



# Infrastructure Services Project Charter

(for Design & Construction projects)

**Project Name:** Replacement of Old Railway Rideau River  
Ped Bridge (SN018600)

**Site Location:** Over Rideau River, just south of  
Hwy 417

**Forecast ID:** LN52588

**viSion ID:** IN22624 / CP000691

**Date:** 22-Feb-22

**Author,  
Branch &  
Service:** Kosta Karadakis, AMB, IS

**Version:** 2.0

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## 1 APPROVAL OF PROJECT CHARTER

Project Charter approval occurs within vISion. Table 1 identifies those that are required to approve the charter. By approving the charter in vISion, you have read the document and agree to its contents based on information available at the time of approval. Any changes post approval to scope, schedule, budget or quality are to be captured using the Project Change Request Approval Process; any administrative changes are to be captured using email. Refer to Section 8.1 for additional detail.

Table 1: Approval of Project Charter

|            | Role                        | Name, Position, Organization   |
|------------|-----------------------------|--|
| Mandatory  | Project Initiator           | Kosta Karadakis,<br>Infrastructure Assessment Engineer-<br>Structures,<br>AMB-Structures |
|            | Infrastructure Services D&C | Vipin Bansal<br>Senior Engineer, Infrastructure Projects,<br>Infrastructure Services     |
| Additional | Project Sponsor             | Bing Liu,<br>Senior Engineer -Structure Renewal,<br>AMB-Structures                       |
|            |                             |  |

## 2 REVISION HISTORY TABLE

Table 2: Revision and Comments Log

| Version | Date                        | Description of Revision or Comments                      | Version Author(s) |
|---------|-----------------------------|--|-------------------|
| 1.0     | 11-Feb-22                   | Submitted to IS Project Intake for review and acceptance | Kosta Karadakis   |
| 2.0     | 21-Feb-22                   | Comments from D&C  | Vipin Bansal      |
| 2.0     | 22-Feb-22                   | Addressed D&C comments                                   | Kosta Karadakis   |
|         | Click here to enter a date. |  |                   |
|         | Click here to enter a date. |  |                   |
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## 3 SCOPE

### 3.1 Background and Description

Old Railway Rideau River Ped Bridge (SN 018600) is an eight-span Half Deck Plate Girder (HDPG) bridge crossing Rideau River just south of Highway 417. Built in 1898, this bridge was originally designed as a single-track railway bridge, but it has since been re-purposed to carry only pedestrian and cycling traffic. In its current configuration, this 160.1 m long by 4.0 m wide riveted steel HDPG structure has a laminated timber deck with a waterproofed & paved surface, and it is supported by concrete jacketed stone masonry piers and abutments. The bridge has undergone numerous rehabilitations since its construction with the latest being in 1999 that included among other items a replacement of the timber decking, paving and waterproofing of the deck, installation of expansion joints and localized structural steel repairs.

According to the detailed condition assessment carried out by Parsons in June 2018, the bridge is in overall 'poor' condition. Several components are exhibiting significant deterioration including the expansion joints, structural steel below deck, structural steel coating system below deck, steel railing coating system, bearings, east abutment wall, ballast walls, wingwalls and piers.

A Detailed Condition Assessment and Renewal Options Analysis report was completed by Parsons in November 2018, which recommended that the existing structure be replaced on a new alignment upstream of the existing bridge.

### 3.2 Objectives, Criticality and Non-Financial Commitments

The structure is generally in 'poor' condition and programmed for end-of-service-life replacement based on a risk and criticality assessment.

Asset condition presents a manageable risk of impact to service/safety. Replacement is to be undertaken according to the programmed schedule

### 3.3 Scope Statement: Program, Location, Ward and Map

The existing bridge shall be replaced in general accordance with the recommendations of the Detailed Condition Assessment and Renewal Options Analysis report prepared by Parsons in 2018. The replacement bridge shall have design life of 75 years.



Figure 1: Key Map

### 3.3.1 Structure Inventory Data

|                                    |   |   |  |
|------------------------------------|---|---|--|
| <b>Structure # &amp; Name:</b>     | SN 018600, Old Railway Rideau River Ped Bridge    |   |  |
| <b>Location:</b>                   | Over Rideau River just south of Highway 417       |   |  |
|                                    | Ward 1:   | 17 – Capital                            | Ward 2: n/a  |
|                                    | Concession:                                       | D / Junction Gore                       | Lot: G / 11  |
|                                    | X coordinate:                                     | 370318.0290                             | Y coordinate: 5031051.2680   |
| <b>Nearest Major Intersection:</b> | Lees Ave & uOttawa road to Lees Campus            |   |  |
| <b>Water course:</b>               | Rideau River                                      | <b>Municipal Drain:</b>                 | <input type="checkbox"/> yes <input checked="" type="checkbox"/> no      |
| <b>Conservation Authority:</b>     | <input checked="" type="checkbox"/> Rideau Valley | <input type="checkbox"/> South Nation   | <input type="checkbox"/> Mississippi Valley <input type="checkbox"/> n/a |
| <b>Seismic Classification:</b>     | <input type="checkbox"/> Lifeline                 | <input type="checkbox"/> Major-Route    | <input checked="" type="checkbox"/> Other <input type="checkbox"/> n/a   |
| <b>Heritage Designation:</b>       | <input type="checkbox"/> Designated               | <input checked="" type="checkbox"/> n/a |  |

| 3.3.2 Road and Traffic Data     |  |  |                                    |                                |
|---------------------------------|--|--|------------------------------------|--------------------------------|
| <b>Road Type:</b>               | Urban  | <input type="checkbox"/> Arterial      | <input type="checkbox"/> Collector | <input type="checkbox"/> Local |
|                                 | Rural  | <input type="checkbox"/> Arterial      | <input type="checkbox"/> Collector | <input type="checkbox"/> Local |
|                                 | Transitway   | <input type="checkbox"/>               |                                    |                                |
|                                 | Pedestrian   | <input checked="" type="checkbox"/>    |                                    |                                |
|                                 | Railway  | <input type="checkbox"/>               |                                    |                                |
| <b>Number of Traffic Lanes:</b> | n/a  | <b>Posted Speed:</b>                   | n/a                                |                                |
| <b>Traffic Count:</b>           | 401 pedestrians and 1,089 cyclists crossed the bridge during a 12-hour period from 7:00 am to 7:00 pm on June 16, 2016 |  |                                    |                                |
| <b>Divided by median</b>        | <input type="checkbox"/> Yes   | <input checked="" type="checkbox"/> No |                                    |                                |
| <b>Bus route:</b>               | <input type="checkbox"/> Yes   | <input checked="" type="checkbox"/> No |                                    |                                |
| <b>Truck route:</b>             | <input type="checkbox"/> Yes   | <input checked="" type="checkbox"/> No |                                    |                                |
| <b>Bicycle route:</b>           | <input checked="" type="checkbox"/> Yes  | <input type="checkbox"/> No            | Major Pathway                      |                                |

### 3.4 Out of Scope

n/a

### 3.5 Detailed and Technical Requirements

#### 3.5.1 Sanitary Sewers and Forcemains

A 1.35 m diameter concrete Rideau River Trunk Collector (SAN01439) installed in 1953 runs along the east bank of Rideau River. Refer to red line in Figure 3.2. The sanitary pipe is not expected to be impacted by construction works. However, management of this utility will need to be considered during design and construction. If the proposed construction is anticipated to impact the adjacent or near sewer assets, please notify AMB-Sewers to discuss a protection plan to mitigate impacts. Please note that this is a collector sewer with a big catchment area and warrants a higher level of attention and mitigation measures. Also, pre and post CCTV will be required in accordance with City standards where the proposed works cross or are working near to existing sewer assets; contact Pawel Niedzwiadek to obtain pre and post construction report IDs. The design must ensure minimum horizontal and vertical clearance are maintained. Please provide a construction cross-section detail. Refer to major system overland drainage in Figure 3.1. Replacement of the bridge must ensure that drainage is not impacted.

### 3.5.2 Storm Sewers and Stormwater Management

Three storm sewer assets are located east of Rideau River. Refer to green lines in Figure 3.2. Storm sewers from north to south are as follows:

- STM29986 - 1.95 m diameter concrete VIA Rail Storm installed in 1980
- STM29764 – 1.95 m diameter concrete St Laurent Station Storm installed in 1984
- STM29767 – 1.20 m diameter concrete Industrial Storm installed in 1955

Impact on sewer infrastructure is dependent on the alignment of the new multi-use crossing, which is yet to be confirmed. The existing sewers are to be protected. If the proposed construction is anticipated to impact the adjacent or near sewer assets, please notify AMB-Sewers to discuss a protection plan to mitigate impacts. Also, pre and post CCTV will be required in accordance with City standards where the proposed works cross or are working near to existing sewer assets; contact Pawel Niedzwiadek to obtain pre and post construction report IDs. The design must ensure minimum horizontal and vertical clearance are maintained. Please provide a construction cross-section detail. Refer to major system overland drainage in Figure 3.1. Replacement of the bridge must ensure that drainage is not impacted.



Figure 3.1 – Overland Drainage Patterns

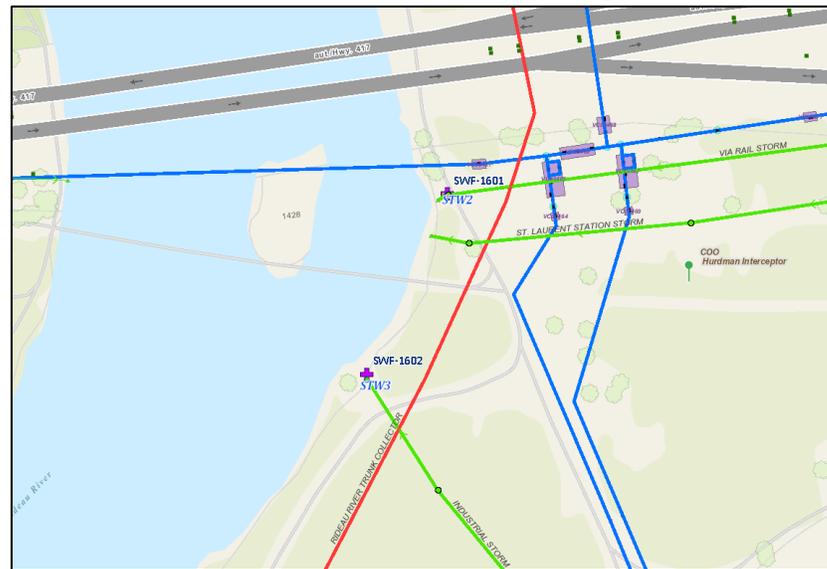


Figure 3.2 – Water and Wastewater Infrastructure

### 3.5.3 Water

A 1.22 m diameter backbone watermain (WAT06101) installed in 1958 crosses Rideau River between the existing structure and the Hwy 417 crossing. Refer to blue lines in Figure 3.2. Notify AMB-Water if it is determined through design phase that there will be impacts to water infrastructure. Protect the watermain if impacted by the planned work.

### 3.5.4 Roads

Provide connections to the new multi-use crossing with the existing pathways along both sides of the Rideau River.

Designer should confirm all required design elements for structure approach guide rails including, but not limited to:

- System type
- Total length
- End Treatments
- Connections to structures

### 3.5.5 Traffic Signals and Street Lighting

A street lighting plan is to be prepared for the multi-use crossing in accordance with current design guidelines, policies and standards. Consultation with City's Street Lighting group would be required for this task. It is anticipated that during the service life of the bridge, nearby pathways in the area will be receiving lighting and there will be a need for lighting to cross the bridge.

### 3.5.6 Transit

n/a

### 3.5.7 Rail

City's Rail Safety office is to be consulted as construction work is expected to be within 2 km of the LRT Stage 1 - Confederation Line. LRT is not expected to be impacted by the construction works.

### 3.5.8 Pedestrian and Cycling Facilities

The existing bridge provides an important transportation link between the National Capital Commission (NCC) Rideau River Eastern Pathway and the City's Rideau River Western Pathway. The cycling volumes along this transportation link are expected to have increased over the years due to ongoing development of Transit-Oriented Development (TOD) areas in the surrounding neighborhoods including the opening of the adjacent LRT pathway that provides a direct cycling link to downtown. In addition, the City's Rideau River Western Pathway has been significantly improved further to the southwest, linking directly to McIlraith Bridge and indirectly to Bank St which is adding bike and foot traffic.

A determination of the optimal alignment and cross-section for the new multi-use crossing is to be established following public consultations and collaborative meetings with major project stakeholders including AMB-Structures, Transportation Planning, NCC, University of Ottawa, Rideau Valley Conservation Authority and Parks Canada. Consult with major stakeholders early in design to ensure that the multi-use crossing reasonably satisfies their needs and to gain an understanding of the site constraints.

During the functional design study in 2018, Transportation Planning had the following design preferences from a cycling network perspective:

- Provide a permanent bike/pedestrian counter
- Provide a clear width of 4.0 m
- New bridge alignment should consider the desire line for the area (i.e. green dotted line in Figure 3.3 that is approximately 100 m upstream/south of the existing bridge), which is the most direct alignment for someone on the LRT pathway travelling over Riverside Dr to downtown

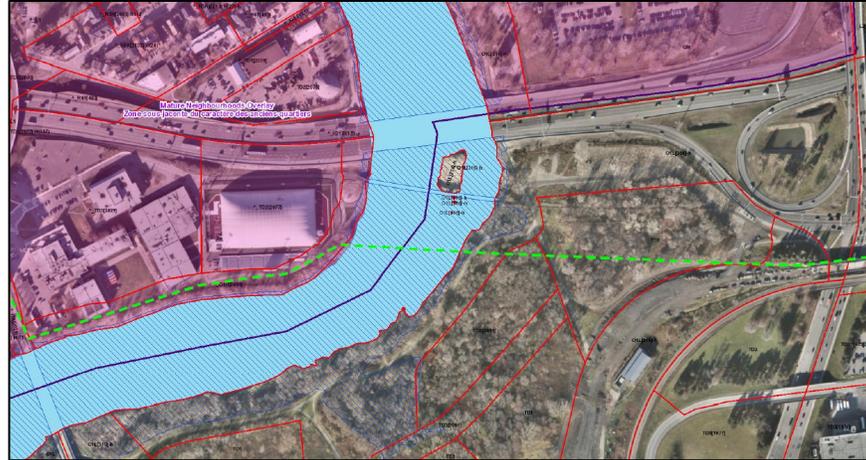


Figure 3.3 – Cycling Desire Line

### 3.5.9 Structures

#### Renewal Strategy:

The recommended renewal strategy entails the following major components:

- Remove existing Half Deck Plate Girder (HDPG) superstructure
- Remove existing concrete jacketed stone masonry abutments, piers and footings down to the riverbed
- Construct a new continuous multi-use bridge that meets functional, accessibility, navigational and flow clearance requirements
- Apply a waterproofing system on the deck top that meets applicable slip resistance standards and is durable for winter operations (i.e. abrasion resistance during snow removal and exposure to chlorides)
- Reconstruct approach pathways, as required, to provide proper tie-in with the new superstructure
- Install approach guide rails

Designer shall be responsible for all aspects of the replacement design including, but not limited to, hydrologic/hydraulic study, seismic analysis, replacement options analysis and vibration analysis.

Vibration analysis of lightweight pedestrian bridges susceptible to vibration issues should conform to the allowable acceleration limits specified by CHBDC S6-19, MTO Structural Manual and more stringent international codes, similar to Eurocode, that analyze multiple dynamic load cases with groups of pedestrians. Vibration monitoring / field tests should also be considered following the installation of pedestrian bridges to ensure theoretical models accurately represent the dynamic behaviour of the constructed bridge and comfort limits are being met. Construction contracts should include provisional items for remediation measures if test measurements exceed allowable acceleration limits.

#### Level of 3<sup>rd</sup> party review:

Level 3 Review: Cursory review by Kosta Karadakis (AMB Structures), Peer review by Jack Q. Zhao (Senior Structural Advisor), and Technical review by a 3<sup>rd</sup> party consultant

### 3.5.10 Parks

n/a

### 3.5.11 Buildings

n/a

### 3.5.12 Green Building Policy

n/a

### 3.5.13 Building Engineering and Energy Management (BEEM)

n/a

### 3.5.14 Forestry

Trees within the NCC parcels are expected to require temporary protection, trimming and/or removal to construct pathway connections and facilitate access during construction. Consult with NCC and City's Forestry Unit for specific requirements/restrictions on tree removals, as required.

### 3.5.15 Landscape

Landscape areas disturbed by construction to existing or better condition, as required

### 3.5.16 Streetscaping

n/a

### 3.5.17 Other

Structural projects going through RFQ/RFP process are required to include a QA review engineer as part of the consultant design team in the RFQ/RFP TOR. Designs are to be reviewed by a QA engineer and a letter memo stamped and signed by the QA engineer be submitted as part of the tender submission. The QA review engineer should be a senior structural P.Eng. with at least 10 years of bridge design experience. The QA review should cover code compliance, cost-effectiveness, cost estimates, schedule and constructability. It is acceptable that the QA review engineer affixes his stamp as the checker engineer on all structural drawings.

It is anticipated that the current project would proceed either under a Schedule 'A+' or 'B' project under the Municipal Class Environmental Assessment (EA) (2000, as amended in 2007, 2011 & 2015). Water crossings constructed outside of the existing right-of-way with project values of \$3.5M-\$9.5M are considered Schedule 'B' projects, while water crossings constructed at the same location are considered Schedule 'A+' projects. If current project

falls under Schedule 'A+', it is suggested that most (if not all) of the same steps of a Class EA would be followed as part of a 'good planning' to determine how best to deal with the 'problems and opportunities' posed by the current planning context. This will include but not limited to full consultation with affected parties throughout; consideration of a reasonable range of alternatives; considerations of effects on all aspects of the environment; systematic evaluation of alternatives and net effects; and documentation of the planning process showing traceability of decision making.

## **3.6 Additional Considerations**

### **3.6.1 Geotechnical, Environmental and HLUI**

The project will be subject to Ontario Regulation 406/19: On-Site and Excess Soil Management, as amended. Projects that will involve off-site disposal of excess soils, after January 1, 2021, need to ensure that the soils meet the appropriate soil criteria at the reuse or waste disposal site(s). Consultant with City CREO's Environmental Remediation Unit will be required for soil reuse and disposal

Undertake a geotechnical investigation to characterize the soil, bedrock and groundwater conditions, and provide recommendations on foundations, seismic design input, dewatering operations, and other geotechnical aspects required for design and construction.

### 3.6.2 Species at Risk

SAR screening is to be undertaken by the City's Capital Planning and Strategic Asset Management Unit

Site Risk: Moderate site risk as per 2021 screening results for Species at Risk (SAR)

SAR Mitigation Measures: 1, 2, 4, 5, 7, 8, 10, 12, 13, 14, 21, 23 (see Appendix A)

Turtle Fencing: Install fencing 20 m upstream and downstream of work area on either side of the Rideau River to dissuade turtle species from entering the work area.

Field Survey: Field survey required to confirm presence of Barn Swallow

ESA Registration Required (y/n): Potential for Barn Swallow Registration

List of Potential SAR:

*High Risk*: n/a

*Moderate Risk*: Barn Swallow

*Low Risk*: Black Ash, Blanding's Turtle, Butternut, Midland Painted Turtle, Northern Map Turtle, Snapping Turtle

*Very Low Risk*: Bald Eagle, Bank Swallow, Canada Warbler, Chimney Swift, Common Nighthawk, Eastern Wood-pewee, Peregrine Falcon, Wood Thrush

Wildlife Timing Windows:

- Breeding Birds - NO WORK between **April 15 to August 15** (if present)
- Nest Sweep - Completed in simple habitats where trees are anticipated for removal within breeding bird timing window between **April 15 to August 15**
- Butternut Health Assessment - between **May 1 to August 15**
- Turtles - Sweep should be carried out prior to work after May 1. No in-water work in winter between **September 15 and April 30**

### 3.6.3 Designated Substances

Designated substances for the site shall be identified in accordance with the Occupational Safety and Health Administration (OHSA).

Paint chip samples were collected from the structural steel coating at each span of the bridge. The results of the laboratory testing indicated lead and mercury contents that greatly exceed acceptable limits according to the Surface Coating Materials Regulations SOR/2005-109 of the Hazardous Products Act.

### **3.6.4 Utilities**

Please contact ROW for details of any existing utilities. Appropriate precautions should be taken to support/protect existing utilities within zone of disturbance.

### **3.6.5 Land Surveying**

A site survey was not prepared as part of the functional design study. The Project Manager should determine the extent of surveying needed and contact City's Surveys and Mapping Branch, as required.

### **3.6.6 Property Ownership, Easements and Encroachments**

The NCC and University of Ottawa are the two major landowners that will be affected by the proposed bridge replacement. NCC owns the property on the east shore of the Rideau River and University of Ottawa owns the property (200 Lees Ave) on the west shore of the Rideau River south of Hwy 417.

Construction easement and/or property acquisition with NCC and University of Ottawa would likely be required. Extent of property requirements will be dependent on the final footprint of the bridge and its approaches. DCS to engage RoW once below property requirements are finalized:

- DCS should work with the Consultant to figure out the property requirements for construction
- The Project Manager/Consultant should then ask for the property requirements for ongoing maintenance and protection from AMB
- If area to complete the construction is not the same as the area needed for maintenance and protection (most cases), then it should be prepared as two property requirements. When calculating the temporary easement/occupancy the smaller permanent easement should be subtracted from the larger temporary area.

During design, please verify if the project will have any impact on private property or utilities; in which case, please contact Surveys and Mapping and ROW Approvals.

### **3.6.7 Property Acquisitions and Disposals**

Refer to above Section 3.6.6

### **3.6.8 Zoning**

n/a

### **3.6.9 Accessibility**

The project is to meet requirements of AODA and City's Accessibility Design Standards.

### **3.6.10 Public Art Policy**

This project has been identified as having eligible capital funds that will be transferred to a dedicated Public Art Fund specifically created and identified for public art projects

### **3.6.11 Long Term Operating and Maintenance Considerations**

Winter maintenance of the multi-use crossing should be considered through the design process. Elements of the design should facilitate the clearance of snow without damage to the bridge elements. Coordination with the City's Roads Services group (Hurdman Roads Section) will be required throughout the process.

### **3.6.12 Other**

Navigation Protection Act (NPA) authorization will be required as the Rideau River is listed as a Scheduled Water under the NPA and is therefore considered a scheduled navigable water. Additionally, construction activities and equipment will partially block the river channel requiring a Notice of Works to be sent to Transport Canada.

Marine traffic would have to be maintained on the Rideau River throughout construction; a navigation clearance envelope would have to be identified and maintained through the construction site. Cautionary buoys and warning signs would also have to be installed upstream and downstream of the construction site.

## 4 SCHEDULE

### 4.1 Milestones

The following table captures the project's major milestones and the Targeted date of completion for each. Besides the listed items, the project manager may at his/her discretion add other milestones and the planned date.

Table 3: Project's Major Milestones

| Project Milestone               | Target Completion (dd\mmm\yyyy) |
|---------------------------------|---------------------------------|
| <b>Project Charter Approved</b> | February 2022                   |
| <b>Design Completion</b>        | January 31, 2024                |
| <b>Ready for Use</b>            | December 27, 2024               |
| <b>Construction Completion</b>  | November 1, 2025                |
|                                 |                                 |

## 5 ASSUMPTIONS, CONSTRAINTS / DEPENDENCIES AND RISKS

### 5.1 Assumptions

The following assumptions have been made:

Table 4: Assumptions

| Item No. | The following is assumed:   |
|----------|---|
| 1.       | Environmental permits, agreements and approvals will impinge unduly on schedule   |
| 2.       | The replacement will extend outside the City's ROW requiring construction easement and/or property acquisition from adjacent NCC and uOttawa parcels. Contractor access/staging issues and property constraints will be a big issue to overcome for this assignment                 |
| 3.       | Bridge replacement will be completed on a new alignment upstream (ranging from 10 m to 100 m south) of the existing bridge, which would allow pedestrians and cyclists to continue using the existing structure without significant disruption until existing bridge is demolished. |
| 4.       | Replacement would be possible without any significant marine traffic impact on Rideau River   |
| 5.       | No impacts to utilities are anticipated based on scope of project   |
| 6.       | Replaced bridge will have spread footings founded on shallow bedrock based on existing site conditions  |

### 5.2 Capital Coordination (Projects with Interdependencies)

The following constraints / dependencies in relation to other capital projects have been identified:

Table 8: Capital Coordination

| Project Identifier (Forecast #)        | Type of Work                 | Project Contact | Description  | Potential Impact/Timing                         |
|--|------------------------------|-----------------|--|---|
| University of Ottawa (200 Lees Campus) | Construction of New Building | Jonathan Bodden | Construction of the new Faculty of Health Sciences (FHS) | Work is in-progress and completion date unknown |

### 5.3 Programming and Operational Constraints / Dependencies

The following programming and operational constraints / dependencies that could impact the project have been identified; this can also include service impacts and special events.

Table 9: Constraints / Dependencies

| Item No. | The following constraints / dependencies are known: | Contact (if applicable) | Impacts |
|----------|---|-------------------------|---------|
|----------|---|-------------------------|---------|

|    |   |                 |                  |
|----|---|-----------------|------------------|
| 1. | Recent restrictions imposed by COVID-19 | n/a             | Schedule         |
| 2. | Contractor access/staging issues        | NCC and uOttawa | Constructability |

## 5.4 Other Constraints / Dependencies

This section includes constraints / dependencies that have not otherwise been captured in above tables.

Table 10: Constraints / Dependencies

| Item No. | The following constraints / dependencies are known:                         | Contact (if applicable)     | Impacts  |
|----------|---|-----------------------------|----------|
| 1.       | All permits, agreements and approvals identified during the detailed design | All applicable stakeholders | Schedule |

## 5.5 High Level Risk Identification

Table 11: Risk Identification

| Risk No. | Risk Category             | Risk Description and Potential Mitigation   |
|----------|---------------------------|---|
| 1.       | Internal Stakeholders     | Progressive deterioration of the existing bridge components leading to safety concerns  |
| 2.       | Schedule / Scope / Budget | Construction work encroaching onto private properties, particularly onto NCC lands, poses a major risk to the schedule requiring a Federal Land Use Design Approval (FLUDA), which can take 6-12 months to obtain approval. |

## 6 ROLES AND RESPONSIBILITIES

### 6.1 Key Deliverables

Table 12: List of Project Key Deliverables

| Item No. | Key Deliverables                                  | Description  |
|----------|---|--|
| 1        | Project Charter                                   | This is a mandatory deliverable that articulates, in detail, HOW the project will be successfully planned, executed, managed and controlled with regard to its purpose, scope, objectives, schedule, resource requirements, budget and additional management plans.  |
| 2        | Project Change Request Approvals                  | As a project evolves, changes that cause any project parameter to exceed the authority of the approved Charter must be documented and authorized by the Project Initiator [and other key stakeholder(s), as appropriate] via the Project Change Request Approval, which details the changes and its impacts.   |
| 3        | Project Status Reports (PSR)                      | This is a mandatory monthly deliverable that provides a glimpse of the progress on the project and reports on the status of the scope, schedule, budget and other project parameters.  |
| 4        | 66% Design Documents & Estimate                   | This is a mandatory deliverable from the Consultant to the project, used to control scope and budget as the design is progressively elaborated based on the functional requirements provided by the stakeholders. It provides a class B estimate or similar.   |
| 5        | 99% Design Documents & Estimate                   | This is a mandatory deliverable from the Consultant to the project, used to control scope and budget as the design is progressively elaborated based on the detailed design. It provides a class A estimate or similar.  |
| 6        | Certificate of Substantial Performance            | This is a mandatory deliverable that validates a Contractor's claim of substantial performance of the work and certifies the monetary value of that progress for payment by the City in accordance with the General Contractor Section   |
| 7        | As-Built or Record Drawings, Key Report Documents | This is a mandatory deliverable from the Contractor and Consultant to the project, which amends the design drawings for the project with the details of what was actually delivered, where those differences exist. This must be obtained and recorded for future use. Includes, but not limited to, drawings, CCTV, Geotech reports and maintenance agreements. |
| 8        | Third Party Technical Review                      | This may be a mandatory deliverable from a Consultant to the project. This item may be a constraint for the project and should be identified as such.  |
| 9        | Completion Certificate                            | The certificate that is issued by the Contract Administrator at completion of construction, as defined in the most current Construction Act.   |

|    |                                  |   |
|----|----------------------------------|---|
| 10 | Warranty Period Inspection (WPI) | This is a mandatory deliverable from the Consultant that summarizes an inspection carried out at the end of a predefined warranty period. The report will summarize construction deficiencies to be rectified by the Contractor   |
| 11 | Final Acceptance                 | Final Acceptance shall be deemed to occur when the Contract Administrator is satisfied that, to the best of the Contract Administrator's knowledge at that time, the Contractor has rectified all imperfect work and has discharged all of the Contractor's obligations under the Contract as defined in the most current Construction Act. |

## 6.2 Project Team Roles

The table below summarizes the main roles and responsibilities of the project team although is not exhaustive.

Table 13: Roles and Responsibilities

| Role                          | Name, Position  | Responsibilities   | Phone, Email   |
|-------------------------------|---|--|--|
| Project Sponsor / Asset Owner | Bing Liu,<br>Senior Engineer - Structure Renewal, AMB-Structures                                | Conceives the project and business need. Provides project funding. Key stakeholder who will be assuming the asset after Final Acceptance. Is also responsible for lifecycle renewal of the asset.                          | <a href="mailto:Bing.liu@ottawa.ca">Bing.liu@ottawa.ca</a><br>613-580-2424 x21737  |
| Project Initiator             | Kosta Karadakis,<br>Infrastructure Assessment Engineer – Structures                             | Approves project changes. Leads the project through to the approved Charter. Defines the objectives and criteria for success.  | <a href="mailto:kosta.karadakis@ottawa.ca">kosta.karadakis@ottawa.ca</a><br>613-580-2424 x23556  |
| D&C Project Manager           | Vipin Bansal<br>Senior Engineer, Infrastructure Projects  | ... is assigned by D&C to achieve the project objectives. Responsible for all aspects of the project as defined by the Charter. Is at the center of interactions between the project team, key stakeholders and initiator, | <a href="mailto:Vipin.Bansal@ottawa.ca">Vipin.Bansal@ottawa.ca</a><br>613-580-2424 ext.21276   |
| Asset Operator                | Bryden Denyes, Area Manager, Urban Roads Branch &<br>Jake Gravelle, Area Manager, Suburban East | ... provides or validates project requirements. Key stakeholder for coordination of project activities. Maintains the asset after Final Acceptance.  | <a href="mailto:Bryden.Denyas@ottawa.ca">Bryden.Denyas@ottawa.ca</a><br>613-564-3742<br>&<br><a href="mailto:Jake.Gravelle@ottawa.ca">Jake.Gravelle@ottawa.ca</a><br>613-580-2424 x21147 |

If any key team member changes, all other key team members are to be notified.

### 6.3 Responsibility Assignments

A high-level responsibility assignment matrix (or RACI Chart) identifies key deliverables to the Initiator (refer to Table 12) and the roles (as defined in Table 13) in preparation through approval and endorsement. An additional table for the construction phase could be provided as required by the project.

Table 14: Responsibility Assignment Matrix

| Item No. | Deliverables                           | Project Sponsor / Asset Owner | Project Initiator | D&C Project Manager | Asset Operator |
|----------|--|-------------------------------|-------------------|---------------------|----------------|
| 1        | Project Charter                        | A                             | R                 | A                   |                |
| 2        | Project Change Request Approvals       | A                             | I                 | R                   |                |
| 3        | Project Status Reports (PSR)           | I                             | I                 | RA                  |                |
| 4        | 66% Design Documents & Estimate        | I                             | A                 | R                   | C              |
| 5        | 99% Design Documents & Estimate        | I                             | A                 | R                   | C              |
| 6        | Certificate of Substantial Performance |                               | I                 | RA                  |                |
| 7        | As-Built or Record Drawings            |                               | I                 | RA                  |                |
| 8        | Third Party Technical Review           | I                             | I                 | RA                  |                |
| 9        | Completion Certificate                 |                               | I                 | RA                  | I              |
| 10       | Warranty Period Inspection (WPI)       | I                             | C                 | RA                  |                |
| 11       | Final Acceptance                       |                               | I                 | RA                  |                |

**Legend:** R=Responsible, A=Approve, C=Consult, I=Inform

## 7 CHANGES AND COMMUNICATIONS

### 7.1 Changes to Project after a Charter is Approved

Project Change Request Approval (PCRA) is required when a proposed project change is outside the scope, quality, budget or schedule of the approved Project Charter. It is important to communicate the project change first, with Project Initiator and any key stakeholders.

The functionality provided by vISion will automate tracking of a Project Change Request Approval throughout its entire life cycle based on business rules. The information is stored in vISion based on the results of communication and discussions between the Project Manager and Project Initiator.

The table below provides the rules for managing changes to the project, as defined in the approved charter.

Table 15: Managing change within the project

|   |  |
|---|--|
|   | <p><i>Expectations<br/>(Magnitude of change to scope, quality, budget, schedule and Contingency)</i></p>   |
| <p><b>Approve</b><br/>The Initiator requires that D&amp;C obtains formal approval for the change <i>prior</i> to proceeding with the change (<i>Project Change Request Approval</i>)</p>    | <p><i>Proposed changes during design in:</i></p> <ul style="list-style-type: none"> <li>• <i>Scope of the project</i></li> <li>• <i>Schedule</i> <ul style="list-style-type: none"> <li>○ <i>Any schedule changes which delay the design completion for 1 month</i></li> </ul> </li> <li>• <i>Budget</i> <ul style="list-style-type: none"> <li>○ <i>Engineering scope changes exceed available contingency</i></li> </ul> </li> <li>• <i>Quality</i> <ul style="list-style-type: none"> <li>○ <i>Not meeting project objectives and key deliverables as outlined in the project charter</i></li> </ul> </li> </ul> <p><i>Proposed scope changes during construction in:</i></p> <ul style="list-style-type: none"> <li>• <i>Scope of the project</i> <ul style="list-style-type: none"> <li>○ <i>All conflict/isolations not previously identified during design that will impact existing operations of the facility</i></li> </ul> </li> <li>• <i>Schedule</i> <ul style="list-style-type: none"> <li>○ <i>Where completion within the planned window will not be achieved</i></li> </ul> </li> <li>• <i>Budget</i> <ul style="list-style-type: none"> <li>○ <i>Scope changes during construction exceed available contingency</i></li> </ul> </li> <li>• <i>Quality</i> <ul style="list-style-type: none"> <li>○ <i>Any impact on performance criteria as established in the design</i></li> </ul> </li> </ul> |
| <p><b>Inform</b><br/>The Initiator requires that D&amp;C provide proactive notification of the change while (or shortly after) the change is being implemented (<i>Inform by email</i>)</p> | <p><i>Notwithstanding the above, Initiator should be informed when there are changes in:</i></p> <ul style="list-style-type: none"> <li>• <i>Scope</i></li> <li>• <i>Schedule</i></li> <li>• <i>Budget</i></li> <li>• <i>Quality</i></li> </ul>  |

## 7.2 Internal Communications

The requirements and high-level strategy for project communications are outlined below:

- Provide draft Request for Proposal (RFP) and Request for Quotation (RFQ) documents to Project Initiator for review and input to confirm scope of work
- Circulate 66% and 99% Design Drawings to Project Initiator for comment
- Provide tender results once received

- Contact Project Initiator prior to Warranty Period Inspection (WPI) for potential inclusion, if required. Provide a warranty inspection report.

Following is a suggested list of stakeholders. Additional stakeholders may be identified and consulted by the Project Team during the project cycle.

Table 15: Internal Stakeholders

| Stakeholder                            | Contact (if applicable)   | Notes /Additional Information   |
|--|---|---|
| Roads Services (Urban & Suburban East) | Bryden Denyes, Urban (613-564-3742) & Jake Gravelle, Suburban East (x21147) | Obtain input on operational or maintenance issues   |
| AMB-Roads                              | Scott Burden (x12432)   | Obtain input on roadway requirements  |
| AMB Sewers                             | Andrea Feilders (x44227)  | Obtain input on storm and sanitary sewer requirements   |
| AMB - Water Resources                  | Birgitte Alting-Mees (x16001) & Eric Tousignant (x25129)                    | Birgitte to provide input on watermain requirements<br>Eric to provide available hydrologic/hydraulic models developed for the watercourses |
| Rail Safety Specialist                 | Kerry-Lynn Mohr (x21874)  | Consulted for construction activity near LRT Stage 1  |
| Streetlighting Section                 | William Quackenbush (x14930)  | Lighting requirements to cross the bridge   |
| Traffic                                | Ron Darraugh (x21612)   | Staging /road closure   |
| Heritage & Urban Design Services       | Ashley Kotarba (x23582)   | Obtain input on heritage requirements   |
| Active Transportation Planning         | Robin Bennett (ext. 21795) and Adam Hortop (ext. 20234)                     | Obtain input on pedestrian and cycling requirements including staging/detours during construction   |
| Forestry Services                      | Jerome Dutrisac (x20279)  | Obtain input on requirements/restrictions for tree management plan, as required   |
| Capital Planning                       | Jennifer Csatlos (x16039)   | Screening of Species at Risk (SAR)  |
| Surveys and Mapping                    | Barbara Dylla-Labelle (x43882) & Walid Shahin (x16911)                      | Contact Barbara to confirm existing easements and/or agreements at the site & contact Walid to obtain a 1:250 site survey                   |
| Geospatial Analyst                     | Sarah MacLaurin (x13635)  | Request GIS layers to supplement hydrology analysis, as required  |
| Right of Way (RoW) Branch              | Rob Maclachlan (x28315)   | Property acquisition and easements with uOttawa and NCC   |
| Environmental Remediation Unit         | ERU-UAE@ottawa.ca   | Consult for property and soil information, and if suspect contaminated soils or have excess soils removed from site                         |

|                                |                               |   |
|--------------------------------|-------------------------------|---|
| Corporate Accessibility Branch | Megan Richards (613-804-4228) | Contact for input on accessibility related design issues    |
| Utilities                      |                               | Coordination will be required with ROW to confirm utilities |
| Councilor                      | Shawn Menard (Ward 17)        | Information   |

### 7.3 External Communications

Following is a suggested list of stakeholders. Additional stakeholders may be identified and consulted by the Project Team during the project cycle.

Table 16: External Stakeholders

| Stakeholder              | Contact (if applicable) | Notes /Additional Information                               |
|--------------------------|-------------------------|---|
| Federal Agencies         |                         | DFO, Transport Canada, Parks Canada, NCC                    |
| Provincial Agencies      |                         | MNRF, MTO, MECP, RVCA                                       |
| Utility Agencies         |                         | Coordination will be required with ROW to confirm utilities |
| Area Schools & Residents |                         | University of Ottawa  |

### 7.4 Communication to the Public

The Role responsible for preparing any public document must contact Public Information and Media Relations prior to issuance of documentation to ensure alignment and compliance with the corporate policies and procedures.

## 8 SUPPORTING DOCUMENTS

### 8.1 Project References

More information concerning this project can be found in the viSion Portal Background Information folder for the following documents listed in Table 17

Table 17: Project References

| Document Name & Number  | Document Date | Author  |
|---|---------------|---------|
| SN 018600,<br>Detailed Condition Assessment and Renewal<br>Option Analysis report,<br>WO 11316522 | 19-Nov-18     | Parsons |

### 8.2 Regulatory Information

The Project Manager and Project Team will adhere to all applicable Federal/Provincial/Municipal legislation and policies upon which the work is based or dependent.

Any previous communication between the Project Initiator and Regulatory Bodies shall be provided to the Project Manager at the outset of the project.

### 8.3 Supporting Document Checklists

Documents in Section 9.3 are provided in the viSion Portal Background Information folder.

1. *1939 Rehabilitation Drawing*. Scope of work included reinforcement of top of piers
2. *1952 Rehabilitation Drawings*. Scope of work included reinforced concrete jacketing of abutments and piers
3. *1999 As-Built Rehabilitation Drawings*. Scope of work included replacement of the timber decking, installation of timber curbs, paving and waterproofing the deck, paving approaches, installation of deck drains, installation of expansion joints, cleaning and painting existing railing, erection of new pipe railing, installation of gabions at ends of wingwalls, and localized structural steel repairs.
4. *2018 Detailed Condition Assessment and Renewal Option Analysis Report* by Parsons
5. *2021 OSIM Inspection* by HP Engineering

| <b>8.3.1 Information Available Internally</b> | Included as a supporting document | Not available | Not applicable | PM to obtain information directly |
|---|-----------------------------------|---------------|----------------|-----------------------------------|
| Aerial Photography                            | X                                 |               |                |                                   |
| As-Builts & Record Drawings                   | X                                 |               |                |                                   |
| E-Map / Central Registry                      |                                   |               | X              |                                   |
| Flood Mapping                                 |                                   |               | X              |                                   |
| Property Information & Permits                |                                   |               |                | X                                 |
| Traffic Data                                  | X                                 |               |                |                                   |
| Zoning Information                            |                                   |               | X              |                                   |

| <b>8.3.2 Asset and Condition Information from Initiator</b> | Included as a supporting document | Not available | Not applicable |
|---|-----------------------------------|---------------|----------------|
| Accessibility Audit   |                                   |               | X              |
| Building Condition Assessment Reports and Evaluations       |                                   |               | X              |
| CCTV Reports  |                                   |               | X              |
| Condition Renewal and Options Analysis – Structures         | X                                 |               |                |
| Elevator Report   |                                   |               | X              |
| Fire Alarm Audit  |                                   |               | X              |
| IMA – Inventory Information on all sewer & water structures |                                   |               | X              |
| Maximo Information – (summary of items to one line)         |                                   |               | X              |
| WMA – work order management for water, sewer operations     |                                   |               | X              |
| SAP-PM  |                                   |               | X              |
| Septic System Audit   |                                   |               | X              |
| Structural Assessment Adequacy Report                       |                                   |               | X              |
| Structural Inspection Reports                               | X                                 |               |                |
| Other condition information (please specify)                |                                   |               | X              |

| <b>8.3.3 Background Reports and Information from Initiator</b> | Included as a supporting document | Not available | Not applicable |
|--|-----------------------------------|---------------|----------------|
| Cost Sharing Agreements  |                                   |               | X              |
| Environmental Assessments, Studies & Reports                   |                                   |               | X              |

|   |   |   |   |
|---|---|---|---|
| Functional Design Studies & Program Requirements                | X |   |   |
| Hydrology and Hydraulics Studies or Reports                     |   | X |   |
| Master Servicing Studies or Reports                             |   |   | X |
| Municipal Drains – Engineer’s Report                            |   |   | X |
| Planning Studies (i.e. Council Approved Community Design Plans) |   |   | X |
| Previous MECP Approvals For Project Limits and Adjacent Areas   |   |   | X |
| Roadway Modification Approval                                   |   |   | X |
| Site Plans and Massing  |   |   | X |
| Stormwater Management Report                                    |   |   | X |
| Traffic Studies   |   |   | X |
| Other background reports and information (please specify)       |   |   | X |

| <b>8.3.4 Project Specific Information</b>                                  | To be provided by D&C Project Manager | To be provided by Initiator at a later date | Included as a supporting document | Not applicable |
|--|---------------------------------------|---|-----------------------------------|----------------|
| Contaminated Soils (HLUI)  |                                       |   |                                   | X              |
| Designated Substance Report  |                                       |   | X                                 |                |
| Development Services – Planning Applications, Proposals and Approved Plans |                                       |   |                                   | X              |
| ESA – Environmental Site Assessments                                       | X                                     |   |                                   |                |
| Geotechnical Investigation & Borehole Data                                 | X                                     |   |                                   |                |
| Horizontal and Vertical Control  |                                       |   |                                   | X              |
| Species at Risk Studies  |                                       |   | X                                 |                |
| Surveys and Mapping – Timing and Scale                                     | X                                     |   |                                   |                |

## APPENDIX A SAR MITIGATION MEASURES

| Mitigation Number | Type of Mitigation Measures | Description   |
|-------------------|-----------------------------|---|
| 1                 | General Mitigation Measures | Species at risk (SAR) awareness training is recommended for all site supervisors. Training should be specific to each infrastructure project site and focus on SAR with potential to occur.   |
| 2                 | General Mitigation Measures | Infrastructure project work sites must be surveyed by a person trained in SAR identification (i.e., construction staff or supervisor) prior to start-up to ensure none are present. Observations of SAR should be reported to the City Project Manager and Contract Administrator, who in return must provide SAR observations to the MECP. Further measures may be needed to continue the activity.  |
| 3                 | General Mitigation Measures | On-site environmental monitoring should be considered for the project. The monitor must be a qualified biologist (or similarly qualified person) that is knowledgeable in SAR and their habitat. The level of effort for the environmental monitoring should be determined through conversation with the project manager and the qualified monitor.   |
| 4                 | General Mitigation Measures | Provide site-specific SAR information to on-site staff. Information should include: <ol style="list-style-type: none"> <li>1. A description of relevant SAR;</li> <li>2. Photos of SAR that may be present on site;</li> <li>3. Appropriate avoidance measures; and</li> <li>4. Emergency contact numbers in case of incident with SAR.</li> </ol>  |
| 5                 | General Mitigation Measures | Construction activities occurring adjacent to wetlands and watercourses that may provide habitat for SAR should avoid the core turtle and marsh bird breeding period (April 15 to August 15, of any year). Furthermore, in-water winter work may only be done if overwintering SAR turtles are not present.   |
| 6                 | General Mitigation Measures | For wetlands and watercourses that may provide habitat for SAR fishes, ensure that any in-water works are completed outside of the applicable fish spawning timing windows.<br><br>Timing windows when in-water work is restricted:<br>Spring spawners: March 15 to June 30 (e.g., Lake Sturgeon, Bridle Shiner, Channel Darter, Northern Brook Lamprey, Silver Lamprey, River Redhorse)<br>Fall spawners: October 1 to May 31 (no cold water SAR species are known to live in the Ottawa area)   |
| 7                 | Barn Swallows               | If the presence of Barn Swallow nesting is confirmed in the project area and construction has the potential to harm or harass the species, then no work should be conducted during the breeding bird period (May 1 to August 31).<br><br>Barn Swallow nests are protected under the Endangered Species Act, 2007 and must not be removed, and access to nests must not be prevented, without first obtaining authorization from MECP and following the rules in regulation (see Ontario Regulation 242/08 Section 23.5 for complete details). |
| 8                 | Barn Swallows               | If active Barn Swallow nests are found in or on a culvert or bridge, during construction activities; stop work immediately, take a photo and contact the City Project Manager and Contract Administrator.   |
| 9                 | Grassland birds             | Sections 4.1, 23.2 and 23.6 of Ontario Regulation 242/08 generally cover the requirements for activities in Bobolink and Eastern Meadowlark habitat.<br><br>If the habitat of Bobolink or Eastern Meadowlark will likely be damaged or destroyed, or if activities will likely harm or harass the species, an authorization may be required from MECP as described in the Regulation.<br><br>Project proposals should be reviewed by MECP to determine required authorization. Construction   |
| 10                | Fish                        | All in-water works will minimize the overall footprint and ensure works occur outside of species-specific spawning timing windows (see mitigation 6).<br><br>Necessary erosion and sediment controls will be in place prior to work beginning adjacent to watercourses. Furthermore, monitoring of devices during significant rain events (10 mm over 24 h) should occur within 24 hours of the event.  |
| 11                | Turtles                     | If mitigation measure 12 is not implemented the following measure applies.<br><br>Work should not be conducted within the nesting habitat during the nesting season (May 1 to September 30).  |

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|    |                             |   |
|----|-----------------------------|---|
| 12 | Turtles                     | <p>Heavy duty silt fencing should be erected adjacent to the wetland habitat by May 1 (prior to the nesting season), to prevent turtles from entering the work area. As turtles have been known to climb the geotextile fencing, the fence must be inspected often (daily or weekly).</p> <p>Silt fencing should be constructed in accordance with the Species at Risk Branch Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing: <a href="http://files.ontario.ca/environment-and-energy/species-at-risk/nmr_sar_tx_rptl_amp_fnc_en.pdf">http://files.ontario.ca/environment-and-energy/species-at-risk/nmr_sar_tx_rptl_amp_fnc_en.pdf</a></p>   |
| 13 | Butternut Trees             | <p>A qualified biologist shall conduct a survey to determine if construction activities will occur within 50 metres of a butternut regulated areas.</p> <p>If butternut tree(s) are present and could be negatively impacted by the proposed construction works (i.e., removal, limbing, or root destruction), an assessment by a butternut health expert (as defined by Ontario Regulation 830/21 Section 21) will be required. An assessment can only occur between May 1 and August 15, of any year.</p> <p>Note: Construction within existing 'impervious surfaces' (e.g., paved roads, sidewalks, buildings), is excluded from the 50 metre area noted above. No additional screening or surveys would be required.</p>  |
| 14 | Butternut Trees             | <p>If construction activities are to occur within the 50 metre butternut habitat area, tree protection fencing will be installed around any healthy (retainable – as determined by a butternut health expert), butternut tree that may be negatively impacted by the construction activities.</p> <p>Fencing shall be constructed in accordance with City of Ottawa Tree Protection Guidelines. The City of Ottawa can be contacted directly for more information on 'Tree Protection Guidelines', or refer to: <a href="https://ottawa.ca/en/residents/water-and-environment/trees-and-community-forests/protection">https://ottawa.ca/en/residents/water-and-environment/trees-and-community-forests/protection</a></p> <p>Note: Works occurring entirely within existing hardened surfaces (e.g., resurfacing of existing roads) are not anticipated to impact the species. Due caution, however, is still required to avoid direct damage to individuals.</p> |
| 15 | Bats                        | <p>If SAR bat (i.e., Northern Myotis, Little Brown Myotis, or Eastern Small-Footed Myotis), hibernacula are determined to be present through field studies, then no work should occur from October 1 through April 30, of any year.</p> <p>Maternity roost habitat for SAR bats (i.e., hollow trees and snags [<math>&gt;20</math> cm DBH]; houses, buildings, and barns; rock piles, cliffs, rocky outcroppings; and mature forest [<math>&gt;60</math> years old]), are protected under the Endangered Species Act, 2007, and protected as significant wildlife habitat under the Provincial Policy Statement (Ontario, 2014). Maternity roosting periods occur from May 1 through July 15, of any year.</p>  |
| 16 | Bats                        | <p>If work cannot be avoided during October 1 through April 30, a permit from the MECP would likely be required.</p>  |
| 17 | Snakes                      | <p>Prevent equipment from encroaching on SAR snake habitat (i.e., keep equipment in road right-of-way). Inspect equipment regularly to ensure no snakes are present in or on machinery.</p>   |
| 18 | Snakes                      | <p>Conduct sweeps for SAR snakes ahead of construction (especially in the early morning), to determine if snakes are present in the construction area. If SAR snakes are present, commence work once the snake has left the work area.</p>  |
| 19 | Amphibians                  | <p>Avoid working in wet ditches and other ephemeral wetland habitats during spring spawning of Western Chorus Frogs (i.e., March through June, of any year), unless amphibian surveys can determine the species is not present.</p>   |
| 20 | Turtles - Overwintering     | <p>If proposed works are to be completed within an area that may impact overwintering habitat for turtles (e.g., stormwater management ponds, etc.), then work must occur only between April 30 and September 15 of any year, to avoid disturbing overwintering turtles. All water must be pumped from the pond, and any turtles must be removed prior to clean-out.</p>  |
| 21 | Birds - Nest Survey         | <p>Project works should avoid clearing trees and vegetation during the breeding bird season. The Migratory Birds Convention Act, 1994, protects breeding migratory birds, their active nests, and young, in Canada. City of Ottawa guidelines require nest activity inspection of vegetation and trees to be cleared from April 15 to August 15, of any year.</p>   |
| 22 | Turtles - Blanding's Turtle | <p>If the project is located in an area of known Blanding's Turtle occurrences, (see Blanding's Turtle Element Occurrence Concentration Map), silt fence should be placed through the channel to either side of the culvert to prevent turtles from travelling into the worksite. In addition, a thorough sweep of the worksite for Blanding's Turtles should be conducted each day before work commences.</p>  |
| 23 | Black Ash                   | <p>For projects to be carried out after January 27, 2022, consideration for this species must be given as it will be Threatened, and the MECP should be consulted for recommended mitigation measures.</p>  |