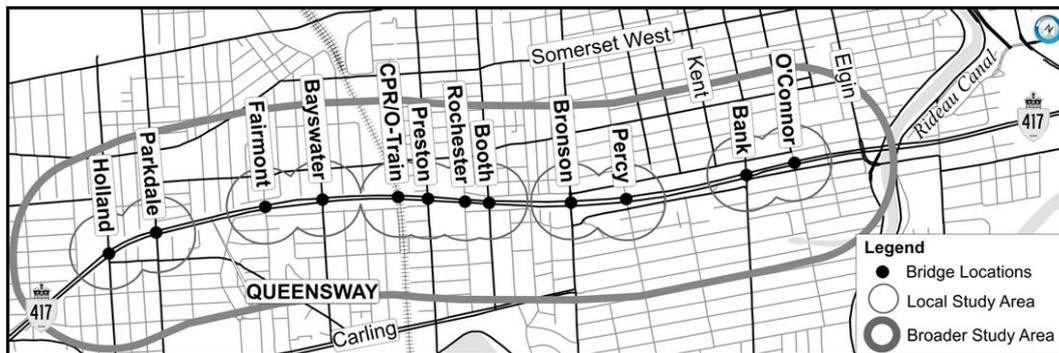
The purpose of the current Detail Design study is to refine the Preliminary Design Recommended Plan for implementation, to prepare the construction contract documents, and to obtain environmental approvals for construction.

Analysis and Evaluation of Alternatives

An extensive evaluation of bridge rehabilitation/replacement alternatives was completed as part of the Preliminary Design. The recommended plans presented as part of this PIC are based on what was recommended during the Preliminary Design, using the evaluation criteria in the table to the right.

The Preliminary Design study concluded that 10 bridges (at 5 locations) on Highway 417 from Preston Street to Percy Street require replacement in the short-term.

The Preliminary Design study also determined that existing noise barriers from Island Park Drive to Bronson Avenue require replacement.



Preliminary Design Highway 417 Midtown Bridges Study Area (GWP 4075-11-00)

Preliminary Design Evaluation Criteria

Environment	<ul style="list-style-type: none"> • Natural Environment (<i>Wildlife & Vegetation</i>) • Socio-economic Environment (<i>Contaminated Sites, Residential, Commercial, Social, Recreation & Staging Area Availability</i>) • Cultural Environment
Transportation	<ul style="list-style-type: none"> • Traffic and Transit (<i>Highway 417 Impacts, Municipal Road Impacts, Emergency Detour, Transit/Emergency Services</i>) • Constructability • Safety (<i>Road Design, Protection of Vulnerable Users</i>)
Cost	<ul style="list-style-type: none"> • Capital Cost • Life Cycle Costing

PROJECT BACKGROUND

Preliminary Design Study (2016)

The 2016 Preliminary Design and EA Study provided a summary of potential direct and indirect environmental effects associated with the Recommended Plan, mitigation measures and commitments to future work. Key commitments carried forward in this Detail Design study are summarized as follows:

Issues / Concerns / Potential Effects (2016 Preliminary Design)	Mitigation / Protection / Monitoring
<p>Property Impacts – Temporary</p> <ul style="list-style-type: none"> – Various properties may experience some level of temporary impact during construction (e.g. loss of access, encroachment, nuisance, etc.) These include potential construction access routes and construction staging areas for rapid bridge replacements. – Temporary loss of parking during localized road closures, detours and during use of parking lots as construction staging areas. 	<ul style="list-style-type: none"> – Potential for additional Environmental Assessment at Detail Design and documentation of results in Design and Construction Report. – Potential lease of private property and financial compensation for construction staging areas and construction access. – Early communication / coordination with owner(s) and tenants to minimize disruption. – Reinstatement of any disturbed areas to original condition or better. – Early advance communication with the parking lot owners / operators and regular users of the above parking lots and designated parking areas.
<p>Tourism / Events</p> <ul style="list-style-type: none"> – Potential construction disruption to various festivals / events (e.g. Italian Festival). 	<ul style="list-style-type: none"> – Schedule construction activities to limit / avoid disruption to major festivals / events (where possible.)
<p>Aesthetics / Landscape Composition</p> <ul style="list-style-type: none"> – Bridge replacement provides opportunity to enhance aesthetics of existing bridge sites. 	<ul style="list-style-type: none"> – Bridge design elements and landscaping that exceed the MTO standard proposed as part of this study will be considered in partnership with communities, with permitting conditions established by MTO. – Minimize vegetation removal; provide protection for those trees & shrubs to remain. – Replace vegetation, where feasible, in accordance with final landscape plan.
<p>Context Sensitive Design</p> <ul style="list-style-type: none"> – Loss of existing vegetation to accommodate recommended design and / or construction access and staging / layout areas. 	<ul style="list-style-type: none"> – If extent of work at any given site supports it, context sensitive design elements will be considered for inclusion.
<p>Site Contamination</p> <ul style="list-style-type: none"> – Potential for soil and/or groundwater contamination given historical land uses. – Presence of existing asbestos containing materials. 	<ul style="list-style-type: none"> – Conduct additional site investigations as required prior to construction. – Develop plans for management of potentially contaminated bridge material in advance of construction.
<p>Management of Excess Materials</p> <ul style="list-style-type: none"> – The project will result in the generation of waste asphalt, granulars, concrete and possibly earth materials. 	<ul style="list-style-type: none"> – Develop plans for management of potentially contaminated bridge material in advance of construction. – Waste generation will be minimized through promoting contractor salvage, recycling and re-use in the contract tender documents.
<p>Noise & Air Quality</p> <ul style="list-style-type: none"> – Noise and air quality nuisance from construction equipment and vehicles during construction. – Noise and air quality nuisance from vehicles (e.g. public, transit, other) using detour routes. 	<ul style="list-style-type: none"> – Maintain equipment in good operating condition. – Restrict idling of equipment to the minimum necessary to perform the work. – Contractor will be required to abide by noise control by-laws for day-to-day operations. – The contractor will be required to implement dust suppression measures to contain dust from operations such as concrete cutting. – Provide advance notice of detour routes and minimize durations.
<p>Pedestrian / Cycling / Recreational Mobility</p> <ul style="list-style-type: none"> – Potential for restricted pedestrian / cycling / recreational movement under Queensway or along other localized closures during construction – including along school / commuter / recreational routes. Longer term sidewalk closures required at bridge replacement sites to provide access to bridge footings. 	<ul style="list-style-type: none"> – Provide alternate detour routes and advance notifications of temporary closures. – Use of protective hoarding and temporary protected walkways to maintain pedestrian passage where possible.

PROJECT BACKGROUND – CONTINUED

Preliminary Design Study (2016)

Issues / Concerns / Potential Effects (2016 Preliminary Design)	Mitigation / Protection / Monitoring
<p>Traffic Operations</p> <ul style="list-style-type: none"> – Potential for traffic congestion and travel delays associated with construction staging on the Queensway (weekend full closures for bridge replacements; up to two-lane closures for bridge rehabilitations) or on ramps or municipal streets for temporary roadway or sidewalk closures / lane reductions / detours. 	<ul style="list-style-type: none"> – Provide advance notice of all closures / lane reductions / detours. – Prepare / implement Traffic Management Plan during construction including changeable message signs and incident detection. – Limit lane closures (Queensway) during peak travel times.
<p>Bus Transit Operations</p> <ul style="list-style-type: none"> – Disruption of OC Transpo bus service during municipal roadway closures and/or lane reductions (Holland, Parkdale, Preston, Booth, Bronson, Bank, Chamberlain, Catherine). 	<ul style="list-style-type: none"> – Advance coordination with OC Transpo to identify construction impacts to transit service and to develop / communicate alternate service plans.
<p>Emergency Services</p> <ul style="list-style-type: none"> – Potential impact to emergency service routes / access due to closures / lane reductions. 	<ul style="list-style-type: none"> – Consider implications of multiple side street closures as part of project phasing. – Prepare / implement Traffic Management Plan during construction. – Ensure ongoing communication with emergency service providers during construction.
<p>Erosion and Sediment Control</p> <ul style="list-style-type: none"> – Potential for erosion / sedimentation during construction. 	<ul style="list-style-type: none"> – Standard erosion and sediment control measures to be incorporated into construction contract – including measures to prevent off-site transport of sediment and prompt restoration of disturbed areas.
<p>Groundwater</p> <ul style="list-style-type: none"> – Potential for dewatering at bridge sites for bridge replacement options. 	<ul style="list-style-type: none"> – If any subsurface works will occur during bridge replacement(s), assess impacts to groundwater if dewatering is necessary.
<p>Utilities</p> <ul style="list-style-type: none"> – Potential for impacts to existing utilities in the vicinity of the bridges, work sites or along access routes from staging areas. 	<ul style="list-style-type: none"> – Ensure advance coordination with utility companies and approval for any utility relocations / protections.
<p>Species at Risk – Birds</p> <ul style="list-style-type: none"> – Potential disruption to migratory birds, nesting, and / or species at risk (SAR) including Chimney Swift and Common Nighthawk. 	<ul style="list-style-type: none"> – Conduct a site 'sweep' prior to and during construction. – Ensure contractor's staff are trained to recognize potentially affected species and are required to notify authorities if any are encountered on site.
<p>Archaeology</p> <ul style="list-style-type: none"> – Stage 1 Archaeological Assessment has not identified any areas of archaeological potential. 	<ul style="list-style-type: none"> – If deeply buried archaeological remains are encountered during construction, the contractor must notify the Ministry of Tourism, Sport and Culture.
<p>Cultural Heritage</p> <ul style="list-style-type: none"> – Potential impacts to buildings over 40 years old (458 Catherine Street). 	<ul style="list-style-type: none"> – Conduct Heritage Screening of potentially affected buildings at detail design.
<p>Property Impacts – Permanent</p> <ul style="list-style-type: none"> – Proposed private property purchases at 458 Catherine Street; from the City of Ottawa at Bronson Avenue – Potential need to acquire / protect other properties for working / staging areas at various bridge sites (either for short or long term). 	<ul style="list-style-type: none"> – Early communication / coordination with owner(s) and tenants to minimize disruption associated with property purchases.

ENVIRONMENTAL ASSESSMENT PROCESS

This Detail Design project 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)*.

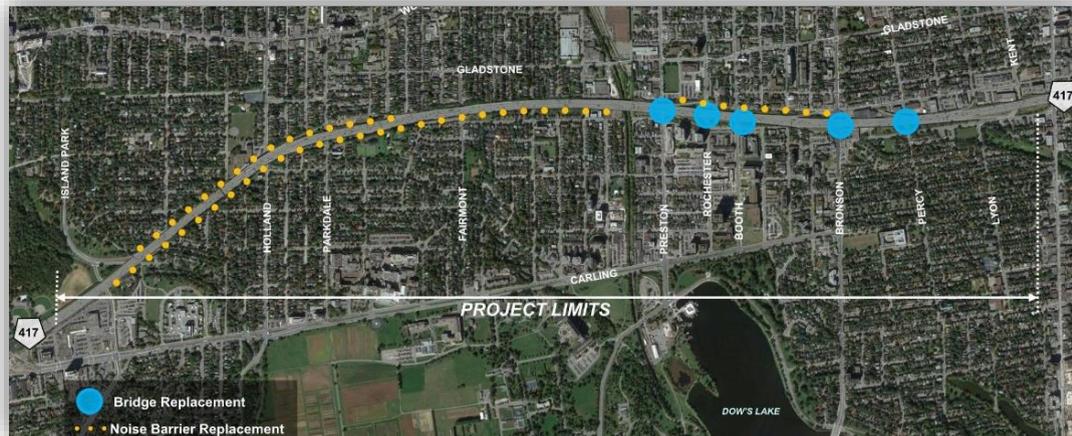
The Preliminary Design and Environmental Assessment Study for the Highway 417 Midtown Bridges was carried out in accordance with the approved environmental planning process for Group 'B' projects under the MTO Class EA, and was documented in a TESR which received environmental clearance in April 2016 (BTE and Morrison Hershfield, 2016).

The purpose of this study is to prepare the contract drawings and documents as well as to obtain environmental approvals.

At the completion of the study, a Design and Construction Report (DCR) will be prepared and will include:

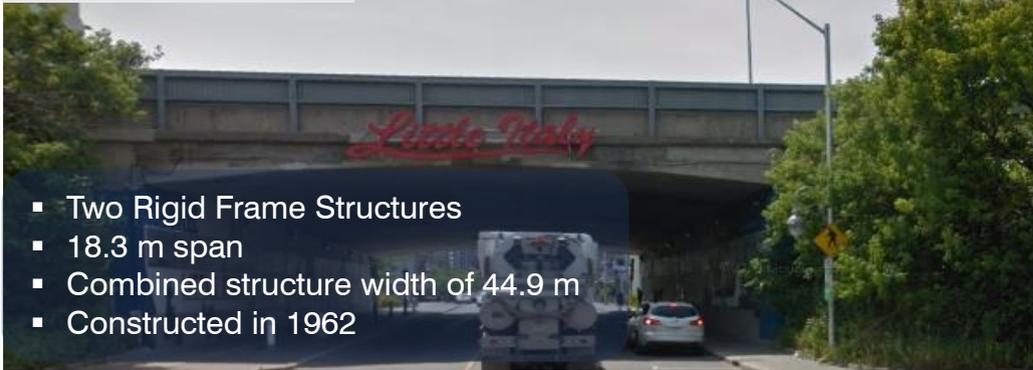
- ▶ A summary description of the project;
- ▶ An outline of the EA process followed;
- ▶ A description of the Recommended Plan, including structural design, landscaping, and Context Sensitive Design (CSD) implementation;
- ▶ A summary of stakeholder and public consultation; and
- ▶ A detailed description of anticipated environmental effects and recommended mitigation measures that will be incorporated into contract documents.

The DCR will be available on the project website and at convenient locations in the City of Ottawa for a 30-day public review period. Following the public review period, the project can proceed to construction.



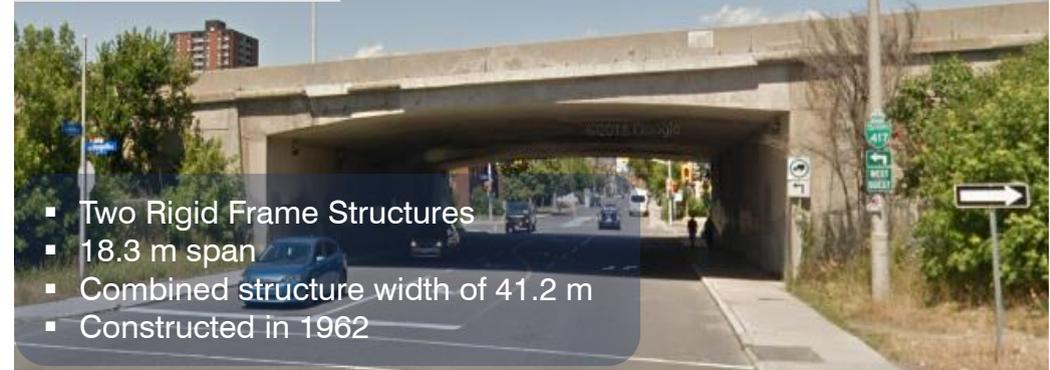
EXISTING STRUCTURAL BRIDGE CONDITIONS

Preston Street Bridge



- Two Rigid Frame Structures
- 18.3 m span
- Combined structure width of 44.9 m
- Constructed in 1962

Booth Street Bridge



- Two Rigid Frame Structures
- 18.3 m span
- Combined structure width of 41.2 m
- Constructed in 1962

Rochester Street Bridge



- Two Rigid Frame Structures
- 18.3 m span
- Combined structure width of 38.3 m
- Constructed in 1962

Bronson Avenue Bridge



- Two Ribbed Beam Rigid Frame Structures
- 23.8 m span
- Combined structure width of 38 m
- Constructed in 1965

Percy Street Bridge



- Two Rigid Frame Structures
- 18.3 m span
- Variable widths average: 18.1 m (EBL); 24 m (WBL)
- Constructed in 1965

EXISTING NOISE BARRIERS AND RETAINING WALL CONDITIONS

NOISE BARRIERS



Existing noise barriers near Parkdale Avenue



Existing noise barriers near Bronson Avenue

Existing corrugated steel and concrete noise barriers (between 2 m and 4 m in height) are present along both sides of Highway 417 within the study area.

Sections of barriers are in a deteriorated state and require replacement.



Existing retaining wall near Parkdale Avenue requiring rehabilitation



Existing retaining wall near Percy Street requiring replacement



Existing retaining wall near Island Park Cres requiring rehabilitation

Existing concrete retaining walls are present along both sides of Highway 417 within the study area.

Retaining walls vary in their level of deterioration and require replacement or rehabilitation accordingly.

RETAINING WALLS

EXISTING ENVIRONMENTAL CONDITIONS

Vegetation

- Vegetation in the study area occurs in small, fragmented locations that limit composition primarily to exotic species. Vegetation communities includes: cultural meadow; scattered trees and small patches of thicket and woodland.
- 800 trees were inventoried within areas that may be impacted by the bridge replacements, noise barrier replacements, staging areas and related operational improvements.
- The majority of trees present are non-native species.

Wildlife and Species at Risk

- Wildlife habitat in the study area is fragmented and isolated by surrounding urban development.
- Wildlife species are limited to those tolerant of a high degree of human disturbance. Wildlife observed during field investigations were species found year-round in urban areas.
- Eastern Gray Squirrels and their nests were observed at various locations and an Eastern Cottontail was observed at the end of Loretta Avenue South. Two dens belonging to Woodchuck were noted in the northwest quadrant of the Booth Street Bridge.
- No Species at Risk (SAR) were observed during field investigations.

Migratory Birds

- Birds observed in the study area included: American Crow, Black-capped Chickadee, European Starling, House Sparrow and Northern Cardinal.

Contaminated Areas

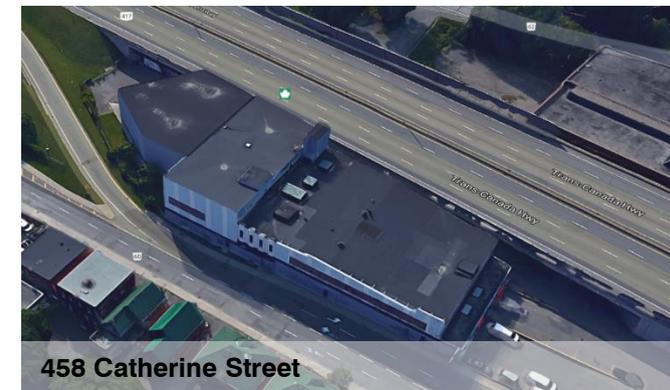
- A Phase 1 & 2 Environmental Site Assessment (ESA) was completed at 458 Catherine Street. There is contaminated soil and groundwater on the property.
- A Phase 2 ESA was completed at all five bridge sites. Petroleum impacted soil was found at the Bronson Avenue Bridge.
- There are designated substances present at 458 Catherine Street and at all five bridge sites.



Vegetation at the Percy Street Bridge

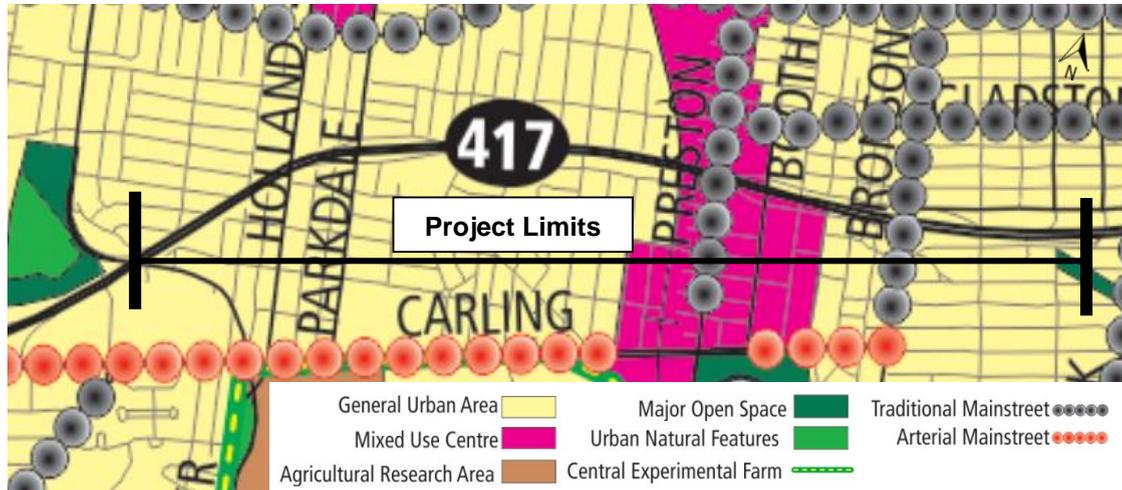


Vegetation at the Booth Street Bridge

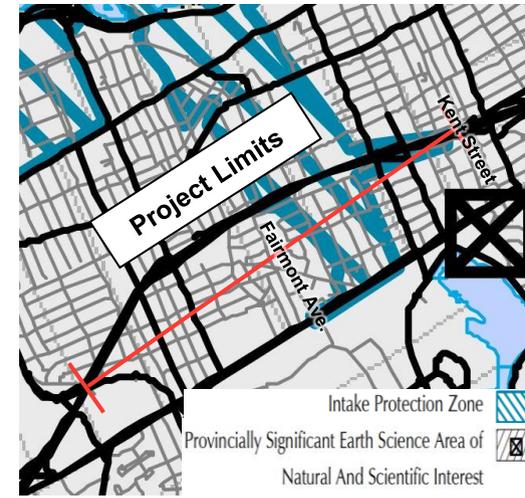


458 Catherine Street

EXISTING ENVIRONMENTAL CONDITIONS



Urban Policy Plan (City of Ottawa Official Plan [By-law 2003-203, as amended], Schedule B)



Urban Policy Plan (City of Ottawa Official Plan [By-law 2003-203, as amended], Schedule K)

Archaeology

- A Stage 1 Archaeological Assessment was completed at the three staging areas required for construction activities. There was no archaeological potential found, as the majority of the sites are disturbed; however there is the potential for deeply buried deposits in some areas. The areas will be monitored during construction that involve subsurface excavation activities.

Cultural Heritage

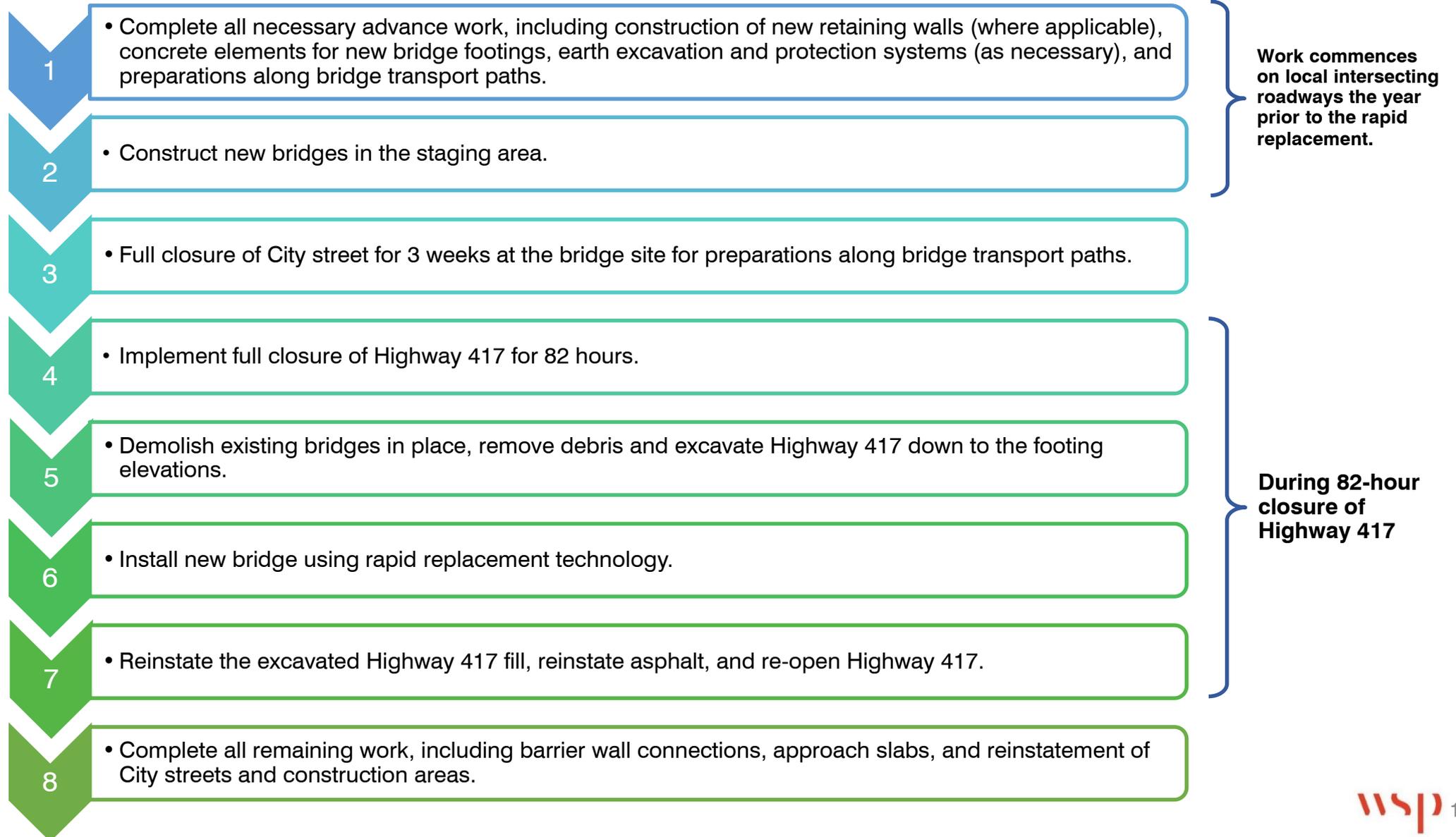
- The bridges were assessed during Preliminary Design for cultural heritage value or interest. The assessment concludes that the bridges do not contain any cultural heritage value or interest in accordance with the Ontario Heritage Act.
- A Cultural Heritage Evaluation Report (CHER) was conducted at 458 Catherine Street. The CHER concluded that the building has undergone extensive modification and that the building in its current form does not have cultural heritage value or interest in accordance with the Ontario Heritage Act.

Land Use

- Lands to the north and south of Highway 417 between Island Park Drive and Preston Street are designated as General Urban Area. The Bronson Avenue Bridge, the Percy Street Bridge, and the noise barriers west of the O-Train corridor are found within this area type. Lands located west of Island Park Drive are designated as Major Open Space and an Urban Natural Feature.
- Lands surrounding the Preston Street Bridge are designated as Mixed Use Centre. Lands surrounding the Rochester Street Bridge are designated as Mixed Use Centre to the northwest and south, and General Urban Area to the northeast. Lands surrounding the Booth Street Bridge are designated as Mixed Use Centre to the south and General Urban Area to the north. Preston Street and Bronson Avenue are designated as Traditional Mainstreets.
- A portion of the study area, from approximately Fairmont Avenue to Kent Street, is located within an Intake Protection Zone as defined in Schedule K (Environmental Constraints) of the City of Ottawa Official Plan.
- An Intake Protection Zone is the area around a surface water intake that is defined to protect the source water for a residential drinking water system.

RECOMMENDED PLAN FOR CONSTRUCTION STAGING

At each bridge site, the existing bridge structures will be demolished in place and the new bridges will be installed using rapid replacement technology over an extended weekend closure (82 hours) of Highway 417. Advance work to facilitate each bridge replacement will be required prior to the rapid replacement operation, and will require both partial and full closures of the intersecting municipal roads in the year prior to the rapid replacement and in the weeks leading up to the full Highway 417 weekend closure. The following is a summary of the construction sequencing for the rapid replacement of each bridge:



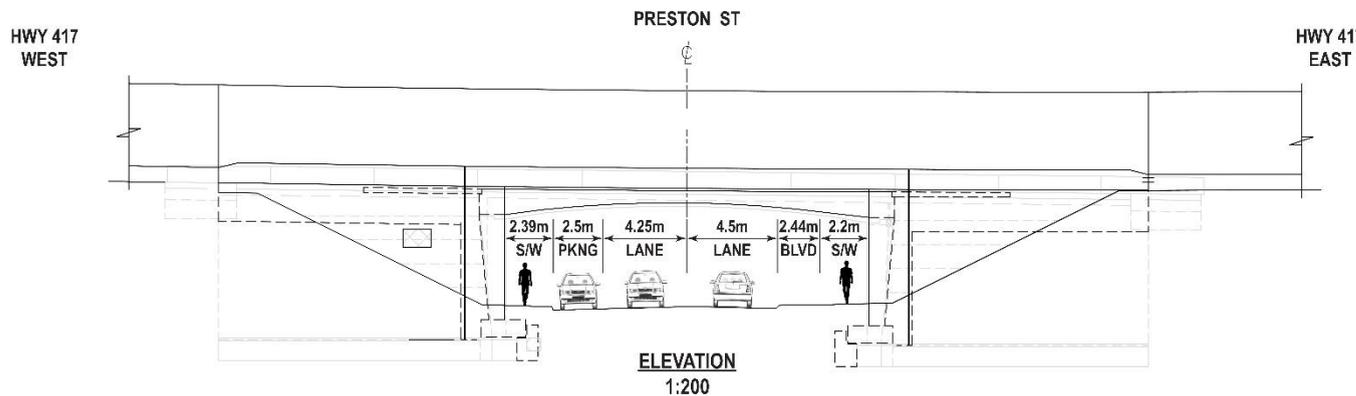
RECOMMENDED PLAN – BRIDGE STRUCTURES

With the exception of the Percy Street Bridge, all bridges will be replaced with two single-span rigid frame structures with a clear span length that matches the existing structures. The Percy Street Bridge will have a clear span of 15 m.

The following illustrations show the proposed cross-sections for each of the replacement bridges.

Preston Street Bridges

Proposed Preston Street Cross-Section



Existing Preston Street cross-section:

- 18.28 single-span bridge
- One 4.5 m northbound lane (NBL)
- One 4.25 m southbound lane (SBL)
- One 2.39 m and one 2.2 m sidewalk (S/W)
- One 2.44 m boulevard (BLVD)
- One 2.5 m parking lane (PKNG)

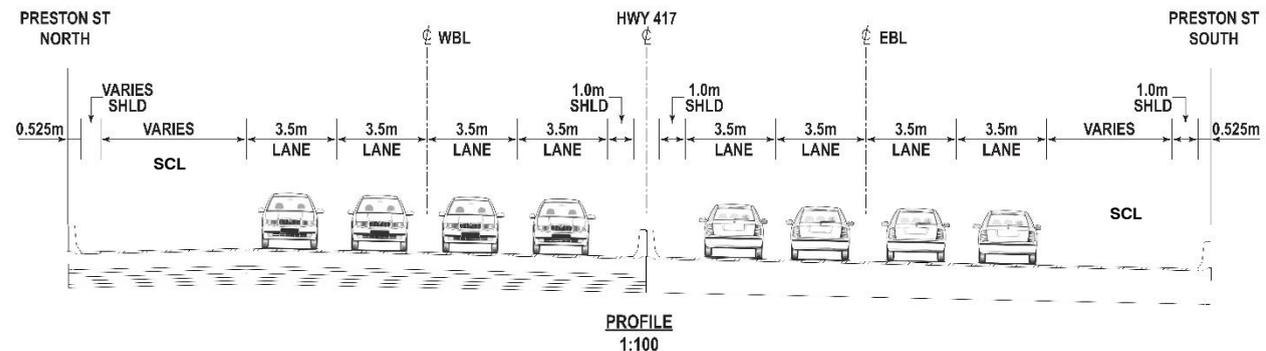
Proposed Preston Street cross-section:

- 18.28 single-span bridge
- One 4.5 m NBL
- One 4.25 m SBL
- One 2.39 m and one 2.2 m sidewalk
- One 2.44 m boulevard
- One 2.5 m parking lane

Proposed Highway 417 Cross-Section

The proposed Highway 417 cross-section at Preston Street will remain unchanged from the existing and includes:

- Eight 3.5 m travel lanes (4 in the EBL & WBL directions)
- Two variable width speed change lanes (SCL)(one in the EBL & WBL direction)
- Two variable width outside shoulders (SHLD)
- Two 1.0 m inside shoulders



PRESTON STREET BRIDGE REPLACEMENT DETOUR ROUTES

Highway 417 - Full Closure

Highway 417, and associated on and off-ramps, will be fully closed for 82 hours, commencing late Thursday night and re-opening by Monday morning to accommodate the rapid replacement of the Preston Street Bridge.

In the EB direction, Highway 417 will be closed between the Carling Avenue and Metcalfe Street interchanges. In the WB direction, Highway 417 will be closed between the Bronson Avenue and Rochester Street interchanges. The WB on-ramps from O'Connor Street, Lyon Street, Bronson Avenue, and Rochester Street will also be closed. A signed detour will be in place for Highway 417 EB and WB traffic.

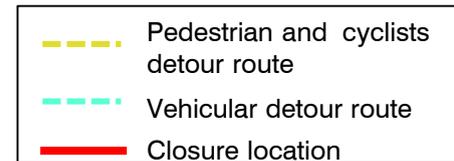


Preston Street - Full Closure

Preston Street will be closed at the location of the bridge between St. Anthony Street and Young Street for a period of up to three weeks for preparatory works to accommodate the rapid replacement of the bridge.

During the rapid replacement weekend, Preston Street will be closed from Louisa Street to Young Street.

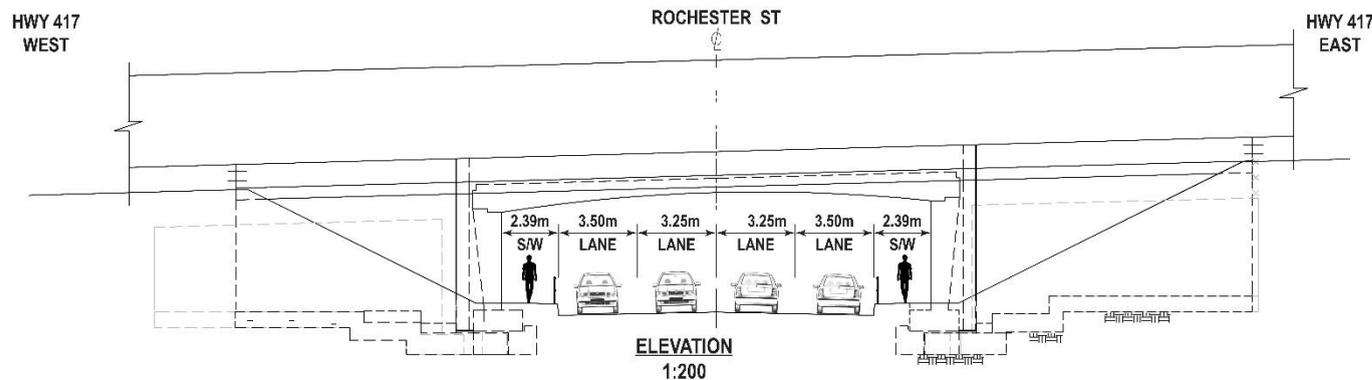
Signed detours will be in place for pedestrian, cyclist and vehicular traffic.



RECOMMENDED PLAN – BRIDGE STRUCTURES

Rochester Street Bridges

Proposed Rochester Street Cross-Section



Existing Rochester Street cross-section:

- 18.28 m single-span bridge
- Two 3.75 m through lanes (one NB; one SB)
- One 3.00 m left turn lane (NB)
- One 3.00 m through lane (SB)
- Two 2.39 m sidewalks

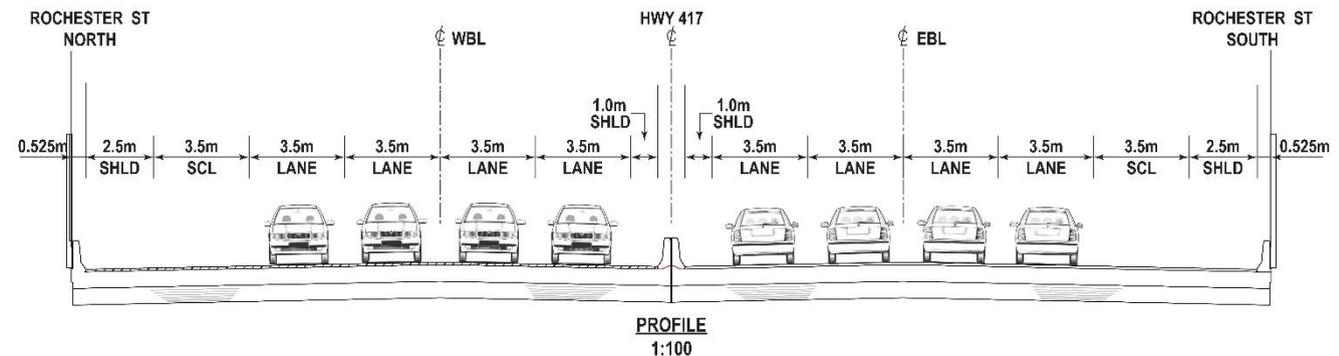
Proposed Rochester Street cross-section:

- 18.28 m single-span bridge
- Two 3.50 m through lanes (one NB; one SB)
- One 3.25 m left turn lane (NB)
- One 3.25 m through lane (SB)
- Two 2.39 m sidewalks (S/W)

Proposed Highway 417 Cross-Section

The proposed Highway 417 cross-section at Rochester Street will be widened to accommodate the extension of speed change lanes for the Bronson on and off ramps and includes:

- Eight 3.5 m travel lanes (four in the EBL & WBL directions)
- Two 3.5 m speed change lanes (SCL) (one in the EBL & WBL direction)
- Two 2.5 m outside shoulders (SHLD)
- Two 1.0 m inside shoulders (SHLD)



ROCHESTER STREET BRIDGE REPLACEMENT DETOUR ROUTES



Highway 417 - Full Closure

Highway 417, and associated on and off-ramps, will be fully closed for 82 hours, commencing late Thursday night and re-opening by Monday morning to accommodate the rapid replacement of the Rochester Street Bridge.

In the EB direction, Highway 417 will be closed between the Carling Avenue and Metcalfe Street interchanges. In the WB direction, Highway 417 will be closed between the Bronson Avenue and Rochester Street interchanges. The WB on-ramps from O'Connor Street, Lyon Street, Bronson Avenue, and Rochester Street will also be closed.

A signed detour will be in place for Highway 417 EB and WB traffic.

Rochester Street, Raymond Street & Orangeville Street – Full Closure

Orangeville Street will be closed from Rochester Street to Booth Street and Booth Street to Lebreton Street S. for up to 5 years to accommodate construction staging.

Raymond Street will be closed from Rochester Street to Booth Street for 2 years to accommodate construction staging.

Rochester Street will be closed from Gladstone Avenue to Orangeville Street for a period of up to three weeks for preparatory works to accommodate the rapid replacement of the bridge.

A signed detour will be in place for pedestrian, cyclist and vehicular traffic.

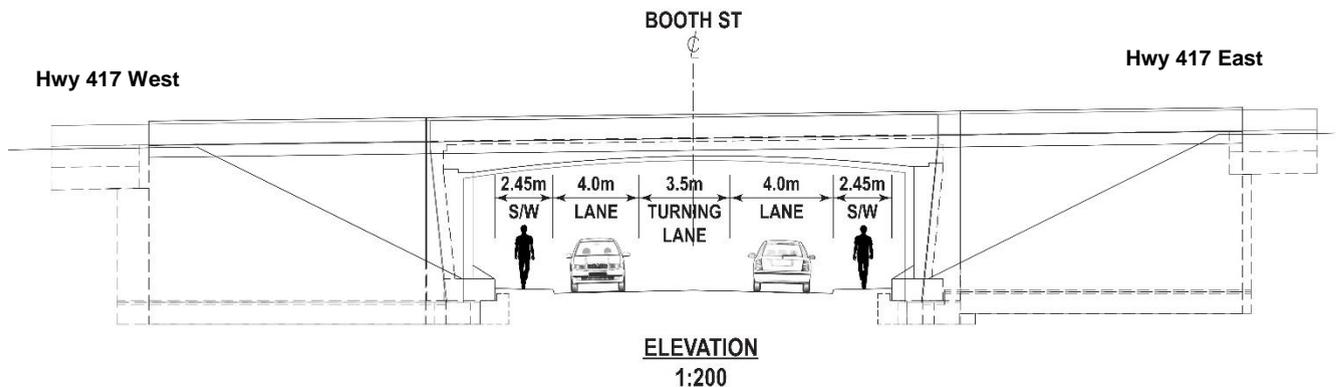


- - - - - Pedestrian and cyclists detour route
- - - - - Vehicular detour route
- - - - - Closure location

RECOMMENDED PLAN – BRIDGE STRUCTURES

Booth Street Bridges

Proposed Booth Street Cross-Section



Existing Booth Street cross-section:

- 18.28 m single-span bridge
- One 5.3 m NBL
- One 4.7 m SBL
- One 3.4 m shared turning lane (NBL & SBL)
- Two 2.44 m sidewalks

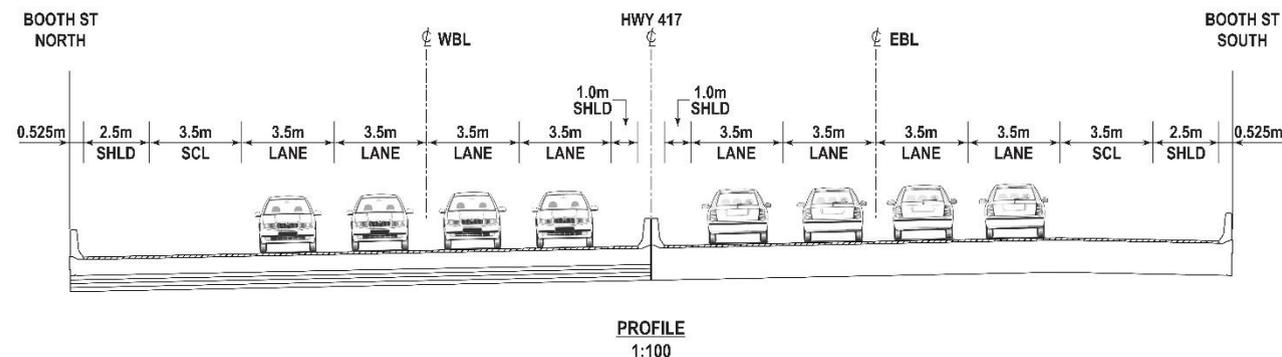
Proposed Booth Street cross-section:

- 18.28 single-span bridge
- Two 4.0 m through lanes (one NB; one SB)
- One 3.5 m shared turning lane (NBL & SBL)
- Two 2.45 m sidewalks (S/W)

Proposed Highway 417 Cross-Section

The proposed Highway 417 cross-section at Booth Street will be widened to accommodate the extension of speed change lanes for the Bronson on and off ramps and includes:

- Eight 3.5 m travel lanes (4 in the EBL & WBL directions)
- Two 3.5 m speed change lanes (SCL) (one in the EBL & WBL direction)
- Two 2.5 m outside shoulders (SHLD)
- Two 1.0 m inside shoulders (SHLD)



BOOTH STREET BRIDGE REPLACEMENT DETOUR ROUTES



Highway 417 - Full Closure

Highway 417, and associated on and off ramps, will be fully closed for 82 hours, commencing late Thursday night and re-opening by Monday morning to accommodate the rapid replacement of the Booth Street Bridge.

In the EB direction, Highway 417 will be closed between the Carling Avenue and Metcalfe Street interchanges. In the WB direction, Highway 417 will be closed between the Bronson Avenue and Rochester Street interchanges. The WB on-ramps from O'Connor Street, Lyon Street and Bronson Avenue will also be closed.

A signed detour will be in place for Highway 417 EB and WB traffic.

Booth Street, Orangeville Street & Raymond Street - Full Closure

Booth Street (from Arlington Avenue to Orangeville Street) will be closed for up to three weeks for preparatory works to accommodate the rapid replacement of the bridge.

Orangeville Street will be closed from Rochester Street to Booth Street and Booth Street to Lebreton Street S. for up to 5 years to accommodate construction staging.

Raymond Street will be closed from Rochester Street to Booth Street for 2 years to accommodate construction staging.

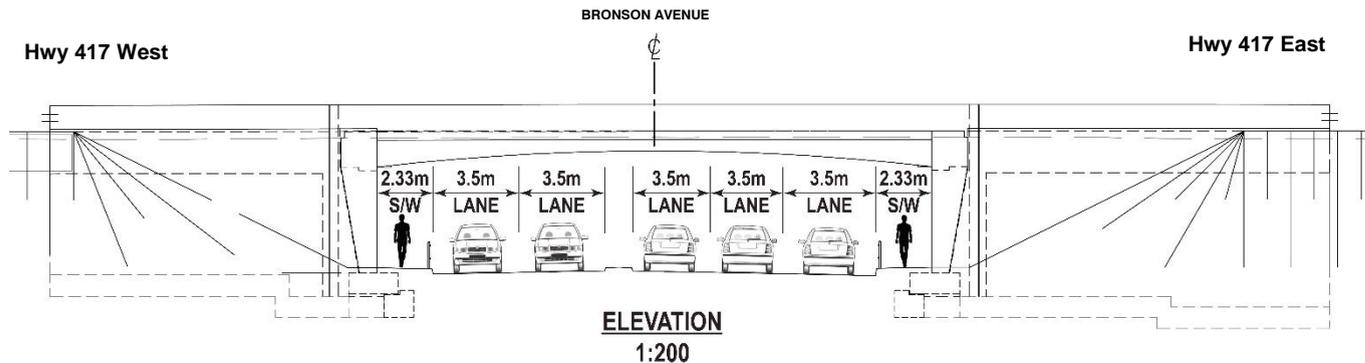
Signed detours will be in place for pedestrians, cyclists, and vehicular traffic.



RECOMMENDED PLAN – BRIDGE STRUCTURES

Bronson Avenue Bridges

Proposed Bronson Avenue Cross-Section



Existing Bronson Avenue cross-section:

- 23.67 m single-span bridge
- Three 3.5 m NBL
- Two 3.5 m SBL
- Two 2.33 m sidewalks
- 1.5 m median

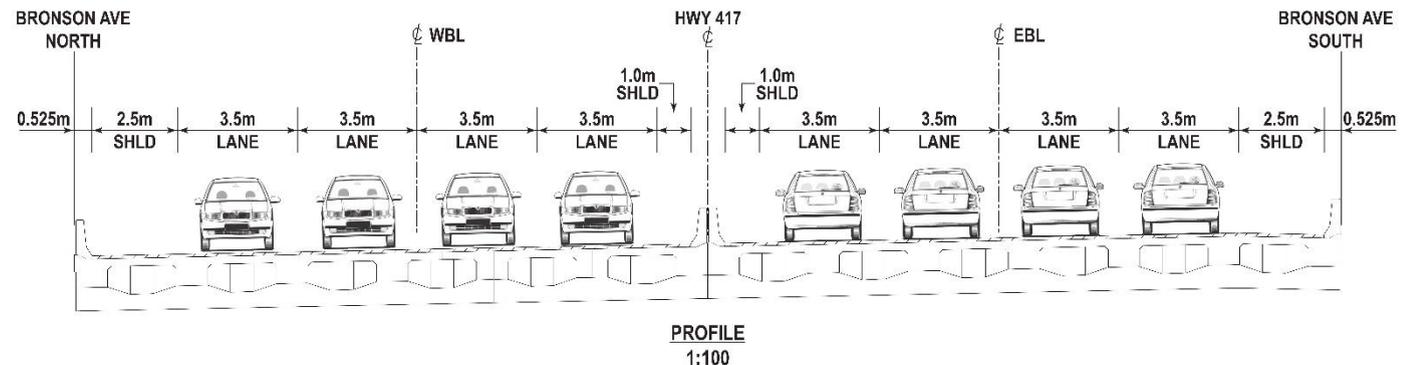
Proposed Bronson Avenue cross-section:

- 23.67 m single-span bridge
- Three 3.5 m NBL
- Two 3.5 m SBL
- Two 2.33 m sidewalks
- 1.5 m median

Proposed Highway 417 Cross-Section

The proposed Highway 417 cross-section at Bronson Avenue will remain unchanged from the existing and includes:

- Eight 3.5 m travel lanes (4 in the EBL & WBL directions)
- Two 2.5 m outside shoulders (SHLD)
- Two 1.0 m inside shoulders (SHLD)

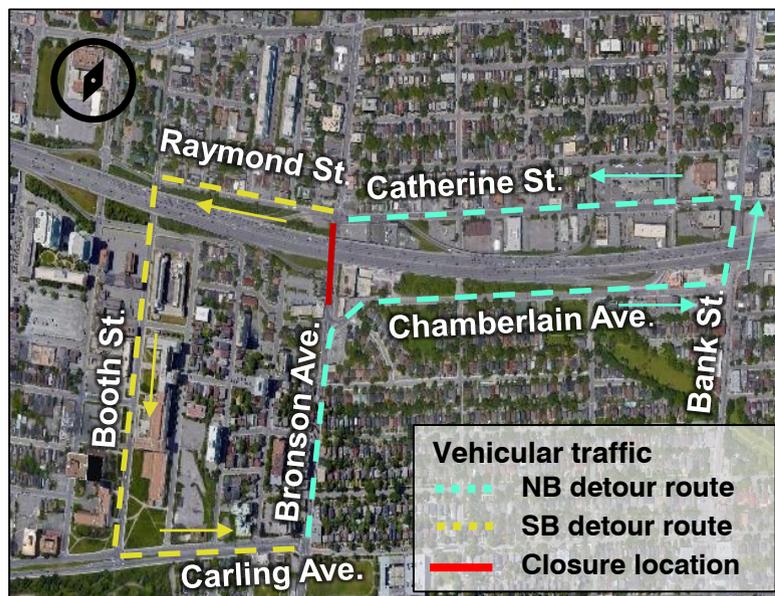


BRONSON AVENUE BRIDGE REPLACEMENT DETOUR ROUTES

Highway 417 - Full Closure

Highway 417, and associated on and off ramps, will be fully closed for 82 hours, commencing late Thursday night and re-opening by Monday morning to accommodate the rapid replacement of the Bronson Avenue Bridge.

In the EB direction, Highway 417 will be closed between the Carling Avenue and Metcalfe Street interchanges. In the WB direction, Highway 417 will be closed between the Bronson Avenue WB off- and on-ramps. The westbound on-ramps from O'Connor Street and Lyon Street, will also be closed. A signed detour will be in place for Highway 417 EB and WB traffic.



Bronson Avenue - Full Closure

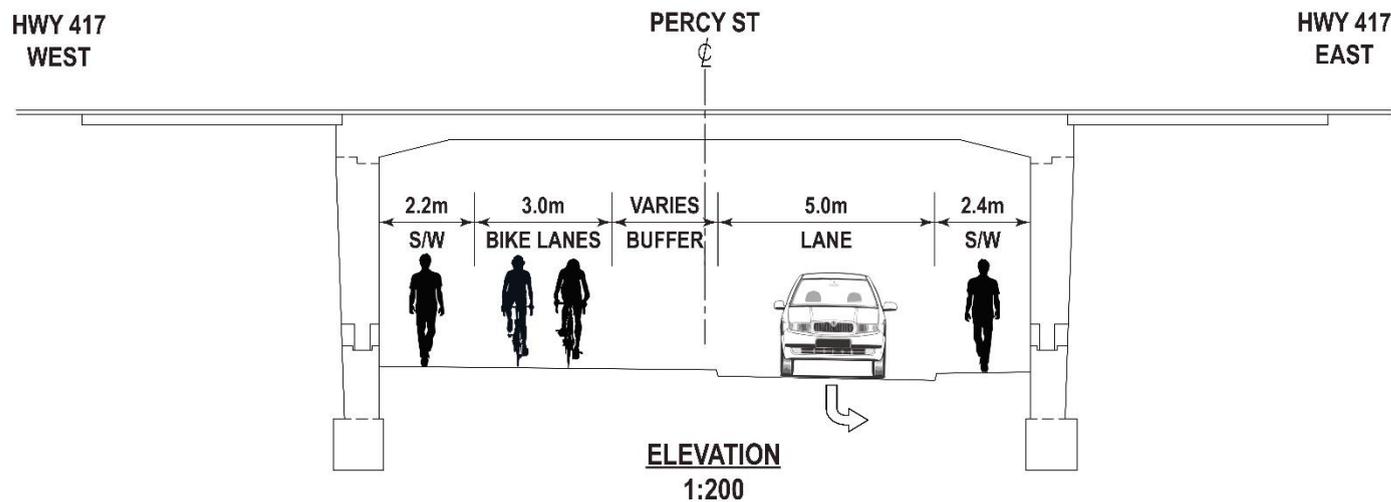
A signed detour will be in place for northbound (NB) and southbound (SB) vehicular traffic as well as for pedestrian and cyclist traffic.

Bronson Avenue will be closed from Catherine Street to Imperial Avenue / Plymouth Street for up to three weeks for preparatory works to accommodate the rapid replacement of the bridge.

RECOMMENDED PLAN – BRIDGE STRUCTURES

Percy Street Bridges

Proposed Percy Street Cross-Section



Existing Percy Street cross-section:

- 18.3 m single-span bridge
- One 2.4 m and one 2.2 m sidewalk
- One 5.0 m lane
- Variable width Buffer
- Two 1.5 m cycling lanes

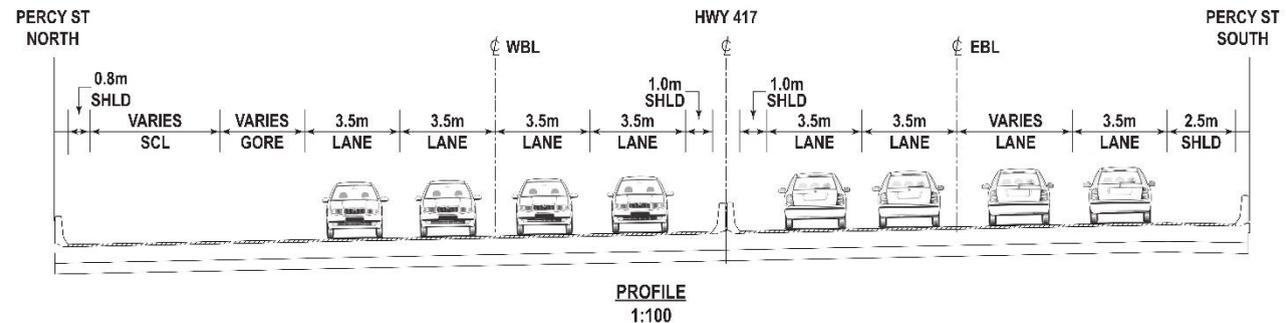
Proposed Percy Street cross-section:

- 15.0 m single-span bridge
- One 2.4 m and one 2.2 m sidewalk (S/W)
- One 5.0 m lane
- Variable width Buffer
- Two 1.5 m cycling lanes

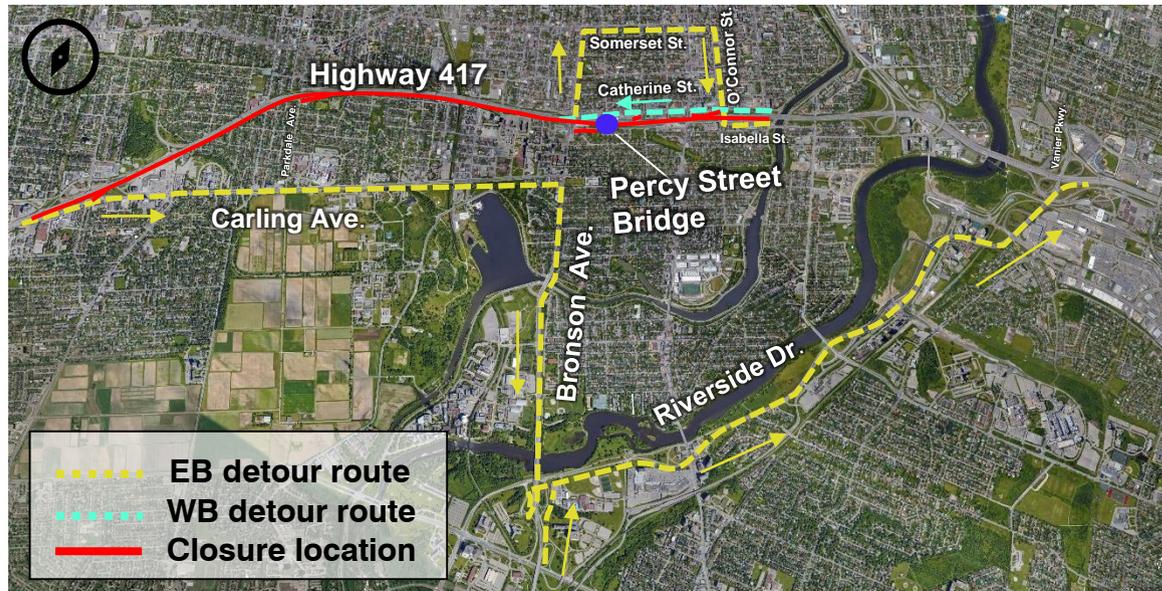
Proposed Highway 417 Cross-Section

The proposed Highway 417 cross-section at Percy Street will remain unchanged from the existing and includes:

- Four 3.5 m travel lanes (WBL)
- One variable width speed change lane (SCL)(WBL)
- 0.8 m outside shoulder (WBL) (SHLD)
- 1.0 m inside shoulder (WBL) (SHLD)
- Two 3.5 m travel lanes (EBL)
- One variable width mixed through/exit lane (EBL)
- One 3.5 m Speed Change Lane (EBL)
- One 1.0 m inside shoulder (EBL) (SHLD)
- One 2.5 m outside shoulder (EBL) (SHLD)



PERCY STREET BRIDGE REPLACEMENT DETOUR ROUTES



Highway 417 - Full Closure

Highway 417, and associated on and off ramps, will be fully closed for 82 hours, commencing late Thursday night and re-opening by Monday morning to accommodate the rapid replacement of the Percy Street Bridge.

In the EB direction, Highway 417 will be closed between the Carling Avenue and Metcalfe Street interchanges. In the WB direction, Highway 417 will be closed between Metcalfe Street and Bronson Avenue. The westbound on-ramps from O'Connor Street and Lyon Street will also be closed.

A signed detour will be in place for Highway 417 EB and WB traffic.

Percy Street - Full Closure

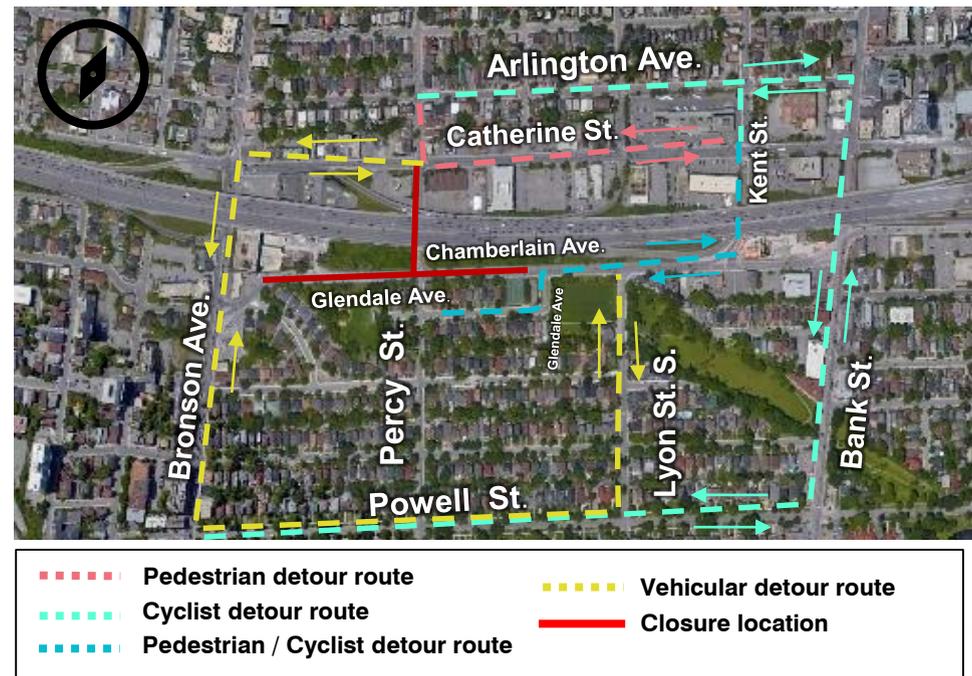
Percy Street will be closed to vehicular traffic from Catherine Street to Chamberlain Avenue during Years 2 and 3. Pedestrian and cyclist traffic will be maintained during most of this time.

Percy Street will be closed to all traffic, including pedestrians and cyclists, from Catherine Street to Chamberlain Avenue for up to 5 weeks for preparatory works to accommodate the rapid replacement of the bridge.

Signed detours will be in place for pedestrians, cyclists and vehicular traffic.

Chamberlain Avenue - Full Closure

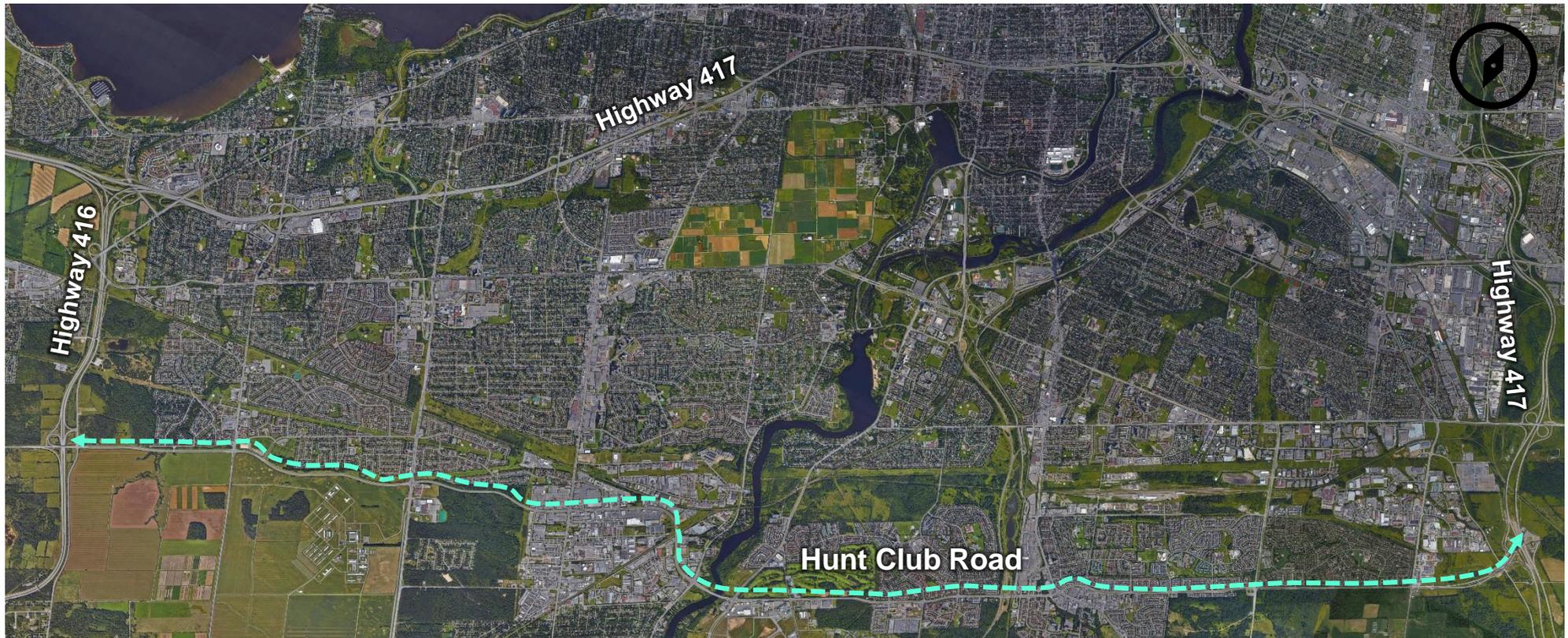
Chamberlain Avenue between Imperial Avenue and Glendale Avenue will be closed for 3 weeks for preparatory works to accommodate the rapid replacement of the bridge.



RECOMMENDED PLAN – HIGHWAY 417 FULL CLOSURE ALTERNATIVE DETOUR ROUTE

During all five full closures of Highway 417 to accommodate the rapid replacement of the bridges, signage will be posted to inform travelers from outside of the Ottawa area of the Highway 417 closure.

A signed alternative route will be in place for both eastbound and westbound directions from Highway 416, along Hunt Club Road, to Highway 417.



HIGHWAY 417 MIDTOWN BRIDGE REPLACEMENTS

RECOMMENDED PLAN – NOISE BARRIER REPLACEMENTS AND RETAINING WALL REHABILITATIONS

The location, type and length of replacement for the replacement of noise barriers are provided below. The Highway 417 ramp closures and associated detours required to complete the noise barrier replacements and retaining wall rehabilitations are illustrated on pages 31 to 33.



Number	Noise Barrier Location on Highway 417	Noise Barrier Type	Length of Replacement
South of Highway 417			
1	East of Island Park Drive to mid-point of W-N/S Parkdale Avenue ramp	Absorptive Noise Barrier	875 m +/-
2	West of Hamilton Avenue to east of Warwick Place	Absorptive Noise Barrier	200 m +/-
3	Midpoint of N/S-E Parkdale Avenue ramp to east of Rosemount Avenue	Absorptive Noise Barrier	190 m +/-
4	West of Reid Avenue to Champagne Avenue	Absorptive Noise Barrier	710 m +/-
5	East of Bronson Avenue to midpoint of the W-N Kent Street Ramp	Absorptive Noise Barrier	130 m +/-
		Acrylite Noise Barrier	40 m +/-
North of Highway 417			
6	E-N Island Park Drive ramp to bullnose of N/S/E-W Parkdale Avenue ramp	Absorptive Noise Barrier	305 m +/-
		Acrylite Noise Barrier	365 m +/-
7	Bullnose of N/S-W Parkdale Avenue ramp to bullnose of E-N/S Parkdale Avenue ramp	Absorptive Noise Barrier	405 m +/-
8	Midpoint of N/S/E-W Rochester Street ramp to N/S/E-W Bronson Avenue ramp	Absorptive Noise Barrier	435 m +/-
		Acrylite Noise Barrier	105 m +/-
9	N/S/E-W Bronson Avenue ramp to Bronson Avenue	Absorptive Noise Barrier	115 m +/-

RECOMMENDED PLAN – AREAS IMPACTED BY CONSTRUCTION

The following figures illustrate the extent of areas impacted by construction, including the highway median work area required to complete the rapid replacements of the bridges, noise barrier replacements and operational improvements along Highway 417.

Access / egress to the construction work areas will be provided by adjacent City streets.

O-Train Rail Corridor to Kent Street



Island Park Drive to O-Train Rail Corridor



	Construction Work Areas		Median Work Area <ul style="list-style-type: none">• Maintains 3 lanes in each direction.		Median Work Area <ul style="list-style-type: none">• Requires reducing Highway 417 to 2 lanes in EB direction.
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RECOMMENDED PLAN – CONSTRUCTION STAGING AREAS

The rapid bridge replacements will utilize three separate construction staging areas to build the replacement bridges for the 5 bridge sites. These areas will be in use for several construction seasons to accommodate construction of multiple bridges at one location to minimize property impacts.



RECOMMENDED PLAN - SUMMARY OF EXTENDED LANE, RAMP AND FULL ROAD CLOSURES

Construction is anticipated to last five years. The following pages provide a summary of the proposed extended duration closures on municipal streets required during each year of construction. The detour routes for the Highway 417 on and off ramp closures are provided after the summary pages.

Year 1

Preston Street to Kent Street



Island Park Drive to Preston Street



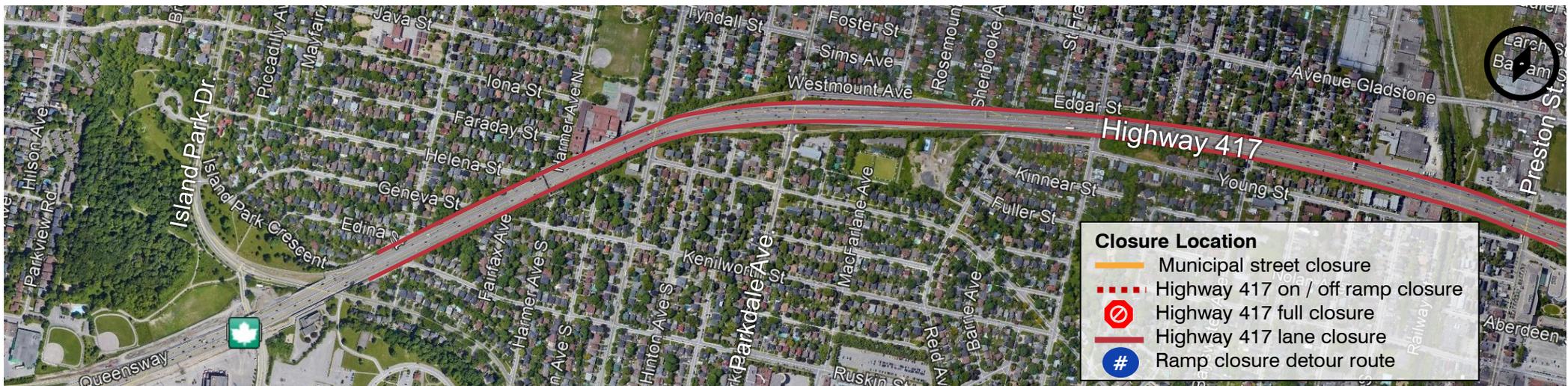
RECOMMENDED PLAN - SUMMARY OF EXTENDED LANE, RAMP AND FULL ROAD CLOSURES

Preston Street to Kent Street

Year 2



Island Park Drive to Preston Street

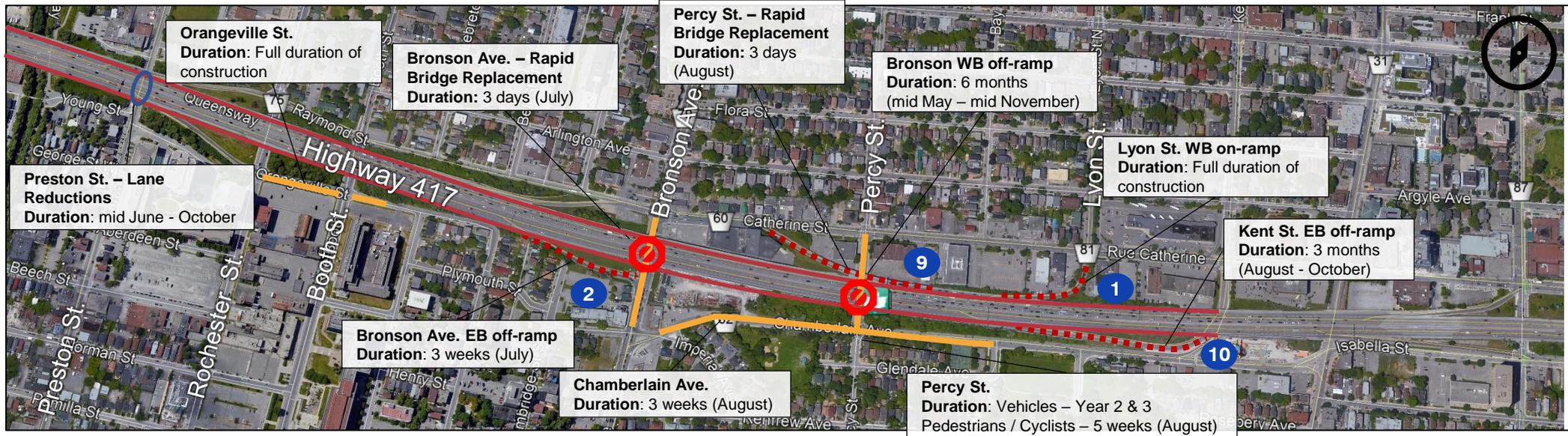


HIGHWAY 417 MIDTOWN BRIDGE REPLACEMENTS

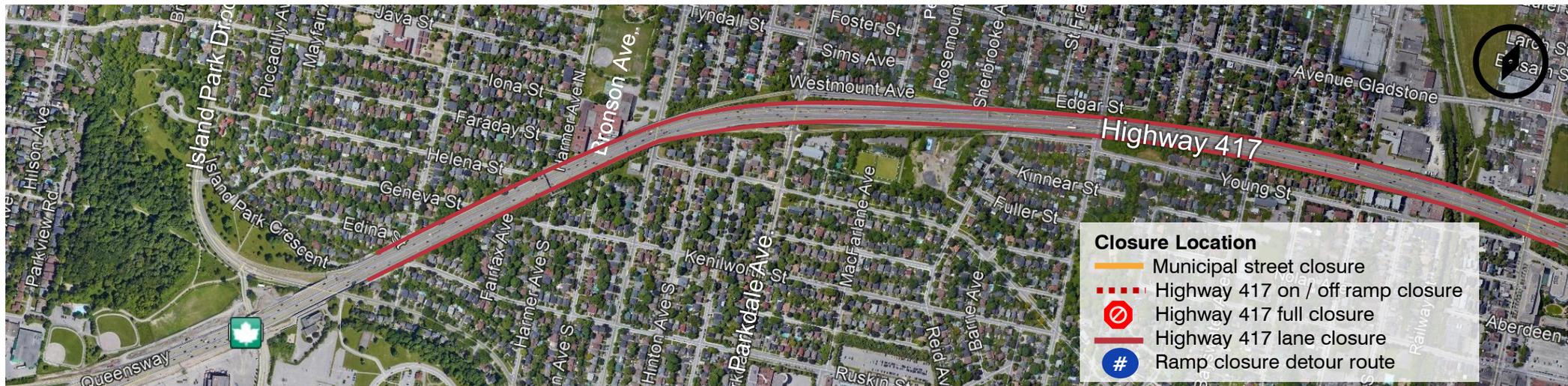
RECOMMENDED PLAN - SUMMARY OF EXTENDED LANE, RAMP AND FULL ROAD CLOSURES

Year 3

Preston Street to Kent Street



Island Park Drive to Preston Street

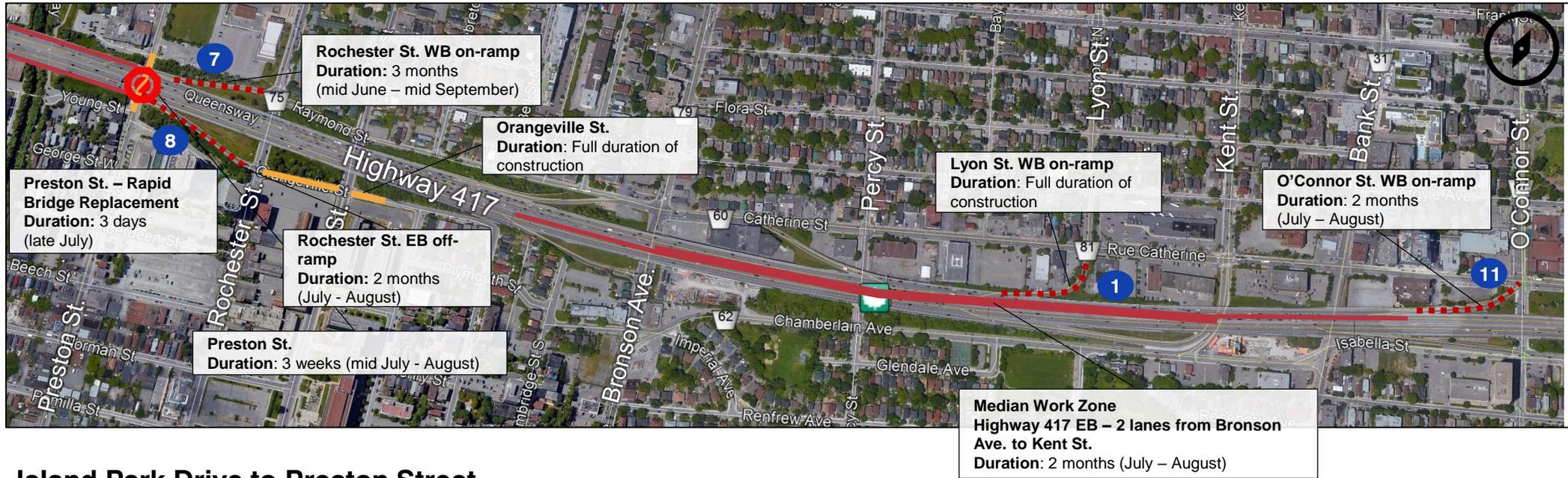


HIGHWAY 417 MIDTOWN BRIDGE REPLACEMENTS

RECOMMENDED PLAN - SUMMARY OF EXTENDED LANE, RAMP AND FULL ROAD CLOSURES

Year 4

Preston Street to Kent Street



Island Park Drive to Preston Street



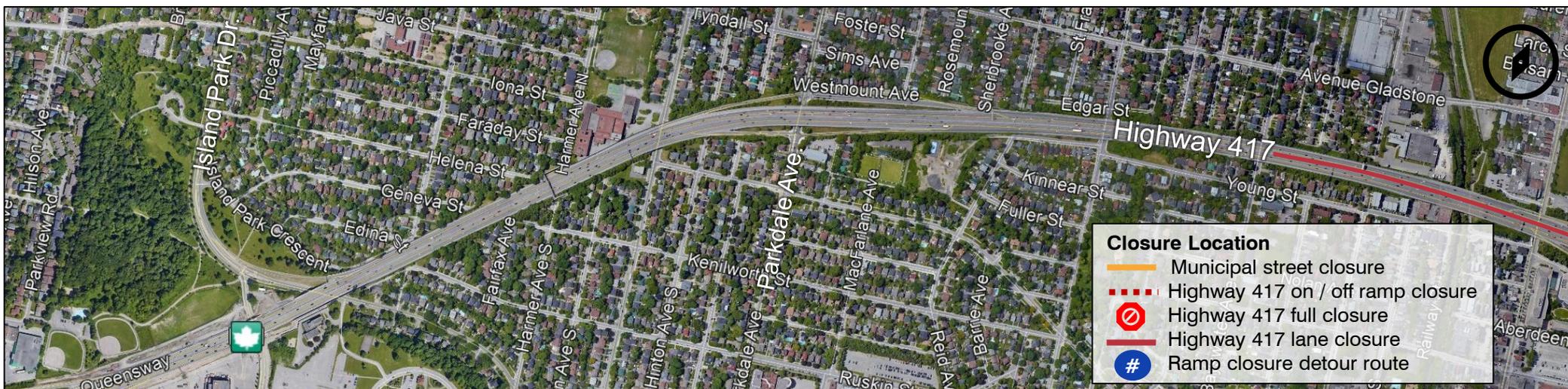
RECOMMENDED PLAN - SUMMARY OF RAMP AND ROAD CLOSURES

Year 5

Preston Street to Kent Street



Island Park Drive to Preston Street



RECOMMENDED PLAN – DETOUR ROUTES FOR RAMP CLOSURES

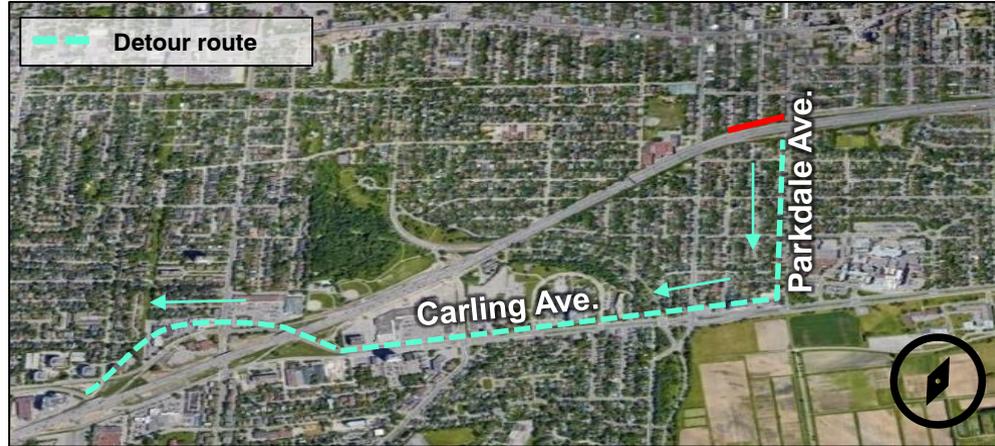
1 Highway 417 Lyon St. WB On-Ramp Detour Route



2 Highway 417 Bronson Ave. EB Off-Ramp Detour Route



3 Highway 417 Parkdale Ave. WB On-Ramp Detour Route



4 Highway 417 Parkdale Ave. EB Off-Ramp Detour Route

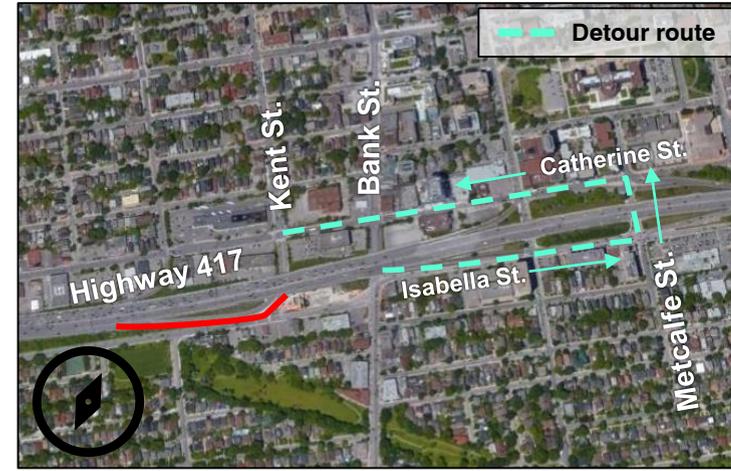


RECOMMENDED PLAN – DETOUR ROUTES FOR RAMP CLOSURES

9 Highway 417 Bronson Ave WB Off-Ramp Detour Route



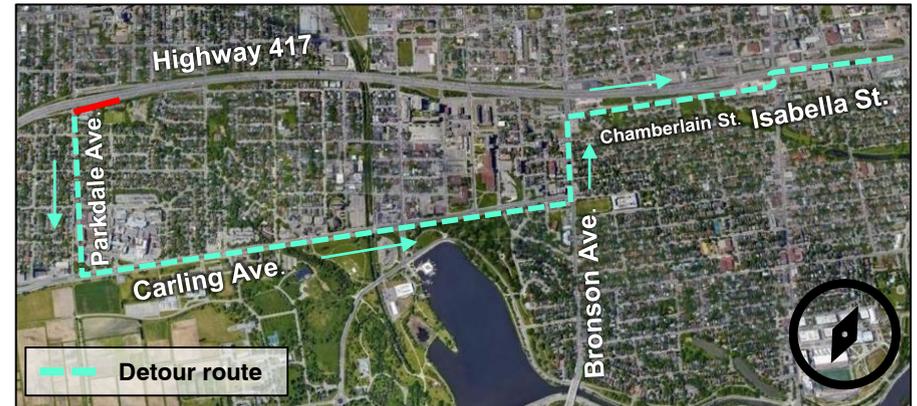
10 Highway 417 Kent St. EB Off-Ramp Detour Route



11 Highway 417 O'Connor St. WB On-Ramp Detour Route



12 Highway 417 Parkdale Ave. EB On-Ramp Detour Route



13 Highway 417 Parkdale Ave. WB Off-Ramp Detour Route



RECOMMENDED PLAN – CONTEXT SENSITIVE DESIGN & LANDSCAPE

In 2011, MTO completed Context Sensitive Design (CSD) guidelines outlining recommendations to be incorporated throughout designs along the Queensway to promote a consistent aesthetic and a sense of place for the Nation’s Capital. As a Capital Arrival Route, guiding principles of the CSD concepts for Highway 417 include: clean, concise, discernible features that articulate the highway as an arrival route into / through Ottawa’s core as the Nation’s Capital; simple design features that are easily perceived without distraction to motor vehicle operators; the use of durable, low maintenance materials; aesthetic design coordinated between the varying CSD elements; and constructible design solutions.

The design recommendations developed through the CSD process that are proposed to be incorporated as part of these bridge replacements include pedestrian scale features such as planting/landscaping, and set back naturalized planted slopes to increase pedestrian space and comfort underneath the bridges. The landscape layout shown below is preliminary. A complete landscape plan will be completed as part of Detail Design and included with Contract Documents.



RECOMMENDED PLAN – NOISE BARRIERS

The existing noise barriers will be replaced using treatments previously constructed along the Queensway, such as the random pattern and colours, depicted below.

Example of highway side noise barrier treatment as installed at Kent Street



Example of structure-mounted clear Acrylite noise barriers as installed at Kent Street



ENVIRONMENTAL IMPACTS AND MITIGATION

WILDLIFE & VEGETATION

Vegetation clearing/removals will be required for bridge replacement sites, staging areas and noise barrier replacements. Potential disturbance to urban tolerant wildlife and migratory birds during construction. Species at Risk (SAR) habitat is not present in the immediate study area.

- Vegetation clearing zones and vegetation retention zones will be clearly delineated in contract documentation and in the field;
- The use of appropriate vegetation clearing techniques will be employed and exposed surfaces will be re-stabilized and re-vegetated as soon as possible following construction;
- Landscape drawings will include compensation for vegetation clearing during construction;
- Any wildlife encountered during construction will not be knowingly harmed;
- Active nests will not be disturbed in accordance with the Migratory Bird Convention Act;
- Vegetation clearing will be avoided/minimized from April 5 to August 31 to protect nesting migratory birds; and
- Should any SAR be encountered at any time in the construction area, the Ministry of Environment, Conservation and Parks (MECP) will be consulted.

CONTEXT SENSITIVE DESIGN AND LANDSCAPING

Potential impacts to the visual character of the bridges and Highway 417 corridor.

- CSD solutions will be applied to various aspects of the design to ensure visual quality and continuity in the corridor to the extent possible, including the design of landscaping and noise barriers.

PROPERTY

Temporary and permanent property impacts are required for construction.

- Property agreements including temporary use of staging areas, will be in place prior to construction.

ARCHAEOLOGY & CULTURAL HERITAGE

There is the potential to uncover archaeological resources during construction.

- There is potential for deeply buried deposits within the construction staging areas. The areas should be monitored during construction activities that involve subsurface excavation activities.

ACTIVE TRANSPORTATION

Pedestrian, cycling and public transit access under Highway 417 is expected to be closed periodically during construction. OC Transpo routes will impacted by arterial road closures.

- Alternate detour routes and advance notifications of temporary closures will be provided.

WASTE MANAGEMENT AND CONTAMINATION

Waste, excess materials and emissions have the potential to contaminate the surrounding environment if not managed properly. Designated substances, and soil and groundwater contamination are confirmed at 458 Catherine Street.

- The Contractor will be responsible for controlling the emission of dust and other pollutants and preventing them from leaving the work site.
- Designated substances will be handled according to Provincial Standards;
- Proposed construction activities at the Bronson Avenue Bridge should be reviewed to determine the extent of soil disturbance in the area and the estimated volume of soil to be managed; and
- A soil and groundwater management plan and health and safety plan will be completed prior to proposed construction and site decommissioning activities that may contact or disturb contaminated soil and/or groundwater at 458 Catherine Street.

TRAFFIC OPERATIONS

Lane reductions, ramp closures and detours are required during construction. Each rapid replacement event will require an 82-hour closure of Highway 417. Municipal roads will be closed at various stages during construction.

- Lane reductions and ramp closures will be kept to the minimum required to complete the work;
- The duration Highway 417 and municipal road closures will be kept to the minimum required to complete the work;
- A traffic management plan will be developed and will be implemented to minimize the impact of closures, including planned detour routes;
- Ongoing communication will be maintained with Emergency Services; and
- Temporary and advance signage and media notifications in both official languages will provide notice of upcoming closures/disruptions and will identify alternate access/routes.

UTILITIES

Utilities may require relocation to accommodate bridge construction. Temporary service outages may be required during some utility relocations.

- Any required utility relocations will be coordinated with the appropriate agencies in advance of construction;
- Properties affected by any required temporary service outages will be notified in advance; and
- Existing utilities to remain in place will be protected during construction.

NOISE

There is the potential for elevated noise levels during construction and noise and air quality nuisance from construction equipment and vehicles during construction.

- Maintain equipment in good operating condition;
- Restrict idling of equipment to the minimum necessary to perform the work; and
- The Contractor will be required to implement dust suppression measures to contain dust from operations such as concrete cutting.

NEXT STEPS

Following this Online Public Information Centre, next steps will include:

- Reviewing and responding to comments received;
- Refining the Detail Design and Mitigation Plan;
- Preparing a Design and Construction Report (DCR) for public review;
- Finalizing the Detail Design and preparing the contract package; and
- Submitting the project for tender.

Thank you for participating in the Online Public Information Centre. We welcome your comments. Information is being collected in accordance with the *Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments will become part of the public record. If you have accessibility requirements in order to participate in this project, please contact the undersigned.

If you would like more information, please contact:

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Please submit any questions or comments to the contacts listed above or [at the project website Contact page](#) by February 25, 2020.

www.highway417-midtownbridgesandimprovements.com