HIGHWAY 417 REHABILITATION AND WIDENING FROM WEST OF MAITLAND AVENUE TO EAST OF ISLAND PARK DRIVE, DETAIL DESIGN

G.W.P. 4058-01-00

City of Ottawa

CLASS ENVIRONMENTAL ASSESSMENT FOR PROVINCIAL TRANSPORTATION FACILITIES (2000) GROUP ‘B’ PROJECT

MINISTRY OF TRANSPORTATION EASTERN REGION

DESIGN AND CONSTRUCTION REPORT

May 2017
HIGHWAY 417 REHABILITATION AND WIDENING
FROM WEST OF MAITLAND AVENUE TO EAST OF
ISLAND PARK DRIVE, DETAIL DESIGN

G.W.P. 4058-01-00

City of Ottawa

CLASS ENVIRONMENTAL ASSESSMENT FOR
PROVINCIAL TRANSPORTATION FACILITIES (2000)
GROUP ‘B’ PROJECT

MINISTRY OF TRANSPORTATION
EASTERN REGION

Prepared for the Ontario Ministry of Transportation by:
WSP

Prepared by: Anita Sott, MCIP, RPP
Environmental Planner
WSP

Reviewed by: Nadia Diczki, P.Eng.
Design Manager
WSP

Lincoln MacDonald, P.Eng.
Project Manager
WSP
THE PUBLIC RECORD

Copies of this Design and Construction Report are available for review at the following locations:

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Ottawa</td>
<td>110 Laurier Avenue West</td>
<td>Monday to Friday: 8:30 a.m. to 5:00 p.m.</td>
</tr>
<tr>
<td>Client Service Centre, City Hall</td>
<td>Ottawa, ON K1P 1J1</td>
<td></td>
</tr>
<tr>
<td>Alexander Community Centre</td>
<td>960 Silver Street</td>
<td>Monday, Tuesday, Thursday: 10:00 a.m. to 9:00 p.m.</td>
</tr>
<tr>
<td></td>
<td>Ottawa, ON K1Z 6H5</td>
<td>Wednesday: 9:00 am to 9:30 pm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Friday: 10:00 a.m. to 8:00 p.m.</td>
</tr>
<tr>
<td>Ottawa Public Library</td>
<td>281 Woodroffe Avenue</td>
<td>Tuesday to Thursday: 10:00 a.m. to 8:30 p.m.</td>
</tr>
<tr>
<td>Carlingwood Branch</td>
<td>Ottawa, ON K2A 3W4</td>
<td>Friday: 1:00 p.m. to 6:00 p.m.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Saturday: 10:00 a.m. to 5:00 p.m.</td>
</tr>
<tr>
<td>Ottawa Public Library</td>
<td>18 Rosemount Avenue</td>
<td>Tuesday to Thursday: 10:00 a.m. to 8:30 p.m.</td>
</tr>
<tr>
<td>Rosemount Branch</td>
<td>Ottawa, ON K1Y 1P4</td>
<td>Friday: 1:00 p.m. to 6:00 p.m.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Saturday: 10:00 a.m. to 5:00 p.m.</td>
</tr>
</tbody>
</table>

Ce document hautement spécialisé n'est disponible qu'en anglais en vertu du règlement 671/92, qui en exempte l'application de la Loi sur les services en français. Pour de l'aide en français, veuillez communiquer avec Heather Edwardson, ministère des Transports, au 905 704-2210.
# TABLE OF CONTENTS

1 OVERVIEW OF THE UNDERTAKING ........................................................................... 1

1.1 PROJECT SUMMARY .......................................................................................... 1
  1.1.1 Introduction .................................................................................................. 1
  1.1.2 Background – Preliminary Design / Environmental Assessment Studies .......... 2
  1.1.3 Detail Design Study Purpose & General Description of the Undertaking (Recommended Plan) ....................................................................................................... 4
  1.1.4 Consultation .................................................................................................. 5
  1.1.5 Environmental Assessment Process ............................................................... 5
  1.1.6 Purpose of the Design and Construction Report ............................................ 8

2 CONSULTATION PROCESS ..................................................................................... 9

2.1 CONSULTATION DURING PRELIMINARY DESIGN ........................................ 9

2.2 CONSULTATION DURING DETAIL DESIGN ................................................... 11
  2.2.1 Study Commencement .................................................................................. 11
  2.2.2 Public Information Centre and DCR Submission ........................................... 12
  2.2.3 Public Involvement during Detail Design ....................................................... 24

3 DETAILED DESCRIPTION OF THE RECOMMENDED PLAN ............................ 49

3.1 MAJOR FEATURES OF THE PROPOSED WORK ............................................. 49
  3.1.1 Mainline Widening ...................................................................................... 49
  3.1.2 Merivale Road Overpass .............................................................................. 50
  3.1.3 Drainage ..................................................................................................... 50
  3.1.4 Illumination ................................................................................................. 51
  3.1.5 Advance Traffic Management System (ATMS) ............................................ 52
  3.1.6 Signage ....................................................................................................... 52
  3.1.7 Utility Relocations / Modifications .............................................................. 52
  3.1.8 Retaining Walls ......................................................................................... 53
  3.1.9 Roadside Safety .......................................................................................... 54
  3.1.10 Active Transportation infrastructure ......................................................... 54
  3.1.11 Noise Barriers .......................................................................................... 54
  3.1.12 Fencing ..................................................................................................... 55
  3.1.13 Landscape Plan .......................................................................................... 55
  3.1.14 Context Sensitive Design ........................................................................ 56

3.2 TRAFFIC / CONSTRUCTION STAGING .......................................................... 58
  3.2.1 Mainline Construction Staging ..................................................................... 58
  3.2.2 Merivale Road Overpass Staging ................................................................. 60
  3.2.3 Summary of Construction Staging ............................................................... 62

3.3 IMPLEMENTATION .............................................................................................. 65

4 ENVIRONMENTAL ISSUES AND COMMITMENTS .......................................... 66

4.1 NATURAL ENVIRONMENT ............................................................................... 69
  4.1.1 Fish and Fish Habitat .................................................................................. 70
  4.1.2 Vegetation ................................................................................................... 70
  4.1.3 Wildlife and Species at Risk ........................................................................ 75
  4.1.4 Designated Natural Areas .......................................................................... 78
  4.1.5 Hydrology / Surface Water ........................................................................ 78
  4.1.6 Erosion and Sediment Control .................................................................... 79
  4.1.7 Waste and Contamination / Management of Excess Materials ..................... 80
  4.1.8 Designated Substances .............................................................................. 81

4.2 SOCIAL / ECONOMIC ENVIRONMENT ........................................................ 82
  4.2.1 Greenways and Open Space Linkages ......................................................... 82
  4.2.2 Land Use .................................................................................................... 82
4.2.3 Aesthetics and Landscape .................................................................................. 85
4.2.4 Traffic Operations .............................................................................................. 85
4.2.5 Pedestrian and Cyclist Access and Safety .......................................................... 92
4.2.6 Property Requirements ...................................................................................... 93
4.2.7 Air Quality ......................................................................................................... 93
4.2.8 Noise .................................................................................................................. 94
4.2.9 Utilities .............................................................................................................. 97
4.3 CULTURAL ENVIRONMENT .................................................................................. 97
   4.3.1 Cultural Heritage .............................................................................................. 97
   4.3.2 Archaeology .................................................................................................... 98
   4.3.3 Context Sensitive Design ............................................................................... 99
4.4 SUMMARY OF ENVIRONMENTAL EFFECTS, PROPOSED MITIGATION, COMMITMENTS TO FURTHER WORK. ................................................................. 100
5 MONITORING ......................................................................................................... 114

LIST OF APPENDICES

Appendix A: Notification Material
Appendix B: Agency Correspondence
Appendix C: Public Information Centre Summary Report & Appendices
Appendix D: Public Correspondence
Appendix E: Contract Drawings

LIST OF FIGURES

Figure 1-1: Project Limits ............................................................................................ 1
Figure 1-2: Overview of Class EA Process for Group ‘B’ Projects ................................... 7
Figure 3-1: Ground-mounted concrete noise barriers; highway side treatment (left) and back side treatment (right) as installed at Lees Avenue .............................................. 57
Figure 3-2: Example of structure-mounted translucent acrylic noise barriers .......... 57
Figure 3-3: Maple leaf emblem on median light pole .................................................. 57

LIST OF TABLES

Table 2-1: Summary of External Agency Comments .................................................. 15
Table 2-2: Summary of Public and Interest Groups Comments .................................. 29
Table 3-1: Summary of Ramp and Road Closures ...................................................... 59
Table 3-2: Summary of Construction Staging .............................................................. 63
Table 4-1: Preliminary Design Summary of Environmental Concerns and Commitments 67
Table 4-2: Provincially Significant Plant Species ....................................................... 73
Table 4-3: Species of Special Concern ....................................................................... 76
Table 4-4: Anticipated Impacts on City Streets ........................................................... 86
Table 4-5: Summary of Closures and Detour Routes .................................................. 88
Table 4-6: Summary of Environmental Concerns and Commitments ...................... 100
## GLOSSARY

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSI</td>
<td>AREA OF NATURAL OR SCIENTIFIC INTEREST</td>
</tr>
<tr>
<td>ATMS</td>
<td>ADVANCED TRAFFIC MANAGEMENT SYSTEMS</td>
</tr>
<tr>
<td>CA</td>
<td>CONTRACT ADMINISTRATOR</td>
</tr>
<tr>
<td>MTO CLASS EA</td>
<td>MINISTRY OF TRANSPORTATION'S CLASS ENVIRONMENTAL ASSESSMENT FOR PROVINCIAL TRANSPORTATION FACILITIES (1999, AS AMENDED 2000)</td>
</tr>
<tr>
<td>DCR</td>
<td>DESIGN AND CONSTRUCTION REPORT</td>
</tr>
<tr>
<td>EA</td>
<td>ENVIRONMENTAL ASSESSMENT</td>
</tr>
<tr>
<td>EEA</td>
<td>ENVIRONMENTAL EFFECTS ANALYSIS</td>
</tr>
<tr>
<td>ERD</td>
<td>ENVIRONMENTAL REFERENCE FOR HIGHWAY DESIGN</td>
</tr>
<tr>
<td>GWP</td>
<td>GROUP WORK PROJECT</td>
</tr>
<tr>
<td>MNRF</td>
<td>ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY</td>
</tr>
<tr>
<td>MOECC</td>
<td>ONTARIO MINISTRY OF THE ENVIRONMENTAL AND CLIMATE CHANGE</td>
</tr>
<tr>
<td>MTO</td>
<td>ONTARIO MINISTRY OF TRANSPORTATION</td>
</tr>
<tr>
<td>NCC</td>
<td>NATIONAL CAPITAL COMMISSION</td>
</tr>
<tr>
<td>NSP</td>
<td>NON-STANDARD SPECIAL PROVISION</td>
</tr>
<tr>
<td>OPP</td>
<td>ONTARIO PROVINCIAL POLICE</td>
</tr>
<tr>
<td>OPSS</td>
<td>ONTARIO PROVINCIAL STANDARD SPECIFICATIONS</td>
</tr>
<tr>
<td>PIC</td>
<td>PUBLIC INFORMATION CENTRE</td>
</tr>
<tr>
<td>ROW</td>
<td>RIGHT-OF-WAY</td>
</tr>
<tr>
<td>SP</td>
<td>STANDARD PROVISION</td>
</tr>
<tr>
<td>TESR</td>
<td>TRANSPORTATION ENVIRONMENTAL STUDY REPORT</td>
</tr>
<tr>
<td>WP</td>
<td>WORK PROJECT</td>
</tr>
</tbody>
</table>
1 OVERVIEW OF THE UNDERTAKING

1.1 PROJECT SUMMARY

1.1.1 INTRODUCTION

The Ministry of Transportation (MTO) retained WSP to complete the Detail Design for the rehabilitation and widening of Highway 417 from 0.5 km west of Maitland Avenue to 0.6 km east of Island Park Drive (GWP 4058-01-00), as part of the overall Queensway Expansion from Highway 416 to Anderson Road. The project limits are illustrated in Figure 1-1.

![Figure 1-1: Project Limits](image)

This Design and Construction Report (DCR) presents the results of the Detail Design component of the Environmental Assessment Study which was completed in accordance with the approved environmental planning process for Group ‘B’ undertakings under the MTO’s Class Environmental Assessment (Class EA) for Provincial Transportation Facilities (2000).

The purpose of this DCR is to document the study process, existing conditions within the project limits, feedback received through consultation activities, the Detail Design (Recommended Plan), potential environmental impacts, and proposed mitigation measures.
1.1.2 BACKGROUND – PRELIMINARY DESIGN / ENVIRONMENTAL ASSESSMENT STUDIES

Highway 417 (Ottawa Queensway) is the major east-west provincial transportation corridor in the Ottawa area that provides for inter-city and local travel. Construction of Highway 417 started in the 1950s to provide a controlled-access highway to replace Highway 17. Over the years, Highway 417 has been expanded to serve growing travel demand and traffic volumes.

Highway 417 Expansion

In 2002, the MTO initiated a comprehensive operational review of Highway 417 (Ottawa Queensway) from west of Highway 416 easterly to Anderson Road (GWP 663-93-00) in response to growing traffic volumes in the City of Ottawa. This study evaluated opportunities to optimize the use of the existing facility, while providing for the efficient movement of people and goods and reducing traffic congestion. It examined existing and future problems and opportunities and provided a Recommended Plan to guide the evolution of the Queensway over the next 20 years. The study examined the mainline, as well as all interchanges and crossing roadways within the study limits.

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. The Preliminary Design was documented in a Transportation Environmental Study Report (TESR), which received environmental clearance in 2008.

This study identified various concerns within the study area, including:

- Insufficient capacity to accommodate existing and projected travel demands for the study corridor;
- Locations on Highway 417 with higher than expected collision frequency (typically associated with recurring congestion);
- The standards used for the original construction and subsequent modifications to Highway 417 throughout the study area have resulted in a number of features that are considered atypical in the context of current design practice (including mainline horizontal and vertical alignment elements, ramp geometry and lane/shoulder widths); and
- The majority of the existing highway infrastructure is in need of significant rehabilitation and/or replacement over the planning horizon (i.e., the next 20 years) in order to maintain its functionality.

A Recommended Plan was developed to address these concerns, which included:

- Widening Highway 417 from three to four mainline lanes in each direction from Highway 416 to Carling Avenue and from Metcalfe Street to Ottawa Road (OR) 174;
- Retaining the existing number of mainline lanes from Carling Avenue to Metcalfe Street;
- Widening Highway 417 from two to three lanes in each direction from OR 174 to east of Walkley Road;
- Retaining the basic horizontal and vertical geometry throughout;
- Modifying the interchanges at Richmond Road, Pinecrest / Greenbank Road, Woodroffe Avenue, Carling Avenue, Parkdale Avenue, Bronson Avenue, Lyon Street, Nicholas Street and St. Laurent Boulevard to improve safety and traffic operations;
- Revising/enhancing the drainage system to accommodate the proposed widening;
- Rehabilitating pavement, bridges and the illumination system as required;
- Upgrading the existing Advance Traffic Management System including additional pavement loop detectors, cameras, changeable message signs and queue end warning devices;
- Upgrading noise barrier walls to current standards; and
- Replacing/enhancing landscaping.

Highway 417 Bridge Replacements/Rehabilitations

Between 2004 and 2005, the MTO completed a Preliminary Design and Environmental Assessment Study for the replacement/rehabilitation of Highway 417 bridges from 0.5 km west of Maitland Avenue to 0.6 km east of Island Park Drive (WP 4058-01-00). The purpose of this study was to:

- Evaluate the structural conditions of the bridges within the project limits;
- Determine rehabilitation needs;
- Develop plans to accommodate highway and City street traffic during the rehabilitations;
- Review opportunities to address other deficiencies at the time of the rehabilitations; and
- Address environmental impacts.

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 Transportation Environmental Study Report (TESR), which received environmental clearance in 2005.

The Recommended Plan included the structure rehabilitation and deck replacement for 10 concrete deck / steel girder bridges and rehabilitation of the Merivale Road Overpass rigid frame bridges. The Detail Design and Environmental Assessment Study for the replacement/rehabilitation of Highway 417 bridges from west of Maitland Avenue to east of Island Park Drive was separated into independent contracts. Between 2007 and 2013, rapid replacement technology was used to complete the following structure rehabilitations and bridge deck replacements:

- Island Park Drive bridges (Contract No. 1 completed in 2007);
- Clyde Avenue bridges (Contract No. 2 completed in 2008);
- Carling Avenue Eastbound bridges (Contract No. 3 completed in 2011); and
- Kirkwood Avenue and Carling Avenue Westbound bridges (Contract No. 4 completed in 2013).

The Current Study

The purpose of the current Detail Design assignment is to prepare the approved Preliminary Design concepts for implementation, including the widening of Highway 417 to four lanes in each direction from Maitland Avenue to Carling Avenue, and the associated widening and rehabilitation of the Merivale Road Overpass bridges which represents the fifth and last remaining contract as part of the Highway 417 Bridge Replacements/Rehabilitations project.
1.1.3 **DETAIL DESIGN STUDY PURPOSE & GENERAL DESCRIPTION OF THE UNDERTAKING (RECOMMENDED PLAN)**

This study was undertaken to prepare the approved Preliminary Design concepts for implementation, including completion of the Detail Design and preparation of contract drawings and tender documents.

**Recommended Plan**

This project includes the following components:

- Widening Highway 417 to four lanes in each direction between Maitland Avenue and Carling Avenue, including reconstruction of the Maitland Avenue and Carling Avenue interchange ramps;
- Rehabilitating the Merivale Road Overpass bridges and widening the eastbound bridge to the south;
- Replacing all existing noise barriers within the project limits, including the noise barriers east of Maitland Avenue (north side of highway) and east of Merivale Road (south side of highway):
  - The existing 4 m high noise barrier located on the north side of the highway east of Maitland Avenue will be removed to accommodate the highway widening. A new 5 m high concrete noise barrier will be constructed along the same section of roadway as close as possible to the location of the existing barrier, but will gradually shift in alignment due to the highway widening by up to 1 m north of the existing barrier;
  - The existing 4 m high noise barrier located on the south side of the highway east of Merivale Road will be replaced with a new noise barrier at the same location and height;
- Constructing related works including retaining walls, replacement and upgrades to drainage, roadside protection, illumination, highway signage, Advanced Traffic Management System (ATMS), and landscaping; and
- Relocating utilities impacted by the highway widening.

Traffic management for construction staging will be coordinated with the City of Ottawa. Anticipated traffic impacts include:

- Lane reductions on Highway 417 from three through lanes to two through lanes in each direction during off-peak periods;
- Short-term ramp closures at the Maitland Avenue and Carling Avenue interchanges;
- Long-term closure of the on-ramp from Carling Avenue Westbound to Highway 417 Eastbound on-ramp on the west side of the Westgate Shopping Centre (refer to the section below regarding a separate Detail Design and Environmental Assessment Study examining this ramp);
- Weekend closures of Merivale Road between Carling Avenue and Island Park Drive; and
- A single overnight full closure of Highway 417 for work at the Merivale Road overpass structure.

A more comprehensive description of the recommended plan is provided in Section 3.0 of this report.

**Highway 417 Carling Avenue E-E On-Ramp**

A separate Detail Design and EA Study is being completed for the proposed permanent closure of the Carling Avenue E-E on-ramp (on-ramp from Carling Avenue westbound to Highway 417 eastbound,
located adjacent to the Westgate Shopping Centre) (WP 4255-15-01). The Highway 417 widening between Maitland Avenue and Island Park Drive will result in future operational and safety issues due to the introduction of a significantly substandard merge condition for the existing Carling Avenue W-E on-ramp (on-ramp from Carling Avenue eastbound to Highway 417 eastbound). The permanent closure of the low volume E-E on-ramp is proposed as a means to accommodate the highway widening and provide a standard-length merge lane for the high volume W-E on-ramp, while maintaining access to Highway 417 eastbound within the Carling Avenue interchange.

Should the Detail Design and EA Study be approved, the E-E on-ramp will remain closed permanently following construction of the highway widening, and mitigation for redirected traffic will be implemented at the Carling Avenue westbound / Kirkwood Avenue and Carling Avenue / Saigon Court intersections.

1.1.4 CONSULTATION

Throughout the duration of the Detail Design study, local elected representatives, Indigenous communities, external agencies, interest groups, and members of the general public were encouraged to participate through a proactive consultation plan that included notification letters, newspaper notices, a Public Information Centre (PIC), and a project website.

Stakeholder comments provided throughout the study were taken into consideration during the refinement of the Detail Design. Specific concerns related to impacts to private properties, the need for improved noise barriers and continued implementation of Context Sensitive Design concepts throughout the Highway 417 corridor, impacts to traffic as a result of the required ramp closures, and the need to coordinate construction with ongoing City of Ottawa projects. A more comprehensive discussion of comments received is included in Section 2.0 of this report.

1.1.5 ENVIRONMENTAL ASSESSMENT PROCESS

The Ministry of Transportation’s Class Environmental Assessment (MTO Class EA) for Provincial Transportation Facilities was approved under the Ontario Environmental Assessment Act (OEAA) in fall 1999, and was amended in 2000. This planning document defines groups of projects and activities and the environmental assessment process that MTO has committed to follow for these undertakings. Provided that this process is followed, projects and activities included under the MTO Class EA do not require formal review or approval under the OEAA. There is an opportunity at any time during the MTO Class EA process for interested persons to provide comments and review outstanding issues.

The MTO Class EA process is principle-based. Where appropriate, this DCR references the principles applied and how they were achieved during the environmental assessment process.

The following principles underlie the MTO Class EA process:
- Transportation engineering principles;
- Environmental protection principles;
- External consultation principles;
- Evaluation principles that are intended to achieve the best overall balance of these principles;
- Documentation principles;
- ‘Bump-up’ principles; and
- Environmental clearance principles to proceed.
As part of the related Preliminary Design and Environmental Assessment Studies, Transportation Environmental Study Reports (TESRs) and were prepared and filed for public and agency review, as described in Section 1.1.2. The TESRs described the recommended improvements on Highway 417, anticipated environmental effects and proposed mitigation measures, and were each filed for a 30-day public review period to provide interested stakeholders with an opportunity to review and comment on the reports. During the 30-day public review of the TESR for the Highway 417 (Ottawa Queensway) from west of Highway 416 easterly to Anderson Road (GWP 663-93-00), 9 ‘bump-up’ requests (i.e. request for a Part II Order) were made. MTO undertook additional consultation with bump-up requestors in order to address outstanding concerns. However, agreements with requestors were not achieved. The Minister of the Environment denied the bump-up requests through correspondence issued to each requestor on August 1, 2008. The TESR received environmental clearance in 2008. During the review of the TESR for the Highway 417 Bridge Replacements/Rehabilitations (WP 4058-01-00), one ‘bump-up’ request was made. Following additional consultation between MTO and bump-up requestors, as well as MTO’s review of the list of issues and recommended conditions, the conditions were agreed upon and the ‘bump-up’ request was withdrawn. The TESR received environmental clearance in 2005.

This Detail Design study is being carried out in accordance with the approved planning process for Group ‘B’ undertakings (Figure 1-2). Following the 30-day public review of this DCR, the project will have met the requirements of the MTO Class EA.
Figure 1-2: Overview of Class EA Process for Group ‘B’ Projects
(Excerpt from the Class Environmental Assessment for Provincial Transportation Facilities [2000])
1.1.6 PURPOSE OF THE DESIGN AND CONSTRUCTION REPORT

This DCR has been prepared in accordance with the requirements of the approved environmental planning process for Group “B” undertakings under the MTO Class EA. The DCR is intended to document the following:

- Transportation engineering and environmental issues and their impact on the EA process;
- Changes in existing environmental conditions from those documented in Preliminary Design;
- Environmental concerns and commitments;
- Anticipated environmental impacts and commitments to mitigation measures (to be included in the contract documents);
- Description of the consultation program carried out during Detail Design;
- Identification of all project approvals, licenses and permits that have been or must be obtained prior to construction;
- Implementation of the commitments to further work contained in the Transportation Environmental Study Report (TESRs), including any environmental effects monitoring that is required; and
- Construction documentation, as required.

As outlined above, approval of the DCR marks the final task in the Detail Design portion of the EA process. The “Notice of Submission” has been published concurrent with the filing of this DCR for a 30-day public review period, and identifies the start and end dates for the DCR review period, as well as the addresses and hours of operation for the review locations.

Additional information is available in the contract drawings and specifications. The Project Team is available to discuss information provided within this report or project-related inquiries, and can be contacted as follows:

**Mr. Lincoln MacDonald, P.Eng.**  
Consultant Project Manager  
WSP  
1145 Hunt Club Road, Suite 300  
Ottawa, Ontario K1V 0Y3  
Tel: 613-690-1093  
1-877-998-9912 (toll free)  
Fax: 613-736-8710  
E-mail: lincoln.macdonald@wsp.com  

**Ms. Anita Sott, MCIP, RPP**  
Consultant Environmental Planner  
WSP  
1145 Hunt Club Road, Suite 300  
Ottawa, Ontario K1V 0Y3  
Tel: 613-690-1121  
1-877-998-9912 (toll free)  
Fax: 613-736-8710  
E-mail: anita.sott@wsp.com  

**Ms. Kate Green, P.Eng.**  
MTO Senior Project Engineer  
Ministry of Transportation, Eastern Region  
1355 John Counter Street, Postal Bag 4000  
Kingston, Ontario K7L 5A3  
Tel: 613-540-5120  
1-800-267-0295 (toll free)  
Fax: 613-540-5106  
E-mail: kate.green1@ontario.ca  

**Ms. Kevin Ogilvie**  
MTO Senior Environmental Planner  
Ministry of Transportation, Eastern Region  
1355 John Counter Street, Postal Bag 4000  
Kingston, Ontario K7L 5A3  
Tel: 613-545-4749  
1-800-267-0295 (toll free)  
Fax: 613-540-5106  
E-mail: kevin.ogilvie@ontario.ca
2 CONSULTATION PROCESS

Consistent with the requirements for Group ‘B’ undertakings under the MTO Class EA, consultation with federal, provincial and municipal agencies, Indigenous communities, local elected representatives, interest groups, and members of the public was on-going throughout all stages of the project.

2.1 CONSULTATION DURING PRELIMINARY DESIGN

Highway 417 Expansion

Consultation during the Preliminary Design and Environmental Assessment Study for the Highway 417 (Ottawa Queensway) from west of Highway 416 easterly to Anderson Road (GWP 663-93-00) (2002-2008) consisted of the following:

- Ontario Government Notices advertising study commencement and three rounds of Public Involvement Centres (PICs);
- Direct letter mailings;
- Preparation of a Study Design Report outlining how the study would be carried out;
- On-going maintenance of the external agency and public mailing list developed during Preliminary Design;
- Meetings with Municipal Technical Advisory and Public Advisory Committees (MTAC and PAC) to facilitate identifications of concerns and evaluation of alternatives, with regular meetings held throughout the duration of the study;
- Presentations to the City of Ottawa Transportation Committee;
- Three PICs as follows:
  o Public Involvement Centre #1, held on January 21, 22, 23 and 30, 2003, to review preliminary drawings, present preliminary background inventory work, the proposed evaluation techniques, and to seek input on the Study Design Report and the overall perceived needs within the study area;
  o Public Involvement Centre #2, held on June 21, 22 and 23, 2004, to present and seek public comments on the alternatives and the technically preferred alternatives as identified by the study team;
  o Public Involvement Centre #3, held on June 20, 21 and 22, 2005, to present and seek public comments on the Recommended Plan as presented at a Preliminary Design level of detail;
- A notice announcing submission of the Transportation Environmental Study Report (TESR) for public review and comment.

Throughout the duration of the study, members of the public, interest groups, and external agencies were encouraged to participate. This proactive approach provided an opportunity for all interested stakeholders to comment both on the process and the study findings.

During the Preliminary Design and Environmental Assessment Study, Environment Canada provided advice on the investigation of environmental issues, and Indian and Northern Affairs Canada (presently Indigenous and Northern Affairs Canada) provided contact information for Indigenous communities.
Comments received during the Preliminary Design and Environmental Assessment Study from members of the public generally indicated:

- Support for prioritizing public transit;
- Support for the proposed widening;
- Concerns about traffic operations and safety; and
- Concerns about loss of green space, impacts to property, neighbourhoods, and air quality, and impacts from noise and vibration.

As previously noted, a TESR was prepared as part of the Preliminary Design and Environmental Assessment Study and described the recommended improvements on Highway 417, anticipated environmental effects and proposed mitigation measures. The TESR was filed for a 30-day public review period, during which 9 'bump-up' requests (i.e. request for a Part II Order) were made for the project. Following additional consultation between MTO and bump-up requestors to address outstanding concerns, agreements were not achieved and the Minister of the Environment denied the bump-up requests through correspondence issued to each requestor on August 1, 2008. The TESR received environmental clearance in 2008.

**Highway 417 Bridge Replacements/Rehabilitations**

Consultation during the Preliminary Design and Environmental Assessment Study for the Highway 417 Bridge Replacements/Rehabilitations (WP 4058-01-00) (2004-2005) consisted of the following:

- Ontario Government Notices advertising study commencement and a Public Information Centre (PIC);
- Direct letter mailings;
- On-going maintenance of the external agency and public mailing list developed during Preliminary Design;
- Meetings with a Municipal Technical Advisory Committee (MTAC) to gain input to the assessment of alternatives, the recommended plan, mitigation measures and future commitments;
- A presentation to the City of Ottawa Transportation Committee;
- A Public Information Centre (PIC), held on July 28, 2004 to present and seek public comments on the Recommended Plan as presented at a Preliminary Design level of detail;
- A notice announcing submission of the Transportation Environmental Study Report (TESR) for public review and comment.

Throughout the duration of the study, members of the public, interest groups, and external agencies were encouraged to participate. This proactive approach provided an opportunity for all interested stakeholders to comment both on the process and the study findings.

Comments received during the Preliminary Design and Environmental Assessment Study from members of the public generally indicated:

- Support for the proposed bridge replacements/rehabilitations;
- The need to maintain traffic movement during construction staging;
Concerns regarding increased traffic on Carling Avenue due to the proposed bridge replacements/rehabilitations;
- The need for provisions for pedestrians during construction; and
- Concerns regarding the duration of construction.

To confirm that the project met the criteria outlined in Article 1 of the Canadian Environmental Assessment Act (CEAA) Exclusion List Regulations, a Project Description Report under CEAA was developed and provided to the Canadian Environmental Assessment Agency for circulation to federal agencies. No federal agencies identified an interest in the project. The TESR also met the requirements of the National Capital Commission’s environmental screening requirements.

As previously noted, a TESR was prepared as part of the Preliminary Design and Environmental Assessment Study and described the recommended improvements on Highway 417, anticipated environmental effects and proposed mitigation measures. The TESR was filed for a 30-day public review period, during which a ‘bump-up’ request was made for this project regarding the proposed construction staging area in Hampton Park. Following additional consultation between MTO and bump-up requestors, as well as MTO’s review of the list of issues and recommended conditions, the conditions were agreed upon and the ‘bump-up’ request was withdrawn. The TESR received environmental clearance in 2005.

2.2 CONSULTATION DURING DETAIL DESIGN

A comprehensive Consultation Plan was developed for the Detail Design phase to address the requirements of the MTO Class EA process and to place emphasis on consultation with the stakeholders most directly affected by the project. As per the Consultation Plan, stakeholders were kept informed of the project and were asked for input through the use of conventional, effective consultation methods, including:

- Ontario Government Notices published in local newspapers;
- Notification letters/emails to local elected representatives, Indigenous communities, external agency representatives, interest groups, and members of the public;
- A Public Information Centre;
- Project website updates; and
- Filing of this Design and Construction Report (DCR) for a 30-day public review period.

2.2.1 STUDY COMMENCEMENT

In March 2006, Ontario Government Notices were published in English and French and notification letters were sent to the study contact list to announce the commencement of the Detail Design and Environmental Assessment for the replacement/rehabilitation of Highway 417 bridges from west of Maitland Avenue to east of Island Park Drive, including the rehabilitation of the Merivale Road overpass bridges. This study was separated into five contracts. Four contracts were completed between 2007 and 2013, as described in Section 1.1.2. The current Detail Design assignment represents the fifth and final contract and includes the rehabilitation of the Merivale Road overpass bridges, as included in the Study Commencement notices, as well as the rehabilitation and widening of Highway 417 from west of Maitland Avenue to east of Island Park Drive. The rehabilitation and widening of Highway 417 was introduced to
the public in the PIC notification (see Section 2.2.2.1). A copy of the Study Commencement notice is included in Appendix A.

2.2.2 PUBLIC INFORMATION CENTRE AND DCR SUBMISSION

2.2.2.1 Consultation with Local Elected Representatives and Indigenous Communities

On July 28, 2015, letters were sent to local elected representatives and Indigenous communities inviting them to attend the Public Information Centre (PIC), which was held on August 11, 2015. These letters included a summary of the project components, an overview of the study process, and details of the date, time and location of the PIC. A copy of the Notice of PIC letter is provided in Appendix A (see Section 2.2.3.4 for more details on the PIC).

On May 25, 2017, letters were sent to local elected representatives and Indigenous communities announcing the submission of the DCR for a 30-day public review period, and identified the start and end dates for the DCR review period and the addresses and hours of operation for the review locations. A copy of the Notice of Submission letter is provided in Appendix A.

The following local elected representatives were contacted:

- City of Ottawa Mayor
- City of Ottawa Councillor – Bay (Ward 7)
- City of Ottawa Councillor – College (Ward 8)
- City of Ottawa Councillor – Kitchissippi (Ward 15)
- City of Ottawa Councillor – River (Ward 16)
- MP – Ottawa Centre
- MP – Ottawa West-Nepean
- MPP – Ottawa Centre
- MPP – Ottawa West-Nepean

The following Indigenous communities were contacted:

- Algonquins of Pikwàkanagàn
- Algonquins of Ontario Consultation Office
- Ottawa Algonquin First Nation
- Ottawa Region Métis Council
- Métis Nation of Ontario Consultation Unit

2.2.2.2 Consultation with External Agencies

On July 28, 2015, letters were sent to external agency representatives from federal agencies, provincial ministries, the City of Ottawa, and utilities, based on the Preliminary Design contact list, inviting them to attend the Public Information Centre (PIC), which was held on August 11, 2015. These letters included a summary of the project components, an overview of the study process, and details of the date, time and location of the PIC. A copy of the Notice of PIC letter is provided in Appendix A.

On May 25, 2017, letters were sent to external agency representatives to announce the submission of the DCR for a 30-day public review period, and identified the start and end dates for the DCR review period.
and the addresses and hours of operation for the review locations. A copy of the Notice of Submission letter is provided in Appendix A.

The following external agencies were contacted:

**Federal Agencies**
- Environment and Climate Change Canada
- Parks Canada
- National Capital Commission (NCC)

**Provincial Ministries/Agencies**
- Ministry of Indigenous Relations and Reconciliation
- Ministry of Natural Resources and Forestry
- Ministry of Tourism, Culture and Sport
- Rideau Valley Conservation Authority

**Municipal Departments**
- City of Ottawa – Asset Management
- City of Ottawa – Design and Construction - Municipal (West)
- City of Ottawa – Infrastructure Services
- City of Ottawa – Public Works
- City of Ottawa – Right of Way Info and Approvals
- City of Ottawa – Traffic and Mobility
- City of Ottawa – Traffic Operations
- City of Ottawa – Traffic Services
- City of Ottawa – Transit Services
- City of Ottawa – Transportation Planning

**Emergency Services**
- Ontario Provincial Police
- Ottawa Fire Services
- Ottawa Paramedic Services
- Ottawa Police
- RCMP

**Utilities**
- Allstream
- Bell Canada
- Cogeco Inc.
- Enbridge Gas Distribution
- Hydro One
- Hydro Ottawa Limited
- Ontario Power Generation
- Rogers Ottawa
- Telus Corporation
2.2.2.3 Comments Received from External Agencies

Table 2-1 provides a summary of comments received from external agencies. Copies of comments received are provided in Appendix B. Note that comments received during Study Commencement did not pertain to the rehabilitation and widening of Highway 417 and are therefore not included in the table.
### Table 2-1: Summary of External Agency Comments

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>AGENCY</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
</table>
| 1   | July 31, 2015 / Email  | National Capital Commission | • Interested in providing comments on the project but is not able to attend PIC. Requested that information be provided as it becomes available. | A response was sent by email by WSP (formerly MMM Group) on Jan. 14, 2016 and included the following:  
  • In response to your request for project information, please be advised that information regarding the Recommended Plan for the above-noted project, including a preliminary landscaping plan, is available for review as part of the display materials prepared for the Public Information Centre, which was held on August 11, 2015. The display materials are available for download on the project website at: [http://queenswayexpansioneast.com/highway-417-rehabilitation-and-widening-from-west-of-maitland-avenue-to-east-of-island-park-drive/public-involvement/](http://queenswayexpansioneast.com/highway-417-rehabilitation-and-widening-from-west-of-maitland-avenue-to-east-of-island-park-drive/public-involvement/).  
  • The Ministry is committed to the continued implementation of Context Sensitive Design (CSD) recommendations along the Highway 417 corridor. CSD recommendations will be incorporated as part of the following project components:  
    • Enhanced landscaping that utilizes a palette of primarily native plants with a strong visual identity, bold and colourful design and four seasons of interest along the Highway 417 corridor and within interchanges between Maitland Avenue and Island Park Drive;  
    • The existing 4 m high metal noise barrier located on the north side of the highway east of Maitland Avenue will be removed to accommodate the highway widening. A new 5 m high concrete noise barrier will be constructed along the same section of roadway as close as possible to the location of the existing noise barrier, but will gradually shift in alignment due to the highway widening by up to 1 m north of the existing barrier. This new noise barrier will be ground-mounted and composed of composite concrete panels in keeping with the same hues and tones of the new noise barrier constructed at Lees Avenue; and |
<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>AGENCY</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
</table>
| 2   | Aug. 7, 2015 / Email   | Ministry of Culture, Tourism & Sport | • Letter of response included the following:  
  • MTCS interest in this EA project relates to its mandate of conserving Ontario’s cultural heritage, which includes: archaeological resources, including land-based and marine;  
  • built heritage resources, including bridges and monuments; and cultural heritage landscapes. Under the EA process, the proponent is required to determine a project’s potential impact on cultural heritage resources.  
  • Noted that the Standards and Guidelines for Conservation of Provincial Heritage Properties must be complied with.  
  • Provides the process for identifying cultural heritage resources and archaeological resources.  
  • Noted that the MTCS Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes should be completed to help determine whether the EA project may impact cultural heritage resources. The draft MTO Ontario Heritage Bridge Guidelines for Provincially Owned Bridges screening criteria have also been established for cultural heritage evaluation of bridges under the Class EA for Provincial | The existing 4 m high metal noise barrier located on the south side of the highway east of Merivale Road to the west wing wall of the Island Park Drive structure will be replaced with a new 4 m high noise barrier at the same location. This new noise barrier will be mounted on top of the existing retaining wall and will be composed of translucent acrylic (acrylite) noise barrier panels.  
  • Please be advised that you will be notified directly of the 30-day public review of the Design and Construction Report for this project. Should you have any further questions or comments, please feel free to contact the undersigned.  
  A response was sent by email by WSP (formerly MMM Group) on Jan. 14, 2016 and included the following:  
  • Please be advised that the current Detail Design project was recommended as a result of Preliminary Design and Environmental Assessment (EA) Studies completed for the rehabilitation of bridges along Highway 417 from 0.5 km west of Maitland Avenue to 0.6 km east of Island Park Drive, and for a comprehensive operational review of Highway 417 (from Highway 416 to Anderson Road). These Preliminary Design and EA Studies were documented in Transportation Environmental Study Reports (TESRs) and received environmental clearance in 2005 and 2008, respectively. The purpose of the current Detail Design assignment is to prepare the approved EA plans for implementation of the rehabilitation of the Merivale Road overpass bridges and the widening of Highway 417 between Maitland Avenue and Carling Avenue.  
  • During Preliminary Design, Stage I & II Archaeological Assessments were completed by C.R. Murphy Archaeological Consulting in August 2002 and October 2004, respectively. The Stage I archaeological assessment found that the Highway 417 right-of-way corridor lies within a zone of medium to high potential for discovery of significant prehistoric or historic archaeological sites, based on proximity to several provincially significant prehistoric and historic sites that have been recorded in the Ottawa Valley. Based on this general proximity, the Stage II archaeological... |
<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>AGENCY</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
</table>
| 3   | Aug. 15, 2015 / Email | City of Ottawa, Transportation Planning - Environmental Assessments Unit | • Requested that during construction, accommodation and awareness for cycling through the reduced lanes areas be a part of the program. Inquired about the noise abatement measures. Stated that it was unclear if the noise generated will be within City guidelines.  
• Noted that there could be opportunity to bundle the highway widening with Stage 2 if the Queensway was to serve as BRT Detour Route during LRT construction.  
• Noted that Carling Ave is identified as a Transit Priority Corridor – Continuous Measures (bus lanes) to be implemented in the first phase of the TMP (Transit Master Plan). Requested clarity regarding the potential increase in peak traffic volumes using the off ramp (WB 417 off-ramps to WB | A response was sent by email by WSP (formerly MMM Group) on Feb. 8, 2016 and included the following:  
• On behalf of the Ministry of Transportation (MTO), thank you for submitting your comments regarding the above-noted project.  
• Construction Detours:  
  • A presentation was made to the City of Ottawa Transportation Committee on Sept. 2, 2015. The Traffic and Incident Management Plan (TIMP) has been prepared and circulated to the City on January 13, 2016 for review, and was presented to the City of Ottawa Traffic Incident Management Group (TIMG) on January 27, 2016.  
• Cycling & Pedestrians:  
  • Regarding limitation for cycling facilities under the Merivale Road overpass, the span of the overpass structure cannot be increased without replacement of the entire structure, including deck, abutments, |
### Comments Received

<table>
<thead>
<tr>
<th>No.</th>
<th>Date/Form of Contact</th>
<th>Agency</th>
<th>Comments Received</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Carling Ave) and the impacts on the Kirkwood intersection may be a concern and require further information. The traffic analysis should be reviewed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Suggested that the restoration of staging areas (city lands in traffic islands and medians) should not only be based on the inventory of existing trees but on the landscape plans for the area as some tree planting has been deferred to accommodate previous and future staging area requirements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Noted that there are opportunities to renew and restore the landscape tree and shrub massings along the Queensway. Suggested that the City should have the opportunity to review and provide comment to the completed landscape plan.</td>
</tr>
</tbody>
</table>

### How It Was Addressed / Response Sent

- **Wing walls, etc.** The existing span of the overpass structure will be maintained and the overpass will only be widened to the south as part of the current Detail Design project.
- **Regarding accommodation and awareness for cyclists through the reduced lanes on Merivale Road, vehicular, pedestrian and cycling traffic control during construction, including signage,** will be in accordance with OTM Book 7. As noted above, the Traffic and Incident Management Plan (TIMP) was presented to TIMG on January 27, 2016.
- **The potential for pedestrian enhancements (i.e. enhanced signage advising of pedestrian crossings at the base of on- and off-ramps) will be reviewed as part of the Detail Design.**
- **Noise:**
  - A Noise Impact Assessment was conducted as part of the Detail Design process for the two segments of noise barriers being replaced as part of the project. The project includes the replacement of all existing metal noise barriers within the project limits, including: a new 5 m high noise barrier on the north side of the highway from east of Maitland Avenue to approximately Broadview Avenue (approx. 372 m in length); and a new 4 m high noise barrier on the south side of the highway from east of Merivale Road to the existing concrete noise barrier west of Island Park Drive (approx. 75 m in length).
  - Existing noise levels at receptors located on the north side of the highway east of Maitland Avenue are approximately 61.7 dBA to 65.9 dBA. With the installation of a new 5 m high noise barrier in this area, noise levels are expected to be below 65 dBA at all critical receptor locations following the highway widening.
  - Existing noise levels at receptors located on the south side of highway between Merivale Road and...
Island Park Drive are approximately 58.4 dBA. With the installation of a new 4 m high noise barrier in this area, noise levels are expected to remain the same following the highway widening.

- As night work will be required during construction, a Noise By-law Exemption request will be submitted to the City of Ottawa prior to the completion of Detail Design.

- Bundling with City Projects / Carling Transit Priority Corridor:
  - The potential to bundle the highway widening with City infrastructure renewal and improvements and with WLRT construction will be coordinated between the City and the MTO. Traffic analysis regarding a potential increase in peak traffic volumes using the Highway 417 westbound off-ramp to Carling Avenue westbound and impacts to the intersection with Kirkwood Avenue was conducted based on available traffic data and signal timing information provided by the City. The Traffic Analysis completed as part of the TIMP Report is based on existing conditions.

- Staging Areas / Landscape:
  - A preliminary landscape plan has been developed to replace vegetation that will require removal in order to accommodate construction and to enhance the existing landscaping within the project limits (see attached Recommended Plan display board). Existing and newly planted vegetation in proposed staging areas located on City lands will be preserved to every extent possible, provided the Contractor can complete the required construction operations. A number of plantings have been identified for protection, as illustrated on the attached Environmental Impacts display board presented at the Public Information Centre held on August 11, 2015.
  - A refined landscape plan is being prepared and can
<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>AGENCY</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>be made available for review by the City following the completion of the 90% Detail Design.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Please be advised that you will be notified directly of the 30-day public review of the Design and Construction Report for this project. Should you have any further questions or comments, please feel free to contact the undersigned.</td>
</tr>
<tr>
<td>4</td>
<td>August 21, 2015 / Email</td>
<td>Ministry of Natural Resources and Forestry</td>
<td>• Noted they were unable to attend the session but would like to review any reports related to natural heritage and species at risk for the project.</td>
<td>A response was sent by email by WSP (formerly MMM Group) on Jan. 14, 2016 and included the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• In response to your request to review any reports related to natural heritage and species at risk, please be advised that a Summary of Existing Environmental Conditions Report, Detail Design Update (December 2015) has been prepared for the above-noted project. The report summarizes the findings of various stages of environmental fieldwork undertaken as part of Preliminary and Detail Design from 2002 to 2014. Please see the attached.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Please be advised that you will be notified directly of the 30-day public review of the Design and Construction Report for this project. Should you have any further questions or comments, please feel free to contact the undersigned.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• A digital copy of the Summary of Existing Environmental Conditions Report was provided.</td>
</tr>
<tr>
<td>5</td>
<td>Sept. 9, 2015 / Letter</td>
<td>Ministry Partnerships Unit, Ministry of Aboriginal Affairs</td>
<td>• Provided information regarding First Nations contacts for communities with existing or asserted rights or claims in Ontario’s land claims process or litigation that could be impacted by the project:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Algonquins Consultation Office Janet Stavinga, Executive Director 31 Riverside Drive, Suite 101 Pembroke, ON K8A 8R6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Ottawa Region Métis Council Benny Michaud, President 528-740 Springland Drive Ottawa, ON K2J 2G2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Métis Nation of Ontario Head Office Métis Consultation Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All suggested contacts have been included on the contact list and have received PIC notification letters, and will continue to receive information related to consultation opportunities.</td>
</tr>
</tbody>
</table>
### Table: Communications Log

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>AGENCY</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Jan. 15, 2016 / Email</td>
<td>Ministry of Culture, Tourism &amp; Sport</td>
<td>• Noted that the response sent helps in understanding where the project stands with respect to cultural heritage resources.</td>
<td>A response was not required.</td>
</tr>
</tbody>
</table>
| 7   | Apr. 12, 2016 / Email  | Ministry of Natural Resources and Forestry | • Provided review comments on the Final Summary of Existing Environmental Conditions Report – Detail Design Update.  
• Noted that any development or site alteration activities that contravene Sections 9 or 10 of the Endangered Species Act may require authorization from MNRF.  
• Confirmed MNRF has no ESA concerns for this project, as it is in a built-up area along a very active major highway, and there are no watercourses within the project limits.  
• Noted it is the proponent’s responsibility to ensure that species at risk which may be in the work area are not killed, harmed or harassed, or their habitat is not damaged or destroyed through the activities carried out on the site. | The comments were noted. A response was not required. |
| 8   | May 16, 2016 / Email   | National Capital Commission | • Notified MTO that a new Federal Approval with conditions will be required for a permanent easement on NCC lands at Hampton Park.  
• Noted that there will be four processes that will need to be completed prior to gaining access to NCC lands, including an Environmental Effects Analysis to fulfill the requirements of the Canadian Environmental Assessment Act, 2012; a Federal Land Use & Design Approval required by the National Capital Act; a Real Property Agreement to grant permanent and temporary rights; and a Land Access Permit. Contact information for the NCC staff responsible for these | A response was provided by MTO by email on May 16, 2016 which confirmed that no other federal lands are required for this project. |
The table below summarizes the communications and responses related to the project.

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>AGENCY</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS Addressed / RESPONSE SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>May 16, 2016 / Email</td>
<td>National Capital Commission</td>
<td>Inquired if the project received or is anticipated to receive federal funding. If yes, requested information regarding the federal authority that has provided or will be providing funding for the undertaking.</td>
<td>A response was provided by MTO by email on May 18, 2016 which confirmed that MTO recently submitted a business case for this project to receive funding under the federal “Building Canada Plan” through the Ministry of Economic Development, Employment and Infrastructure.</td>
</tr>
<tr>
<td>10</td>
<td>June 10, 2016 / Email</td>
<td>National Capital Commission</td>
<td>Noted that there were conversations between the MTO and NCC following construction of the Highway 417 widening from Nicholas to the Split, during which NCC requested that the maple leaves on the median light poles be increased by 15-20% to make them more visible.</td>
<td>A response was sent by WSP (formerly MMM Group) by email on February 24, 2017: Generally, the response from the public regarding the implementation of CSD elements from Nicholas to the Split has been positive. There have been no issues raised with the size or visibility of the maple leaf emblem or the noise barrier pattern design. Regarding the feasibility of implementing enlarged maple leaf emblems on the median light poles, please note that the following technical and safety considerations were used to determine the size of the maple leaf emblems at the time of the initial design of this CSD feature: o Wind load, with respect to structural impact to the stability of the light poles; o Weight, with respect to the point connection to the light poles; o Mounting height; and o Creating visual impact of the CSD feature while avoiding visual distractions to drivers. The Ministry would like to note that the design of the staggered pattern on the noise barriers can be reviewed during future Detail Design projects. However, for the current project limits, the plan is to implement the noise barrier...</td>
</tr>
</tbody>
</table>
### Comments Received and How Addressed

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>AGENCY</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
</table>
|     |                        |        | design to be consistent with the barrier walls constructed at Lees Avenue, along the westbound off-ramp to Parkdale Avenue, and in the sections of new retrofit noise barriers recently constructed between Kent Street and Lyon Street. | March 1, 2017:  
  - The NCC confirmed that they will not pursue further the enlarged sizing of the maple leaf emblems after receiving the above-noted information regarding technical and safety considerations. |
2.2.3 Public Involvement during Detail Design

2.2.3.1 Project Website

A project website was created to provide information, updates and documents to interested stakeholders. The project website is available at www.queenswayexpansioneast.com. The website includes information on the project background, study area, study process, public involvement, and the project schedule, and provides a comment submission tool.

The newspaper notices announcing the Public Information Centre are provided on the website, as well as relevant reports and the PIC display boards. The newspaper notice announcing submission of the DCR for a 30-day review period will also be provided on the website.

Following the publication of the newspaper notices advertising the PIC and leading up to the event date (July 28 to August 10, 2015), the website had 744 visits. During the two-week period following the PIC (August 11 to August 25, 2015), the website had 1089 visits.

2.2.3.2 Consultation with the General Public & Interest Groups – Letter Notifications

A project contact list was developed based on a review of members of the public, including local Community Associations, interest groups, businesses, and stakeholders who previously expressed an interest in the project during Preliminary Design and who live/work in the general vicinity of the project.

On June 18, 2015, letters were sent to affected property owners to advise them of utility pole relocations required to accommodate the proposed highway widening. The letters indicated that representatives from Hydro Ottawa, Bell and Rogers will be in direct contact to provide additional information on the relocation requirements, including scheduling, potential service interruptions and equipment upgrades. A copy of the utility relocation notification letter is provided in Appendix A.

On July 28, 2015, letters/emails were sent to members of the general public, interest groups, Community Associations, and local businesses inviting them to attend the PIC. Theses letters included information on the date, location and timing of the PIC. A copy of the PIC invitation letter is provided in Appendix A.

On July 28, 2015, PIC invitation letters were also sent to affected property owners who were identified as being directly adjacent to the location of the proposed noise barrier replacement east of Maitland Avenue. The letter also advised the property owners that the existing noise barrier at the rear of their properties will be replaced along the same section of roadway, as close as possible to the location of the existing noise barrier, but will gradually shift in alignment due to the highway widening by up to 1 m north of the existing barrier. The letter explained that although the new noise barrier would be installed on MTO property, impacts to existing vegetation and private structures that are located on MTO property are anticipated. The letters were accompanied by a plan of the proposed noise barrier location and treatment, as well as individual cross-sections for each address showing the location of the existing and proposed noise barriers and the MTO property limit. A copy of the PIC invitation letter is provided in Appendix A.

On May 25, 2017, letters were sent to members of the public, including local Community Associations, interest groups, businesses, affected property owners, and stakeholders who previously expressed interest in the project, to announce the submission of the DCR for a 30-day public review period. The
letters identified the start and end dates for the DCR review period and the addresses and hours of operation for the review locations. A copy of the Notice of Submission letter sent to members of the public is provided in Appendix A.

The following Community Associations, interest groups, and businesses were contacted:

Community Associations
- Action Sandy-Hill/Action Cote-de-Sable
- Alta Vista Community Association
- Bayshore Community Association
- Bel-Air Kensor Park Community Association
- Belltown Neighbourhood Association
- Britannia Woods Community Association
- Canterbury Community Association
- Cardinal Glen Association
- Carleton Heights and Area Residents Association
- Carlington Community Association
- Carlingwood Community Association
- Centennial Park Community Association
- Centrepointe Citizens Community Association
- Champlain Park Community Association
- Civic Hospital Neighbourhood Association
- Copeland Park Community Alliance
- Dalhousie Community Association
- Faircrest Heights Community Association
- Fairlea Community Association
- Federation of Citizens’ Associations of Ottawa
- Foster Farm Community Association
- Glabar Park Community Association
- Glebe Community Association
- Hampton Court Tenant's Association
- Hampton Iona Community Group
- Heron Park North Community Association
- Highland Park Ratepayers' Association
- Hintonburg Community Association
- Hunt Club Park Community Association
- Island Park Community Association
- Katimavik-Hazeldean Community Association
- King Edward Avenue Task Force
- Lindenlea Community Association
- Lowertown Community Association
- Manor Park Community Association
- McKellar Park Community Association
- Mechanicsville Community Association
- Michele Heights Community Association
• New Edinburgh Community Alliance
• Old Ottawa South Community Association
• Ottawa East Community Association
• Qualicum Community Group / Graham Park Group
• Queensway Terrace North Community Association
• Queensway Terrace South Ridgeview Community Association
• Hunt Club Community Organization
• Ridgemont Community Association
• Riverside Park Community & Recreation Association
• Riverview Park Community Association
• South Keys/Greenboro Community Association
• Westboro Beach Community Association
• Whitehaven Community Association
• Westboro Community Association
• Wellington Village Community Association
• Woodpark Community Association
• Woodroffe North Community Association

Interest Groups
• City Centre Coalition
• Citizens for Safe Cycling
• Transport Action Canada
• Ottawa Chamber of Commerce
• Child & Youth Friendly Ottawa
• Ottawa Field Naturalists Club
• West Village Co-tenancy Association
• Kriska Transportation
• Mobility Issues Advisory Committee
• Ontario Trucking Association
• Tibbs Transport Inc.
• Sound Foundation
• West Ottawa Board of Trade (Greater Nepean Chamber of Commerce)

Local Businesses within the Project Limits
• Turpin-Capital Collision
• The Trustees of Kitchissippi United Church
• Royal Ottawa Health Care Group/Services de Sante Royal Ottawa
• Soloway Jewish Community Centre
• Congregation Adath Shalom
• Ottawa Jewish Community School
• Ottawa Veterinary Hospital
• inMotion
• Medaglia Auto
• Neilson Dairy Limited
• Churchill Office Park (owned and managed by Manulife Financial)
• Blind Depot and Décor
• Dymon Storage
• Hampton Park Plaza
• Westgate Shopping Centre - RioCan Management Inc.
• The Regional Group
• J.L. Richards & Associates Limited
• The Healthiest Home
• Otto's Collision Centre
• CarbonOak
• Ability Janitorial
• Bemac Autobody and Painting
• Enterprise Rent-A-Car
• Customs and Immigration Union
• Canadian Cancer Society
• Coldwell Banker
• Strongplan Holdings Limited
• Sherwin-Williams
• Herzing College West
• Tobin Everedy
• McKE Engineering
• Ron Engineering and Construction
• BBS Construction Ltd.
• Merkburn Holdings
• Vanpro Inc.
• Travelodge Ottawa Hotel & Conference Centre
• Embassy West Senior Living
• Campbell Ford Sales
• Convex Energy Inc.

2.2.3.3 Newspaper Advertisements

In order to ensure general public awareness and invite anyone with an interest in the project to attend the PIC held on August 11, 2015, a notice was published in the following local newspapers:

• Ottawa Citizen (English version) Tuesday, July 28, 2015
• Ottawa Le Droit (French version) Tuesday, July 28, 2015

In order to ensure general public awareness and inform anyone with an interest in the project where the DCR may be reviewed, a notice of Submission of the DCR was published in the following local newspapers:

• Ottawa Citizen (English version) Monday, May 29, 2017
• Ottawa Le Droit (French version) Monday, May 29, 2017
Copies of the French and English notices advertising the PIC, and filing of the DCR for a 30-day public review period are provided in Appendix A.

### 2.2.3.4 Public Information Centre

A Public Information Centre (PIC) was held on August 11, 2015 at the J.A. Dulude Arena from 4:00 pm to 8:00 pm to provide external agencies, interest groups, business representatives and members of the general public with an opportunity to review and comment on the following elements of the project:

- Overall study process;
- Existing conditions in the study area;
- Plans for the proposed highway widening and rehabilitation of the Merivale Road overpass bridge;
- Construction staging and implementation; and
- Anticipated impacts and proposed mitigation.

Representatives from the MTO and the Consultant Project Team, including bilingual members, were available at the PIC to discuss the project and answer any questions.

Thirty (30) individuals signed the register at the PIC and were encouraged to complete comment sheets. Four (4) comment sheets were received. An additional nineteen (19) comments were received by email, the project website, by letter, or by phone in advance of or in the two-week comment period following the PIC. The majority of comments and questions received pertained to the following:

- Construction staging and anticipated timing, and associated traffic impacts and detours;
- Availability of the PIC materials on the project website and requests for digital copies;
- Clarification regarding the location and design treatment of noise barrier replacements;
- Construction timing of this project and other ongoing Detail Design projects in the Highway 417 corridor;
- Potential impacts to properties in the study area; and
- Inquiries regarding landscaping around the interchanges.

A copy of the Public Information Centre Summary Report, including copies of notification letters, PIC display materials, and comments received, is provided in Appendix C. Public comments received are also summarized in Table 2-2.

### 2.2.3.5 Comments Received from Members of the Public and Interest Groups

Table 2-2 provides a summary of public consultation. All comments requiring a response received a letter or email reply. Copies of comments received from members of the public and interest groups are included in Appendix D. Note that comments received during Study Commencement did not pertain to the rehabilitation and widening of Highway 417 and are therefore not included in the table.
Table 2-2: Summary of Public and Interest Groups Comments

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
</table>
| 1   | May 6, 2015 / Email    | • Inquired about the widening of Highway 417 overpasses at Parkdale Avenue and Carling Avenue and when additional lanes will be added/open for use. | Response sent by email by WSP (formerly MMM Group) on May 25, 2015:  
• Please be advised that, as per the recommended plan approved through the Preliminary Design and Environmental Assessment (EA) Study for Highway 417 from Highway 416 to Anderson Road (2008), there are no plans to widen Highway 417 at Parkdale Avenue. The study recommended retaining the existing number of lanes in each direction from Carling Avenue to Metcalfe Street.  
• A Detail Design and Environmental Assessment Study is currently being undertaken for Highway 417 from west of Maitland Avenue to east of Island Park Drive. The design includes the widening of Highway 417 to four lanes in each direction between Maitland Avenue and Carling Avenue. The study is targeted for completion in the fall of 2015. A Public Information Centre (PIC) for this study is planned to take place this summer 2015, and will provide further details regarding: existing conditions in the study area; the recommended plan; construction and traffic staging and anticipated timing; and, anticipated environmental impacts and the associated mitigation strategy.  
• Please be advised that we have added you to the study mailing list and you will be notified directly of the upcoming PIC and 30-day public review of the Design and Construction Report. Should you require additional information, please feel free to contact the undersigned. |
| 2   | June 22, 2015 / Phone  | • Received notification from WSP (formerly MMM Group) about the project and inquired about changes at the rear of his property with the noise wall.  
• Did not yet receive letter about services coming off the poles at the rear of the property but Hydro was on site looking into it. | Responded to directly by MTO. |
| 3   | July 28, 2015 / Phone  | • Received email notification of PIC and called to inquire about the nature of the email attachment prior to opening.  
• Inquired how email was included on contact list. | Response was provided by phone by WSP (formerly MMM Group) on July 28, 2015 and explained that the individual was included in the original study contact list from Preliminary Design. |
| 4   | July 28, 2015 / Email  | • Due to the location of their property, is interested in the project but will be unable to attend the Open House. It is requested that Preliminary Design plans (PDF) and any other pertinent | A letter was provided by WSP (formerly MMM Group) on September 1, 2015 and included the following:  
• A link to the PIC display materials on the project website;  
• A description of property impacts to the JL Richards property during |
<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>July 28, 2015 / Email</td>
<td>• Stated they do not know why they received the notice as they do not live in Ottawa.</td>
<td>Response was provided by email by WSP (formerly MMM Group) on July 28, 2015 to confirm the contact would be removed from the study contact list.</td>
</tr>
</tbody>
</table>
| 6   | Aug. 3, 2015 / Email   | • Inquired if trees will be planted on the side of ramps and if the soil would be suitable for fruit trees, which the public could have access to. If not possible, inquired if white pine trees would be planted to hide the sight of the Queensway. | A response was sent by email by WSP (formerly MMM Group) on Jan. 14, 2016 and included the following:  
  • Providing access for the public to enter the open space areas adjacent to Highway 417 ramps within the MTO right-of-way is not feasible from a public safety perspective. Furthermore, the soil quality within the Highway 417 right-of-way is not suitable for plantings intended for public consumption, due to impacts related to vehicle emissions, road salt, etc.  
  • Please be advised that a landscape plan is being prepared as part of the Recommended Plan for this project. Proposed landscaping is illustrated in the display materials prepared for the Public Information Centre which was held on August 11, 2015. The PIC display materials are available for download at: http://queenswayexpansioneast.com/highway-417-rehabilitation-and-widening-from-west-of-maitland-avenue-to-east-of-island-park-drive/public-involvement/.  
  • Please be advised that you will be notified directly of the 30-day public review of the Design and Construction Report for this project. |
| 7   | Aug. 11, 2015 / Email  | • Informed that he would not be able to make the meeting. | A response was not required. |
| 8   | Aug. 11, 2015 / Email  | • Inquired if it would be possible to build the city around and above the highway to maximize the use of land if one wants to grow plants. | See response for Comment #6. |
| 9   | Aug. 11, 2015 / PIC Comment Sheet | • Requested copies of the detailed design of the barrier replacements (Drawing of existing barrier vs. proposed barrier)  
• Inquired if the existing cedar hedges in their backyard will be impacted and if they are to be relocated, if the expense will be covered by MTO.  
• Concerned that the removal of the hedges will | A response was sent by WSP (formerly MMM Group) on Feb. 5, 2016 and included the following:  
  • Please be advised that a letter was sent to you on July 28, 2015 inviting you to the Public Information Centre held on Tuesday, August 11, 2015, and included notification that your property has been identified as being directly adjacent to the location of the proposed noise barrier. The letter included the following attachments, which are also attached in this email response: |
have a negative impact on their yard.

- A general plan showing the location of the MTO property line at the rear of the properties along [address redacted], and the location of the proposed noise barrier on the north side of Highway 417 east of Maitland Avenue; and
- a cross section showing the locations of the existing noise barrier and the proposed noise barrier as it relates to [address redacted] and the location of the MTO property line.
- Please be advised that the new 5 m high noise barrier will be installed within the MTO right-of-way along the same section of roadway from east of Maitland Avenue to approximately Broadview Avenue. The new noise barrier will be installed as close as possible to the location of the existing noise barrier, but will gradually shift in alignment due to the highway widening by up to 1 m north of the existing barrier location.
- Regarding the removal of vegetation on the residential side of the proposed noise barrier, the cross section also shows the limits within which all existing vegetation will have to be removed to accommodate the construction of the new noise barrier. Vegetation removal is only required within a portion of the MTO right-of-way. If the cedar hedges on your property are located within the MTO right-of-way (i.e. beyond the residential property line), the MTO will not be providing compensation for their removal.
- Please be advised that you will be notified directly of the 30-day public review of the Design and Construction Report for this project. Should you have any further questions or comments, please feel free to contact the undersigned.

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Aug. 11, 2015 / PIC Comment Sheet</td>
<td>Inquired if consultants are aware that the Kitchissippi United Church also operates as a provincially licensed daycare facility in the basement (Ottawa Montessori School) and has a playground on the west side of the building, immediately south to the 417. It is their understanding that daycare centres are priority areas for the installation of noise barriers and would like to see a new noise barrier installed in that section. Inquired if there are design elements that can be included at the base of the on-ramps and off-ramps to enhance pedestrian safety. Problematic areas include the on-ramp just west of the Westgate Mall (417 east-bound on-ramp) and the off-ramp for westbound lanes existing on to</td>
<td>A response was sent by WSP (formerly MMM Group) on Feb. 5, 2016 and included the following: Please be advised that daycare facilities are not considered to be Noise Sensitive Areas when located adjacent to existing freeways, and therefore do not qualify for any noise attenuation measures under the MTO Noise Policy. A Noise Sensitive Area is considered to be a residential land use that has an associated Outdoor Living Area (OLA), which does not include apartment balconies or paved areas for multiple dwelling residential units. Daycares are only considered to be a Noise Sensitive Area where new freeway/highway corridors are planned. As such, the extension of the noise barrier on the south side of the highway further west towards Merivale Road is not considered to be warranted at this time. Regarding potential design elements to enhance pedestrian safety at the Highway 417 on- and off-ramps within the project limits, please be advised that these considerations are currently under review as part of the Detail Design process.</td>
</tr>
<tr>
<td>NO.</td>
<td>DATE / FORM OF CONTACT</td>
<td>COMMENTS RECEIVED</td>
<td>HOW IT WAS ADDRESSED / RESPONSE SENT</td>
</tr>
<tr>
<td>-----</td>
<td>------------------------</td>
<td>-------------------</td>
<td>-------------------------------------</td>
</tr>
</tbody>
</table>
|     |                        | Carling Ave at Kirkwood.  
• Concerned with the barrier height on the north side of the Island Park Drive 417 overpass. Safety concerns with snowplows travelling in the westbound lane pushing snow over the barrier and falling onto the road and sidewalks along Island Park Drive creating a safety hazard for both pedestrians and vehicles. Inquired about the requirements to ensure that snow is not pushed out on to roadways under overpasses and if the barriers can be replaced with a higher barrier (similar to the south side/eastbound lanes). | • Regarding potential safety issues related to snow clearing on Highway 417 and snow being pushed over the existing highway traffic barrier on the north side of the highway at Island Park Drive, please be advised that the MTO has reviewed the need for care in the plowing operations to minimize snow thrown onto municipal streets below with the winter maintenance service provider.  
• Please be advised that you will be notified directly of the 30-day public review of the Design and Construction Report for this project. Should you have any further questions or comments, please feel free to contact the undersigned. |
| 11  | Aug. 11, 2015 / PIC Comment Sheet | Requested extending the sound barrier on the south side of the 417 from the Carling overpass to the existing one at Island Park Drive. | A response was sent by WSP (formerly MMM Group) by email and regular mail on Feb. 5, 2016 and included the following:  
• Please be advised that noise attenuation achieved through the installation of noise barriers is highest for the first row of residential receivers. The effectiveness of noise barriers is significantly reduced for residences that are located several blocks from the highway. The first row of receivers in the area south of Highway 417 between the Carling Avenue interchange and Island Park Drive is characterized by commercial properties, such as a car dealership and the Westgate Shopping Centre. Commercial properties are not considered to be Noise Sensitive Areas, and therefore do not qualify for any noise attenuation measures under the MTO Noise Policy. A Noise Sensitive Area is considered to be a residential land use that has an associated Outdoor Living Area (OLA), which does not include apartment balconies or paved areas for multiple dwelling residential units. As such, the installation of a noise barrier on the south side of the highway between the Carling Avenue interchange and the existing noise barrier at Island Park Drive is not warranted.  
• Please be advised that you will be notified directly of the 30-day public review of the Design and Construction Report for this project. Should you have any further questions or comments, please feel free to contact the undersigned.  
• A hard copy of this letter is also being sent to you by regular mail, as requested on the PIC comment sheet. |
<p>| 12  | Aug. 11, 2015 / PIC Comment Sheet | Requested an electronic copy of the presentation. | A digital copy of the PIC display boards was forwarded by WSP (formerly MMM Group) on Aug. 17, 2015. |</p>
<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Aug. 11, 2015 / PIC Sign In Sheet</td>
<td>• Requested a copy of the PIC boards.</td>
<td>A digital copy of the PIC display boards was forwarded by WSP (formerly MMM Group) on Aug. 17, 2015.</td>
</tr>
</tbody>
</table>
| 14  | Aug. 12, 2015 / Email | • Attended PIC as a representative for a property within the project limits.  
• Requested a copy (PDF) of the images and descriptions that were on display at the PIC. | WSP (formerly MMM Group) provided a response by email and phone on August 12, 2015 and provided a digital copy of the PIC boards and a link to the project website where the PIC boards will be available for download. |
| 15  | Aug. 13, 2015 / Phone | • Requested a copy of the PIC boards. | A digital copy of the PIC display boards was forwarded by WSP (formerly MMM Group) on Aug. 17, 2015. |
| 16  | Aug. 20, 2015 / Email | • Inquired when traffic will be rerouted and the duration of the detours. | A response was sent by email by WSP (formerly MMM Group) on Jan. 14, 2016 and included the following:  
• Please be advised that information on traffic management during construction is available as part of the display materials prepared for the Public Information Centre, which was held on August 11, 2015. The display materials are available for download on the project website at:  
• Please see the attached display board which provides a summary of the ramp and road closures required during the various construction stages.  
• Please be advised that you will be notified directly of the 30-day public review of the Design and Construction Report for this project. Should you have any further questions or comments, please feel free to contact the undersigned. |
| 17  | Aug. 26, 2015 / Phone | • Requested a package of information on how their property will be impacted. | A meeting was held with the property owner, representatives from MTO Property and the Design Manager from WSP (formerly MMM Group) the week of November 30, 2015 to discuss potential property impacts. |
| 18  | Aug. 28, 2015 / Email | • Suggested replacing the noise barriers on the north side of the Queensway east of Island Park Drive which are in a state of disrepair.  
• Suggested extending the noise barrier on the north side of the Queensway from Island Park Drive further west to the Hampton Park baseball diamonds to provide additional attenuation of noise to the residential homes on Island Park Crescent, which will increase as a result of an additional westbound lane at the Merivale bridge, | A response was sent by WSP (formerly MMM Group) on Feb. 5, 2016 and included the following:  
• Regarding the replacement of noise barriers on the north side of the highway east of Island Park Drive, please be advised that under the Ministry’s Queensway improvement plan all existing metal noise barriers throughout the Highway 417 corridor are planned for replacement over time. In order to minimize impacts to the travelling public, replacements will be completed if existing noise barriers are impacted by construction works in the highway corridor or if they are at the end of their service life, and will be designed to meet the Ministry’s current design standard at the time of construction.  
• Regarding the extension of the noise barrier on the north side of the Queensway from Island Park Drive further west to the Hampton Park baseball diamonds, please be advised that the Ministry’s Queensway improvement plan does not currently propose any changes to the noise barrier in that area. |
Highway 417 Rehabilitation and Widening from West of Maitland Avenue to East of Island Park Drive (GWP 4058-01-00)  
Design and Construction Report

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
</table>
| 19  | September 7, 2015 / Email | - Described a 2013 incident of a car breaking through noise barrier and landing in backyard on the north side of Highway 417, just west of the Harmer Street pedestrian overpass.  
- Since this incident occurred, a temporary concrete barrier was installed and the concrete barrier has been made permanent in August 2015.  
- Expressed concerns related to the safety of the such, a date for the retrofit of noise barriers along the north side of Highway 417 east of Island Park Drive has not been determined at this time. The timing of future noise barrier replacements is dependent on provincial priorities and the availability of funding.  
- Regarding an extension of the noise barrier on the north side of the highway from Island Park Drive further to the west, please be advised that a noise assessment was completed as part of Preliminary Design which found that the widening of the highway will not result in increased noise levels greater than 5 dBA and that increases of this magnitude are not likely to be perceptible. Please be advised that the north side of the Merivale Road overpass structure is not being widened; an additional westbound lane will be added west of the structure which is not anticipated to result in significant increased noise levels in the area.  
- Please be advised that under the MTO Noise Policy, the installation of new noise barriers is only considered to mitigate noise for Noise Sensitive Areas (i.e. residential units, hospitals, nursing homes) with associated Outdoor Living Areas (OLAs). An extension of the existing noise barrier on the north side of the highway west of Island Park Drive would not provide further noise attenuation to residential areas, as the areas immediately adjacent to the highway west of Island Park Drive are open space / Hampton Park.  
- The landscape plan presented as part of the Recommended Plan at the Public Information Centre will be refined through the Detail Design process; a final landscape plan will be included in the Design and Construction Report (DCR) for this project and will only include plantings within the MTO right-of-way. Any additional plantings at Hampton Park would be under the jurisdiction of the National Capital Commission or the City of Ottawa.  
- Please be advised that you have been added to the study mailing list and will be notified directly of 30-day public review of the DCR. Should you require additional information, please feel free to contact the undersigned. | A response was sent by WSP (formerly MMM Group) on Feb. 5, 2016 and included the following:  
- The temporary concrete barrier was replaced with a permanent concrete barrier as part of the construction of the Highway 417 Parkdale Avenue Interchange Operational Improvements project.  
- Please be advised that the replacement of existing noise barriers as part of the current Detail Design project is limited to replacements within the project limits on Highway 417 between Maitland Avenue and Island Park Drive. The existing 4 m noise barrier on the on the north side of the highway east of Island Park Drive has not been determined at this time. The timing of future noise barrier replacements is dependent on provincial priorities and the availability of funding.  
- Regarding an extension of the noise barrier on the north side of the highway from Island Park Drive further to the west, please be advised that a noise assessment was completed as part of Preliminary Design which found that the widening of the highway will not result in increased noise levels greater than 5 dBA and that increases of this magnitude are not likely to be perceptible. Please be advised that the north side of the Merivale Road overpass structure is not being widened; an additional westbound lane will be added west of the structure which is not anticipated to result in significant increased noise levels in the area.  
- Please be advised that under the MTO Noise Policy, the installation of new noise barriers is only considered to mitigate noise for Noise Sensitive Areas (i.e. residential units, hospitals, nursing homes) with associated Outdoor Living Areas (OLAs). An extension of the existing noise barrier on the north side of the highway west of Island Park Drive would not provide further noise attenuation to residential areas, as the areas immediately adjacent to the highway west of Island Park Drive are open space / Hampton Park.  
- The landscape plan presented as part of the Recommended Plan at the Public Information Centre will be refined through the Detail Design process; a final landscape plan will be included in the Design and Construction Report (DCR) for this project and will only include plantings within the MTO right-of-way. Any additional plantings at Hampton Park would be under the jurisdiction of the National Capital Commission or the City of Ottawa.  
- Please be advised that you have been added to the study mailing list and will be notified directly of 30-day public review of the DCR. Should you require additional information, please feel free to contact the undersigned. |
<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>rotting metal noise barrier and inquired if the noise barrier would also be replaced.</td>
<td>Maitland Avenue to Broadview Avenue will be removed and replaced by a 5 m noise barrier, and the existing 4 m noise barrier on the south side of the highway between Merivale Road and Island Park Drive will be removed and replaced with a 4 m noise barrier in the same location.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Under the Ministry’s Queensway improvement plan, all existing metal noise barriers throughout the Highway 417 corridor are planned for replacement over time. To minimize impacts to the travelling public, replacements will be completed if existing noise barriers are impacted by construction works within the highway corridor or if they are at the end of their service life. Noise barrier replacements will be designed to meet the Ministry’s current design standard at the time of construction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Please note that the timing of construction for future noise barrier replacements is dependent on provincial priorities and the availability of funding. As such, a date for the replacement of the noise barriers on the north side of Highway 417 west of Harmer Street has not been determined at this time.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Please be advised that you will be notified directly of the 30-day public review of the Design and Construction Report for this project. Should you have any further questions or comments, please feel free to contact the undersigned.</td>
</tr>
<tr>
<td>20</td>
<td>September 10, 2015 / Email</td>
<td>Inquired about the long-term closure of the Carling Avenue on-ramp to westbound Highway 417 and whether the ramp would eventually be reinstated following the completion of construction.</td>
<td>A response was sent by email by WSP (formerly MMM Group) on Jan. 14, 2016 and included the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Please be advised that the Carling Avenue westbound on-ramp to Highway 417 westbound will only be closed during Stage 1 of construction on Highway 417, for a maximum duration of 2 weeks. During this closure, traffic will be re-directed to the Maitland Avenue on-ramp to Highway 417 westbound.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The long-term closure noted on the project website will affect the Carling Avenue westbound on-ramp to Highway 417 eastbound, which will be closed for approximately 3 years, including the winters. The closure will take place at the start of construction, with the ramp reopening at the start of Stage 2 of construction on Highway 417. Information regarding traffic management during construction, including a summary of the required ramp and road closures is available as part of the display materials prepared for the Public Information Centre, which was held on August 11, 2015. The display materials are available for download on the project website at: <a href="http://queenswayexpansioneast.com/highway-417-rehabilitation-and-widening-from-west-of-maitland-avenue-to-east-of-island-park-drive/public-involvement/">http://queenswayexpansioneast.com/highway-417-rehabilitation-and-widening-from-west-of-maitland-avenue-to-east-of-island-park-drive/public-involvement/</a>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Please be advised that you will be notified directly of the 30-day public review of the Design and Construction Report for this project. Should you have any</td>
</tr>
<tr>
<td>NO.</td>
<td>DATE / FORM OF CONTACT</td>
<td>COMMENTS RECEIVED</td>
<td>HOW IT WAS ADDRESSED / RESPONSE SENT</td>
</tr>
<tr>
<td>-----</td>
<td>------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 21  | February 4, 2016 / Email | • Recently purchased a property on [address redacted] and inquired regarding the plan to replace the noise barrier wall.  
• Requested the latest update and to be added to the study contact list. | The individual was added to the study contact list on Feb. 4, 2016.  
A response was sent by email by WSP (formerly MMM Group) on Mar. 24, 2016 and included the following:  
• A letter was sent to affected residents on [address redacted] on July 28, 2015 inviting them to the Public Information Centre held on Tuesday, August 11, 2015, and included notification that the properties had been identified as being directly adjacent to the location of the proposed noise barrier. The letter included the following attachments:  
  • a general plan showing the location of the MTO property line at the rear of the properties along [address redacted], and the location of the proposed noise barrier on the north side of Highway 417 east of Maitland Avenue; and  
  • a cross section showing the locations of the existing noise barrier and the proposed noise barrier as it relates to individual residences and the location of the MTO property line.  
• Please find the general noise barrier location plan referenced above attached to this email. A cross section drawing for your specific address on [address redacted] can be provided upon request.  
• Please be advised that a new 5 m high noise barrier will be installed within the MTO right-of-way along the same section of roadway from east of Maitland Avenue to approximately Broadview Avenue. The new noise barrier will be installed as close as possible to the location of the existing noise barrier, but will gradually shift in alignment due to the highway widening by up to 1 m north of the existing barrier location.  
• The replacement of the noise barrier will require vegetation removal within a portion of the MTO right-of-way. The individual cross sections show the limits within which all existing vegetation will have to be removed to accommodate the construction of the new noise barrier. If vegetation at the rear of the property is located within the MTO right-of-way (i.e. beyond the residential property line), the MTO will not be providing compensation for the removals.  
• Please be advised that you have been added to the study contact list and will be notified directly of the 30-day public review of the Design and Construction Report for this project. Should you have any further questions or comments, please feel free to contact the undersigned.  |
<p>| 22  | February 24, 2016 / Email | • Inquired as to the exact scope of the propose | The individual was added to the study contact list on Feb. 24, 2016.  |</p>
<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
</table>
|     |                        | noise barrier and if the barrier would extend to [street name redacted].  
|     |                        | • Inquired as to when the noise barrier will be completed. |
| 23  | May 4, 2016 / Email    | • Requested a response to their previous email and inquired if the project is anticipated to begin in 2016.  
|     |                        | • Inquired who is contracted to cut trees as they would like to approach the Contractor to cut one tree on their lot. | A response was sent by email by WSP (formerly MMM Group) on Mar. 24, 2016 and included the following:  
|     |                        | • Please be advised that the replacement of existing noise barriers as part of the current Detail Design project is limited to replacements within the project limits on Highway 417 between Maitland Avenue and Island Park Drive. The existing 4 m noise barrier on the north side of the highway east of Maitland Avenue to approximately Broadview Avenue will be removed and replaced by a 5 m noise barrier, and the existing 4 m noise barrier on the south side of the highway between Merivale Road and Island Park Drive will be removed and replaced with a 4 m noise barrier in the same location.  
|     |                        | • Under the Ministry’s Queensway Improvement Plan, all existing metal noise barriers throughout the Highway 417 corridor are planned for replacement over time. The design for the replacement of existing noise barriers from west of Island Park Drive to west of the O-Train will be undertaken as part of an upcoming MTO Detail Design project, although details regarding the commencement of this project are not available at this time. To minimize impacts to the travelling public, replacements will be completed if existing noise barriers are impacted by construction works within the highway corridor or if they are at the end of their service life. Noise barrier replacements will be designed to meet the Ministry’s current design standard at the time of construction.  
|     |                        | • Please note that the timing of construction for future noise barrier replacements is dependent on provincial priorities and the availability of funding. As such, a date for the replacement of the noise barriers on the south side of Highway 417 at [street name redacted] has not been determined at this time.  
|     |                        | • Please be advised that you will be notified directly of the 30-day public review of the Design and Construction Report for the current Detail Design project. Should you have any further questions or comments, please feel free to contact the undersigned. | A response was provided by WSP (formerly MMM Group) by email on May 12, 2016 and included the following:  
|     |                        | • Further to our phone conversation this morning, please be advised that we sent a response to your email from February 4, 2016 on March 24, 2016 (see attached email). The email included the attached plan for the noise barrier replacement which is proposed to occur at the rear of the [address redacted] properties, showing the location of the MTO property line at the rear of the [address redacted] properties, and the location of the proposed noise barrier... |
on the north side of Highway 417 east of Maitland Avenue. Please also find attached a cross-section for your specific property at [address redacted] which shows the location of the MTO property line, the existing noise barrier to be removed and the proposed new noise barrier, as well as the location of any required vegetation removals within the MTO right-of-way.

- The Detail Design and Environmental Assessment Study is ongoing and is planned to be completed this summer 2016. Construction is anticipated to commence in fall 2016 and will continue over multiple stages for a duration of 4 years. Construction of the noise barrier at the rear of the [address redacted] properties is anticipated to take place in 2017 during Stage 1 of construction.
- At this time, a Contractor has not been selected for the overall construction on Highway 417 or tree removals. MMM Group representatives are planning to undertake a review of the vegetation within the MTO right-of-way at the rear of the [address redacted] properties during the week of May 16, 2016. At this time, a specific date for the site visit is still being determined. We would like to request your permission to enter your property to undertake this review at this time – a letter can be emailed to you in advance of this visit. Based on our phone conversation, we understand that you would like to be present during the site visit and are concerned about a large white oak tree on your property.
- As mentioned on the phone, the Consultant Design Manager, Nadia Diczki, will be on site during the vegetation and is cc’ed on this email. Nadia will be joined by representatives from CSW, who are undertaking the landscape design for the Highway 417 widening project.
- Please be advised that you have been added to the study contact list and will be notified directly of the 30-day public review of the Design and Construction Report for this project. Should you have any additional questions or concerns regarding the proposed noise barrier replacement or the planned vegetation review, please feel free to contact myself or Nadia.

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>May 12, 2016 / Phone</td>
<td>- Called to inquire about the proposed noise barrier replacement at the rear of the [address redacted] properties.</td>
<td>A response was provided by WSP (formerly MMM Group) by phone on May 12, 2016.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Noted that they did not receive the response to their original comment.</td>
<td>- It was explained that a response to the individual’s original comment from February 4, 2016 was sent by email on March 26, 2016 which contained a description of the proposed noise barrier replacement and a location plan showing the noise barrier and the MTO property line. The response requested confirmation of the individual’s address so that a detailed cross-section could be provided pertaining to the specific property.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Expressed concerns about impacts to a large white oak tree on their property.</td>
<td>- The individual was informed that a response to their comment from May 4, 2016 would be issued shortly and that a vegetation survey for the rear of the</td>
</tr>
</tbody>
</table>
properties impacted by the proposed noise barrier replacement is planned for the week of May 16, 2016. The individual was informed that a request for permission to enter their property would be included in the forthcoming email response.

- The individual was informed that only vegetation located within the MTO property line would be removed, and that required removals would be confirmed on site.

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
</table>
| 25  | May 12, 2016 / Email   | • Confirmed permission to enter their property to conduct a review of vegetation.  
• Requested to be notified one hour in advance of the site visit so that they may be present. | A response was provided by WSP (formerly MMM Group) by email on May 12, 2016 which confirmed that the individual’s contact information would be provided to the project team members who will be conducting the site visits in order to inform the individual of the timing of the site visit so that they may be present. |
| 26  | June 8, 2016 / Email   | • Inquired when the community meeting to notify property owners would be held. | A response was provided by WSP (formerly MMM Group) by email on February 22, 2017 and included the following:  
• A Public Information Centre (PIC) was held for this study on August 11, 2015. The display materials presented at the PIC are available for download on the project website at: http://queenswayexpansioneast.com/highway-417-rehabilitation-and-widening-from-west-of-maitland-avenue-to-east-of-island-park-drive/public-involvement/.  
• Property owners whose properties may be directly impacted by the proposed widening and rehabilitation of Highway 417 within the project limits have been notified by the Ministry. |
| 27  | June 10, 2016 / Email  | • Noted that the long term closure of Carling Westbound ramp is unacceptable, as this is a major and necessary exit off of Highway 417.  
• Concerned that the closure will result in a major impact to the Parkdale westbound exit which is already failing and results in backups from Parkdale leading onto the highway. | A response was provided by WSP by email on May 23, 2017 and included the following:  
• The proposed construction and traffic staging for the project does not include any long-term closure of any off-ramps at the Carling Avenue interchange. Short-term closures of the Highway 417 Westbound Off-ramp to Carling Avenue Westbound and the Highway 417 Eastbound Off-ramp to Carling Avenue Eastbound are proposed for an approximate duration of 4 weeks at each ramp during Stage 1 of construction to facilitate construction.  
• To clarify, a longer duration temporary closure of the Carling Avenue E-E on-ramp (on-ramp from Carling Avenue westbound to Highway 417 eastbound, located adjacent to Westgate Shopping Centre) is proposed for an approximate duration of three (3) years, including some winters. The ramp closure would close at the start of construction in 2017 and will reopen for the first winter. At the start of the second construction season, the ramp will be closed again and will remain closed until the end of construction in 2020, including winter months. During this closure, it is anticipated that traffic will
<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>access Highway 417 eastbound using the Carling Avenue W-E on-ramp (on-ramp from Carling Avenue eastbound to Highway 417 eastbound), located within the same interchange immediately to the west of the E-E on-ramp and accessible via Carling Avenue eastbound at Kirkwood Avenue.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Advance notifications will be provided for any upcoming ramp closures during construction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• It should be noted that a separate Detail Design and EA Study is being completed for the proposed permanent closure of the Carling Avenue E-E on-ramp (WP 4255-15-01). The Highway 417 widening between Maitland Avenue and Island Park Drive will result in future operational and safety issues due to the introduction of a significantly substandard merge condition for the existing Carling Avenue W-E on-ramp. The permanent closure of the low volume E-E on-ramp is proposed as a means to accommodate the highway widening and provide a standard-length merge lane for the high volume W-E on-ramp, while maintaining access to Highway 417 eastbound within the Carling Avenue interchange. Should the Detail Design and EA Study be approved, the E-E on-ramp will remain closed permanently following construction of the highway widening, and mitigation for redirected traffic will be implemented at the Carling Avenue westbound / Kirkwood Avenue and Carling Avenue / Saigon Court intersections. A Transportation Environmental Study Report (TESR) has been prepared to document the study and is available for a 30-day public review period until May 27, 2017 on the project website (<a href="http://www.highway417carling-eramp.com">www.highway417carling-eramp.com</a>) and at select review locations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Please be advised that you will be notified directly of the 30-day public review of the Design and Construction Report for this study.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Does not believe that widening the highway will address traffic issues.</td>
<td>A response was provided by WSP by email on May 29, 2017 and included the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suggested that congestion on the highway is caused by lack of visibility for motorists (e.g. reduced visibility approaching the hill near the Carling ramps on Highway 417 Eastbound).</td>
<td>• In 2008, the MTO, in consultation with the City of Ottawa, completed a Preliminary Design and Environmental Assessment (EA) study to review infrastructure and operational issues on Highway 417 (Ottawa Queensway) from west of Highway 416 easterly to Anderson Road (GWP 663-93-00), in response to growing traffic volumes in the City of Ottawa. The study examined existing and future problems and opportunities and provided a Recommended Plan to guide the evolution of the Queensway over the next 20 years. Through Ottawa’s core, the Recommended Plan includes widening Highway 417 from three to four mainline lanes in each direction from Highway 416 to Carling Avenue and from Metcalfe Street to Ottawa Road (OR) 174, and retaining the existing number of mainline lanes from Island Park Drive to Metcalfe Street.</td>
</tr>
<tr>
<td>28</td>
<td>June 10, 2016 / Email</td>
<td>A similar issue is present on Highway 417 Westbound near Island Park Drive where the road curves to the left and the middle barrier is high enough to block forward visibility for the furthest left lane.</td>
<td></td>
</tr>
</tbody>
</table>

WSP  
May 2017  
Page 40
Highway 417 Rehabilitation and Widening from West of Maitland Avenue to East of Island Park Drive (GWP 4058-01-00)

Design and Construction Report

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Strategic widening of the Queensway will help to minimize congestion, and reduce the number of hours in a day prone to congestion. Highway expansion will also provide safety benefits, as a significant part of the collision history is related to recurring congestion. A strategic widening will provide benefits to the overall road network (e.g. if additional traffic can be accommodated on the freeway, infiltration to arterial and local streets can be reduced).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• The planning horizon of the 2008 Preliminary Design and EA Study for the evolution of Highway 417 was 20 years, and the study and Recommended Plan are still considered valid.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• The current Detail Design and EA study is for the widening and rehabilitation of Highway 417 from 0.5 km west of Maitland Avenue to 0.6 km east of Island Park Drive and is anticipated to be completed in spring 2017. The highway will be widened to four lanes in each direction from Maitland Avenue to Carling Avenue, at which point it will tie in to the existing 4th lane that starts at Carling (heading eastbound). The project has received both federal and provincial funding for construction, which is expected to begin in late summer/early fall 2017 and be completed in 2020.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• In the eastbound direction, the issue you note is related to the highway profile. The Preliminary Design study identified the issue that the vertical alignment of the highway between approximately Clyde Avenue and Island Park Drive is substandard for a design speed of 120 km/h. However, the study did not recommend improvements because an examination of the collision experience along this segment did not reveal any significant history of collisions associated with these curves. In order to improve the design speed of the vertical crest curves, it would be necessary to flatten the grades approaching the curves. This would require raising the elevation of Highway 417 approaching each of the curves and would result in significant impacts, such as the construction of additional traffic detours and retaining walls, impacts to existing bridges to fit a new highway alignment, removal of landscaping, and longer duration of construction for the highway widening. As a safety problem was not identified, and due to the significant impacts associated with making improvements to the vertical alignment, other methods, such as positive guidance and signing, were recommended to address these geometric deficiencies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• As part of the current Detail Design assignment, there will be improvements to the ATMS system (i.e. digital message boards); the purpose of the ATMS system is to advise motorists of real-time updates on traffic conditions on the highway. Two digital ATMS signs will be installed within the project limits.</td>
</tr>
</tbody>
</table>
In the westbound direction, the Preliminary Design study examined the horizontal issue you have noted. Again, no significant collision history was identified and no recommendations were included in the Preliminary Design recommended plan to alter the highway geometry. Within the project's limits for the current Detail Design assignment, all standards for stopping sight distance based on the horizontal geometry have been met.

Please be advised that you have been added to the study contact list and will be notified directly of the 30-day public review of the Design and Construction Report for this study.

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
</table>
| 29  | June 12, 2016 / Email  | • Lives near Maitland interchange.  
• Noted if the highway is widening .5 km west of the bridge that includes their property. Inquired if new and improved noise barrier will be installed at the rear of their property and when. | A response was provided by WSP by email on May 23, 2017 and included the following:  
• Private properties west of Maitland Avenue will not be impacted by the current detail design study for the widening and rehabilitation of Highway 417 from west of Maitland Avenue to east of Island Park Drive. The project limits extend west of Maitland Avenue for traffic and construction staging. Further information regarding the future replacement of noise barriers located west of Maitland Avenue is provided below.  
• The replacement of existing noise barriers as part of the current detail design project is limited to replacements within the project limits on Highway 417 east of Maitland Avenue to Island Park Drive. The existing 4 m noise barrier on the north side of the highway east of Maitland Avenue to approximately Broadview Avenue will be removed and replaced by a 5 m noise barrier, and the existing 4 m noise barrier on the south side of the highway between Merivale Road and Island Park Drive will be removed and replaced with a 4 m noise barrier in the same location.  
• Under the Ministry’s Queensway Improvement Plan, all existing metal noise barriers throughout the Highway 417 corridor are planned for replacement over time. To minimize impacts to the travelling public, replacements will be completed if existing noise barriers are impacted by construction works within the highway corridor or if they are at the end of their service life.  
• Noise barrier replacements will be designed to meet the Ministry’s current design standard at the time of construction. The replacement of existing noise barriers along Highway 417 west of the Maitland Avenue interchange will be undertaken as part of the future widening and rehabilitation of Highway 417 to four lanes in each direction from Highway 416 to Maitland Avenue, which will undergo a Detail Design and Environmental Assessment Study planned to begin shortly.  
• Please note that the timing of construction for future noise barrier |
<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>replacements is dependent on provincial priorities and the availability of funding. As such, a date for the replacement of the noise barriers northwest of the Maitland Avenue interchange has not been determined at this time.</td>
</tr>
<tr>
<td>30</td>
<td>July 9, 2016 / Email</td>
<td>Inquired if the noise barrier along the Highway 417 off-ramp to Island Park Drive (Exit 123) will be replaced as part of this project, as the existing barrier in extremely corroded and badly pitted and in serious need of replacement.</td>
<td>A response was provided by MTO by email on July 12, 2016 and confirmed that the Island Park Drive off-ramp section of noise barrier is not located within the current project limits for the highway widening between Maitland Avenue and Island Park Drive. It is the ministry's intention to replace all of the old steel noise barrier along the Ottawa Queensway, and since last summer, replacement of the noise barrier in question has been grouped with the Ministry's bridge replacement/rehabilitation project for Preston Street, Rochester Street, Booth Street, Bronson Avenue, and Percy Street, arising from the Preliminary Design and Environmental Assessment Study of the Ottawa Queensway's Mid-town Bridges from Holland Avenue to O'Connor. MTO noted that the consultant acquisition phase was underway and that the design is expected to begin in the coming months. The MTO contact for that project was provided.</td>
</tr>
<tr>
<td>31</td>
<td>July 18, 2016 / Email</td>
<td>Requested an update on the noise barrier work at Ernest Avenue. Inquired if they could keep the sidings of the existing barrier once it is removed.</td>
<td>A response was provided by WSP (formerly MMM Group) by email on February 22, 2017 and included the following: Overall construction of the project is anticipated to commence as early as summer 2017 and is currently scheduled for completion in 2020. The replacement of the noise barrier at the rear of Ernest Avenue is anticipated to take place in summer 2017. Regarding salvaging of the existing noise barrier walls once removed, the materials will become the property of the Contractor.</td>
</tr>
<tr>
<td>32</td>
<td>September 22, 2016 / Email</td>
<td>Inquired if construction is still scheduled to begin in fall 2016.</td>
<td>A response was provided by WSP (formerly MMM Group) by email on February 22, 2017 and confirmed that construction is anticipated to commence as early as summer 2017 and is currently scheduled for completion in 2020.</td>
</tr>
<tr>
<td>33</td>
<td>September 27, 2016 / Email</td>
<td>Noted no further information on the status of the project has been received. As the widening will impact their property, inquired when the work will commence and where updated information can be found. Also inquired when the noise barrier adjacent to their property will be replaced.</td>
<td>A response was provided by WSP (formerly MMM Group) by email on February 22, 2017 and confirmed that construction is anticipated to commence as early as summer 2017 and is currently scheduled for completion in 2020; replacement of the noise barrier at the rear of the Ernest Avenue properties is anticipated to take place in summer 2017.</td>
</tr>
<tr>
<td>NO.</td>
<td>DATE / FORM OF CONTACT</td>
<td>COMMENTS RECEIVED</td>
<td>HOW IT WAS ADDRESSED / RESPONSE SENT</td>
</tr>
<tr>
<td>-----</td>
<td>------------------------</td>
<td>-------------------</td>
<td>--------------------------------------</td>
</tr>
</tbody>
</table>
| 34  | October 5, 2016 / Email| • Inquired as to when the planned expansion will be completed.  
• Owns a business in the corridor and requested a construction timeline. | A response was provided by WSP (formerly MMM Group) by email on February 22, 2017 and confirmed that construction is anticipated to commence as early as summer 2017 and is currently scheduled for completion in 2020. |
| 35  | November 23, 2016 / Email| • Inquired as to when the project will begin construction. | A response was provided by WSP (formerly MMM Group) by email on February 22, 2017 and confirmed that construction is anticipated to commence as early as summer 2017 and is currently scheduled for completion in 2020. |
| 36  | December 19, 2016 / Email| • Inquired if the widening will create a bottleneck outside the expansion?  
• Noted that they do not see the widening as a solution to traffic congestion.  
• Inquired why Ottawa does not look at the east end, with specific mention of the two-lane Ottawa Road 174. | A response was provided by WSP by email on May 23, 2017 and included the following:  
• Comments regarding the need for expansion of Ottawa Road 174 should be directed to the City of Ottawa, as this is a regional road under the City’s jurisdiction.  
• In 2008, the MTO, in consultation with the City of Ottawa, completed a Preliminary Design and Environmental Assessment (EA) study to review infrastructure and operational issues on Highway 417 (Ottawa Queensway) from west of Highway 416 easterly to Anderson Road (GWP 663-93-00), in response to growing traffic volumes in the City of Ottawa. The study examined existing and future problems and opportunities and provided a Recommended Plan to guide the evolution of the Queensway over the next 20 years. Through Ottawa’s core, the Recommended Plan includes widening Highway 417 from three to four mainline lanes in each direction from Highway 416 to Carling Avenue and from Metcalfe Street to Ottawa Road (OR) 174, and retaining the existing number of mainline lanes from Island Park Drive to Metcalfe Street. The EA provides a detailed discussion of the long-range planning and analysis undertaken in this corridor by the ministry and incorporates the City of Ottawa’s 2003 Transportation Master Plan’s goal of increasing transit modal share to 30% of all morning peak period trips. The same transit modal share was also included in the more recent 2013 City of Ottawa Transportation Master Plan.  
• The Preliminary Design and EA Study was premised on the City of Ottawa’s Transportation Master Plan goals regarding transit usage being fully met. It was evident that significant expansion of the rapid transit network would be required in order to achieve these goals (e.g. LRT). The EA determined that improved transit was not a standalone alternative to Highway 417 modifications, and even with a goal of achieving a 30% transit modal share, there was still a residual travel demand that would require additional lanes in selected locations on Highway 417 in order to accommodate future long-term traffic projections and the safe and efficient movement of people and goods. |
Highway 417 Rehabilitation and Widening from West of Maitland Avenue to East of Island Park Drive (GWP 4058-01-00)

Design and Construction Report

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>• The planning horizon of the 2008 Preliminary Design and EA Study for the evolution of Highway 417 was 20 years, and the study and Recommended Plan are still considered valid.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Strategic widening of the Queensway will help to minimize congestion, and reduce the number of hours in a day prone to congestion. Highway expansion will also provide safety benefits, as a significant part of the collision history is related to recurring congestion. A strategic widening will provide benefits to the overall road network (e.g. if additional traffic can be accommodated on the freeway, infiltration to arterial and local streets can be reduced).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• The Detail Design and EA Study for the widening and rehabilitation of Highway 417 from Nicholas Street to the Highway 417/Ottawa Road 174 split was completed in 2012, and construction was completed in 2015.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Highway 417 between Highway 416 and Maitland Avenue generally consists of three mainline lanes in each direction, with additional auxiliary lanes resulting in four lanes in some sections; any three-lane sections within these limits will be expanded to four lanes as part of a future construction project for which a Detail Design and EA study will begin shortly. East of Island Park Drive, Highway 417 is currently four lanes in each direction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• The current Detail Design and EA study for the widening and rehabilitation of Highway 417 from 0.5 km west of Maitland Avenue to 0.6 km east of Island Park Drive is currently undergoing a Detail Design and EA study which is anticipated to be completed in spring 2017. The section of Highway 417 between Maitland and Island Park is the only remaining segment through the core that is currently three lanes in each direction, hence the need for the widening to provide a continuous four lanes in each direction. The highway will be widened to four lanes in each direction from Maitland Avenue to Carling Avenue, at which point it will tie in to the existing 4th lane that starts at Carling (heading eastbound). The project has received both federal and provincial funding for construction, which is expected to begin in late summer/early fall 2017 and be completed in 2020.</td>
</tr>
</tbody>
</table>
| 37  | January 18, 2017 / Email | • Owns a building adjacent to the Queensway and welcomes the project.  
• Inquired about the construction timeline.  
• Noted that the planned widening will not impact his operation negatively, only in a positive manner. | A response was provided by WSP (formerly MMM Group) by email on February 22, 2017 and confirmed that construction is anticipated to commence as early as summer 2017 and is currently scheduled for completion in 2020. |
**Highway 417 Rehabilitation and Widening from West of Maitland Avenue to East of Island Park Drive (GWP 4058-01-00)**

### Design and Construction Report

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
</table>
| 38  | February 5, 2017 / Email | • Inquired if noise barriers would be installed along the north side of the highway at Hampton Park at the location of the dog park.                                                                                                                                                                                                                                                                                                                                 | A response was provided by MTO by email on May 8, 2017 and included the following:  
  • I would like first to apologize for the delay in responding to your enquiry about whether noise barriers are included at Hampton Park in the Highway 417 widening project between Maitland Avenue and Island Park Drive.  
  • In 2008 the Ministry completed a comprehensive study of the Ottawa Queensway and identified a long-term plan to rehabilitate and upgrade the highway infrastructure as part of the preliminary design. Replacement of existing noise barriers and provisions for the installation of new noise barriers were considered throughout the Queensway corridor.  
  • Noise barriers were not recommended at Hampton Park, and have not been included in the detail design of the highway widening between Maitland Avenue and Island Park Drive. The Ministry's noise policy does not consider installation of noise barriers adjacent to parks, recreational areas or commercial properties, and is limited to noise mitigation for outdoor living areas immediately adjacent to the freeway.  
  • The Ministry's noise policy, The Environmental Guide for Noise - Ontario, is available at the following website: http://www.raqsb.mto.gov.on.ca/techpubs/eps.nsf/0/69f17cc0c5a57f1e852572b300578dee/$FILE/MTO%20Env%20Guide%20for%20Noise%20Oct-06%20v%201.1_ACC.pdf  
  • If you have additional questions or concerns regarding the Highway 417 widening project in this area, please contact me by phone or email.                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 39  | February 22, 2017 / Email | • Inquired why a response to their comment was sent so late and that, due to the late response, they missed the meeting about the project.                                                                                                                                                                                                                                                                                                                                                                                                   | A response was provided by WSP (formerly MMM Group) by email on February 22, 2017 and included the following:  
  • I would like to clarify that the Public Information Centre (PIC) for the Highway 417 Widening from Maitland Avenue to Island Park Drive was held in August 2015, and your comment was received the following year in June 2016.  
  • Notice of the August 2015 PIC was advertised in the Ottawa Citizen and Le Droit newspaper, as well as on the project website, two weeks in advance of the event. We apologize if you did not receive notification of the project in 2015. You were added to the study contact list following receipt of your comment in June 2016, however there have not been any project notifications sent out since that time. You will receive direct notification of the 30-day public review for the Design and Construction Report for the project which is anticipated to be available this spring, and is the next major consultation opportunity under the MTO Class Environmental Assessment process. However, you may submit a comment about the project at any time. Should you have any trouble viewing the display materials on the project website at... |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
**Highway 417 Rehabilitation and Widening from West of Maitland Avenue to East of Island Park Drive (GWP 4058-01-00)**

**Design and Construction Report**

---

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>February 22, 2017 / Email</td>
<td>• Noted that the widening can’t come soon enough as the lack of widening within the project limits is the main cause of bottlenecks in both directions.</td>
<td>A response is not required.</td>
</tr>
</tbody>
</table>
| 41  | March 4, 2017 / Email | • Inquired if the widening between Maitland - Island Park implies that the Highway will be widened east of Island Park in a few years. | A response was provided by WSP (formerly MMM Group) by email on April 21, 2017 and included the following:  
  - The ministry does not have any current plans to widen Highway 417 between Island Park Drive and Metcalfe Street. In 2002, the MTO conducted a Preliminary Design and Environmental Assessment Study (approved in 2008) to review infrastructure and operational issues on Highway 417 (Ottawa Queensway) from west of Highway 416 easterly to Anderson Road (GWP 663-93-00) in response to growing traffic volumes in the City of Ottawa. It examined existing and future problems and opportunities and provided a Recommended Plan to guide the evolution of the Queensway over the next 20 years. The Recommended Plan included widening Highway 417 from three to four mainline lanes in each direction from Highway 416 to Carling Avenue and from Metcalfe Street to Ottawa Road (OR) 174, and retaining the existing number of mainline lanes from Island Park Drive to Metcalfe Street.  
  - 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. The Preliminary Design was documented in a TESR, which received environmental clearance in 2008.  
  - The Detail Design and EA Study for the widening and rehabilitation of Highway 417 from Nicholas Street to the Highway 417/Ottawa Road 174 split was completed in 2012, and construction was completed in 2015.  
  - The Highway 417 widening and rehabilitation from 0.5 km west of Maitland Avenue to 0.6 km east of Island Park Drive is currently undergoing a Detail Design and EA study which is anticipated to be completed in spring 2017. The highway will be widened to four lanes in each direction from Maitland Avenue to Carling Avenue, at which point it will tie in to the existing 4th lane that starts at Carling (heading eastbound). The project has received both federal and provincial funding for construction, which is expected to begin in late summer/early fall 2017 and be completed in 2020.  
  - A Design and Construction Report (DCR) will be prepared and will be available for a 30-day public review period on the project website as noted above and at select review locations. You will be directly notified of the publication of the DCR for public review. |

---

WSP  
May 2017  
Page 47
<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE / FORM OF CONTACT</th>
<th>COMMENTS RECEIVED</th>
<th>HOW IT WAS ADDRESSED / RESPONSE SENT</th>
</tr>
</thead>
</table>
| 42  | May 3, 2017 / Email   | • Inquired why it is necessary to widen the highway.  
• Argues that widening the highway will not alleviate congestion due to induced demand. | A response was provided by WSP by email on May 23, 2017 and included the following:  
• The MTO, in consultation with the City of Ottawa, completed a Preliminary Design and Environmental Assessment (EA) study for the Highway 417 widening from Highway 416 to Anderson Road in 2008. The EA provides a detailed discussion of the long-range planning and analysis undertaken in this corridor by the ministry and incorporates the City of Ottawa’s 2003 Transportation Master Plan’s goal of increasing transit modal share to 30% of all morning peak period trips. The same transit modal share was also included in the more recent 2013 City of Ottawa Transportation Master Plan.  
• The MTO Preliminary Design and EA Study was premised on the City of Ottawa’s Transportation Master Plan goals regarding transit usage being fully met. It was evident that significant expansion of the rapid transit network would be required in order to achieve these goals (e.g. LRT). The EA determined that improved transit was not a standalone alternative to Highway 417 modifications, and even with a goal of achieving a 30% transit modal share, there was still a residual travel demand that would require additional lanes in selected locations on Highway 417 in order to accommodate future long-term traffic projections and the safe and efficient movement of people and goods.  
• The planning horizon of the 2008 Preliminary Design and EA Study for the evolution of Highway 417 was 20 years, and the study and Recommended Plan are still considered valid.  
• The Province of Ontario recognizes that a multi-modal transportation solution, including both transit and highway infrastructure is required to adequately manage congestion on Highway 417 in the Ottawa area. Since 2003, Ontario has committed over $2.2 billion to support public transit in Ottawa, and will continue working with the City of Ottawa as it works towards further improving transit in the region.  
• Strategic widening of the Queensway will help to minimize congestion, and reduce the number of hours in a day prone to congestion. Highway expansion will also provide safety benefits, as a significant part of the collision history is related to recurring congestion. A strategic widening will provide benefits to the overall road network (e.g. if additional traffic can be accommodated on the freeway, infiltration to arterial and local streets can be reduced).  
• Please be advised that you have been added to the study contact list and will be notified directly of the 30-day public review of the Design and Construction Report for this study. |
3 DETAILED DESCRIPTION OF THE RECOMMENDED PLAN

3.1 MAJOR FEATURES OF THE PROPOSED WORK

As previously described, the Detail Design Recommended Plan for the rehabilitation and widening of Highway 417 from west of Maitland Avenue to east of Island Park Drive includes the following components:

- Widening Highway 417 to four lanes in each direction between Maitland Avenue and Carling Avenue, including reconstruction of the Maitland Avenue and Carling Avenue interchange ramps;
- Rehabilitating the Merivale Road Overpass bridges and widening the eastbound bridge to the south;
- Replacing all existing noise barriers within the project limits, including the noise barriers east of Maitland Avenue (north side of highway) and east of Merivale Road (south side of highway):
  - The existing 4 m high noise barrier located on the north side of the highway east of Maitland Avenue will be removed to accommodate the highway widening. A new 5 m high concrete noise barrier will be constructed along the same section of roadway as close as possible to the location of the existing barrier, but will gradually shift in alignment due to the highway widening by up to 1 m north of the existing barrier;
  - The existing 4 m high noise barrier located on the south side of the highway east of Merivale Road will be replaced with a new noise barrier at the same location and height;
- Constructing related works including retaining walls, replacement and upgrades to drainage, roadside protection, illumination, highway signage, Advanced Traffic Management System (ATMS), and landscaping; and
- Relocating utilities impacted by the highway widening.

Traffic management for construction staging will be coordinated with the City of Ottawa. Anticipated traffic impacts include:

- Lane reductions on Highway 417 from three through lanes to two through lanes in each direction during off-peak periods;
- Short-term ramp closures at the Maitland Avenue and Carling Avenue interchange;
- Long-term closure of the on-ramp from Carling Avenue Westbound to Highway 417 Eastbound (on the west side of the Westgate Shopping Centre) (refer to the section below regarding a separate Detail Design and Environmental Assessment Study examining this ramp);
- Weekend closures of Merivale Road between Carling Avenue and Island Park Drive; and
- A single overnight full closure of Highway 417 for work at the Merivale Road overpass structure.

More detailed traffic / construction staging information is provided in Section 3.2.

3.1.1 MAINLINE WIDENING

As recommended during Preliminary Design, Highway 417 will be widened by one (1) lane in each direction between Maitland Avenue and Carling Avenue. In the westbound direction, the widening will provide an additional 3.5 m-wide continuous lane between Carling Avenue and Maitland Avenue for a total of four (4) lanes. In the eastbound direction, the widening will provide an additional 3.5 m-wide
continuous lane between Maitland Avenue and Kirkwood Avenue for a total of four (4) lanes. At Kirkwood Avenue, the additional lane will be dropped, reducing the highway to a total of three (3) lanes. Once the Carling Avenue W-E on-ramp merges with Highway 417, the highway returns to a four (4) lane condition. A site overview showing overall construction sequencing and constraints is illustrated on Sheet 24 in Appendix E.

Ramp terminal intersections will not be modified.

The widening will be accomplished by constructing a new lane to the outside of the existing right hand lane in both directions and by widening the eastbound Merivale Road overpass bridge structure to the south.

The remaining Highway 417 bridge structures within the project limits were rehabilitated and if required, widened, to accommodate additional lanes at the time of the structure rehabilitation and deck replacements using rapid replacement methods:

- Island Park Drive bridges (Contract No. 1 completed in 2007);
- Clyde Avenue bridges (Contract No. 2 completed in 2008);
- Carling Avenue Eastbound bridges (Contract No. 3 completed in 2011); and
- Kirkwood Avenue and Carling Avenue Westbound bridges (Contract No. 4 completed in 2013).
- Refacing of the abutments with installation of cathodic protection.

### 3.1.2 Merivale Road Overpass

The Merivale Road overpass will be rehabilitated and widened to the south. The structure rehabilitation work includes:

- Full removal and replacement of the north barrier wall and top portion of the wing walls;
- Removal of south barrier walls and top portion of wing walls for south side widening;
- Deck rehabilitation, which consists of removing the existing overlay, removing existing deteriorated deck concrete under the old overlay, placing new concrete overlay (including concrete patches), waterproofing and paving;
- Removal and replacement of approach slabs; and
- Insulation of the existing and new abutment footings.

Sheet 590 in Appendix E illustrates the General Arrangement drawing of the Merivale Road overpass.

### 3.1.3 Drainage

The existing highway drainage system consists of a median storm sewer system with catchbasins and a combination of roadside ditching or outside shoulder catchbasins with lateral connections to the median storm sewer system as the conditions required. The outlets for the highway drainage system consist of a combination of direct connections to existing municipal storm sewers, or direct outlet to side slopes/open grassed areas. In general, the existing outlet locations will be maintained. Due to the introduction of additional concrete barriers and new retaining walls on the outside to facilitate the widening, additional outside shoulder catchbasins and shoulder storm sewers will be required; these storm sewers will connect to the new median storm sewer system or to existing drainage outlets. A stormwater
management facility (dry detention pond) will be incorporated into the highway drainage system at the Maitland Avenue interchange in the southeast quadrant.

The new storm sewer system will be designed for a 10-year return. The new storm sewer system maximizes the ability to separate the MTO drainage from the City of Ottawa drainage and provides treatment in grassed swales and enhanced grass swales where conditions permit.

Drainage consistent with the proposed staging of the highway widening will be maintained during construction.

In addition to the required drainage modifications, the proposed highway widening provides an opportunity to implement stormwater management measures, where presently no strategy is in place. The proposed stormwater management strategy for treatment of highway runoff within the project limits includes the incorporation of the following stormwater management facilities into the drainage system:

- A stormwater management pond at the Maitland Avenue interchange within the loop of the Highway 417 Eastbound off-ramp to Maitland Avenue;
- A 1 m wide flat-bottom grassed swale along the base of the reconstructed highway embankment at Hampton Park, located west of the intersection of Merivale Road and Island Park Drive; and
- Enhanced flat-bottom grassed swales along the base of the highway embankment on the south side of Carling Avenue.

### 3.1.4 ILLUMINATION

**Highway 417 Mainline**

Existing lighting infrastructure consists of conventional median illumination throughout with supplementary illumination as required at the ramps within each interchange. The existing mainline illumination will be upgraded to conventional poles with LED luminaires. The supplementary illumination at the ramps will be upgraded to conventional illumination with LED luminaires with the exception of the lighting along the N/S-W ramp and select light poles on the E-N/S ramp at the Maitland Avenue interchange. For these light poles, only the existing HPS luminaires will be replaced with new LED luminaires and the existing poles will be retained. All existing power supplies will be replaced with new distribution assemblies to current Ministry standards.

Temporary illumination will be required for construction staging.

**Highway 417 Merivale Road Overpass**

No light standards are located on the existing bridge structures. Surface mounted lighting for the illumination of Merivale Road is present on the existing abutments under the bridge deck.

There is minor electrical work on Merivale Road for the City of Ottawa due to the Merivale Road Overpass widening and rehabilitation. The City’s existing overpass lighting circuit, traffic signal interconnect and power supply feed for a cabinet in the vicinity of the structure are all being rerouted during construction and then reinstated after the widening and rehabilitation of the structure is completed.
3.1.5 **ADVANCE TRAFFIC MANAGEMENT SYSTEM (ATMS)**

The existing ATMS plant, which supports existing cameras within the project limits, is located on a mix of existing wood poles and underground buried and surface mounted ducts. The existing ATMS trunk communications plant will be temporarily relocated to the south side on temporary wood poles during construction.

The ATMS work includes new and redeveloped CCTV IP cameras, new Variable Message Signs (VMS) (full colour, full matrix - one overhead full size, one roadside mid-sized), and Hybrid Vehicle Detector Stations (NITS and Loops) at varied sites. Supporting works include power supply and cabling provisions, new fibre optic based communication linkages, as well as support of existing fibre optic cabling networks through construction, and planned migration.

3.1.6 **SIGNAGE**

Improvements to signage are required throughout the Highway 417 corridor within the project limits. Existing ground mounted and overhead signage will be replaced due to the widening of the highway and will be installed to current standards. The signboards will be replaced if they do not meet current standards.

The overhead advance sign for the eastbound exit at Carling Avenue (W-ENS ramp) will be installed as an overhead Variable Message Sign (VMS) structure rather than a conventional static overhead sign board and structure.

3.1.7 **UTILITY RELOCATIONS / MODIFICATIONS**

The following utilities exist within the project limits and will be maintained during construction:

- Multiple City of Ottawa storm sewer and sanitary sewer crossings (underground infrastructure);
- City of Ottawa traffic and street lighting infrastructure (poles and associated underground infrastructure);
- City of Ottawa 1220 mm diameter water distribution main (underground infrastructure);
- Multiple Hydro Ottawa underground ducts; abandoned ducts that conflict with construction operations will be removed as part of this project’s work;
- Enbridge Gas mains (underground utility);
- Bell Canada infrastructure – one overhead pole line, crossing Highway 417; multiple underground ducts;
- High voltage Hydro One transmission lines (overhead utility); and
- High voltage Hydro Ottawa transmission lines (overhead utility).

The following utilities required advance relocation for this project:

- Hydro Ottawa ducts within the highway right-of-way from Maitland Avenue to Boyd Avenue were relocated out of the MTO right-of-way;
- City of Ottawa 406 mm watermain on the south side of the highway ROW from Maitland Avenue easterly to Kirkwood Avenue was abandoned by the City; sections of the abandoned pipe will have to be removed as part of this project if in conflict with the construction operations (i.e. grading operations or retaining wall construction);
- Overhead Bell pole line, shared with overhead Hydro Ottawa, which serviced residential properties from the rear was removed from the ROW; the utilities relocated into underground installations within City ROW and the residences were re-serviced from the front of their properties;
- Bell Canada duct(s) and pedestals located within a permanent property purchase area are to be relocated out of the new right-of-way and services to the properties are to be re-routed off of Woodward Avenue;
- Hydro Ottawa transformer at Boyd Avenue is being relocated out of the MTO ROW; electrical service for the Ministry's electrical/ATMS infrastructure in this location will be maintained at this location;
- Anchors on a Hydro Ottawa pole at the Carling W-E(N/S) off-ramp required relocation;
- City of Ottawa 1220 mm watermain on the south side of the highway ROW from Lady Ellen Place easterly to Merivale Road was relocated by the City (the watermain continues to run parallel to the Highway 417 on the south side easterly within the remaining project limits and beyond); sections of the abandoned pipe will have to be removed as part of this project to facilitate construction of the retaining walls; and
- Hydro Ottawa underground concrete duct bank and manhole structure on Merivale Road required relocation.

3.1.8 RETAINING WALLS

There are various locations within the study area where a standard 3:1 side slope cannot be maintained as a result of the proposed highway widening, and therefore, retaining walls will be required for soil stabilization and to retain Highway 417 within the existing right-of-way.

The following retaining walls and slopes are to be constructed as part of the highway widening:
- Retaining Wall 1N – along the north side of Highway 417 west of Clyde Avenue Overpass with a maximum grade difference of 4.5 m and extending for a length of 170 m;
- Retaining Wall 2N – along the north side of Highway 417 east of Clyde Avenue Overpass with a maximum grade difference of 5.5 m and extending for a length of 183 m;
- Retaining Wall 3N – along the north side of Highway 417 west of Carling Avenue Eastbound Overpass Avenue Overpass with a maximum grade difference of 5.5 m and extending for a length of 222 m;
- Retaining Wall 6N – along the north side of Highway 417 east of the Carling Avenue E-W on-ramp with a maximum grade difference of 1.5 m and extending for a length of 49 m;
- Retaining Wall 7N – along the north side of Highway 417 adjacent to the E-W[N/S] off-ramp at Carling Avenue with a maximum grade difference of 3.0 m and extending for a length of 100 m;
- Retaining Slope 3S – along the south side of Highway 417 west of Clyde Avenue Overpass with a maximum grade difference of 3.5 m and extending for a length of 110 m;
- Retaining Slope 4S – along the south side of Highway 417 east of Clyde Avenue Overpass with a maximum grade difference of 5.5 m and extending for a length of 208 m;
- Retaining Wall 5S – along the south side of Highway 417 adjacent to the W-E[N/S] off-ramp at Carling Avenue with a maximum grade difference of 2.0 m and extending for a length of 70 m;
- Retaining Wall HT #25 – along the south side of Highway 417 between the W-E[N/S] off-ramp at Carling Avenue and the Carling Avenue Eastbound Overpass with a maximum grade difference of 4.0 m and extending for a length of 47 m;
- Retaining Wall HT #26 – along the south side of Highway 417 between the Carling Avenue Eastbound Overpass and the Kirkwood Avenue Overpass with a maximum grade difference of 4.5 m and extending for a length of 60 m;
- Retaining Wall HT #27 – along the south side of Highway 417 between the Carling Avenue Eastbound Overpass and the Kirkwood Avenue Overpass with a maximum grade difference of 3.0 m and extending for a length of 47 m;
- Retaining Wall HT #28 – along the south side of Highway 417 adjacent to the Carling Avenue W-E on-ramp at Carling Avenue Eastbound with a maximum grade difference of 2.5 m and extending for a length of 37 m;
- Retaining Wall 10S – along the south side of Highway 417 east of Carling Avenue Westbound Overpass with a maximum grade difference of 3.0 m and extending for a length of 57 m; and
- Retaining Wall 11S – along the south side of Highway 417 west of the Merivale Overpass with a maximum grade difference of 4.0 m and extending for a length of 305 m.

The following retaining walls are to be rehabilitated as part of the highway widening:
- Retaining Wall 15S – along the south side of Highway 417 west of the Island Park Drive Overpass for a length of 70 m.

3.1.9 ROADSIDE SAFETY

Roadside safety is addressed through the provision of a hazard free “clear zone” or, where this is not possible, by provision of a hazard protection system. The widening of the highway will result in the replacement of all concrete barriers on the outside thus eliminating any protection treatments that do not meet current standards. The median concrete barrier system will be replaced with a concrete Tall Wall barrier. At specific locations where property requirements or existing conditions dictate, the concrete barrier will be incorporated within the retaining wall being constructed.

3.1.10 ACTIVE TRANSPORTATION INFRASTRUCTURE

The sidewalks and bicycle lanes on Merivale Road were rehabilitated by the City under an infrastructure improvement contract. All infrastructure that requires removal to accommodate the rehabilitation of the Merivale Road overpass bridges and widening of the south abutments of the eastbound structure will be reinstated to match pre-construction conditions.

3.1.11 NOISE BARRIERS

All existing corrugated steel type noise barriers located along Highway 417 within the project limits will be replaced, including the noise barriers east of Maitland Avenue (north side of highway) and east of Merivale Road (south side of highway).

On the north side of the highway, the existing 4 m high steel noise barrier located from east of Maitland Avenue easterly to Broadview Avenue and parallel to Ernest Avenue (approximately 372 m in length) will be removed to accommodate the highway widening. A new 5 m high ground-mounted concrete noise barrier will be constructed along the same section of roadway as close as possible to the location of the existing barrier, but will gradually shift in alignment due to the highway widening by up to 1 m north of the existing barrier. This noise barrier will be ground mounted and will consist of concrete composite noise
barrier panels in keeping with the same colour and patterns of the noise barriers constructed at Lees Avenue as part of the Highway 417 Expansion from Nicholas Street to OR 174.

On the south side of the highway, the existing 4 m high steel noise barrier located east of Merivale Road easterly to Island Park Drive (approximately 75 m in length) will be replaced with a new 4 m high noise barrier at the same location. This noise barrier will be constructed on top of an existing retaining wall and will consist of translucent Acrylite (acrylic) panels (i.e. frosted panels, not transparent).

Snow “fencing” will be installed on both the north and south barrier walls on the Merivale Overpass structure and along the retaining wall behind the Westgate Shopping Plaza. The barrier will be a 2.4 m high structure-mounted Acrylite noise barrier system with translucent colourless panels.

Noise barrier treatments are further discussed in Section 3.1.14.

3.1.12 FENCING

The existing highway chain link fencing will be removed in order to complete the required works. New chain link fencing will be installed along the limits removed for construction, with adjustments required in areas where there are changes in the right-of-way limits due to property purchases. In keeping with the Context Sensitive Design requirements for the Queensway corridor, black chain link fence will be installed in areas of high visibility and black picket metal fence matching the height of the chain link fence will be installed in high pedestrian traffic areas.

Temporary construction fence will be installed during construction as required to maintain the integrity of the highway and secure construction areas.

3.1.13 LANDSCAPE PLAN

Following construction, a Landscape Plan will be implemented to reinstate areas of vegetation disturbed by the construction works throughout the project limits and to enhance the existing landscaping along the highway corridor and within interchanges. The landscape plan is illustrated in Sheets 338 to 360 in Appendix E.

Based on the Highway 417 Tree Inventory Report completed by CSW in 2015, the majority of existing trees are located on the north side of the highway, while the south side of the highway is primarily populated by shrubs. A total of 77 trees are recommended to be removed during construction, either due to their poor condition or because they are in conflict with the proposed highway widening and related construction works.

The following areas of vegetation have been identified for protection during construction (from west to east):

- Mature trees located within the loop of the Highway 417 Eastbound off-ramp to Maitland Avenue where the new stormwater management pond is proposed;
- Trees located along the north side of Highway 417 at the rear of the Soloway Jewish Community Centre property;
- Newly planted trees in the Saigon Court construction staging area which was used for the Carling Avenue eastbound bridge replacements. Existing and newly planted vegetation in proposed staging areas located on City lands will be preserved to every extent possible, provided the Contractor can complete the required construction operations.

The landscape design includes low maintenance, native, or non-evasive, species which have high durability (i.e. salt/wind tolerant, regional hardiness) and which provide seasonal interest through colour, form, and texture. Proposed plant selections for the following areas include native seed mix, shrub plantings, deciduous and coniferous trees, as appropriate and in accordance with Context Sensitive Design recommendations.

The following highlights key elements of the landscape strategy for the current project:

- Native, salt tolerant, hardy tree and shrub species will be used throughout;
- Seasonal interest will be provided by drought tolerant trees and vegetation, where and as appropriate. Fall and Spring plants with red attributes (flowers, budding, stalk colouration, and fruit) will be incorporated. Areas absent of existing landscaping will be enhanced where feasible;
- Appropriate MTO standard seed mixes and plantings will be utilized along roadside conditions;
- Specialized MTO standard seed mixes and slope stabilization will be used on slopes greater than 2:1. When 2:1 slopes are visible by traffic on City roads (i.e., south side along Carling Avenue eastbound under the Hydro One towers), they will be sodded;
- Tree placement will be respectful of highway light and pole locations to maximize evening lighting effectiveness; and
- An appropriate selection of plant materials, sizes, and placement will be made to provide for natural visibility/observation and ease of maintenance to preserve sight lines.

### 3.1.14 Context Sensitive Design

The proposed rehabilitation and widening of Highway 417 from west of Maitland Avenue to east of Island Park Drive will incorporate the recommendations documented in the Context Sensitive Design (CSD) study for the Ottawa Queensway, completed in 2011. The purpose of the CSD study was to ensure that the overall planned expansion and rehabilitation of Highway 417 reflects a holistically-planned aesthetic and vision for the Ottawa Queensway corridor. 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 (MTO & Stantec, 2011).

The major opportunities to incorporate the CSD recommendations as part of the current project include:

- Use of concrete composite noise barrier panels in keeping with the same random pattern and colours constructed for the noise barriers at Lees Avenue as part of the Highway 417 Expansion from Nicholas Street to OR 174 (see Figure 3-1);
- Use of acrylic panels where noise barriers are required to be installed on top of retaining walls and where views are to be retained (see Figure 3-2);
**Enhanced landscaping that utilizes a palette of primarily native plants with a strong visual identity, a bold and colourful design, and four seasons of interest (MTO & Stantec, 2011);**

- Use of black iron picket and black vinyl chain link fencing, where applicable; and

- Decorative metal maple leaf emblems attached to every other median light pole on the highway mainline, alternating left and right, throughout the project limits, as installed as part of the Highway 417 Expansion from Nicholas Street to OR 174. The maple leaf emblems will be mounted at a height of approximately 5-6 m and will help to signify the Capital Arrival Route through the core of the City (see Figure 3-3).

**Figure 3-1:** Ground-mounted concrete noise barriers; highway side treatment (left) and back side treatment (right) as installed at Lees Avenue

**Figure 3-2:** Example of structure-mounted translucent acrylic noise barriers

**Figure 3-3:** Maple leaf emblem on median light pole
3.2 TRAFFIC / CONSTRUCTION STAGING

3.2.1 MAINLINE CONSTRUCTION STAGING
The rehabilitation and widening of Highway 417 within the project limits will be completed in two stages using an “outside-inside” construction staging methodology. Construction of the Highway 417 widening is anticipated to take place over four (4) construction seasons, as detailed in Table 3-2. See Section 4.2.4 for the traffic detour routes proposed to mitigate the required ramp and road closures.

3.2.1.1 Stage 1 (Approximate Duration: 2 years)

During Stage 1, construction to complete the widening of the highway to the outside lanes will occur. Three mainline lanes of traffic will be maintained in both directions during peak periods.

Construction works to be completed in Stage 1 include:

- Widening of the highway by one lane in each direction;
- Replacement of noise walls;
- Construction of new retaining walls;
- Installation of new shoulder storm sewers and laterals, and
- Upgrades to highway illumination and ATMS systems.

Sheets 28-57 in Appendix E illustrate the works to be completed in Stage 1.

Due to the limited ROW available, and the Preliminary Design commitment to maintain three lanes of traffic during peak periods, the posted speed limit on Highway 417 through the project limits will be reduced to 80 km/h during Stage 1. The median shoulder widths will remain at existing widths and the outside shoulder width will be reduced to 0.5 m throughout. The speed change lanes will be reduced in length and meet a 100 km/h design speed.

Highway 417 Ramp and Mainline Closures

Short-term ramp closures varying from one (1) to nine (9) weeks in duration will be required for ramp reconstruction operations, as a described below and summarized in Table 3-2.

The ramp closures will be scheduled such that no two consecutive on- or off-ramps in one direction occur at the same time. Traffic will be redirected along signed detour routes on local municipal roads, as illustrated on Sheets 9 to 18 in Appendix E.

The following ramps will not be closed at the same time:

- Highway 417 Westbound off-ramp to Carling Avenue Westbound / Kirkwood Avenue and the Highway 417 Westbound off-ramp to Maitland Avenue;
- Carling Avenue Westbound on-ramp to Highway 417 Westbound and the Maitland Avenue on-ramp to Highway 417 Westbound;
- Highway 417 Eastbound off-ramp to Maitland Avenue and the Highway 417 Eastbound off-ramp to Carling Avenue Eastbound; and
- Maitland Avenue on-ramp to Highway 417 Eastbound and the Carling Avenue Eastbound on-ramp to Highway 417 Eastbound.

Table 3-1: Summary of Ramp and Road Closures

<table>
<thead>
<tr>
<th>RAMP* OR ROAD CLOSURE</th>
<th>DURATION</th>
<th>ANTICIPATED YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway 417 Eastbound Off-Ramp to Maitland Avenue (W-N/S Off-Ramp)</td>
<td>2 weeks</td>
<td>2017</td>
</tr>
<tr>
<td>Maitland Avenue On-Ramp to Highway 417 Eastbound (N/S-E On-Ramp)</td>
<td>2 weeks</td>
<td>2017</td>
</tr>
<tr>
<td>Highway 417 Westbound Off-Ramp to Maitland Avenue (E-N/S Off-Ramp)</td>
<td>1 week</td>
<td>2017</td>
</tr>
<tr>
<td>Highway 417 Eastbound Off-Ramp to Carling Avenue Eastbound (W-E[N/S] Off-Ramp)</td>
<td>4 weeks</td>
<td>2018</td>
</tr>
<tr>
<td>Carling Avenue Westbound On-Ramp to Highway 417 Westbound (E-W On-Ramp)</td>
<td>9 weeks</td>
<td>2018</td>
</tr>
<tr>
<td>Highway 417 Westbound Off-Ramp to Carling Avenue Eastbound (E-W[N/S] Off-Ramp)</td>
<td>4 weeks</td>
<td>2018 or 2019, depending on Contractor schedule</td>
</tr>
<tr>
<td>Carling Avenue Eastbound On-Ramp to Highway 417 Eastbound ([N/S]W-E On-Ramp)</td>
<td>7 weeks</td>
<td>2019</td>
</tr>
<tr>
<td>Carling Avenue Westbound On-Ramp to Highway 417 Eastbound (E-E On-Ramp)</td>
<td>At construction start, re-opening by December 1, 2017</td>
<td>2017</td>
</tr>
<tr>
<td></td>
<td>At construction start in spring, and stays closed for the remaining duration of the construction, including winter months (see Section 3.3 regarding potential permanent closure of the ramp)</td>
<td>2018-2020</td>
</tr>
<tr>
<td>Parkdale Avenue On-Ramp to Highway 417 Westbound (N/S-W On-Ramp)</td>
<td>13 hours (overnight)</td>
<td>2019</td>
</tr>
<tr>
<td>Highway 417 Full Closure</td>
<td>17 hours (overnight)</td>
<td>2019</td>
</tr>
<tr>
<td>Parkdale Avenue On-Ramp to Highway 417 Eastbound (N/S-E On-Ramp)</td>
<td>17 hours (concurrent with Highway 417 full closure)</td>
<td>2019</td>
</tr>
<tr>
<td>Parkdale Avenue On-Ramp to Highway 417 Westbound (N/S-W On-Ramp)</td>
<td>17 hours (concurrent with Highway 417 full closure)</td>
<td>2019</td>
</tr>
<tr>
<td>Bronson Avenue On-Ramp to Highway 417 Westbound (N/S-W On-Ramp)</td>
<td>17 hours (concurrent with Highway 417 full closure)</td>
<td>2019</td>
</tr>
<tr>
<td>Rochester Street On-Ramp to Highway 417 Westbound (N/S-W On-Ramp)</td>
<td>17 hours (concurrent with Highway 417 full closure)</td>
<td>2019</td>
</tr>
<tr>
<td>Merivale Road</td>
<td>two separate 36-hour closures (weekend)</td>
<td>2018</td>
</tr>
</tbody>
</table>

*Note that the naming convention for ramps refers to the direction of origin to the direction of travel (e.g., W-N/S refers to traffic coming from the west heading north or south)*
3.2.1.2 Stage 2 (Approximate Duration: 1.5 years)

During Stage 2, traffic will be shifted to the newly widened outside lanes to allow construction work to be completed in the median. Generally, three mainline traffic lanes will be provided at all times in both directions during peak hours.

Construction works to be completed in Stage 2 include:
- Replacement of the existing median drainage system, including catchbasin structures;
- Refacing of the abutments with installation of cathodic protection;
- Installation of concrete median Tall Wall barrier;
- Installation of upgraded conventional median illumination;
- Installation of new overhead sign structures;
- Landscaping of staging areas; and,
- Final paving.

Sheets 77-95 in Appendix E illustrate the works to be completed in Stage 2.

The posted speed will be reduced to 80 km/h during Stage 2. The median shoulder widths will be 0.5 m throughout and the outside shoulder widths will be 1.5 m, with localized narrowing to 0.5 m where required.

3.2.2 Merivale Road Overpass Staging

The rehabilitation of the Merivale Road Overpass and widening of the eastbound structure will commence during Stage 1 of the highway widening, described in Section 3.2.1.1, and will be completed during a transition period between Stages 1 and 2 of the highway works. Widening and rehabilitation of the overpass will be completed using a combination of “outside/inside” and “median cross-over” construction staging methodologies. Three traffic lanes will be maintained on Highway 417 in each direction during peak hours; however, a full overnight closure of Highway 417 will be required during the bridge works. In 2018, two separate 36-hour weekend closures of Merivale Road will be required in order to set-up and take down formwork.

Construction works to be completed include:
- Widening the eastbound structure to the south side only with modifications to the substructure, abutments and wingwalls;
- Deck repairs and new concrete overlay;
- Barrier replacements (north side and median);
- Approach slab replacement; and
- Waterproofing and paving of the deck.

Highway 417 Stage 1

During the Stage 1 works on Highway 417, the eastbound Merivale Road Overpass structure will be widened to the south in three stages.
Bridge Stages I and II

- Stages I and II of the bridge works consist of substructure widening.
- South abutments will be extended and new wing walls will be constructed. The works require excavation into the existing roadway in order to install piles and construct new footings.
- This work will be completed one side at a time in order to maintain one 3.5 m lane in each direction and one temporary 1.5 m sidewalk along Merivale Road at all times.
- Bridge Stage I and II works are illustrated on Sheets 20 and 21 in Appendix E.

Bridge Stage III

- Stage III consists of superstructure widening.
- This stage requires work on both sides of Merivale Road concurrently. Traffic and pedestrians will be channelled down the centre of Merivale Road behind temporary concrete barrier.
- Traffic lanes will be reduced to 3.25 m and the vertical clearance under the structure will be reduced to 3.6 m.
- Two separate 36-hour closures of Merivale Road are required for the set-up and take-down of formwork.
- Bridge Stage III works are illustrated on Sheet 22 in Appendix E.

Transition from Highway 417 Stage 1 to Stage 2

Upon completion of the Stage 1 works on Highway 417 and prior to commencement of Stage 2, the decks of the Merivale Overpass will be rehabilitated. Advanced weekend operations and a single full overnight closure of Highway 417 will be required to facilitate the deck rehabilitation work. Three lanes of traffic will be maintained in each direction during construction. The deck rehabilitation will occur over three interim stages (Stage 1A, Stage 1B and Pre-Stage 2), each approximately 3 weeks in duration.

Stage 1A

In preparation for this stage, the existing median barrier and concrete approach slabs will be removed. Approximately ⅔ of the north (westbound) deck will be rehabilitated, consisting of the replacement of the overlay, repairs to the deck, reconstruction of approach slabs, and waterproofing and paving of the work zone. All six lanes (three lanes per direction) of Highway 417 traffic will be temporarily realigned to the south using back-to-back curves on both the east and west approaches to the structure work area. Stage 1A works are illustrated on Sheets 65 to 68 in Appendix E.

Stage 1B

During this stage, highway lanes will be temporarily realigned to the north (including the portion of the deck rehabilitated during Stage 1A), while approximately ⅔ of the south side of the deck is rehabilitated. The new approach slabs and the north and south outside portions of the deck will be waterproofed and paved during this stage. Stage 1B works are illustrated on Sheets 69 to 72 in Appendix E.
Pre-Stage 2

During this stage, the remaining median portions of the deck will be rehabilitated, waterproofed and paved. Three eastbound lanes will be temporarily shifted south to allow for construction in the median. Once complete, the highway traffic lanes will be realigned to match the lane configuration required for the Highway 417 Stage 2 construction. Pre-Stage 2 works are illustrated on Sheets 73 to 76 in Appendix E.

3.2.3 Summary of Construction Staging

A summary of construction staging is provided in Table 3-2.
Table 3-2: Summary of Construction Staging

<table>
<thead>
<tr>
<th>WORK STAGE</th>
<th>CONSTRUCTION ACTIVITIES</th>
<th>TIMING</th>
<th>DURATION</th>
<th>TRAFFIC IMPACTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway 417</td>
<td>• Widening of the highway by one lane in each direction;</td>
<td>2017-2019</td>
<td>Approximately 2 years</td>
<td>Impacts to Highway 417:</td>
</tr>
<tr>
<td></td>
<td>• Replacement of noise walls;</td>
<td></td>
<td></td>
<td>• Lane reductions during off-peak periods.</td>
</tr>
<tr>
<td></td>
<td>• Construction of new retaining walls;</td>
<td></td>
<td></td>
<td>• Short-term ramp closures (see Table 3-1 Error! Reference source not found.)</td>
</tr>
<tr>
<td></td>
<td>• Installation of new shoulder storm sewers and laterals, and</td>
<td></td>
<td></td>
<td>Impacts to City roadways:</td>
</tr>
<tr>
<td></td>
<td>• Upgrades to highway illumination and ATMS systems.</td>
<td></td>
<td></td>
<td>• Traffic will be redirected along signed detour routes on municipal roads during ramp closures.</td>
</tr>
<tr>
<td></td>
<td>• Merivale Road Overpass widening works as described below.</td>
<td></td>
<td></td>
<td>• City roads will experience construction traffic due to access and egress points throughout project limits.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Replacement of the existing median drainage system, including catchbasin structures</td>
<td>2019-2020</td>
<td>Approximately 1.5 years</td>
<td>Impacts to Highway 417:</td>
</tr>
<tr>
<td></td>
<td>• Installation of concrete median Tall Wall barrier;</td>
<td></td>
<td></td>
<td>• Three mainline traffic lanes will be provided in both directions during peak hours.</td>
</tr>
<tr>
<td></td>
<td>• Installation of upgraded conventional median illumination;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Installation of new overhead sign structures;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Landscaping of staging areas; and,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Final paving.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merivale Road Overpasses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>During Highway 417 Stage 1</td>
<td>Stages I and II – Substructure Widening</td>
<td>2018</td>
<td>8 weeks</td>
<td>Impacts to Merivale Road:</td>
</tr>
<tr>
<td></td>
<td>• South abutments will be extended and new wing walls will be constructed.</td>
<td></td>
<td></td>
<td>• During Stages I and II, work will be restricted to one side at a time in order to maintain one 3.5 m lane in each direction and one temporary 1.5 m sidewalk along Merivale Road at all times.</td>
</tr>
<tr>
<td></td>
<td>The works require excavation into the existing roadway in order to install piles and construct new footings.</td>
<td></td>
<td></td>
<td>• During Stage III, work will be done on both</td>
</tr>
</tbody>
</table>

WSP

May 2017

Page 63
<table>
<thead>
<tr>
<th>WORK STAGE</th>
<th>CONSTRUCTION ACTIVITIES</th>
<th>TIMING</th>
<th>DURATION</th>
<th>TRAFFIC IMPACTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage III – Superstructure Widening</td>
<td>• Superstructure widening will be constructed.</td>
<td>2019</td>
<td>3.5 weeks</td>
<td>sides of Merivale Road concurrently. Traffic and pedestrians will be channelled down the centre of Merivale Road behind temporary concrete barrier.</td>
</tr>
<tr>
<td>1A (transition between Highway 417 Stage 1 and 2)</td>
<td>• Approximately 3/4 of the westbound deck will be rehabilitated.</td>
<td>2019</td>
<td>3.5 weeks</td>
<td>Impacts to Highway 417:</td>
</tr>
<tr>
<td>1B (transition between Highway 417 Stage 1 and 2)</td>
<td>• Approximately 3/4 of the eastbound deck will be rehabilitated.</td>
<td>2019</td>
<td>3.5 weeks</td>
<td>Impacts to Highway 417:</td>
</tr>
</tbody>
</table>
| Pre Stage 2 (transition between Highway 417 Stage 1 and 2) | • Remaining median sections of the existing decks will be rehabilitated.  
• Remaining median deck surfaces and approach slabs will be waterproofed and paved. | 2019   | 3 weeks  | Impacts to Highway 417: |

Impacts to Highway 417:
• All six lanes of Highway 417 traffic will be temporarily realigned to the south.

Impacts to Highway 417:
• All six highway lanes will be temporarily realigned to the north side.

Impacts to Highway 417:
• Highway traffic will be realigned to match the lane configuration.
3.3 IMPLEMENTATION

The contract drawings in Appendix E illustrate two conditions for rehabilitation and widening: interim and final. For the duration of construction of the Highway 417 widening, as noted in Table 3-1, the Carling E-E on-ramp (on-ramp from Carling Avenue westbound to Highway 417 eastbound, located adjacent to the Westgate Shopping Centre) will be closed.

A separate Detail Design and EA Study is currently being completed for the proposed permanent closure of the Carling Avenue E-E on-ramp (WP 4255-15-01). The Transportation Environmental Study Report for the proposed Carling E-E on-ramp closure was published for a 30-day public review period between April 27, 2017 and May 27, 2017.

The Highway 417 widening between Maitland Avenue and Carling Avenue will result in future operational and safety issues due to the introduction of a significantly substandard merge condition for the existing Carling Avenue W-E on-ramp (on-ramp from Carling Avenue eastbound to Highway 417 eastbound). The permanent closure of the low volume E-E on-ramp is proposed as a means to accommodate the highway widening and provide a standard-length merge lane for the high volume W-E on-ramp, while maintaining access to Highway 417 eastbound within the Carling Avenue interchange.

Construction of the Highway 417 rehabilitation and widening will be undertaken in accordance with the interim condition drawings, which includes closure of the Carling Avenue E-E on-ramp and highway widening between Maitland Avenue and Carling Avenue. The highway widening on the south side is required as an interim condition during construction in order to complete the Merivale Road Overpass deck rehabilitation operations. Following construction and implementation of the final condition drawings, the Carling Avenue E-E on-ramp will be re-opened and the fourth lane in the eastbound direction will be blocked between Kirkwood Avenue and the E-E on-ramp using concrete barriers, as shown in the final condition drawings.

However, should the Detail Design and EA Study for the proposed closure of the Carling Avenue E-E on-ramp be approved, the Carling Avenue E-E on-ramp will remain closed permanently following construction of the highway widening as per the interim condition drawings. Mitigation for redirected traffic will be implemented at the Carling Avenue westbound / Kirkwood Avenue and Carling Avenue / Saigon Court intersections. For further details regarding proposed mitigation, refer to the Transportation Environmental Study Report for the Carling E-E on-ramp closure (WP 4255-15-01) available at www.highway417carlinge-ramp.com.
4 ENVIRONMENTAL ISSUES AND COMMITMENTS

This section focuses on the direct and indirect environmental impacts associated with the proposed works. Specifically, this section describes the mitigation measures developed to minimize the impacts for each identified environmental issue. Mitigation measures include planning decisions, design features, construction requirements and constraints.

The key to ensuring effective environmental quality control and risk management during the project is the development and proactive implementation of an approach that:

- Identifies environmental sensitivities;
- Presents environmental protection measures in a way that can be translated into contractual requirements and for which compliance can be verified; and
- Includes a monitoring program, as required, that verifies that environmental protection measures are being implemented and are effective.

It is important to ensure that the Contract Administrator and Contractor are made aware of, and are prepared to deal with, all environmental issues that may arise during construction.

Environmental contract specifications, including standard and non-standard special provisions (SP), Ontario Provincial Standard Specifications (OPSS) and MTO General Conditions of Contract, will be included in the contract documents to address specific environmental and operational concerns.

The key environmental concerns and commitments identified in the TESR for the entire Preliminary Design study area (Highway 417 from west of Highway 416 easterly to Anderson Road) are summarized in Table 4-1. This table has been provided as a reference and forms the foundation upon which the impact assessment of the Detail Design was developed.
Table 4-1: Preliminary Design Summary of Environmental Concerns and Commitments

<table>
<thead>
<tr>
<th>L.D.#</th>
<th>Issue/Concern Potential Effects</th>
<th>Responsible Agencies</th>
<th>L.D. #</th>
<th>Mitigation/Protection/ Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Fisheries and Aquatic Ecosystems • Impact on fish habitat at culvert extension/pier extension locations identified as fish habitat. • Impact on fish habitat due to sediment and debris entry into watercourses.</td>
<td>Department of Fisheries and Oceans</td>
<td>1.1</td>
<td>• Habitat improvements to be determined at the detail design phase. Typical measures to be considered include: embedment of culverts, use of natural stream substrate or other suitable river stone material in culvert bottom, placement of riparian plantings at disturbed areas at culvert ends and placement of 300 mm thickness of river stone around pier extensions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.2</td>
<td>• Restrict timing of in-stream works.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.3</td>
<td>• Prepare fisheries compensation plan during Detailed Design and submit to DFO for approval; secure Federal Fisheries Act authorization during Detailed Design.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.4</td>
<td>• Prevent sediment and debris from entering watercourse through the use of silt fencing, check dams and other suitable debris capture devices.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.5</td>
<td>• Restrict activities adjacent to watercourses (i.e. storage of materials, refuelling, excess materials placement).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.6</td>
<td>• Monitor construction activities. Monitor environmental protection measures and implementation of the fisheries compensation plan.</td>
</tr>
<tr>
<td>2.0</td>
<td>Terrestrial Ecosystems • Impact on wildlife habitats due to removal of vegetation at the edge of forested areas.</td>
<td>Ministry of Natural Resources</td>
<td>2.1</td>
<td>• Minimize vegetation removal; provide protection for those trees to remain.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.2</td>
<td>• Replace vegetation where feasible (refer to landscape concept plan).</td>
</tr>
<tr>
<td>3.0</td>
<td>Surface Water / Stormwater Management • Increased runoff resulting from increased pavement platform.</td>
<td>City of Ottawa, Ministry of Transportation</td>
<td>3.1</td>
<td>• Reduce runoff to pre-construction rates by using underground detention.</td>
</tr>
<tr>
<td>4.0</td>
<td>Land Use • Property acquisition required (including homes on Westmont Avenue and Concord Street). • Traffic delays / access restrictions during construction. • Impact on emergency service routes/access. • Restricted pedestrian/cyclist passage at the Queensway.</td>
<td>City of Ottawa, Ministry of Transportation</td>
<td>4.1</td>
<td>• Compensation for property acquisition will be negotiated through the property acquisition process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.2</td>
<td>• Prepare Traffic Management Plan during Detailed Design.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.3</td>
<td>• Maintain existing number of lanes on Queensway at most times during construction except for minor reductions during off-peak travel times. Preclude lane restrictions during peak travel times.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.4</td>
<td>• Implement elements of an Advanced Traffic Management System including changeable message signs and incident detection.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.5</td>
<td>• Maintain access to businesses and other properties throughout construction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.6</td>
<td>• Ensure ongoing communication with emergency services during construction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.7</td>
<td>• Free flow channelizations at ramp terminals removed, where possible, to better accommodate pedestrians/cyclists.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.8</td>
<td>• Accommodate the needs of pedestrians and cyclists during construction. Do not close adjacent crossings at the same time during construction. Provide alternative route and advance warning during temporary closures.</td>
</tr>
<tr>
<td>5.0</td>
<td>Contaminated Property / Waste Management • Encroachment onto potentially contaminated properties.</td>
<td>Ministry of Environment, Ministry of Transportation</td>
<td>5.1</td>
<td>• Undertake Environmental Site Assessment for properties to be acquired during Detailed Design.</td>
</tr>
<tr>
<td>I.D. #</td>
<td>Issue/Concern Potential Effects</td>
<td>Responsible Agencies</td>
<td>I.D. #</td>
<td>Mitigation/Protection/ Monitoring</td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------</td>
<td>----------------------</td>
<td>-------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>6.0</td>
<td>Aesthetics/Landscape Composition</td>
<td>City of Ottawa, National Capital Commission, Ministry of Transportation</td>
<td>6.1</td>
<td>Minimize vegetation removal; provide protection for those trees to remain.</td>
</tr>
<tr>
<td></td>
<td>• Loss of vegetation to accommodate Recommended Design.</td>
<td></td>
<td>6.2</td>
<td>Replace vegetation where feasible (refer to landscape concept plan).</td>
</tr>
<tr>
<td></td>
<td>• Effect on visual landscape and scenic resources available to motorists.</td>
<td></td>
<td>6.3</td>
<td>Enhance aesthetic design of bridges and retaining walls, where appropriate, to minimize visual intrusion.</td>
</tr>
<tr>
<td></td>
<td>• Effect on adjacent dwellers sensitive to views of facility.</td>
<td></td>
<td>6.4</td>
<td>Provide visual screening and aesthetic enhancement through landscape design (refer to landscape concept plan).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6.5</td>
<td>Develop final landscape plan during detail design, in consultation with the City and NCC, and present to the public at that time.</td>
</tr>
<tr>
<td>7.0</td>
<td>Noise</td>
<td>City of Ottawa, Ministry of Transportation</td>
<td>7.1</td>
<td>No further action required. Mitigation not required since the increase in noise levels is less than 5 dBA for the proposed road modifications relative to the future noise levels without the road modifications.</td>
</tr>
<tr>
<td></td>
<td>• Increase in noise levels adjacent for highway as a result of proposed highway modifications.</td>
<td></td>
<td>7.2</td>
<td>Require contractor to maintain equipment in an operating condition that prevents unnecessary noise, including but not limited to non-defective muffler systems, properly secured components and the lubrication of moving parts.</td>
</tr>
<tr>
<td></td>
<td>• Noise from construction equipment and vehicles during construction</td>
<td></td>
<td>7.3</td>
<td>Restrict idling of equipment to the minimum necessary to perform the specified work.</td>
</tr>
<tr>
<td>8.0</td>
<td>Air Quality</td>
<td>Ministry of Environment Canada Health Canada</td>
<td>8.1</td>
<td>No further action required. Mitigation not required since concentration levels of contaminants predicted to be below applicable government guidelines for the Recommended Design. Furthermore, results of regional air quality assessment concluded that the proposed modifications to Highway 417 would have an unnoticeable and insignificant impact on smog pollutants.</td>
</tr>
<tr>
<td>9.0</td>
<td>Archaeology</td>
<td>Ministry of Culture</td>
<td>9.1</td>
<td>Include contract provisions that require that the Ministry of Culture be notified immediately if deeply buried archaeological remains are encountered during construction.</td>
</tr>
</tbody>
</table>
Applicable commitments from the Preliminary Design and Environmental Assessment Study and additional commitments developed during Detail Design are summarized in the following sections. Each section also contains an overview of Hampton Park-specific commitments required by the National Capital Commission (NCC) as a condition of approval for works on their lands.

4.1 **Natural Environment**

During Preliminary Design, terrestrial ecosystem sensitivities were identified and evaluated within the Highway 417 study area from west of Highway 416 easterly to Anderson Road (Highway 417 Expansion). Detailed botanical and wildlife surveys were carried out from June 17th to 20th, 2002. The results of these surveys and a preliminary assessment of potential impacts were documented in the *Botanical and Wildlife Survey Report* (January 2003).

A second natural environment assessment of the Highway 417 / Island Park Drive Interchange was conducted in May 2005 during Preliminary Design to provide a better understanding of floral and faunal diversity at Hampton Park. This assessment included site reconnaissance on May 17, 2005 with follow-up visits on July 8 and 15, 2005.

Further field surveys within the study area were conducted by Corush Sunderland Wright (CSW) on April 10th and 11th, 2006, with subsequent follow-up site review in May 2006 after the bud break, and October 2006. The results of these field surveys were reviewed during Detail Design, as described in the Environmental Summary of Existing Conditions Report, Contract No. 2 (MMM/CSW, 2007).

During Detail Design, these reports were reviewed to obtain background information on the terrestrial environment within the study corridor. As there are no watercourses within the project limits, no assessment of aquatic environments was performed.

Species at Risk records (based on the *Endangered Species Act*, 2007), were also obtained from the Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC) database, in order to update the previous data from the Ontario Ministry of Natural Resources’ Vulnerable, Threatened, Endangered and Extirpated List (VTEE OMNR, 1996). In addition, an information request letter for updated Species at Risk information was sent to MNRF Kemptville District on March 23, 2015.

While consultation with MNRF identified a number of potential Species at Risk and Species of Special Concern that could occur in the study area (including butternut, pale-bellied frost lichen, milksnake, and snapping turtle), the habitat requirements of these species were reviewed and it was found that suitable habitat for these species is not present within the highly urbanized study area. One butternut was observed in the Hampton Park woodlot during the May 2005 natural environment assessment but will not be affected by the removal of landscaped / cultural vegetation required for the project works. No other Species at Risk were observed during the site reconnaissance completed for Preliminary Design.

A detailed description of existing environmental conditions is documented in the TESR prepared for Highway 417 from west of Highway 416 easterly to Anderson Road, while updated information on existing conditions, sensitivities, potential impacts and proposed mitigation are documented in the Summary of Existing Environmental Conditions Report, Detail Design Update, Highway 417 Rehabilitation & Widening...
from West of Maitland Avenue to East of Island Park Drive (GWP 4058-01-00) (MMM Group, December 2015).

The following sections describe potential impacts to the natural environment associated with the proposed works and summarize mitigation measures that have been included in the contract documents.

### 4.1.1 Fish and Fish Habitat

There are no watercourses within the project limits or the immediate surrounding area; therefore, fish and fish habitat will not be impacted by the proposed works.

### 4.1.2 Vegetation

**Existing Conditions and Potential Impacts**

According to the Botanical and Wildlife Survey Report (2003), there were no records of regionally or provincially rare species of plants or animals within the study area based on a review of the previous VTEE (OMNR, 1996). In addition, there are no Areas of Natural and Scientific Interest (ANSIs) or other natural features of interest within the study area.

Limited landscaped / cultural vegetation exists within the Highway 417 corridor within the project limits. Discontinuous grass, landscape trees and plantings are predominant along the Highway 417 right-of-way (ROW). Vegetation includes escaped species from residential gardens.

In general, deciduous trees occur along the north perimeter of the highway ROW, primarily immediately adjacent to the property line. Along the south perimeter, the overhead Hydro One transmission corridor restrict the species selection and height. The edge of the ROW is primarily planted with a range of shrub material and isolated locations of deciduous trees. On lands immediately adjacent to the highway, there is a limited quantity of vegetation due to urban development. Within the City and NCC parks and open spaces, the north perimeter of the corridor has a greater variety of plant material, and in addition to shrubs, there is a blend of deciduous trees.

The Highway 417 Tree Inventory Report (CSW, 2015) provides a description of vegetation along the highway corridor between Maitland Avenue and Merivale Road. The following detailed descriptions cover the study area between Maitland Avenue and Merivale Road:

- **Maitland Avenue interchange – north side:** The inner loop ramp north of the highway is generally an open grass area with a number of large specimen trees and a dense woodlot on the slope adjacent to the Maitland Avenue overpass. The specimen trees are all very large and generally in good condition and should be considered to be retained. A total of 52 trees were inventoried. Seven (7) trees are recommended to be removed in this area due to their poor condition (two [2] dead Manitoba maples in the woodlot; four [4] dying Ash trees infected with Emerald Ash Borer; and one [1] Crab apple tree with rot).

- **Maitland Avenue interchange – south side:** The inner loop ramp south of the highway is an open grass area with a number of large specimen trees, a woodlot adjacent to Maitland Avenue and a cluster of deciduous trees near the centre of the island. The majority of the specimen trees are in good condition and should be considered to be retained. A total of 27 trees were inventoried. Eleven (11) trees are recommended to be removed in this area due to their poor condition (seven...

- Maitland Avenue (STA 21+950) to Clyde Avenue (STA 22+750) – north side: This area is characterized by fragmented areas of planting and trees. A large mature hedge row of deciduous trees with understory shrubs occurs along the Soloway Jewish Community Centre / Ottawa Jewish Community School property. One (1) tree is present adjacent to commercial properties. The majority of trees are in good condition and should be considered to be retained, as they provide a successful buffer to adjacent properties. A total of 42 trees were inventoried. Three (3) trees are recommended to be removed in this area due to their poor condition (two [2] small caliper Norway maple trees in poor condition; and one (1) dead Norway maple tree). One (1) Manitoba maple will require removal due to its location adjacent to a proposed retaining wall.

- Maitland Avenue (STA 21+950) to Clyde Avenue (STA 22+750) – south side: The majority of plantings are shrubs, with very few trees concentrated along the on-ramp, and other specimens scattered along the south edge of the highway. The existing trees have a shrub-like character with low canopies and poorly defined central leaders, and are considered to be of low value. A total of 11 trees were inventoried. Three (3) trees are recommended to be removed in this area due to their poor condition (one [1] Manitoba maple in poor condition; two [2] Ash trees infected with Emerald Ash Borer).

- Clyde Avenue (STA 22+750) to Churchill Avenue (STA 23+075) – north side: The north side of the highway has a fairly dense treed edge which offers screening of views to the adjacent industrial property. Many of the existing trees are mature and have a shrub-like character with low canopies and poorly defined central leaders, and few are in good condition. A total of 39 trees were inventoried. Six (6) Cottonwood trees are recommended to be removed in this area due to their poor condition. Nineteen (19) trees will require removal due to conflict with the location of the proposed retaining wall between STA 22+800 and STA 22+950 (10 Russian olive trees; nine [9] Cottonwood trees).

- Clyde Avenue (STA 22+750) to Churchill Avenue (STA 23+075) – south side: This area is primarily characterized by shrubs, with the exception of one (1) Siberian elm tree in good condition located along the edge of the highway adjacent to the hydro tower. This tree requires removal due to conflict with the location of the proposed retaining wall (three [3] Siberian elm trees, one of which is dead) and storm sewer construction requirements.

- Churchill Avenue (STA 23+075) to Carling Avenue Eastbound (STA 23+490) – north side: This area has some small linear groups of trees and some individual trees generally spaced far apart. These trees are located in grass areas void of understory shrub planting. A total of 15 trees were inventoried. Five (5) trees were assessed as being in poor condition (three [3] Norway maples and two [2] Amur maples. All vegetation will require removal due to conflict with the location of the proposed retaining wall (three [3] Siberian elm trees, one of which is dead) and storm sewer construction requirements.

- Churchill Avenue (STA 23+075) to Carling Avenue Eastbound (STA 23+490) – south side: This area is primarily characterized by shrubs, with the exception of one (1) Siberian elm tree in good condition located along the edge of the highway adjacent to the hydro tower. This tree requires removal due to conflict with the location of the proposed retaining wall at the existing hydro tower.

- Carling Avenue Eastbound (STA 23+490) to Kirkwood Avenue (STA 23+890) – north side: This area has a thick planted edge primarily consisting of shrubs with some trees generally located at the toe of the slope along the edge of the chain link fence. A total of 10 trees were inventoried. Six (6) trees are recommended to be removed due to their poor condition (four [4] dead Manitoba maples; one [1] Manitoba maple in poor condition; one [1] dead Ash tree).
• Carling Avenue Eastbound (STA 23+490) to Kirkwood Avenue (STA 23+890) – south side: This area is primarily characterized by shrubs, with the exception of one (1) Siberian elm tree in good condition located in close proximity to the highway. This tree requires removal due to conflict with the location of the grading operations for highway widening.

• Kirkwood Avenue (STA 23+890) to Carling Avenue Westbound (STA 24+040) – north side: This area has a thick planted edge primarily consisting of shrubs with some trees generally located at the toe of the slope along the edge of the chain link fence. A total of 17 trees were inventoried. Six (6) dead Ash trees are recommended to be removed due to their poor condition.

• Kirkwood Avenue (STA 23+890) to Carling Avenue Westbound (STA 24+040) – south side: This area is characterized by shrub plantings along the edge of the right-of-way and is void of trees.

• Carling Avenue Westbound (STA 24+040) to Merivale Road (STA 24+525) – north side: this area has a thick planted edge of shrubs that extends along the off-ramp to Carling Avenue westbound. There are only three (3) dead Ash trees located along the off-ramp within the right-of-way, which are recommended to be removed due to their poor condition.

• Carling Avenue Westbound (STA 24+040) to Merivale Road (STA 24+525) – south side: This area is characterized by shrub plantings along the edge of the right-of-way. There are several trees at the base of the existing Carling Avenue E-E on-ramp.

An additional natural environmental assessment of the Highway 417 / Island Park Drive interchange was conducted during Preliminary Design (May 2005) to provide a better understanding of floral and faunal diversity at Hampton Park. The assessment concluded that the Hampton Park woodlot supports a moderate level of significant plant species (one Regionally Rare species [Butternut] and four Regionally Uncommon vascular species) and a relatively high level of ecological integrity, despite fragmentation of the woodland areas to the north, disturbance by formal and informal footpaths, and some invasive weed growth (TSH, 2007).

Field surveys conducted as part of the Detail Design for the Highway 417 Bridge Rehabilitations from Maitland Avenue to Island Park Drive found no regionally or provincially rare species within the study area. The existing vegetation within, and adjacent to the corridor, is typical of an urban condition. The original plant material was removed, urban development disturbed the existing soil condition, and new plant material was installed post construction. The quality of the plant material varies, with vegetation immediately adjacent to the highway more affected by the roadside conditions, including salt spray and wind burn (MMM/CSW, 2007).

In summary, the majority of existing trees are located on the north side of the highway, while the south side of the highway is primarily populated by shrubs. Tree removals are required throughout.

Construction is proposed to occur within the follow staging areas, as illustrated in Figure 4-1.

• Staging Area 1: On the north side of the highway in the open space median areas between Carling Avenue Eastbound and Westbound, east and west of Saigon Court (Staging area used for the Carling Avenue Eastbound bridge replacements); and

• Staging Area 2: On the south side of the highway in the open space area between the Carling Avenue eastbound off-ramp and Carling Avenue westbound (Staging area used for the Carling Avenue Westbound bridge replacements).
Within the areas previously used for the bridge rapid replacements, vegetation has been removed as part of the previous construction works. Reinstatement following those contracts was limited to sodding only.

TESR commitments include minimizing vegetation removal and providing protection for trees to be retained. Significant trees for protection are identified in the final landscape plan prepared as part of the current Detail Design project (e.g. trees along the north side of Highway 417 at the rear of the Soloway Jewish Community Centre property will not be removed during construction and will be protected).

A review of the NHIC database during Detail Design identified provincially significant plant species, outlined in Table 4-2, as having historical or current records within the study area:

**Table 4-2: Provincially Significant Plant Species**

<table>
<thead>
<tr>
<th>Plant Species</th>
<th>Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Waterwort</td>
<td>Shallow water, river edges, and shores of ponds, lakes, pools and ditches.</td>
</tr>
<tr>
<td>Limestone Oak Fern</td>
<td>Ledges and slopes in limestone or dolomite rock, and in moist humus in forests on calcareous rock.</td>
</tr>
<tr>
<td>Pitch Pine</td>
<td>Shallow soil of dry rock outcrops and ridges.</td>
</tr>
<tr>
<td>Ram’s-head Lady’s-slipper</td>
<td>Moderately open forests, outcrops, cliff tops, river banks, and moderate to steep slopes and sink holes.</td>
</tr>
</tbody>
</table>

Suitable habitat for these species is not present within the study area.
Figure 4-2, Figure 4-3, and Figure 4-4 illustrate the existing vegetation conditions in select locations within the project limits.

Figure 4-2: Discontinuous cultural vegetation along embankments at Merivale Road overpass. (Google Maps, 2015)

Figure 4-3: Saigon Court staging areas adjacent to Carling Avenue Eastbound bridges on the north side of the highway looking west. (Google Maps, 2015)

Figure 4-4: Looking east along Highway 417, east of the Maitland Avenue interchange; vegetation at the rear of Ernest Avenue properties on the north side of Highway 417. (Google Maps, 2015)
Mitigation

The following mitigation measures will be included in the Contract Documents to mitigate impacts to vegetation:

- Protection will be provided for any large diameter trees to remain;
- Vegetation removal and grading will be minimized to only what is required for the proposed works and existing vegetation will be retained where possible;
- The use of appropriate vegetation clearing techniques and protection measures will be employed and exposed surfaces will be re-vegetated using a seed mix composed of native species that are appropriate for the site conditions or sod as soon as possible following construction, in accordance with OPSS 201.
- A landscaping plan has been developed to provide landscape enhancement within the interchanges and along the highway corridor, where feasible. The plan will be implemented following construction of the widening and rehabilitation.

Hampton Park-specific Mitigation

The following site-specific mitigation measures will be included in the Contract Documents to mitigate impacts to vegetation on National Capital Commission (NCC) lands at Hampton Park and only apply to works undertaken at Hampton Park:

- Existing trees (including crown, trunk and root system) are to be protected during all stages of work. No material, construction equipment, or vehicles are to be stored under the drip line of trees at any time. Any disturbed vegetation or landscaping will be repaired or replaced without delay to the satisfaction of the NCC.
- If any trees, other than those identified in the plans, are to be cut, the Contractor must address a request to the Senior Land Use Planner, Federal Approvals Division (613-239-5678 x5196) for review and, if acceptable, obtain all necessary approvals.
- The recently planted trees along the base of the embankment on NCC lands at Hampton Park will be relocated within the dog park at Hampton Park by the Contractor during construction in close coordination with the NCC and the City of Ottawa.
- For each unsuccessfully relocated NCC tree, the Contractor will provide compensation at a 2:1 ratio (i.e. two new trees for each unsuccessfully relocated/dead tree).

4.1.3 Wildlife and Species at Risk

Existing Conditions and Potential Impacts

As the study area is highly urbanized, wildlife habitat is limited. The Environmental Summary of Existing Conditions Report, Contract No. 2 (MMM/CSW, 2007) noted that common expected species tolerant of urban habitats are present; however, there were no observations or evidence of large, regionally and/or locally rare mammals and no wildlife trails or paths were noted.
North of the study area and west of Island Park Drive, the Hampton Park woodlot has the potential for a greater diversity of wildlife and habitat. This woodlot area will not be impacted by the proposed works, and therefore was not included during the initial field evaluation or assessment for the Detail Design (MMM/CSW, 2007).

An information request was sent to the Ministry of Natural Resources and Forestry (MNRF) Kemptville District on March 23, 2015. MNRF provided a response on May 21, 2015, which indicated that potential Species at Risk which may be found in the vicinity of the project limits include Butternut (Endangered) and Pale-bellied frost lichen (Endangered). In general, suitable habitat for these species is not present within the study area and these species were not observed during site reconnaissance along the Highway 417 corridor.

Butternuts usually occur alone or in small groups in deciduous forests, and are often found along streams with moist, well-drained soil, and are also found on well-drained gravel sites and rarely on dry rocky soil. One Butternut was observed in the Hampton Park woodlot during the natural environment assessment of the Highway 417 / Island Park Drive Interchange (May 2005), but will not be affected by the removal of landscaped / cultural vegetation required for the project works.

Pale-bellied frost lichen is usually found in wooded areas and, in Ontario, grows on Hop Hornbeam (also known as Ironwood) trunks at a height of 0.5 to 2 metres. No Pale-bellied frost lichen were observed in the study area and therefore will not be affected by the removal of landscaped / cultural vegetation required for the project works.

MNRF also indicated that one or more species of Special Concern have been documented to occur within or in the vicinity of the project limits. A review of the species of Special Concern species identified by MNRF and their habitat is outlined in Table 4-3.

### Table 4-3: Species of Special Concern

<table>
<thead>
<tr>
<th>Species</th>
<th>Habitat</th>
</tr>
</thead>
</table>
| Milksnake     | Rural areas around buildings and old structures, prairies, pastures, hayfields, rocky hillsides and a wide variety of forest types.  
*Note that Milksnake is no longer classified as a species of Special Concern.* |
| Snapping Turtle | Shallow water bodies and dense aquatic vegetation including ponds, sloughs, shallow bays or river edges, and slow streams. |

Suitable habitat for these species is not present within the study area.

**Mitigation**

The following mitigation measures will be included in the Contract Documents to protect wildlife during construction:

- Wildlife incidentally encountered during construction should not knowingly be harmed and should be allowed to move away from the construction area on its own. In the event that wildlife encountered during construction does not move from the construction zone, an Environmental Inspector should move the animal to a safe area. Active nests will not be disturbed in accordance with the *Migratory Bird Convention Act*;
Tree removal operations will be prohibited during the breeding bird period (April 1 to August 15) in any calendar year; 

- If vegetation clearing and grubbing must occur during the breeding bird period (April 1 to August 15), these activities shall be preceded by a nesting survey conducted by a Qualified Avian Biologist to ensure no active nests (with eggs or young) are disturbed; 

- If an active nest is identified within or adjacent to the construction site, the Contractor Administrator will be contacted. The Contractor will not disturb or destroy protected migratory birds or their active nests. Work shall not proceed until a qualified biologist defines and marks an appropriate setback within which no construction activities shall occur until the nest becomes inactive; 

- If construction activities are such that continuing construction in that area would result in a contravention of the *Migratory Birds Convention Act*, all activities shall stop and MNRF will be contacted to discuss mitigation options; and 

- Should any SAR be encountered at any time in the construction area, the Ministry of Natural Resources and Forestry will be consulted.

**Hampton Park-specific Mitigation**

The following site-specific mitigation measures will be included in the Contract Documents to mitigate impacts to wildlife on NCC lands at Hampton Park.

- The Contractor will inspect the site prior to the commencement of construction (for Butternut, Pale-bellied frost lichen, Milksnake and Snapping Turtle), and on a daily basis (for Milksnake and Snapping Turtle) for the duration of the works for the potential presence of Species at Risk. Should any Species at Risk be encountered at any time in the construction area, the species must be left alone to move out of the area on their own, construction activities will stop, and the Ministry of Natural Resources and Forestry and the Head, Species at Risk, Canadian Wildlife Service (416-739-4214) will be contacted.

Even if the works are undertaken outside the core breeding window of birds protected under the *Migratory Birds Convention Act*, as noted above (April 1 to August 15), the following mitigation measures apply:

- The Contractor shall ensure that a bird nest survey is conducted prior to the vegetation removal works. A Qualified Avian Biologist shall be retained by the Contractor to conduct a nesting survey a maximum of 2-3 days prior to clearing. The nesting survey will be carried out following a methodology approved by the Canadian Wildlife Service.

- If one or more nests containing eggs or chicks of migratory birds are spotted or discovered prior to the construction activity, work must not proceed, the immediate area shall be avoided, and an action plan must be developed by the Qualified Avian Biologist retained by the Contractor. The plan shall include a species-appropriate buffer zone to the work and provide further information on noise levels which may not be exceeded within an appropriate distance to the nest taking into account the species of bird and the area surrounding the nest. The buffer zone shall be clearly identified to the construction crew and the construction supervisor at the site. However, in all
cases, the nest itself should never be marked using flagging tape or other similar material as this increases the risk of nest predation.

- If one or more nests containing eggs or chicks of migratory birds are spotted or discovered during the works, any disruptive activity in the nesting area will be stopped until the establishment of a buffer zone by the Qualified Avian Biologist retained by the Contractor. This is based on a range of appropriate protection to the species and circumstances and must be maintained until the chicks have naturally left the area near the nest permanently.

### 4.1.4 Designated Natural Areas

There were no designated natural heritage features or areas, including Provincially Significant Wetlands (PSWs), Areas of Natural and Scientific Interest (ANSIs), or Environmentally Sensitive Areas (ESAs), identified in the vicinity of the project.

### 4.1.5 Hydrology / Surface Water

**Potential Impacts**

Construction of the highway widening will result in an overall increase in impervious area due to construction of this project which may result in additional stormwater runoff.

**Mitigation**

In general, the existing storm sewer outlet locations will be maintained. Due to the introduction of additional concrete barriers and new retaining walls on the outside to facilitate the widening, additional outside shoulder catchbasins and shoulder storm sewers will be required; these storm sewers will connect to the new median storm sewer system or to existing drainage outlets. A stormwater management facility (dry detention pond) will be incorporated into the highway drainage system at the Maitland Avenue interchange.

The new storm sewer system will be designed for a 10-year return. The new storm sewer system maximizes the ability to separate the MTO drainage from the City of Ottawa drainage and provides treatment in grassed swales and enhanced grass swales where conditions permit.

Drainage consistent with the proposed staging of the highway widening will be maintained during construction.

In addition to the required drainage modifications, the proposed highway widening provides an opportunity to implement stormwater management measures, where presently no strategy is in place. The proposed stormwater management strategy for treatment of highway runoff within the project limits includes the incorporation of the following stormwater management facilities into the drainage system:

- A stormwater management pond at the Maitland Avenue interchange within the loop of the Highway 417 Eastbound off-ramp to Maitland Avenue;
- A 1 m wide flat-bottom grassed swale along the base of the reconstructed highway embankment at Hampton Park, located west of the intersection of Merivale Road and Island Park Drive; and
• Enhanced flat-bottom grassed swales along the base of the highway embankment on the south side along Carling Avenue eastbound.

4.1.6 EROSION AND SEDIMENT CONTROL

Potential Impacts

Uncontrolled erosion and sedimentation occurring during construction can result in a loss of topsoil, disruption of drainage systems and nearby natural systems.

Mitigation

Standard erosion and sediment control measures will be implemented during construction to prevent the migration of soils from the site. The Contractor shall be required to prepare an Erosion and Sediment Control Plan including (but not limited to) the following measures:

• All vegetated cover not specified for removal should be preserved in order to minimize erosion and sedimentation;
• All erosion and sediment control measures should be integrated with a construction operation and the schedule as determined by the Contractor. Operations should not commence until temporary erosion and sediment control measures have been installed. Erosion control measures should include, but not be limited to, silt fence barrier, straw bale flow checks, tarps, etc.;
• Erosion and sediment control measures should accommodate other aspects of the work including, but not restricted to the following:
  o work area requirements, including equipment access, operation and storage, and material supply, utilization and storage;
  o surface drainage from outside, through or around the work;
  o areas of disturbed soil and soil stockpiles;
  o means of access to erosion and sediment control measures requiring maintenance;
  o constraints that may be specified elsewhere in the Contract; and
  o protection of completed portions of the work.
• The Contractor should monitor the erosion and sediment control measures and if the measures are found to be ineffective, the Contractor should immediately make changes in order to control erosion and sediment; and
• Temporary erosion and sediment control measures should be maintained and kept in place until 100% of all work has been completed and stabilized. Temporary control measures should be removed at the completion of the work but not until permanent erosion control measures, as specified in the contract, have been established.

Hampton Park-specific Mitigation

The following design and site-specific mitigation measure will be included in the Contract Documents to mitigate impacts of uncontrolled erosion and sedimentation and only apply to works undertaken on NCC lands at Hampton Park:
The Contractor shall develop and submit an Erosion and Sediment Control Plan for works to be completed on NCC lands at Hampton Park to MTO and the NCC prior to the commencement of work. Measures and devices will remain in place until all disturbed ground has been permanently stabilized and all suspended sediment has been contained. Measures and structures will be inspected regularly to ensure that they are working efficiently, and if not, repair them so that they effectively remove sediments during the duration of the works. Upon the completion of the works, the Contractor will remove all the sediment and erosion control devices from the site.

4.1.7 WASTE AND CONTAMINATION / MANAGEMENT OF EXCESS MATERIALS

Potential Impacts

If not managed properly, waste, excess materials (including salt impacted soil) and emissions have the potential to contaminate the surrounding environment.

Within the project limits, there are three sites with either confirmed or suspected soil contamination. There is therefore the potential that contaminated soils may be encountered during construction.

The first site with confirmed contamination issues is located on NCC property. Metal parameters (barium, chromium, cobalt, nickel and vanadium) in soil exceeding Ontario Standard Table 1 were found in a borehole (MW 09-44) on the west side of Merivale Road within Hampton Park as part of a Phase II Environmental Site Assessment prepared for the City of Ottawa in 2009. This information has been provided by the NCC.

The remaining sites have either suspected contamination from hydrocarbons and / or solvents, or other unconfirmed contaminants. At one site, monitoring wells are in place and will be protected during construction.

Mitigation

The following mitigation measures will be included in the Contract Documents to manage excess waste and emissions:

- Construction waste and excess materials generated during construction will be managed in accordance with OPSS 180.
- Excess earth from highway construction projects may contain elevated concentrations of chloride and sodium. Where the Contractor manages excess earth as disposable fill, the Contractor will take into account the possibility of salt impacts and ensure that the material is managed responsibly and in an environmentally appropriate manner. Where the Contractor intends to manage excess earth that may be salt impacted on private property, the Contractor shall make the Property Owner aware that it may be salt impacted by using the Property Owner’s Release. The Contractor is responsible for conducting such sampling and testing as may be necessary to comply with any requirements imposed by the Property Owner as a condition of accepting the excess earth.
- Procedures to control emissions of dust, silica and other debris will be implemented to ensure they do not escape beyond the right-of-way.
• A Spill Control and Response Plan will be developed and implemented to prevent deleterious substances from entering the watercourse or other surrounding natural areas. The plan should ensure machinery arrives on site in clean condition and maintained free of fluid leaks.

• An emergency spill kit should be kept on site in case of spills during activities or fluid leaks or spills from equipment.

• When spills occur, the Ministry of the Environment Spills Action Centre should be contacted and all reasonable corrective action should be taken to contain and clean the spill immediately.

• Refuelling is not permitted in areas that have been identified as having on-going environmental monitoring systems in place (e.g., monitoring wells).

• Contaminated soil shall be managed as commercial waste and/or non-hazardous solid industrial waste and will be taken to an appropriately-approved waste disposal site.

• The existing monitoring wells will be protected throughout the duration of the temporary use of land, as stipulated under TLI agreements.

Hampton Park-specific Mitigation

The following mitigation measure will be included in the Contract Documents and only apply to works undertaken on NCC land at Hampton Park:

• For soil removed within Hampton Park in the vicinity of borehole MW 09-44, the Contractor may reuse this material in the MTO Right-of-Way within the contract limits. If the material is managed within the MTO ROW, the Contractor shall take into account that the material shall be managed responsibly and in an environmentally appropriate manner and shall manage the material according to Table 2 of OPSS 180. In the event that a suitable location for the above material cannot be determined, the Contractor shall manage it as commercial waste and/or non-hazardous solid industrial waste. Waste shall be transported directly from the construction area to a site that has a Certificate of Approval for a Waste Disposal Site that is valid for commercial waste and/or non-hazardous solid industrial waste.

• If a fuel spill or spill of other pollutants should occur on or adjacent to NCC property, the Contractor will be responsible for containing, cleaning out and disposing the contaminants caused by the spill in accordance with existing regulations. The Contractor must immediately contact the NCC Emergency line at 613-239-5353 and send a copy of the spill and clean up reports to the NCC.

• A spill report form will be completed and sent to NCC Environmental Services within 24 hours of the spill. The Spill Report, Response and Review Log will be submitted to the NCC Contract Manager and will include details on the spill.

• If any visual or olfactory signs of contamination such as oil sheen, stains, discoloration of surfaces, stressed vegetation, presence of debris, etc. are observed onsite during the excavation of the swale, the works must be halted and the NCC Senior Environmental Officer, 613-239-5678 ext. 5418 shall be immediately contacted.

4.1.8 DESIGNATED SUBSTANCES

Potential Impacts

The following designated substances are assumed to be present at the Merivale Road Overpass:
- Arsenic: assumed to be present in pressure treated lumber in sign supports and steel beam guide rail;
- Asbestos: conduit in barrier walls of the Merivale Road Overpass bridges are assumed to contain asbestos and are assumed to be non-friable. Existing abandoned utility ducts throughout the project limits may be impacted by excavations and are assumed to contain non-friable asbestos;
- Lead: assumed to be present in barrier wall epoxies and road paint;
- Mercury: assumed to be present in luminaries; and
- Silica: present throughout the work area, including asphalt, concrete and granular materials.

**Mitigation**

Elements with the potential to contain designated substances will be handled in accordance with the MTO Special Provision No. 101F21 to ensure compliance with the *Occupational Health and Safety Act* and provincial regulations.

### 4.2 SOCIAL / ECONOMIC ENVIRONMENT

During Detail Design, a review of existing planning documents, current land use, and the social environment (i.e. neighbourhood structures within the study area) was completed to identify any potential impacts associated with the project.

The following sections describe potential impacts to the socio-economic environment associated with the proposed works, and provide a summary of mitigation included in the Contract Documents.

#### 4.2.1 GREENWAYS AND OPEN SPACE LINKAGES

While there are no greenways or open space linkages across the highway corridor, the area of Hampton Park between the baseball diamonds and Island Park Drive / Merivale Road is open space, currently being used as a fenced-in dog park. The Island Park Drive corridor is recognized as one of the green corridors bisecting Highway 417.

No impacts to greenways or open space linkages are anticipated.

#### 4.2.2 LAND USE

The study area lies within an urban setting. Within the project limits, the lands surrounding Highway 417 are designated General Urban Area, with the exception of the south side of Highway 417 between Maitland Avenue and Carling Avenue which is designated as Employment Area in the City of Ottawa Official Plan. The lands abutting the ROW are zoned as Light Industrial and General Industrial, Arterial Mainstreet, Minor Institutional, Residential, and Open Space as per the City of Ottawa Comprehensive Zoning By-law No. 2008-250.

NCC-owned lands (Hampton Park) are located along the north perimeter of the Highway 417 ROW west of Island Park Drive. Within Hampton Park, there is an open meadow adjacent to the highway ROW which has been fenced-in and is in use as a dog park, with a varying width of 60 meters to 120 meters. A successionary woodlot occurs to the north and is zoned as Environmental Protection. Hampton Park also
contains a City-owned outdoor sports complex located at the west end of the NCC lands and includes two baseball fields, a basketball court, and a wading pool with parking facilities.

There are two churches and one school located within the study area. St. Basil's Church is located north of Highway 417 at the Maitland Avenue interchange, on the east side of Maitland Avenue. The Kitchissippi United Church is located south of Highway 417 between Merivale Road and Island Park Drive. The Hillel Academy/Rambam Day School and adjoining park and Soloway Jewish Community Centre are located north of Highway 417, east of Maitland Avenue between Broadview Avenue and Boyd Avenue.

Other land uses south of Highway 417 include predominantly commercial / industrial uses including office buildings, a City of Ottawa Surface Operations yard, vehicle services and dealerships, a hotel, seniors' housing and the Westgate Shopping Centre.

Other land uses north of Highway 417, land uses include residential development, office buildings and commercial establishments including Hampton Park Plaza and several car dealerships.

The Ottawa Fire Station No. 23 is located north of Highway 417 at the intersection of Carling Avenue westbound and Kirkwood Avenue.

Existing land uses are illustrated on Figure 4-5.

No permanent impacts to existing land uses are anticipated.
Figure 4-5: Existing land uses within the study area
4.2.3 AESTHETICS AND LANDSCAPE

Potential Impacts

The proposed works will result in minor disturbance to the existing landscape and vegetation within the project limits.

Mitigation

The landscape design for the highway corridor includes low maintenance, native or non-evasive, species which have high durability (i.e. salt/wind tolerant, regional hardiness) and which provide seasonal interest through colour, form, and texture. Proposed plant selections for the following areas include native seed mix, shrub plantings, deciduous and coniferous trees, as appropriate and are in accordance with Context Sensitive Design recommendations:

- The Landscape Plan developed during Detail Design will be implemented following construction of the rehabilitation and widening;
- Salt tolerant, hardy tree and shrub species will be used throughout;
- Seasonal interest will be provided by drought tolerant trees and vegetation, where and as appropriate. Restrained use of Fall and Spring plants with red attributes (flowers, budding, stalk colouration, and fruit) will be used. Areas absent of existing landscaping will be enhanced where feasible;
- Appropriate MTO standard seed mixes and plantings will be utilized along roadside conditions;
- Specialized MTO standard seed mixes or sodding and slope stabilization will be used on slopes greater than 2:1;
- Tree placement will be respectful of highway light and pole locations to maximize evening lighting effectiveness; and
- Specifications for sod, seed and mulch, shrubs and trees are included in the Contract Documents.

4.2.4 TRAFFIC OPERATIONS

Potential Impacts

While the construction staging presented in Section 3.2 was developed with the goal of minimizing lane and ramp closures to the extent possible, some closures are required to accommodate the proposed construction activities.

Table 4-4 outlines anticipated impacts to City streets. Short-term ramp closures varying from one (1) to nine (9) weeks in duration will be required for ramp reconstruction operations, as described in Table 4-5.

A single overnight full closure of Highway 417 (Queensway) is required for work at the Highway 417 Merivale Road Overpass structure.
Table 4-4: Anticipated Impacts on City Streets

<table>
<thead>
<tr>
<th>CITY STREET NAME</th>
<th>ANTICIPATED IMPACT/USE OF STREET</th>
<th>ANTICIPATED YEAR(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodroffe Avenue</td>
<td>• Will see detour traffic during ramp closures at Maitland Avenue interchange</td>
<td>2017</td>
</tr>
<tr>
<td>Baseline Road</td>
<td>• Will see detour traffic during ramp closures at Maitland Avenue interchange</td>
<td>2017</td>
</tr>
<tr>
<td>Maitland Avenue</td>
<td>• Will see detour traffic during ramp closures at Carling Avenue interchange</td>
<td>2017-2019</td>
</tr>
<tr>
<td></td>
<td>• Will see construction traffic from construction access/egress points on ramps</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Construction access/egress directly onto Maitland Avenue on the south side of the underpass, in southbound lane</td>
<td></td>
</tr>
<tr>
<td>Carling Avenue</td>
<td>• Will see detour traffic during ramp closures at Carling Avenue interchange and Maitland Avenue interchange</td>
<td>For the duration of construction (2017-2020)</td>
</tr>
<tr>
<td></td>
<td>• Will see construction traffic from construction access/egress points at overpass structures; from closed ramps; from the designated construction staging area between Carling Avenue eastbound and westbound across from the Travelodge; and from the green spaces between Carling Avenue eastbound and westbound within the Highway 417 interchange</td>
<td></td>
</tr>
<tr>
<td>Saigon Court</td>
<td>• Will see construction traffic from construction access/egress points from the designated construction areas off of Saigon Court/Carling Avenue</td>
<td>For the duration of construction (2017-2020)</td>
</tr>
<tr>
<td>Boyd Avenue</td>
<td>• Dead end roadway will see construction traffic as it is an access/egress point to the temporary access route that runs parallel to Highway 417 on the north side</td>
<td>2017</td>
</tr>
<tr>
<td></td>
<td>• Portion of the roadway immediately adjacent to the 417 may be excavated for a receiving pit to facilitate tunneling operations for the installation of underground utility crossings (i.e. storm later or electrical/ATMS ducts)</td>
<td></td>
</tr>
<tr>
<td>CITY STREET NAME</td>
<td>ANTICIPATED IMPACT/USE OF STREET</td>
<td>ANTICIPATED YEAR(S)</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Clyde Avenue</td>
<td>• Will see construction traffic from construction access/egress points at all four quadrants of the overpass structure to the temporary construction access routes that run parallel to the Highway 417 on both the north and south sides</td>
<td>2017-2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Churchill Avenue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>• Dead end roadway will see construction traffic as it is an access/egress point to the temporary access route that runs parallel to Highway 417 on the south side</td>
<td>2017-2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Churchill Avenue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>• Dead end roadway will see construction traffic as it is an access/egress point to the temporary access route that runs parallel to Highway 417 on the north side</td>
<td>2017-2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lady Ellen Place</td>
<td>• Dead end roadway will see construction traffic as it is an access/egress point (via private lands) to the temporary access route that runs parallel to Highway 417 on the north side</td>
<td>2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kirkwood Avenue</td>
<td>• Will see construction traffic from construction access/egress points at the overpass structure and from the designated staging area on the north side of the overpass (northbound side)</td>
<td>For the duration of construction (2017-2020)</td>
</tr>
<tr>
<td></td>
<td>• Will see detour traffic during ramp closures</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merivale Road</td>
<td>• Will see construction traffic from construction access/egress points at the overpass structure in all four quadrants</td>
<td>2017: potential for some work</td>
</tr>
</tbody>
</table>
|                     | • Staged construction operations for the widening of the overpass structure will require reduced traffic lane widths, single sided pedestrian access paths, and reduced overhead clearance (+/- 3.6 m) at various stages during the widening construction | 2018: construction for the widening of the overpass will commence, including full weekend closures; potential that this work could carry into early 2019 | 2019-2020: continued potential for construction traffic
|                     | • Will be closed for two (2) 36-hour periods (weekend closure) for the set-up and take down of formwork                                                                                                                                                                               |                                             |
Highway 417 Rehabilitation and Widening from West of Maitland Avenue to East of Island Park Drive (GWP 4058-01-00)  
Design and Construction Report

<table>
<thead>
<tr>
<th>CITY STREET NAME</th>
<th>ANTICIPATED IMPACT/USE OF STREET</th>
<th>ANTICIPATED YEAR(S)</th>
</tr>
</thead>
</table>
| Island Park Drive| • Will see construction traffic from construction access/egress point at Byng Drive (south side)  
• Will see detour traffic during Merivale Road full closure | 2017-2018, with potential in 2019 |
| Bronson Avenue  
Chamberlain Avenue  
Isabella Street  
Catherine Street | • Will see Highway 417 detour traffic during overnight, 17-hour full closure of Highway 417 | 2019 |

Mitigation

The Contractor will be required to adhere to general construction requirements which apply throughout the duration of construction and, in general, include the following:

- Three (3) lanes of traffic will be maintained on Highway 417 at all times during peak periods;
- No short-term lane closures will be permitted on City of Ottawa roadways between the hours of 07:00 to 19:00 Monday to Friday, and 10:00 to 18:00 Saturday and Sunday, as specified in the Contract documents; and
- Extended duration closures will be scheduled well in advance and require that an appropriate Communication Plan be developed and followed which involves advance public notification (e.g. media releases, signage) of any upcoming closures and identification of appropriate detour routes.
- The ramp closures will be scheduled such that no two consecutive on- or off-ramps in one direction occur at the same time. The following ramps will not be closed at the same time:
  - Highway 417 Westbound off-ramp to Carling Avenue Westbound / Kirkwood Avenue and the Highway 417 Westbound off-ramp to Maitland Avenue;
  - Carling Avenue Westbound on-ramp to Highway 417 Westbound and the Maitland Avenue on-ramp to Highway 417 Westbound;
  - Highway 417 Eastbound off-ramp to Maitland Avenue and the Highway 417 Eastbound off-ramp to Carling Avenue Eastbound; and
  - Maitland Avenue on-ramp to Highway 417 Eastbound and the Carling Avenue Eastbound on-ramp to Highway 417 Eastbound.

Traffic will be redirected along signed detour routes on local municipal roads. **Table 4-5** provides a summary of the required closures, approximate timing and duration, and proposed detour routes.

**Table 4-5: Summary of Closures and Detour Routes**

<table>
<thead>
<tr>
<th>CLOSURE</th>
<th>DURATION</th>
<th>ANTICIPATED YEAR</th>
<th>PROPOSED DETOURS</th>
</tr>
</thead>
</table>
| Highway 417 Eastbound Off-Ramp to Maitland Avenue (W-N/S Off-Ramp) | 2 weeks | 2017 | Exit the highway at Woodroffe Avenue. Detour via:  
• Woodroffe Avenue Northbound, to  
• Carling Avenue eastbound, to  
• Maitland Avenue |
<table>
<thead>
<tr>
<th>CLOSURE</th>
<th>DURATION</th>
<th>ANTICIPATED YEAR</th>
<th>PROPOSED DETOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maitland Avenue On-Ramp to Highway 417 Eastbound (N/S-E On-Ramp)</td>
<td>2 weeks</td>
<td>2017</td>
<td>Southbound traffic on Maitland Avenue will be directed to:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Baseline Road eastbound, to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Merivale Road northbound, to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Kirkwood Avenue northbound, to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Carling Avenue Eastbound On-Ramp to Highway 417 Eastbound ([N/S]W-E On-Ramp)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Northbound traffic on Maitland Avenue will be directed to:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Carling Avenue eastbound, to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Carling Avenue Eastbound On-Ramp to Highway 417 Eastbound ([N/S]W-E On-Ramp)</td>
</tr>
<tr>
<td>Highway 417 Westbound Off-Ramp to Maitland Avenue (E-N/S Off-Ramp)</td>
<td>1 week</td>
<td>2017</td>
<td>Exit the highway at Woodroffe Avenue. Detour via:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Woodroffe Avenue Northbound, to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Carling Avenue eastbound, to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Maitland Avenue</td>
</tr>
<tr>
<td>Highway 417 Eastbound Off-Ramp to Carling Avenue Eastbound (W-E[N/S] Off-Ramp)</td>
<td>4 weeks</td>
<td>2018</td>
<td>Exit the highway at Maitland Avenue. Detour via:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Maitland Avenue northbound, to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Carling Avenue eastbound</td>
</tr>
<tr>
<td>Carling Avenue Westbound On-Ramp to Highway 417 Westbound (E-W On-Ramp)</td>
<td>9 weeks</td>
<td>2018</td>
<td>Traffic will be directed to:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Maitland Avenue southbound, to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Maitland Avenue On-Ramp to Highway 417 Westbound (N/S-W On-Ramp)</td>
</tr>
<tr>
<td>Highway 417 Westbound Off-Ramp to Carling Avenue Eastbound (E-W[N/S] Off-Ramp)</td>
<td>4 weeks</td>
<td>2018 or 2019, depending on Contractor schedule</td>
<td>Exit at Maitland Avenue. Detour via:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Maitland Avenue northbound, to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Carling Avenue eastbound</td>
</tr>
<tr>
<td>Carling Avenue Eastbound On-Ramp to Highway 417 Eastbound ([N/S]W-E On-Ramp)</td>
<td>7 weeks</td>
<td>2019</td>
<td>Kirkwood Avenue traffic will be directed to:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Carling Avenue westbound, to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Maitland Avenue southbound, to</td>
</tr>
<tr>
<td>CLOSURE</td>
<td>DURATION</td>
<td>ANTICIPATED YEAR</td>
<td>PROPOSED DETOURS</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Carling Avenue Westbound On-Ramp to Highway 417 Eastbound (E-E On-Ramp)</td>
<td>At construction start, re-opening by December 1</td>
<td>2017</td>
<td>• Maitland Avenue On-Ramp to Highway 417 Eastbound (N/S-E On-Ramp)</td>
</tr>
</tbody>
</table>
|                                                                       | At construction start in spring, and stays closed for the remaining duration of the construction, including winter months (see Section 3.3 regarding potential permanent closure of the ramp) | 2018-2020       | • Westbound Carling Avenue traffic will be directed to:  
  • Kirkwood Avenue southbound, to  
  • Carling Avenue eastbound, to  
  • Carling Avenue Eastbound On-Ramp to Highway 417 Eastbound ([N/S]W-E On-Ramp) |
| Parkdale Avenue On-Ramp to Highway 417 Westbound (N/S-W On-Ramp)       | 13 hours (overnight)          | 2019            | • Parkdale Avenue traffic will be directed southbound to:  
  • Carling Avenue westbound, to  
  • Carling Avenue Westbound On-Ramp to Highway 417 Westbound (E-W On-Ramp) |
| Highway 417 Full Closure                                               | 17 hours (overnight)          | 2019            | • The closure will occur on a weekend and shall not commence prior to 5:00 p.m. on Saturday and shall reopen by 6:00 a.m. on Monday  
  • Traffic intending to travel eastbound will:  
  • Diverted onto Carling Avenue eastbound, to  
  • Bronson Avenue northbound, to  
  • Chamberlain Avenue/Isabella Street eastbound, to  
  • Isabella Street On-Ramp to Highway 417 Eastbound (W-E on-Ramp) |
<table>
<thead>
<tr>
<th>CLOSURE</th>
<th>DURATION</th>
<th>ANTICIPATED YEAR</th>
<th>PROPOSED DETOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parkdale Avenue On-Ramp to</td>
<td>17 hours (concurrent with</td>
<td>2019</td>
<td>Refer to Highway 417 Full Closure</td>
</tr>
<tr>
<td>Highway 417 Eastbound (N/S-E</td>
<td>Highway 417 full closure)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Ramp)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parkdale Avenue On-Ramp to</td>
<td>17 hours (concurrent with</td>
<td>2019</td>
<td>Refer to Highway 417 Full Closure</td>
</tr>
<tr>
<td>Highway 417 Westbound (N/S-W</td>
<td>Highway 417 full closure)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Ramp)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronson Avenue On-Ramp to</td>
<td>17 hours (concurrent with</td>
<td>2019</td>
<td>Refer to Highway 417 Full Closure</td>
</tr>
<tr>
<td>Highway 417 Westbound (N/S-W</td>
<td>Highway 417 full closure)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Ramp)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rochester Street On-Ramp to</td>
<td>17 hours (concurrent with</td>
<td>2019</td>
<td>Refer to Highway 417 Full Closure</td>
</tr>
<tr>
<td>Highway 417 Westbound (N/S-W</td>
<td>Highway 417 full closure)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Ramp)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merivale Road between</td>
<td>two 36-hour closures (weekend)</td>
<td>2018</td>
<td>Traffic will be directed east on Carling to Island Park Drive or west on Carling</td>
</tr>
<tr>
<td>Carling Avenue and Island</td>
<td></td>
<td></td>
<td>to Kirkwood Avenue, depending on the direction of origin.</td>
</tr>
<tr>
<td>Park Drive</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Detour routes are illustrated on Sheets 9 to 18 in Appendix E.

Temporary traffic control will be provided in accordance with Ontario Traffic Manual Book 7.

Applicable temporary signage and advance notification will be implemented during construction for the temporary ramp closures, in advance of the work zones and for any required detours.

The Contractor will notify Emergency Services, OC Transpo, school boards, and other relevant stakeholder agencies two weeks in advance of the start of construction and if any changes to traffic flow are anticipated (e.g., lane closures) as construction progresses.
Access by buses and pedestrians to all existing bus stops in the work zone must be maintained at all times, unless the Contractor coordinates otherwise with OC Transpo in advance.

The Contract shall provide OC Transpo at least five (5) working days’ notice to coordinate adjustments required to their facilities as a result of construction.

The Contractor shall advise OC Transpo a minimum of 10 working days in advance of any Highway 417 ramp or City road closures to permit rerouting of bus services or adjustments to their schedule and/or facilities.

The Contractor will also notify Emergency Services at least two (2) days in advance of any temporary ramp and/or road closures.

Merivale Road

During Bridge Stage I and Bridge Stage II (see Section 3.2.2), work will be restricted to one side at a time in order to maintain one 3.5m lane in each direction and one temporary 1.5m sidewalk along Merivale Road at all times. Temporary concrete barrier will protect both the work zone and the temporary sidewalk from traffic during these stages.

Bridge Stage III will require work areas on both sides of Merivale Road simultaneously. During this stage, traffic and pedestrians will be channeled down the center of Merivale Road. Temporary concrete barrier will delineate and protect the work zones on both sides of the roadway and additional temporary concrete barrier will be installed to protect pedestrians from the traffic. The traffic lanes will be reduced to 3.25m in width and the vertical clearance under the structure will be reduced to approximately 3.6m.

Additionally in Bridge Stage III, Merivale Road will be closed for two separate 36-hour periods as referenced in Table 4-4 and Table 4-5. Detour routes are described in Table 4-5.

4.2.5 Pedestrian and Cyclist Access and Safety

Potential Impacts

Contractor access and egress during Highway 417 Stage 1 will primarily be off of City streets and/or from temporary easements on private property, creating numerous potential conflict points between pedestrians and construction traffic throughout the project limits.

There are 2.5m-wide sidewalks on either side of Merivale Road at the Highway 417 overpass. Works on the Merivale Road Overpass will temporarily impact pedestrian and cyclist access. During construction, pedestrian access will be maintained; however, only one sidewalk of reduced width (1.5m) will be open at any given stage of construction. The only exception will be during the two separate 36-hour closures of Merivale Road, during which time pedestrian access will be restricted, along with vehicular traffic, for safety reasons.
Mitigation

Conflict points will be managed appropriately within the Contract Documents. The Contractor will be responsible for maintaining and protecting pedestrian access at all times during construction.

One sidewalk under Merivale Road will remain open at all times, with the exception of the two separate 36-hour closures. The Contractor will be required to provide adequate protection for pedestrians at all times. Pedestrians, cyclists and vehicular traffic will be protected from construction by fencing and/or tarps and any temporary pedestrian surfaces will be protected from vehicular traffic by temporary concrete barriers.

Cyclists sharing the road with vehicular traffic will be made aware of construction access and egress locations as the Contractor will be required to sign all locations in accordance with OTM Book 7 requirements.

4.2.6 Property Requirements

Potential Impacts

Property impacts include both permanent and temporary impacts. Temporary Limited Interest (TLI) agreements are required for construction access and staging areas throughout the limits of the contract where existing conditions allow. TLI agreements will be obtained from Hydro One, City of Ottawa and private property owners prior to construction.

Property acquisition is required at the Maitland Avenue interchange to accommodate the widening of the highway. Permanent easements are required from the NCC and a private land owner to accommodate drainage works in the Hampton Park area and to include enhanced landscaping.

Mitigation

Property agreements will be obtained with all affected land owners prior to commencement of construction.

Federal Land Use, Design and Transaction Approval (FLUDTA) has been obtained from the NCC for use of NCC-owned lands at Hampton Park. Construction activities will be in accordance with the conditions of the FLUDTA. A Land Access Permit is required from the NCC prior to construction. An easement agreement has been obtained and signed in accordance with the FLUDTA conditions.

4.2.7 Air Quality

During Preliminary Design, it was identified that the contribution of the Highway 417 Expansion Project is projected to be below applicable government guidelines for air quality and would have an unnoticeable and insignificant impact on smog pollutants. Therefore, mitigation is not proposed.
4.2.8 NOISE

Potential Impacts

There are presently two corrugated steel-type noise barrier walls located on Highway 417 within the project limits at the following locations:

- North side of Highway 417 – east of Maitland Avenue to Broadview Avenue, parallel to Ernest Avenue (approximately 372 m in length); and
- South side of Highway 417 – between Merivale Road and Island Park Drive (approximately 75 m in length)

A noise assessment was completed as part of Detail Design to evaluate the potential impacts of highway widening at noise sensitive areas (NSAs) within the project limits. Consideration was given as to whether it is technically or economically feasible to reduce future noise levels as close as possible to the provincial noise level objective of 55 dBA or pre-construction ambient noise levels through noise mitigation. Existing noise levels were taken at eight receptor locations on the north side of the highway and at one location on the south side, in the vicinity of existing noise barriers.

On the north side of the highway within the project limits, there is an existing 4 m high noise barrier situated within the MTO ROW between Highway 417 and the residential dwelling units located east of the Maitland Interchange along Ernest Avenue. Without replacing the existing noise barrier, future noise levels at receptor locations in this area are predicted to range from 61.7 dBA to 65.9 dBA. This 4 m high noise barrier will be removed to accommodate the widening of Highway 417 (MMM, 2015). A new 5 m high noise barrier is proposed to be constructed along the same section of roadway, as close as possible to the location of the existing noise barrier, but will gradually shift in alignment due to the highway widening by up to 1 m north of the existing barrier. Future noise levels following the highway widening and installation of a new 5 m high noise barrier are predicted to range from 60.8 dBA to 65.3 dBA.

On the south side of the highway within the project limits, there is an existing 4 m high noise barrier within the MTO ROW between the Highway 417 mainline and residential dwelling units. Without replacing the existing noise barrier, future noise levels at the receptor location in this area are predicted to be 58.4 dBA. This 4 m high noise barrier will be replaced as part of the Highway 417 improvements (MMM, 2015). A new 4 m high noise barrier is proposed to be constructed at the same location, in order to match the height of the existing noise barrier across the Island Park Drive overpass structure. Increasing the height of the existing 4 m noise barrier to 5 m was not predicted to significantly reduce the noise levels at the receptor location due to the elevation of the highway above the residential dwelling units in this area. Future noise levels following the highway widening and installation of a new 4 m high noise barrier are predicted to remain at 58.4 dBA.

The locations of the noise receptors and recommended noise barriers are shown in Figure 4-6.

It is anticipated that there will be an increase in noise levels during construction. The study area is governed by the City of Ottawa Noise By-Law (By-Law no. 2004-253), and therefore, an exemption from the noise by-law is required for night-time construction activities.
Night-time construction activities may include roadway excavation, paving, placement of granular materials and concrete, construction of barrier and retaining walls, pile driving (at Merivale Road on the south side of the highway, in 2018 only), and other related construction activities.

Mitigation

Existing noise barriers will be replaced as part of the works. Constraints have been placed in the Contract Documents that will ensure the noise barriers will only be removed for the installation of the new barrier.

The Contractor will abide by all municipal control by-laws for the day-to-day construction. However, night-time work will be required in order to minimize traffic closure impacts and to minimize the duration of construction. A noise by-law exemption has been obtained for the required night work.

Equipment will be maintained in an operating condition that prevents unnecessary noise, including but not limited to non-defective muffler systems, properly secured components, and the lubrication of moving parts. Idling of equipment should be restricted to the minimum necessary to perform the specified work.
Figure 4-6: Noise receptor and recommended noise barrier locations
4.2.9 UTILITIES

Potential Impacts

There are several utilities with existing plant located within the study area:

- Bell Canada;
- City of Ottawa (storm sewers, sanitary sewers, watermain, traffic signals and street lighting);
- Enbridge Gas;
- Hydro One; and
- Hydro Ottawa.

The following utilities have been relocated as part of the proposed works:

- Hydro Ottawa ducts within the highway right-of-way from Maitland Avenue to Boyd Avenue.
- Overhead Bell pole line, shared with overhead Hydro Ottawa.
- Hydro Ottawa transformer at Boyd Avenue.
- Anchors on a Hydro Ottawa pole at the Carling W-E (N/S) off-ramp.
- Hydro Ottawa underground concrete duct bank and MH structure on Merivale Road.
- 1220 mm and 406 mm City of Ottawa watermains.
- Bell Canada duct(s) and pedestals will be relocated within a permanent property purchase area.

Mitigation

- Any required utility relocations will be coordinated with the appropriate agencies in advance of construction; and
- Properties affected by any required temporary service outages will be notified in advance by the appropriate service provider.

4.3 CULTURAL ENVIRONMENT

4.3.1 CULTURAL HERITAGE

Potential Impacts

The province has an interest in identifying and protecting cultural heritage resources, including built heritage such as bridges. The Merivale Road Overpass is the only structure that will be impacted by the works. No buildings will be impacted.

A Cultural Heritage Evaluation Report (CHER) was not completed for the Merivale Road bridge as the overpass structure is not included in the Ontario Heritage Bridge List and have not been identified as Candidate Class A, B, or C structures in the Heritage Bridges Identification and Assessment Guide 1945-
1965, Ontario. The City of Ottawa has not identified the overpass structures as having cultural heritage value.

The proposed works are not located within an identified, designated or protected area under the *Ontario Heritage Act*, or within a National Historic Site or UNESCO World Heritage Site. The proposed works are not located within a City of Ottawa Heritage Conservation District, as determined through a review of the City of Ottawa geoOttawa online mapping tool. Throughout the study, no comments were received identifying any significant cultural sites or cultural heritage landscapes.

No impacts on built heritage resources are anticipated.

### 4.3.2 Archaelogy

#### Potential Impacts

During Preliminary Design, Stage 1 and Stage 2 Archaeological Assessments were completed for the larger Highway 417 Expansion Project from Highway 416 to Anderson Road and are documented in the following reports, which were reviewed during Detail Design for information on archaeological potential within the study area:

- Stage I Archaeological Assessment of Highway 417 from Highway 416 Easterly to Anderson Road (2002); and
- Stage II Archaeological Assessment of Highway 417 (Queensway) from Highway 416 Easterly to Anderson Road (2004).

No evidence of archaeological resources was identified within the existing Highway 417 right-of-way during the Stage I and Stage II Archaeological Assessments undertaken during Preliminary Design. As the existing right-of-way has been significantly disturbed, there are no present archaeological concerns.

#### Mitigation

In the event that deeply buried archaeological deposits are discovered in the course of construction, the Ministry of Tourism, Culture and Sport (416-314-1177) should be notified immediately. Should previously undocumented archaeological resources be discovered, they may be new archaeological sites and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out a determination of their nature and significance.

In the event that human remains are encountered during construction, the Cemeteries Regulation Unit of the Ministry of Consumer Service (1-800-889-9768) should be notified. In situations where human remains are associated with archaeological resources, the Ministry of Tourism, Culture and Sport should also be contacted to ensure that the site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*. 
Hampton Park-specific Mitigation

The following mitigation measure will be included in the Contract documents and only applies to works undertaken on NCC lands at Hampton Park:

- If any archaeological resources or human remains are discovered during the construction work, all work at the location concerned must be halted immediately, and the NCC Heritage Program must be notified immediately at Archaeology-Archeologie@ncc-ccn.ca. Work shall not be resumed at that location until measures for the protection of those resources or remains have been put in place.

4.3.3 CONTEXT SENSITIVE DESIGN

Potential Impacts

The widening of Highway 417 presents an opportunity to incorporate Context Sensitive Design (CSD) recommendations along the corridor, to reflect the aesthetic vision for the Queensway.

Opportunities to incorporate CSD include:
- Enhanced landscaping along the Highway 417 corridor and within highway interchanges;
- Landscaping that utilizes a palette of primarily native plants with a strong visual identity, a bold and colourful design, and four seasons of interest.
- Use of concrete composite noise barrier panels in keeping with the same random pattern and colours for the noise barriers at Lees Avenue constructed as part of the Highway 417 Expansion from Nicholas Street to OR 174;
- Use of black iron picket and black vinyl chain link fencing, where applicable; and
- Decorative metal maple leaf emblems attached to every other median light pole on the highway mainline, alternating left and right, throughout the project limits, as installed as part of the Highway 417 Expansion from Nicholas Street to OR 174. The maple leaf emblems will be mounted at a height of approximately 5-6 m and will help to signify the Capital Arrival Route through the core of the City.

Mitigation

CSD elements will be incorporated into the Highway 417 widening in accordance with the Contract Drawings and Landscape Plan. The Landscape Plan is shown in Sheets 338 to 360 in Appendix E.
### 4.4 SUMMARY OF ENVIRONMENTAL EFFECTS, PROPOSED MITIGATION, COMMITMENTS TO FURTHER WORK

Table 4-6 summarizes the identified key environmental concerns and proposed mitigating measures.

#### Table 4-6: Summary of Environmental Concerns and Commitments

<table>
<thead>
<tr>
<th>I.D. #</th>
<th>ISSUE / CONCERN / POTENTIAL EFFECTS</th>
<th>CONCERNED AGENCIES</th>
<th>I.D. #</th>
<th>PROPOSED MITIGATION / PROTECTION / MONITORING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Vegetation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 1.1 | Construction of the proposed works will result in minor disturbances and limited removals of existing landscaped / cultural vegetation within the Highway 417 ROW, City of Ottawa and National Capital Commission (NCC) lands. | MTO MNRF City of Ottawa | 1.1.1 | - Vegetation removal and grading will be minimized to only what is required for the proposed works and existing vegetation will be retained where possible.  
- The use of appropriate vegetation clearing techniques and protection measures will be employed and exposed surfaces will be re-vegetated using a seed mix composed of native species that are appropriate for the site conditions (or sodded) as soon as possible following construction. |
| | | | | |
| | | | 1.1.2 | - Tree protection will be implemented during construction for any large diameter trees to be retained. |
| | | | | |
| | | | 1.1.3 | - A landscaping plan has been developed to provide landscape enhancement within interchanges and along the corridor, where feasible. The plan will be implemented following construction of the Highway 417 rehabilitation and widening. |
| | | | | |
| | | | 1.1.4 | - On NCC lands at Hampton Park only, the following mitigation measures apply:  
  o Existing trees (including crown, trunk and root system) are to be protected during all stages of work. No material, construction equipment, or vehicles are to be stored under the drip line of trees at any time. Any disturbed vegetation or landscaping will be repaired or replaced without delay to the satisfaction of the NCC.  
  o If any trees, other than those identified in the plans are to be cut, the Contractor must address a request to the Martin Barakengera, Senior |
<table>
<thead>
<tr>
<th>I.D. #</th>
<th>ISSUE / CONCERN / POTENTIAL EFFECTS</th>
<th>CONCERNED AGENCIES</th>
<th>I.D. #</th>
<th>PROPOSED MITIGATION / PROTECTION / MONITORING</th>
</tr>
</thead>
</table>
|       |                                    |                   |       | Land Use Planner, Federal Approvals Division (martin.barakengera@ncc-ccn.ca, 613-239-5678 x5196) for review and, if acceptable, obtain all necessary approvals.  
  o The recently planted NCC trees along the base of the embankment at Hampton Park will be relocated within the dog park at Hampton Park by the Contractor during construction in close coordination with the NCC and the City of Ottawa.  
  o For each unsuccessfully relocated NCC tree, the Contractor will provide compensation at a 2:1 ratio (i.e. two new trees for each unsuccessfully relocated/dead tree). |       | |

**2.0 Wildlife and Species at Risk (SAR)**

2.1 Potential for minor disturbance to wildlife during construction.  
No SAR or species of Special Concern were observed during site reconnaissance. Suitable habitat is not present for the SAR or species of Special Concern with potential to occur within the study area. | MTO MNRF | 2.1.1  
  - Wildlife incidentally encountered during construction should not knowingly be harmed and should be allowed to move away from the construction area on its own. In the event that wildlife encountered during construction does not move from the construction zone, an Environmental Inspector should move the animal to a safe area.  
  - Should any SAR be encountered at any time in the construction area, the Ministry of Natural Resources and Forestry will be consulted.  

**Operational Constraint – Work on National Capital Commission Property**

**Operational Constraint (Environmental) – Prevention of Wildlife Harassment**

**Operational Constraint (Environmental) – Protection of Species at Risk**

2.1.2 On NCC lands at Hampton Park only, the Contractor will inspect the site prior to the commencement of construction (for Butternut, Pale-bellied frost lichen, Milksnake and Snapping Turtle) and on a daily basis (for Milksnake and Snapping Turtle) for the duration of the works for the potential presence of Species at Risk. Should any Species at Risk be encountered at any time in the construction area, the species must be left alone to move out of the area on their own, construction activities will stop and the Ministry of Natural Resources and Forestry and the Head, Species at Risk, Canadian Wildlife Service (416-739-4214) will be contacted.  

**Operational Constraint – Work on National Capital Commission Property**
<table>
<thead>
<tr>
<th>I.D. #</th>
<th>ISSUE / CONCERN / POTENTIAL EFFECTS</th>
<th>CONCERNED AGENCIES</th>
<th>I.D. #</th>
<th>PROPOSED MITIGATION / PROTECTION / MONITORING</th>
</tr>
</thead>
</table>
| 2.2   | There is potential for disturbance to migratory birds during construction. No evidence of nesting was observed within the project limits. | MTO MNRF MOECC     | 2.2.1 | - Tree removal operations will be prohibited during the breeding bird period (April 1st to August 15th) in any calendar year.  
- If vegetation clearing and grubbing must occur during the breeding bird period (April 1st to August 15th), these activities shall be preceded by a nesting survey conducted by a Qualified Avian Biologist to ensure no active nests (with eggs or young) are disturbed.  
- If an active nest is identified within or adjacent to the construction site, the Contractor Administrator will be contacted. The Contractor will not disturb or destroy protected migratory birds or their active nests. Work shall not proceed until a qualified biologist defines and marks an appropriate setback within which no construction activities shall occur until the nest becomes inactive.  
- If construction activities are such that continuing construction in that area would result in a contravention of the Migratory Birds Convention Act, all activities shall stop and MNRF will be contacted to discuss mitigation options. |

**Operational Constraint (Environmental) – Migratory Bird Protection - General**

| MTO NCC | 2.2.2 | - On NCC lands at Hampton Park only the following provisions apply at all times, even if the works are undertaken outside the core breeding window of birds protected under the Migratory Birds Convention Act (April 1 to August 15):  
  o The Contractor shall ensure that a bird nest survey is conducted prior to the vegetation removal works. A Qualified Avian Biologist shall be retained by the Contractor to conduct a nesting survey a maximum of 2-3 days prior to clearing. The nesting survey will be carried out following a methodology approved by the Canadian Wildlife Service.  
  o If one or more nests containing eggs or chicks of migratory birds are spotted or discovered prior to the construction activity, work must not proceed, the immediate area shall be avoided, and an action plan must be developed by the Qualified Avian Biologist retained by the Contractor. The plan shall include a species-appropriate buffer zone to the work and provide further information on noise levels which may not be exceeded within an appropriate distance to the nest taking into account the species of bird and the area surrounding the nest. The buffer zone shall be |
<table>
<thead>
<tr>
<th>I.D. #</th>
<th>ISSUE / CONCERN / POTENTIAL EFFECTS</th>
<th>CONCERNED AGENCIES</th>
<th>I.D. #</th>
<th>PROPOSED MITIGATION / PROTECTION / MONITORING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>clear identified to the construction crew and the construction supervisor at the site. However, in all cases, the nest itself should never be marked using flagging tape or other similar material as this increases the risk of nest predation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o If one or more nests containing eggs or chicks of migratory birds are spotted or discovered during the works, any disruptive activity in the nesting area will be stopped until the establishment of a buffer zone by the Qualified Avian Biologist retained by the Contractor. This is based on a range of appropriate protection to the species and circumstances and must be maintained until the chicks have naturally left permanently the area near the nest.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Operational Constraint (Environmental) – Migratory Bird Protection - General**

### 3.0 Fish and Fish Habitat

#### 3.1 There are no watercourses within the project limits or the immediate surrounding area.

| MTO | MNRF | DFO | 3.1.1 | None required. |

### 4.0 Hydrology / Surface Water

#### 4.1 Construction of the highway widening will result in an overall increase in impervious area which may result in additional stormwater runoff.

| 4.1.1 | • Due to the introduction of additional concrete barriers and retaining walls, additional outside shoulder catchbasins and shoulder storm sewers will be installed.  
• A stormwater management facility (dry detention pond) will be incorporated into the highway drainage system within the loop of the Highway 417 Eastbound off-ramp to Maitland Avenue  
• A 1 m wide flat-bottom grassed swale will be constructed along the base of the reconstructed highway embankment at Hampton Park, located west of the intersection of Merivale Road and Island Park Drive  
• Enhanced flat-bottom grassed swales will be constructed along the base of the highway embankment on the south side along Carling Avenue eastbound  
• Drainage consistent with the proposed staging of the highway widening will be maintained during construction |

**Contract Drawings**
<table>
<thead>
<tr>
<th>I.D. #</th>
<th>ISSUE / CONCERN / POTENTIAL EFFECTS</th>
<th>CONCERNED AGENCIES</th>
<th>I.D. #</th>
<th>PROPOSED MITIGATION / PROTECTION / MONITORING</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0 Erosion and Sediment Control</td>
<td>5.1 Uncontrolled erosion and sedimentation occurring during construction can result in a loss of topsoil, disruption of drainage systems and nearby natural systems.</td>
<td>MTO MNRF MOECC</td>
<td>5.1.1</td>
<td>- Standard erosion and sediment control measures should be implemented prior to construction to prevent the migration of soils from the site.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Operational Constraint (Environmental) – Erosion and Sediment Control</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5.1.2</td>
<td>- Storage and stockpiling of soil and other fill materials should be located a minimum of 30 m away from drainage features and the top of steep slopes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>OPSS 180 – The Management of Excess Materials</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5.1.3</td>
<td>- The Contractor will develop and submit an Erosion and Sediment Control Plan for works to be completed on NCC lands at Hampton Park to MTO and the NCC prior to the commencement of work. Measures and devices will remain in place until all disturbed ground has been permanently stabilized and all suspended sediment has been contained. Measures and structures will be inspected regularly to ensure that they are working efficiently, and if not, repair them so that they effectively remove sediments during the duration of the works. Upon the completion of the works, the Contractor will remove all the sediment and erosion control devices from the site.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Operational Constraint (Environmental) – Work on National Capital Commission Property</strong></td>
</tr>
<tr>
<td>6.0 Management of Waste/Debris and Excess Materials</td>
<td>6.1 Stockpiled and excess materials and construction waste have the potential to contaminate the surrounding environment, if not properly managed.</td>
<td>MTO MOECC MNRF</td>
<td>6.1.1</td>
<td>- Construction waste and excess materials generated during construction will be managed in accordance with OPSS 180.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>OPSS 180 – The Management of Excess Materials</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6.1.2</td>
<td>- Excess earth from highway construction projects may contain elevated concentrations of chloride and sodium. Where the Contractor manages excess earth as disposable fill, the Contractor will take into account the possibility of salt impacts and ensure that the material is managed responsibly and in an environmentally appropriate manner. Where the Contractor intends to manage excess earth that may be salt impacted on private property, the Contractor shall make the Property Owner aware that it may be salt impacted by using the Property Owner’s Release. The Contractor is responsible for conducting such sampling and testing as may be necessary to comply with any requirements imposed by the Property Owner as a condition of accepting the excess earth.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Operational Constraint (Environmental) – Management of Excess Earth</strong></td>
</tr>
<tr>
<td>I.D. #</td>
<td>ISSUE / CONCERN / POTENTIAL EFFECTS</td>
<td>CONCERNS AGENCIES</td>
<td>I.D. #</td>
<td>PROPOSED MITIGATION / PROTECTION / MONITORING</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------</td>
<td>------------------</td>
<td>--------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>6.2</td>
<td>Dust emissions may result from construction activities.</td>
<td></td>
<td>6.2.1</td>
<td>• Procedures to control emissions of dust, silica and other debris will be implemented to ensure they do not escape beyond the right-of-way.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>MTO General Conditions of Contract</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Operational Constraint (Environmental) – Environmental Plan</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Environmental Plan</strong></td>
</tr>
<tr>
<td>6.3</td>
<td>Wildlife and vegetation may be impacted by spills and contaminated runoff that may flow from the work site.</td>
<td></td>
<td>6.3.1</td>
<td>• A Spill Control and Response Plan will be developed and implemented to prevent deleterious substances from entering the watercourse or other surrounding natural areas. The plan should ensure machinery arrives on site in clean condition and maintained free of fluid leaks.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• An emergency spill kit should be kept on site in case of spills during activities or fluid leaks or spills from equipment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• When spills occur, the Ministry of the Environment Spills Action Centre should be contacted and all reasonable corrective action should be taken to contain and clean the spill immediately.</td>
</tr>
<tr>
<td>MTO</td>
<td>NCC</td>
<td></td>
<td>6.3.2</td>
<td>• On NCC lands at Hampton Park only:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>o If a fuel spill or spill of other pollutants should occur on or adjacent to NCC property, the Contractor will be responsible for containing, cleaning out and disposing the contaminants caused by the spill in accordance with existing regulations. The Contractor must immediately contact the NCC Emergency line at 613-239-5353 and send a copy of the spill and clean up reports to the NCC.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>o A spill report form will be completed and sent to NCC Environmental Services within 24 hours of the spill. The Spill Report, Response and Review Log will be submitted to the NCC Contract Manager and will include details on the spill.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>o If any visual or olfactory signs of contamination such as oil sheen, stains, discoloration of surfaces, stressed vegetation, presence of debris, etc. are observed onsite during the excavation of the swale, the works must be halted and the NCC Senior Environmental Officer (613-239-5678 ext. 5418) shall be immediately contacted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Operational Constraint (Environmental) – Work on National Capital Commission Property</strong></td>
</tr>
<tr>
<td>I.D. #</td>
<td>ISSUE / CONCERN / POTENTIAL EFFECTS</td>
<td>CONCERNED AGENCIES</td>
<td>I.D. #</td>
<td>PROPOSED MITIGATION / PROTECTION / MONITORING</td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------------------------------------------------------------------------</td>
<td>---------------------------</td>
<td>--------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 6.4   | Contaminated soils may be encountered during construction.                                        | MTO City of Ottawa MOECC | 6.4.1  | - Contaminated soil shall be managed as commercial waste and/or non-hazardous solid industrial waste and will be taken to appropriately-approved waste disposal site.   
|       | Metal parameters (barium, chromium, cobalt, nickel and vanadium) were found in a borehole (MW 09-44) on the west side of Merivale Road within Hampton Park. | NCC                        |        | - Existing monitoring wells will be protected throughout the duration of the temporary use of land, as stipulated under TLI agreements.           
|       | Two other sites have either suspected contamination from hydrocarbons and / or solvents, or other unconfirmed contaminants. At one site, monitoring wells are in place. |                            |        | - On NCC lands at Hampton Park only:                                                                          
|       |                                                                                                  |                            |        | o The Contractor may reuse the material in the MTO Right-of-Way within the contract limits or as approved by the Contract Administrator. If the material is managed within the MTO ROW, the Contractor shall take into account that the material shall be managed responsibly and in an environmentally appropriate manner and shall manage the material according to Table 2 of OPSS 180. In the event that a suitable location for the above material cannot be determined, the Contractor shall manage it as commercial waste and/or non-hazardous solid industrial waste. Waste shall be transported directly from the construction area to a site that has a Certificate of Approval for a Waste Disposal Site that is valid for commercial waste and / or non-hazardous solid industrial waste. |

### Operational Constraint – Work on Non-MTO Lands

Notice to Contractor – Management of Contaminated Soil

### 7.0 Designated Substances

| 7.1   | Designated Substances, including arsenic, asbestos, lead, mercury, and silica, may be present on the Merivale Road Overpass and other infrastructure. | MTO MOECC                  | 7.1.1  | - Elements with the potential to contain designated substances will be handled in accordance with the MTO Special Provision No. 101F21 to ensure compliance with the *Occupational Health and Safety Act* and provincial regulations. |

**Special Provision No. 101F21 – Occupational Health and Safety Act Compliance**

### 8.0 Land Use and Property

| 8.1   | No impacts to current land uses are anticipated. Private property impacts are discussed under Item 11.0. | MTO NCC City of Ottawa     | 8.1.1  | None required. |

---

**May 2017**
<table>
<thead>
<tr>
<th>I.D. #</th>
<th>ISSUE / CONCERN / POTENTIAL EFFECTS</th>
<th>CONCERNED AGENCIES</th>
<th>I.D. #</th>
<th>PROPOSED MITIGATION / PROTECTION / MONITORING</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.0</td>
<td>Traffic Operations</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 9.1   | Short-term ramp closures varying from one (1) to nine (9) weeks in duration will be required for ramp reconstruction operations | MTO City of Ottawa (including Emergency Services and OC Transpo) Area Residents / Businesses | 9.1.1 | • The ramp closures will be scheduled such that no two consecutive on- or off-ramps in one direction occur at the same time. The following ramps will not be closed at the same time:  
  - Highway 417 Westbound off-ramp to Carling Avenue Westbound / Kirkwood Avenue and the Highway 417 Westbound off-ramp to Maitland Avenue;  
  - Carling Avenue Westbound on-ramp to Highway 417 Westbound and the Maitland Avenue on-ramp to Highway 417 Westbound;  
  - Highway 417 Eastbound off-ramp to Maitland Avenue and the Highway 417 Eastbound off-ramp to Carling Avenue Eastbound; and  
  - Maitland Avenue on-ramp to Highway 417 Eastbound and the Carling Avenue Eastbound on-ramp to Highway 417 Eastbound. |
| 9.2   | A full closure of Highway 417 is required for work at the Merivale Overpass structure | MTO City of Ottawa (including Emergency Services and OC Transpo) Area Residents / Businesses | 9.2.1 | • The closure will occur on a weekend and shall not commence prior to 6:00 p.m. on Saturday and shall reopen to a single lane by 11:00 a.m. on Sunday.  
  • Traffic will be redirected along signed detour routes on local municipal roads as detailed in the Contract Drawings. |
<p>| 9.3   | Construction activities at the Merivale Road overpass may impact pedestrian access. | MTO City of Ottawa (including Emergency | 9.3.1 | • During Bridge Stage I and Bridge Stage II, work will be restricted to one side at a time in order to maintain one 3.5m lane in each direction and one temporary 1.5m sidewalk along Merivale Road at all times. Temporary concrete barrier will protect both the work zone and the temporary sidewalk. |</p>
<table>
<thead>
<tr>
<th>I.D. #</th>
<th>ISSUE / CONCERN / POTENTIAL EFFECTS</th>
<th>CONCERNED AGENCIES</th>
<th>I.D. #</th>
<th>PROPOSED MITIGATION / PROTECTION / MONITORING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Services and OC Transpo) Area Residents / Businesses</td>
<td>9.4 The highway widening is a multi-year construction project and scheduling of particular aspects of construction will be the responsibility of the Contractor. Construction may result in disruptions to existing traffic operations.</td>
<td>9.4.1</td>
<td>• Applicable temporary signage and advance notification will be implemented during construction for the permanent ramp closure and the intersection improvements, in advance of the work zones and for any required detours.</td>
</tr>
<tr>
<td></td>
<td>MTO City of Ottawa (including Emergency Services and OC Transpo) Area Residents / Businesses</td>
<td></td>
<td></td>
<td>Contract Drawings Operational Constraint – Merivale Road Overpass Staging Non-Standard Special Provision – Construction Site Pedestrian Control Plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Contract Drawings Operational Constraint – Highway 417 Ramp and City Street Closures</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• The Contractor will be required to adhere to general construction requirements which apply throughout the duration of construction and, in general, include the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Three (3) lanes of traffic will be maintained on Highway 417 at all times during peak periods;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• No short-term lane closures will be permitted on City of Ottawa roadways within the hours specified in the Contract documents; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Extended duration closures will be scheduled well in advance and require that an appropriate Communication Plan be developed and followed which involves advance public notification (e.g. media releases, signage) of any upcoming closures and identification of appropriate detour routes.</td>
</tr>
<tr>
<td>I.D. #</td>
<td>ISSUE / CONCERN / POTENTIAL EFFECTS</td>
<td>CONCERNED AGENCIES</td>
<td>I.D. #</td>
<td>PROPOSED MITIGATION / PROTECTION / MONITORING</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------</td>
<td>--------------------</td>
<td>-------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Special Provision No. 100F08M – Protection of Public Traffic</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Non-Standard Special Provision – Communications Plan for Traffic Management – Item Code 9999-5024</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Non-Standard Special Provision – Control of Vehicular and Pedestrian Traffic – City Streets</td>
</tr>
<tr>
<td>9.4.3</td>
<td></td>
<td></td>
<td></td>
<td>• Temporary traffic control will be provided in accordance with Ontario Traffic Manual Book 7.</td>
</tr>
<tr>
<td></td>
<td><strong>Contract Drawings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.4.4</td>
<td></td>
<td></td>
<td></td>
<td>• The Contractor will notify Emergency Services, OC Transpo, school boards, and other relevant stakeholder agencies two weeks in advance of the start of construction and if any changes to traffic flow are anticipated (e.g. lane closures).</td>
</tr>
<tr>
<td></td>
<td><strong>Operational Constraint – Notification of Affected Agencies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.4.5</td>
<td></td>
<td></td>
<td></td>
<td>• Access by buses and pedestrians to all existing bus stops in the work zone must be maintained at all times, except where stated otherwise in the Contract.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• The Contract shall provide OC Transpo at least five (5) working days’ notice to coordinate adjustments required to their facilities as a result of construction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• The Contractor shall advise OC Transpo a minimum of 10 working days in advance of any Highway 417 ramp or City road closures to permit rerouting of bus services or adjustments to their schedule and/or facilities.</td>
</tr>
<tr>
<td>9.5</td>
<td>Access during emergencies may be impacted during construction of the proposed works and any related closures.</td>
<td>MTO City of Ottawa (including Emergency Services)</td>
<td>9.5.1</td>
<td>• In addition to the mitigation listed in sections 7.4.5 of this table, the Contractor will also notify Emergency Services at least two (2) days in advance of any temporary ramp and/or lane closures.</td>
</tr>
<tr>
<td></td>
<td><strong>Operational Constraint – Notification of Affected Agencies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.0</td>
<td><strong>Pedestrian and Cyclist Access and Safety</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.1</td>
<td>Impacts to pedestrian and cyclist access on Merivale Road are anticipated during</td>
<td>MTO City of Ottawa</td>
<td>10.1.1</td>
<td>• Conflict points will be managed appropriately within the contract documents. The Contractor will be responsible for maintaining and</td>
</tr>
<tr>
<td>I.D. #</td>
<td>ISSUE / CONCERN / POTENTIAL EFFECTS</td>
<td>CONCERNED AGENCIES</td>
<td>I.D. #</td>
<td>PROPOSED MITIGATION / PROTECTION / MONITORING</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------</td>
<td>--------------------</td>
<td>-------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td></td>
<td>construction and rehabilitation of the Merivale Road Overpass.</td>
<td></td>
<td></td>
<td>protecting pedestrian access at all times during construction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• One sidewalk under Merivale Road will remain open at all times, with the exception of the two 36-hour closures. The Contractor will be required to provide adequate protection for cyclists and pedestrians at all times. Pedestrians, cyclists and vehicular traffic will be protected from construction by fencing and/or tarps and any temporary pedestrian surfaces will be protected from vehicular traffic by temporary concrete barriers.</td>
</tr>
<tr>
<td>11.0</td>
<td>Property</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.1</td>
<td>Permanent property acquisitions and temporary limited interests are required for construction access and staging areas.</td>
<td>MTO City of Ottawa Hydro One Private Property Owners</td>
<td>11.1.1</td>
<td>• Agreements with property owners will be obtained prior to the commencement of construction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Operational Constraint – Work on Non-MTO Lands</td>
</tr>
<tr>
<td>11.2</td>
<td>Federal Land Use, Design and Transaction Approval (FLUTDA) has been obtained from the NCC for use of NCC-owned lands at Hampton Park.</td>
<td>MTO NCC</td>
<td>11.1.2</td>
<td>• Construction activities will be in accordance with the conditions of the FLUTDA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• A Land Access Permit must be obtained prior to construction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• An easement agreement has been obtained and signed in accordance with the FLUTDA conditions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Operational Constraint – Work on National Capital Commission Property</td>
</tr>
<tr>
<td>12.0</td>
<td>Aesthetics and Landscape</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.1</td>
<td>The proposed works will result in minor disturbance to the existing landscape and vegetation within the project limits.</td>
<td>MTO MNRF City of Ottawa</td>
<td>12.1.1</td>
<td>• The Landscape Plan developed during Detail Design will be implemented following construction of the rehabilitation and widening;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Salt tolerant, hardy tree and shrub species will be used throughout;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Seasonal interest will be provided by drought tolerant trees and vegetation, where and as appropriate. Restrained use of Fall and Spring plants with red attributes (flowers, budding, stalk colouration, and fruit) will be used. Areas absent of existing landscaping will be enhanced where feasible;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Appropriate MTO standard seed mixes and plantings will be utilized along</td>
</tr>
<tr>
<td>I.D. #</td>
<td>ISSUE / CONCERN / POTENTIAL EFFECTS</td>
<td>CONCERNED AGENCIES</td>
<td>I.D. #</td>
<td>PROPOSED MITIGATION / PROTECTION / MONITORING</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------</td>
<td>-------------------</td>
<td>--------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>roadside conditions;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Specialized MTO standard seed mixes and slope stabilization will be used on slopes greater than 2:1;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Tree placement will be respectful of highway light and pole locations to maximize evening lighting effectiveness; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Specifications for sod, seed and mulch, shrubs and trees are included in the Contract documents.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Contract Drawings</strong></td>
</tr>
<tr>
<td></td>
<td><strong>13.0 Construction Noise</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.1</td>
<td>Construction activities may result in elevated noise levels throughout the duration of project.</td>
<td>MTO City of Ottawa Area Residents</td>
<td>13.1.1</td>
<td>• The Contractor will abide by all municipal noise control by-laws for the day-to-day construction.</td>
</tr>
<tr>
<td></td>
<td>Night work is anticipated to be required for the proposed works.</td>
<td></td>
<td></td>
<td>• An exemption to the municipal noise control by-law required for night work has been obtained.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Special Provision No. 199F33 – Construction Noise Constraints</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Special Provision No. 199F31 – Environmental Exemptions and Permits</strong></td>
</tr>
<tr>
<td>13.1.2</td>
<td></td>
<td></td>
<td></td>
<td>• Equipment shall be maintained in an operating condition that prevents unnecessary noise, including but not limited to non-defective muffler systems, properly secured components, and the lubrication of moving parts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Idling of equipment shall be restricted to the minimum necessary to perform the specified work.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Special Provision No. 199F33 – Construction Noise Constraints</strong></td>
</tr>
<tr>
<td>13.1.3</td>
<td></td>
<td></td>
<td></td>
<td>• A noise by-law exemption has been obtained.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Special Provision No. 199F31 – Environmental Exemptions and Permits</strong></td>
</tr>
<tr>
<td>13.2</td>
<td>Highway widening may result in increased noise levels at noise sensitive areas.</td>
<td>MTO City of Ottawa Area Residents</td>
<td>13.2.1</td>
<td>• Replacement of existing noise walls will occur in accordance with Contract Drawings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Removal of the existing noise barrier is limited to what can be removed and replaced with new noise barrier within five consecutive days.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Contract Drawings</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Special Provision – Removal of Noise Barrier – Item Code 0510-5991</strong></td>
</tr>
<tr>
<td>I.D. #</td>
<td>ISSUE / CONCERN / POTENTIAL EFFECTS</td>
<td>CONCERNED AGENCIES</td>
<td>I.D. #</td>
<td>PROPOSED MITIGATION / PROTECTION / MONITORING</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------------------------</td>
<td>--------------------</td>
<td>-------</td>
<td>---------------------------------------------</td>
</tr>
</tbody>
</table>
| 14.0 Utilities | Utilities are anticipated to be impacted as part of construction works, which may result in temporary service outages. Impacted utilities include: Hydro Ottawa, Bell, City of Ottawa storm and sanitary sewers. | MTO City of Ottawa Utility Providers | 14.1.1 | • Any required utility relocations will be coordinated with the appropriate agencies in advance of construction; and  
• Properties affected by any required temporary service outages will be notified in advance by the appropriate service provider. |
| 15.0 Built Heritage and Cultural Heritage Landscapes | No impacts to built heritage resources or cultural heritage landscapes are anticipated. | MTO MTCS Indigenous Communities | 15.1.1 | None required. |
| 16.0 Archaeology | No archaeological resources were found during Archaeological Assessments, however there is potential to uncover deeply buried archaeological resources during construction. | MTO MTCS Indigenous Communities | 16.1.1 | In the event that deeply buried archaeological deposits are discovered in the course of construction, the Ministry of Tourism, Culture and Sport (416-314-1177) should be notified immediately. Should previously undocumented archaeological resources be discovered, they may be new archaeological sites and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out a determination of their nature and significance. |
| | | | | MTO General Conditions of Contract |
| 16.1.2 | In the event that human remains are encountered during construction, the Cemeteries Regulation Unit of the Ministry of Consumer Service (1-800-889-9768) should be notified. In situations where human remains are associated with archaeological resources, the Ministry of Tourism, Culture and Sport should also be contacted to ensure that the site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act. | | MTO General Conditions of Contract |
## I.D. # | ISSUE / CONCERN / POTENTIAL EFFECTS | CONCERNED AGENCIES | I.D. # | PROPOSED MITIGATION / PROTECTION / MONITORING
--- | --- | --- | --- | ---

| MTO | 16.1.3 | • At Hampton Park, if any archaeological resources or human remains are discovered during the construction work, all work at the location concerned must be halted immediate, and the NCC Heritage Program must be notified immediately at Archaeology-Archeologie@ncc-ccn.ca. Work shall not be resumed at that location until measures for the protection of those resources or remains have been put in place. |

### 17.0 Context Sensitive Design

#### 17.1 The widening of Highway 417 presents an opportunity to incorporate CSD recommendations along the highway corridor.

| MTO | 17.1.1 | • The Landscape Plan and Contract Drawings incorporate the following CSD features:

- Landsaping that utilizes a palette of primarily native plants with a strong visual identity, a bold and colourful design, and four seasons of interest.
- Use of concrete composite noise barrier panels in keeping with the same random pattern and colours constructed for the new noise barriers at Lees Avenue;
- Use of translucent acrylic panels where noise barriers are required to be installed on top of retaining walls;
- Use of black iron picket and black vinyl chain link fencing, where applicable; and
- Decorative metal maple leaf emblems attached to every other median light pole on the highway mainline, alternating left and right, throughout the project limits, as installed as part of the Highway 417 Expansion from Nicholas Street to OR 174. The maple leaf emblems will be mounted at a height of approximately 5-6 m and will help to signify the Capital Arrival Route through the core of the City. |

### Contract Drawings
5 MONITORING

The Ministry of Transportation has an internal process to identify and address updates to the Ontario Provincial Standard Specifications (OPSS) and MTO Special Provisions. This includes on-going review of unanticipated events that occur during other construction contracts and incorporation of required updates into future contract provisions. This helps to assess the effectiveness of the contract provisions to ensure that they are providing the expected control and/or protection.

An independent on-site Contract Administrator (CA Consultant) is retained by MTO to ensure that construction proceeds as per the contract documentation, including environmental protection.

During construction, the on-site CA Consultant ensures that implementation of mitigating measures and key design features are consistent with the contract requirements. In addition, the effectiveness of the environmental impact mitigation measures is assessed to ensure that:

- Individual mitigation measures are providing the expected control and/or protection;
- Composite control and/or protection provided by the mitigation measures is adequate; and
- Additional mitigation measures are provided, as required, for any unanticipated environmental problems that may develop during construction.

In the event that problems develop, the CA Consultant is there to ensure that MTO and appropriate agencies are contacted.