

OVERBROOK TO RIVERVIEW TRANSMISSION LINE UPGRADE

CLASS ENVIRONMENTAL ASSESSMENT

Draft Environmental Study Report

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CLASS ENVIRONMENTAL ASSESSMENT Draft Environmental Study Report

2017

Report Number:
Hydro One Networks Inc.
Environmental Engineering & Project Support
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Toronto, ON, M5G 2P5

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EXECUTIVE SUMMARY

Hydro One Networks Inc. (Hydro One) has prepared this draft Environmental Study Report (ESR) for the upgrade of an existing section of 115 kilovolt (kV) transmission line in the City of Ottawa. The upgrade of this transmission line is referred to as the Overbrook to Riverview Transmission Line Upgrade (herein referred to as “the proposed Project”). Specifically, Hydro One is proposing to install an additional 115 kV circuit in the existing transmission right-of-way (RoW) between Overbrook Transformer Station (TS) on Coventry Road and Balena Park in the Riverview neighbourhood. The proposed 115 kV circuit will be just less than two kilometres in length. The reinforcement will involve replacing seven of the nine existing transmission structures with steel poles to accommodate the second circuit. The existing transmission structure adjacent to Overbrook TS will also be replaced with approximately nine tapping structures.

The transmission line upgrade is required to ensure an adequate and reliable supply of electricity to central Ottawa and is a near-term initiative identified in the Independent Electricity System Operator’s (IESO) *Ottawa Area Integrated Regional Resource Plan* (IRRP). Hydro Ottawa has requested that Hydro One proceed with this IRRP initiative, to reinforce the transmission infrastructure in central Ottawa, based on the forecasted electricity needs in the area.

The proposed Project is subject to the *Class Environmental Assessment for Minor Transmission Facilities* (Class EA), (Ontario Hydro, 1992), and approved process under Ontario’s *Environmental Assessment Act (EA Act)* (1990). This draft ESR has been prepared in accordance with the requirements of the *EA Act* and describes the Class EA process that has been undertaken for the proposed project.

At the beginning of the study, the technical specifications and system requirements of the proposed project were determined and a study area was defined. Subsequently, the Class EA process for the proposed Project included an assessment of the environmental features within the study area. Resources were identified from literature reviews, databases, mapping, consultation, and field surveys.

Since June 2016, Hydro One has conducted comprehensive consultation regarding the proposed Project with government agencies and officials, one First Nation community as directed by the Crown, potentially affected and interested persons, and interest groups to inform them of the proposed project as well as to identify and resolve potential concerns. The consultation plan included: Public Information Centres which provided opportunities for interested parties to have one-on-one discussions with members of the Hydro One project team and complete comment forms; meetings with key stakeholders, including a municipal coordination meeting; individual meetings with property owners adjacent to the RoW, to address specific concerns and considerations; and the establishment and maintenance of a project website.

Based on the project design and the implementation of the proposed mitigation measures, no significant adverse or residual effects (i.e., effects following the implementation of mitigation measures) are expected during the construction and on-going operation of the proposed Project.

This draft ESR is being made available for public review and comment for 30 calendar days, from January 12, 2017 until 4:30 pm on February 10, 2017. It can be viewed at the following locations:

Ottawa Public Library
Elmvale Acres Branch, 1910 St. Laurent Blvd.
Alta Vista Branch, 2516 Alta Vista Dr.
(Infoservice) 613-580-2940

Ottawa City Hall (Customer Service Counter)
110 Laurier Ave. W
613-580-2424

Dempsey Community Centre
1895 Russell Rd.
613-247-4846

Overbrook Community Centre
33 Quill St.
613-742-5147

The draft ESR is also available on the project website:

www.HydroOne.com/Projects/OverbrooktoRiverview

Comments or questions can be submitted to:

Jennifer Trotman
Environmental Planner
Hydro One Networks Inc.
483 Bay St., North Tower, 14th Floor
Toronto, ON, M5G 2P5

Community.Relations@HydroOne.com
1-877-345-6799

Comments received from government agencies and officials, First Nation and Métis communities, potentially affected and interested persons, and interest groups during this period will be addressed and documented in the final ESR, as required by the Class EA process.

Hydro One will respond to and make best efforts to resolve issues raised by concerned parties during the public review period. If no concerns are expressed, Hydro One will finalize the ESR and file it with the Ministry of the Environment and Climate Change. The proposed Project will then be considered acceptable and may proceed as outlined in the ESR.

The *EA Act* has provisions that allow interested parties to ask for a higher level of assessment for a Class EA project if they feel that outstanding issues have not been adequately addressed by Hydro One. This is referred to as a Part II Order request. Such requests must be addressed in writing to the Minister of the Environment and Climate Change, as well as the Director of the Environmental Approvals Branch, and received no later than 4:30 pm on February 10, 2016 at the following addresses:

Minister of the Environment and Climate Change
Ontario Ministry of the Environment and Climate Change
77 Wellesley Street West
11th Floor, Ferguson Block
Toronto, ON M7A 2T5
Email: Minister.MOECC@ontario.ca

Director, Environmental Approvals Branch
Ontario Ministry of the Environment and Climate Change
135 St. Clair Avenue West, 1st Floor

Toronto, ON M4V 1P5
Email: EAASIBgen@ontario.ca

Please note that a duplicate copy of a Part II Order request must also be sent to Hydro One at the above noted address.

The proposed Project will be implemented in full compliance with the requirements of the Class EA process as outlined in this ESR, incorporating input obtained throughout the planning process including the consultation plan. Hydro One will obtain the necessary environmental approvals and permits required for the proposed Project.

SOMMAIRE

Hydro One Networks Inc. (Hydro One) a préparé la présente ébauche du Rapport d'évaluation environnementale (RÉE) pour les travaux de modernisation d'une section existante d'une ligne de transport de 115 kilovolts (kV) dans la Ville d'Ottawa. La modernisation de cette ligne de transport porte le nom de Modernisation de la ligne de transport d'électricité d'Overbrook à Riverview (ci-après « le Projet proposé »). De manière plus précise, Hydro One propose d'ajouter un circuit supplémentaire de 115 kV sur l'emprise actuel entre le poste de transformation (PT) Overbrook sur le chemin Coventry et le parc Balena dans le quartier Riverview. Le circuit de 115 kV proposé s'étendra sur un peu moins de deux kilomètres. Le renforcement de l'infrastructure comprendra le remplacement de sept des neuf structures de transport actuelles par des poteaux d'acier pour accueillir le deuxième circuit. La structure de transport actuelle adjacente au PT Overbrook sera également remplacée par une série de supports de dérivation.

La modernisation de la ligne de transport est requise pour assurer un approvisionnement suffisant et fiable d'électricité au quartier central d'Ottawa. Il s'agit d'une initiative à court terme recommandée dans le Plan régional d'intégration des ressources (PRIR) pour la région d'Ottawa conçu par la Société indépendante d'exploitation du réseau d'électricité (SIERÉ). Hydro Ottawa a demandé à Hydro One d'aller de l'avant avec l'initiative du PRIR pour renforcer l'infrastructure de transport au centre d'Ottawa, selon les besoins prévus en matière d'électricité dans la région.

Le Projet proposé est assujéti à l'*Évaluation environnementale de portée générale relative aux installations de transmission secondaires* (classe d'ÉE), (Ontario Hydro, 1992), soit un processus approuvé en vertu de la *Loi sur les évaluations environnementales de l'Ontario (Loi sur les ÉE)*. Cette ébauche du RÉE a été préparée conformément aux exigences de la *Loi sur les ÉE* et décrit le processus de la classe d'ÉE qui a été entrepris dans le cadre du Projet proposé.

Au début de l'évaluation, les spécifications techniques et les exigences en matière de systèmes du Projet proposé ont été déterminées et le champ de l'évaluation a été défini. Subséquemment, le processus de la classe d'ÉE pour le Projet proposé comprenait une évaluation des caractéristiques environnementales au sein du champ de l'évaluation. Les

ressources ont été identifiées à partir de l'examen de documents, de bases de données, et à l'aide de schématisations, de consultations et d'études sur le terrain.

Depuis juin 2016, Hydro One a mené des consultations détaillées concernant le Projet proposé auprès d'organismes et de représentants gouvernementaux, d'une communauté des Premières Nations, à la demande de l'État, de personnes pouvant être touchées ou concernées et de groupes d'intérêt pour les informer du Projet proposé et pour cerner et régler les préoccupations potentielles. Le plan de consultation comprenait les éléments suivants : des centres de renseignements publics, permettant aux parties intéressées de discuter personnellement avec des membres de l'équipe de projet d'Hydro One et de formuler des commentaires; des réunions avec les intervenants clés, y compris une réunion de coordination municipale; des rencontres individuelles avec les propriétaires de terrains adjacents à l'emprise pour aborder des préoccupations et des considérations précises; et l'établissement et le maintien d'un site Web pour le projet.

En fonction de la conception du projet et de la mise en œuvre des mesures d'atténuation proposées, aucun effet indésirable ou résiduel important (par exemple, effet suivant la mise en œuvre des mesures d'atténuation) n'est prévu lors de la construction et de l'exploitation du Projet proposé.

La présente ébauche du RÉE est rendue publique aux fins d'examen et de commentaires pendant 30 jours, soit du 12 janvier 2017 au 10 février 2017 à 16 h 30 et peut être consultée aux emplacements suivants :

Bibliothèque publique d'Ottawa

Succursale Elmvale Acres, 1910, boul. St-Laurent
Succursale Alta Vista, 2516, prom. Alta Vista
(Infoservice) 613 580-2940

**Hôtel de ville d'Ottawa (comptoir
du service à la clientèle)**

110, av. Laurier Ouest
613 580-2424

Centre communautaire Dempsey

1895, ch. Russell
613 247-4846

Centre communautaire Overbrook

33, rue Quill
613 742-5147

L'ébauche du RÉE est également disponible sur le site Web du projet à :

www.HydroOne.com/Projects/OverbrooktoRiverview

Vous pouvez envoyer vos questions ou vos commentaires à :

Jennifer Trotman
Planificatrice environnementale
Hydro One Networks Inc.
483, rue Bay, Tour Nord, 14^e étage
Toronto (Ontario) M5G 2P5
Community.Relations@HydroOne.com
1 877 345-6799

Les commentaires reçus de la part des organismes et des représentants gouvernementaux, des communautés des Premières Nations ou Métis, des personnes pouvant être touchées ou concernées et des groupes d'intérêt durant cette période seront abordés et documentés dans le RÉE final, comme l'exige le processus de la classe d'ÉE.

Hydro One répondra aux questions et fera de son mieux pour régler les questions soulevées par les parties concernées durant la période d'examen public. Si aucune préoccupation n'est exprimée, Hydro One finalisera le RÉE et le présentera au ministère de l'Environnement et de l'Action en matière de changement climatique. Le Projet proposé sera par la suite considéré comme étant acceptable et le projet pourra aller de l'avant conformément au RÉE.

La *Loi sur les ÉE* comporte des dispositions permettant aux parties concernées de demander une évaluation plus poussée pour un projet de classe d'ÉE si ces parties sont d'avis que certaines questions n'ont pas été suffisamment abordées par Hydro One. Il s'agit des arrêtés prévus à la partie II. De telles demandes doivent être présentées par écrit au ministère de l'Environnement et de l'Action en matière de changement climatique ainsi qu'au directeur des autorisations environnementales du ministère, et celles-ci doivent être reçues au plus tard le 10 février 2017 à 16 h 30 aux adresses suivantes :

Ministre de l'Environnement et de l'Action en matière de changement climatique
de l'Ontario
77, rue Wellesley Ouest
Édifice Ferguson, 11^e étage
Toronto (Ontario) M7A 2T5
Courriel : Minister.MOECC@ontario.ca

Directeur, autorisations environnementales
Ministère de l'Environnement et de l'Action en matière de changement climatique
de l'Ontario

135, avenue St-Clair Ouest, 1^{er} étage
Toronto (Ontario) M4V 1P5
Courriel : EAASIBgen@ontario.ca

Veillez noter qu'une copie de la demande d'arrêtés prévus à la partie II doit également être envoyée à Hydro One à l'adresse susmentionnée.

Le Projet proposé sera mis en œuvre en respectant l'intégralité des exigences du processus de la classe d'ÉE, comme le décrit le présent RÉE, en y ajoutant les commentaires obtenus tout au long du processus de planification, y compris le plan de consultation. Hydro One obtiendra les approbations et les permis environnementaux nécessaires et requis pour le Projet proposé.

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LIST OF ACROYMS, ABBREVIATIONS & MEASUREMENT UNITS

AAQC	Ambient Air Quality Criteria
ANSI	Area of Natural and Scientific Interest
CAAQS	Canadian Ambient Air Quality Standards
Class EA	Class Environmental Assessment for Minor Transmission Facilities
CN Rail	Canadian National Railway
CO	Carbon monoxide
DBH	Diameter at breast height
EA	Environmental Assessment
EA Act	Environmental Assessment Act
EAB	Environmental Approvals Branch
EASR	Environmental Activity and Sector Registry
ECCC	Environment and Climate Change Canada
ELC	Ecological Land Classification
EMF	Electric and magnetic fields
EPA	Environmental Protection Act
ESA	Environmentally Sensitive Area
ESR	Environmental Study Report
GIS	Geographic Information Systems
GPS	Global Positioning System
HVA	Highly Vulnerable Aquifer
Hydro One	Hydro One Networks Inc.
IESO	Independent Electricity System Operator
IO	Infrastructure Ontario
IRRP	Ottawa Area Integrated Regional Resource Plan
kV	Kilovolt
LIO	Land Information Ontario
LRT	Light Rail Transit
MBCA	<i>Migratory Birds Convention Act</i>
MNRF	Ministry of Natural Resources and Forestry

MOECC	Ministry of the Environment and Climate Change
MPP	Member of Provincial Parliament
MTCS	Ministry of Tourism, Culture and Sport
MTO	Ministry of Transportation
MW	Megawatt
NAPS	National Air Pollution Surveillance Program
NCC	National Capital Commission
NHIC	Natural Heritage Information Centre
NO	Nitric oxide
NO _x	Nitrogen oxides
NO ₂	Nitrogen dioxide
OMB	Ontario Municipal Board
PIC	Public Information Centre
PM _{2.5}	Fine Particulate Matter (airborne with a mass median diameter of less than 2.5 microns [μm])
PM ₁₀	Particulate Matter (airborne with a mass median diameter of less than 10 microns [μm])
POR	Point of Reception
PPS	Provincial Policy Statement
proposed Project	Overbrook to Riverview Transmission Line Upgrade
PSW	Provincially Significant Wetland
PTTW	Permit to Take Water
RCMP	Royal Canadian Mounted Police
RoW	Right-of-Way
RVCA	Rideau Valley Conservation Authority
SAR	Species at Risk
SARO	Species at Risk in Ontario
SPM	Suspended Particulate Matter
TS	Transformer Station
μm	Micrometres
$\mu\text{g}/\text{m}^3$	Micrograms per metre cubed

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1 Introduction

The proposed undertaking is a near term initiative identified in the Independent Electricity System Operator's (IESO) *Ottawa Area Integrated Regional Resource Plan* (IRRP) (IESO, 2015), which was developed by the IESO in collaboration with Hydro Ottawa Limited (Hydro Ottawa) and Hydro One Networks Inc. (Hydro One). Hydro Ottawa has requested that Hydro One proceed with this IRRP initiative to reinforce the transmission infrastructure in central Ottawa, to ensure an adequate and reliable supply of electricity to the area. The Overbrook to Riverview Transmission Line Upgrade (the proposed Project) would reinforce the existing transmission infrastructure by upgrading the existing section of 115 kilovolt (kV) transmission line between Hydro One's Overbrook Transformer Station (TS) on Coventry Road and Balena Park in the Riverview neighbourhood in the City of Ottawa (Figure 1-1).

A Class Environmental Assessment (EA) is being carried out to assess the potential environmental effects of the proposed project. This report has been prepared in accordance with the requirements of Ontario's *Environmental Assessment Act* (EA Act). The proposed project falls within the class of routine projects described in the *Class Environmental Assessment for Minor Transmission Facilities* (Class EA) process (Ontario Hydro, 1992). This Class EA process was developed as a streamlined process to ensure minor transmission facilities that have a predictable range of effects are planned and carried out in an environmentally acceptable manner. This draft Environmental Study Report (ESR) describes the Class EA process that has been undertaken for the proposed project.

1.1 Need for the Undertaking

This project is one of the recommended near term actions identified in the *Ottawa Area Integrated Regional Resource Plan* (IRRP) (IESO, 2015), which was prepared by the Independent Electricity System Operator (IESO) in collaboration with Hydro One and Hydro Ottawa. This report described the need to upgrade a section of circuit A5RK between Overbrook TS and the junction (located in Balena Park) into a double-circuit transmission line to provide increased supply capability for the circuit A4K. This undertaking will reinforce the 115 kV transmission supply to the downtown Ottawa area and relieve overloading of the 115 kV circuit A4K to ensure an adequate and reliable supply of electricity to central Ottawa (IESO, 2015, p. 6). Figure 1-1 shows the existing transmission network in central Ottawa and the location of the recommended upgrade of circuit A5RK from the IRRP.

It is important to note that while Hydro One is the project proponent, the Class EA for the proposed Project is being conducted on behalf of Hydro Ottawa and to satisfy the near-term electricity needs in central Ottawa.

1.2 Purpose of the Undertaking

The purpose of the proposed undertaking is to reinforce the electricity supply in central Ottawa, as recommended in the IRRP document. Specifically, the purpose of the undertaking is to upgrade the section of single-circuit 115 kV transmission line (circuit A5RK) between Overbrook TS and the junction (located in Balena Park) to a double-circuit 115 kV transmission line. Adding a tap connection to the existing circuit A6R at the junction, located at the existing transmission structure in Balena Park would provide the second 115 kV supply to Overbrook TS. (IESO, 2015)

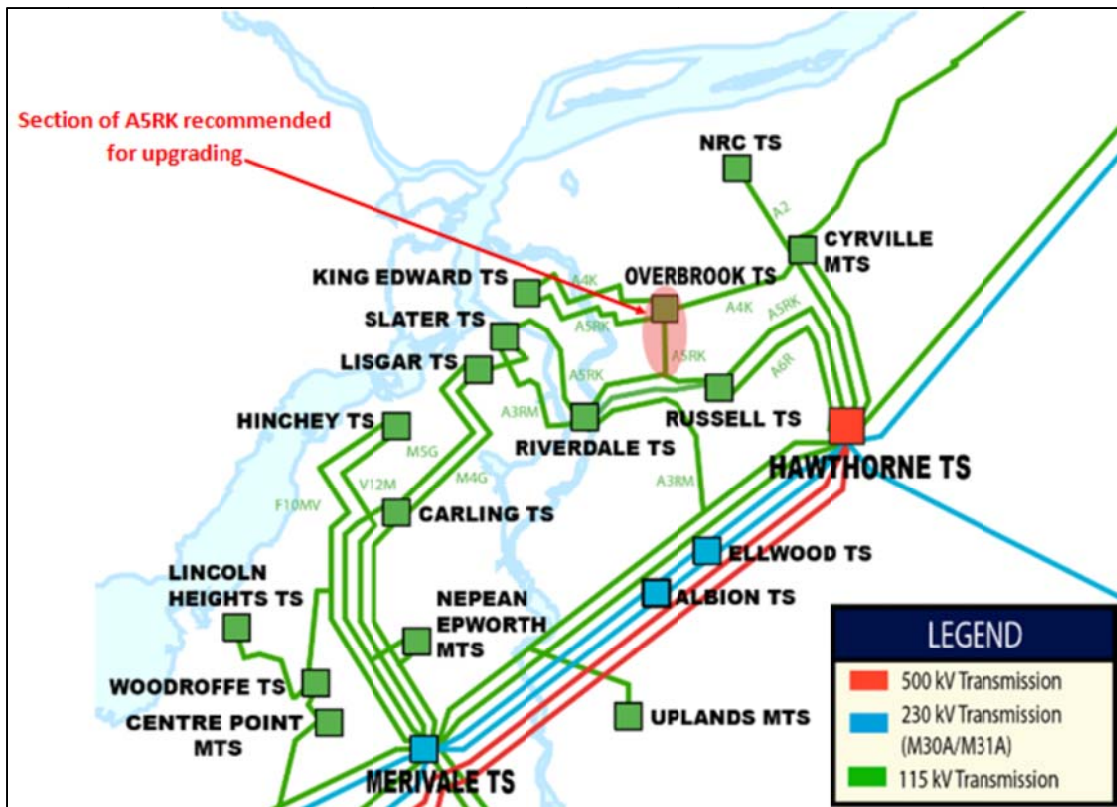


Figure 1-1: Central Ottawa Transmission Network

Source: (IESO, 2015, p. 43)

1.3 Description of the Undertaking

The proposed undertaking involves the installation of a second 115 kV circuit on the existing right-of-way (RoW) between Overbrook TS on Coventry Road and Balena Park in the Riverview neighbourhood.

The length of the proposed 115 kV circuit will be just less than two kilometres and will require seven of the nine existing transmission structures to be replaced with steel pole structures to accommodate this second circuit. The existing transmission structure adjacent to Overbrook TS will also be replaced with approximately nine tapping structures. The final exact locations of the new transmission structures will be determined during the detailed engineering design of the proposed project, which will take place following

submission of the final Environmental Study Report (ESR) to the Ministry of the Environment and Climate Change (MOECC), as discussed in section 6.1.

Upon the completion of the approval process and obtaining all the necessary permits, construction could begin in spring 2017 and be completed by the end of 2018.

1.4 Alternatives to the Undertaking

The *EA Act* and the Class EA process require identification and evaluation of alternatives to the undertaking. These alternatives must be reasonable from a technical, economic and environmental perspective and must fall within the mandate of the proponent.

Alternatives to the undertaking were explored by the IESO, Hydro One, and Hydro Ottawa during the development of the IRRP (IESO, 2015) and included:

- The “Do Nothing” alternative
- Alternative 1 - Conservation
- Alternative 2 - Distributed Generation
- Alternative 3 - Transmission

The “Do Nothing” alternative would not meet the need for the undertaking and is therefore not a feasible alternative that will be carried forward for further consideration in this ESR.

The IRRP considered the forecasted electricity demand of the central Ottawa area, which expects the load to exceed the current supply capability by more than 45 megawatts (MW) in 2025, and by more than 50 MW by 2032 (IESO, 2015, p. 42). It was determined that based on the large forecasted electricity demand, both conservation and distributed generation would not be sufficient alternatives to meet the forecasted need (IESO, 2015, p. 42). These alternatives will therefore not be carried forward for further consideration in this ESR.

The IRRP determined that transmission is the only feasible alternative that will meet the forecasted electricity demand in central Ottawa. This alternative has been carried forward for consideration in this ESR and is further discussed in section 2.1.

1.5 Approval Process and Regulatory Requirements

This section outlines the approval process as required under the Class EA process, as well as other regulatory requirements.

1.5.1 *Environmental Assessment Act*

This ESR has been prepared in accordance with the *Class Environmental Assessment for Minor Transmission Facilities* process (Ontario Hydro, 1992), which was approved under the Ontario *EA Act*. This Class EA process defines an environmental planning process, which meets all requirements of the *EA Act*, including:

- Establish need (section 1.1);
- Identify and evaluate alternatives to the undertaking (section 1.4);
- Define study area (section 2.1);
- Issue initial notification (section 2.2 and section 4.1);
- Conduct environmental inventory (section 3);
- Identify and evaluate alternative methods (section 5.1);
- Select preferred alternative method (section 5.2) and prepare draft ESR;
- Issue final notification (section 4.1.3) and commence associated draft ESR Review Period (section 4.8);
- File Statement of Completion with the MOECC and proceed with undertaking (section 4.9); and
- Conduct consultation throughout the process (section 4).

1.5.2 *Class Environmental Assessment Process*

This ESR was prepared in accordance with the *Class Environmental Assessment for Minor Transmission Facilities* (Ontario Hydro, 1992). This Class EA describes the process that must be followed for a defined class of projects/undertakings in order to meet the requirements of the Ontario *EA Act*. The Class EA process is illustrated in Figure 1-2.

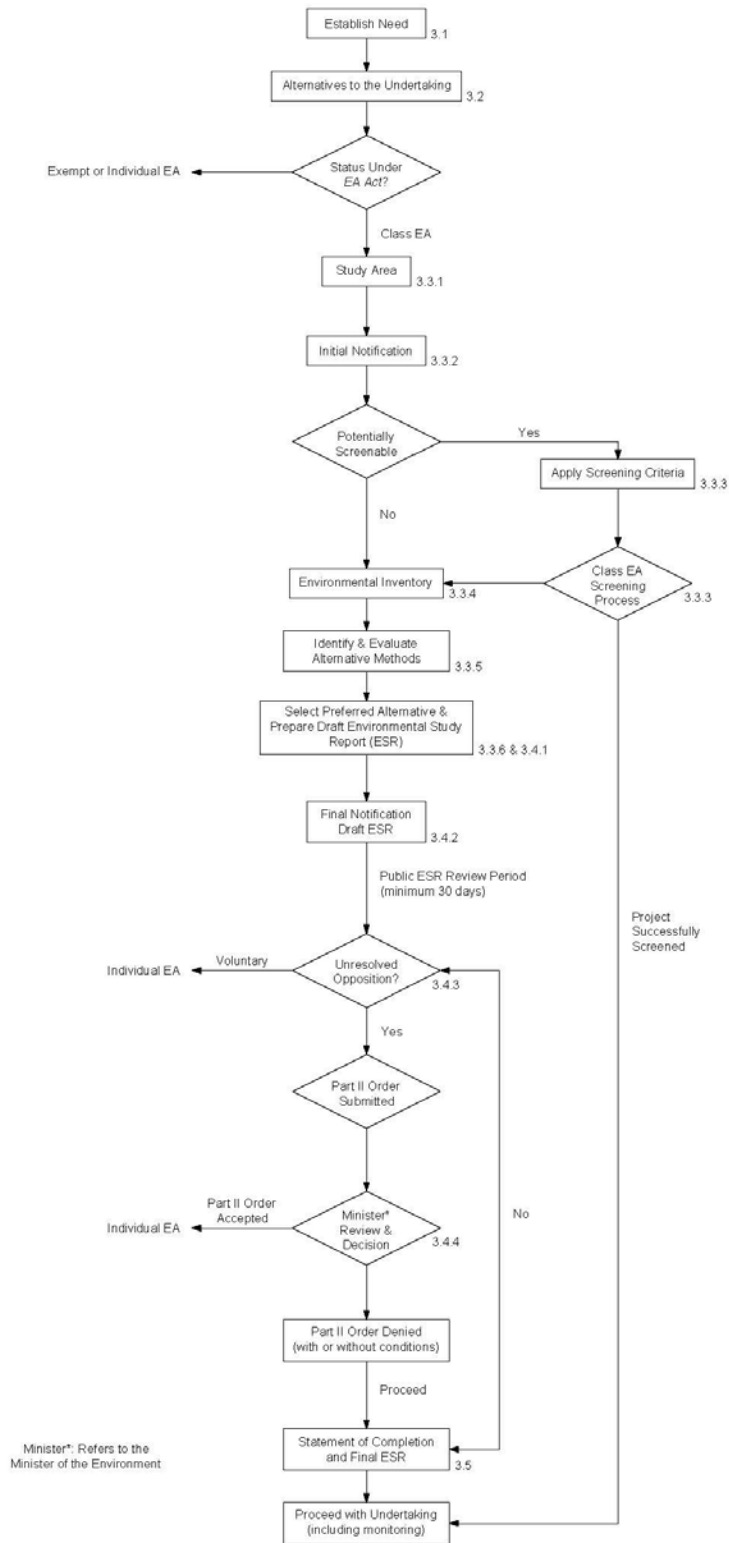


Figure 1-2: Class EA Process

The Class EA process is equivalent to the Environmental Screening Process described in sections A.5.1 and A.5.2 of the *Guide to Environmental Assessment Requirements for Electricity Projects* (MOECC, 2011). The Class EA applies to Category B transmission projects that are not associated with Category B generation projects.

Transmission facilities covered under the Class EA include:

- a. The planning, design and construction of minor transmission lines and/or transmission stations (including telecommunication stations), and the subsequent operation, maintenance and retirement of these facilities.

Minor transmission lines include all transmission line projects involving greater than 2 km of line, which:

- i. Are capable of operating at a nominal voltage equal to 115 kV.
 - ii. Are capable of operating at a nominal voltage level higher than 115 kV and less than 500 kV, and which involve less than 50 kilometres of line.
- b. The planning, design and construction required to modify or upgrade a transmission line, and the subsequent operation, maintenance and retirement of the revised line where:
 - i. The work requires replacement of poles or towers and/or changes in the right-of-way (RoW) for existing transmission lines capable of operating at a nominal voltage of equal to or greater than 115 kV and equal to or less than 500 kV.
 - ii. The modified or upgraded existing lines would operate at a nominal voltage of equal to or greater than 115 kV, and equal to or less than 500 kV (nominal voltage).

- c. The planning, design and construction required to modify or expand a transmission station, and the subsequent operation, maintenance and retirement of the modified station where:
 - i. Acquisition of additional property is required; and,
 - ii. The modified stations are capable of operating at a nominal voltage level of equal to or greater than 115 kV and equal to or less than 500 kV (where a station has more than one voltage level, the highest level is used in defining the station's nominal operating voltage).

Should there be substantive issues or effects raised by a concerned party regarding the proposed project that cannot be resolved by the proponent, the Class EA process allows that concerned parties may require the level of assessment for the project to be elevated to an Individual EA (referred to as a Part II Order request). See section 4.8 for more information on Part II Order requests.

Upon completion of the ESR, Hydro One will issue a final notification to all stakeholders including municipal, provincial, federal government officials, government agencies, and First Nation and Métis communities, potentially affected and interested persons and interest groups. This draft ESR will be made available for public review and comment for a period of 30 days, from January 12, 2017 to February 10, 2017. Hydro One will respond to and make best efforts to resolve any issues raised by concerned parties during the review period. These issues will be documented and the resolutions summarized in the final ESR.

Once the review period of the draft ESR is complete, all comments raised during the review period will be incorporated into the report and the ESR will be finalized. A copy of the finalized ESR will be placed on the Hydro One website, and sent to the Environmental Approvals Branch (EAB) at the MOECC and the appropriate Regional EA Coordinator at for filling. The Statement of Completion will be completed and submitted to the MOECC along with the finalized ESR. The project will then be considered acceptable and can proceed as outlined in the final ESR.

1.5.3 Other Permits, Licenses and Approvals

In addition to meeting *EA Act* requirements, there are a number of necessary permits, licenses and approvals that may be required under federal and provincial legislation. Permits, licenses and approvals potentially required for the proposed Overbrook to Riverview Transmission Line Upgrade are presented in Table 1-1. Hydro One will contact all regulatory agencies to ensure that the proposed project meets all applicable requirements and all approvals are obtained as necessary. This project does not meet any of the conditions which would require a federal environmental assessment under the *Canadian Environmental Assessment Act*.

Hydro One electricity transmission and distribution projects are exempt from municipal approvals as authorized under section 62 of the *Planning Act* (1990) if approval is obtained under the *EA Act*. However, Hydro One has consulted and will continue to consult with the City of Ottawa regarding construction planning and restoration plans.

Table 1-1: Potentially required Permits, Licenses and Approvals

PERMIT, LICENSE, OR APPROVAL	PRIMARY AGENCY	DESCRIPTION
Encroachment Permit	Ministry of Transportation (MTO)	Required when working adjacent to Highway 417.
Building and Land Use Permit	MTO	Required to re-string transmission lines over Highway 417.
Clearance Letter	Utility and railway companies	Required to cross utilities (e.g. natural gas or oil pipelines) or railways
Temporary Road Entrance Permit	City of Ottawa	Required to construct an entrance for access to a construction site.
Environmental Activity & Sector Registry (EASR) or Permit to Take Water (PTTW)	MOECC	May be required for construction dewatering.

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2 Project Assessment Process

This section presents a summary of the project specific requirements of the Class EA process as they pertain to this ESR.

2.1 Study Area Definition

A project study area is delineated to encompass the potential area of project effects. At the beginning of the study, the IESO, Hydro Ottawa, and Hydro One collaborated to identify the technical specifications and system requirements for the proposed electrical facilities, and the criteria and guidelines that were established to assist in identifying a study area.

The study area for the proposed Project was delineated to areas within 100 metres from the centerline of the existing RoW, as all work will be occurring within the RoW. The study area extends from Balena Park, where a proposed laydown area will be located, north through the Riverview neighbourhood and the Ottawa Train Yards shopping complex. The study area then continues north to cross the Light Rail Transit (LRT) Confederation Line at Belfast Road and then parallels the LRT Line next to the Eastway Gardens neighbourhood, and crosses the Queensway - Highway 417 to continue north to Overbrook TS on Coventry Avenue (see Figure 2-1).

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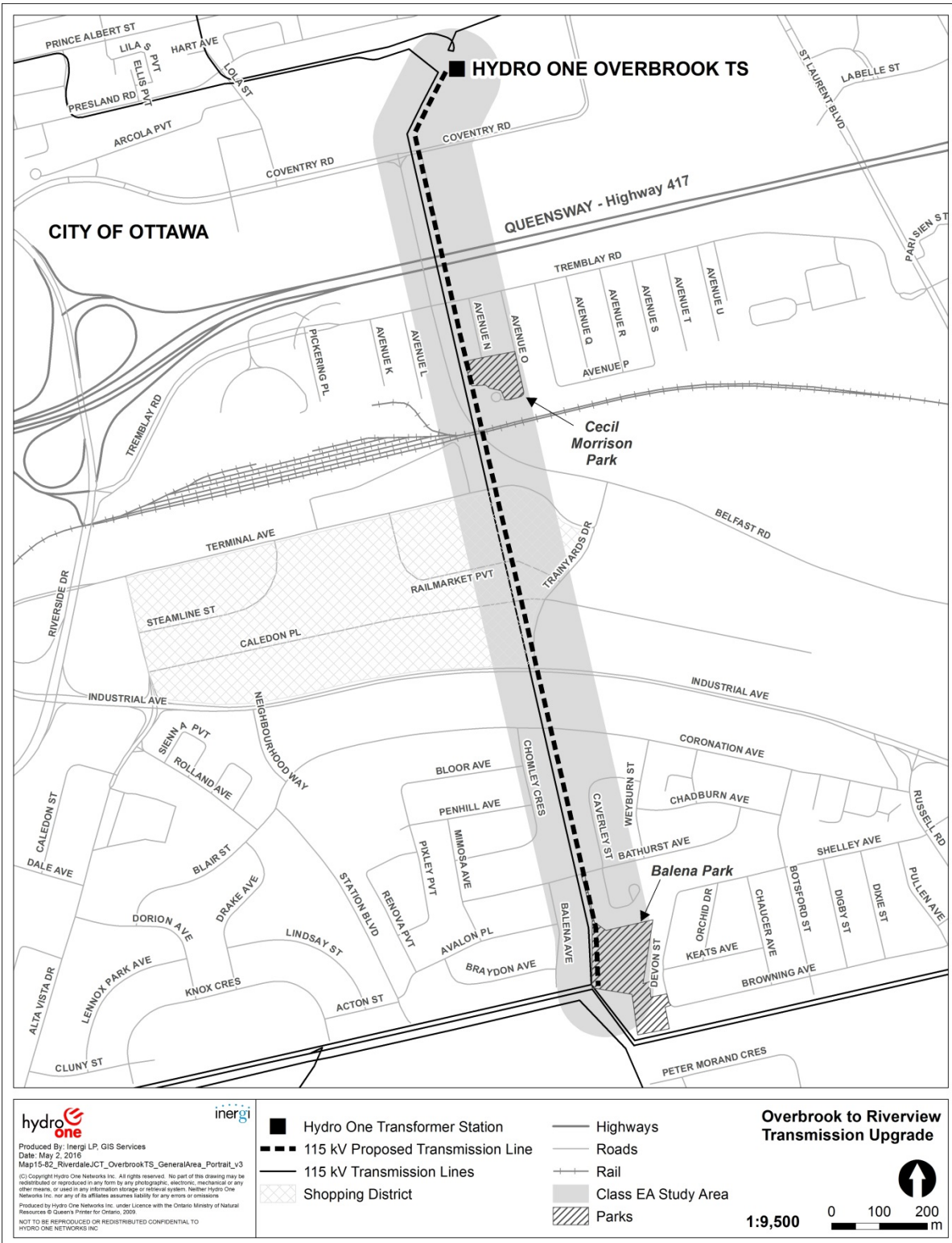


Figure 2-1: Study Area Map

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2.2 Initial Notification

The First Nations affected were notified of the project early in the planning process in May 2016. Pre-consultations with municipal elected officials also took place prior to public notification and introductory meetings were held with the two City Councillors in the project area. Initial contact to government officials and agencies, potentially affected and interested persons, and interest groups was made by Hydro One in June 2016 through the Notice of Commencement, which was distributed via email, mailed letters and newspaper advertisements.

Stakeholders were notified of the need for the proposed Project and study area, and were asked to provide comments. Each ministry, department or agency was asked to provide comments with respect to potential concerns relating to their respective policies, mandates and/ or jurisdictions.

Section 4 provides additional information on the consultation activities undertaken for the proposed project and Appendix A provides consultation related documents. Environmental Inventory

As described in the Class EA process (Ontario Hydro, 1992), environmental information for the following environmental factors is collected, summarized, mapped and assessed, as applicable to the study area of the proposed Project:

- Agricultural Resources
- Forestry Resources
- Cultural Heritage Resources
- Human Settlements
- Mineral Resources
- Natural Environment Resources
- Recreational Resources
- Visual and Aesthetic Resources

Information pertaining to these factors and resources were obtained from literature review, reports, databases, mapping, consultation and field surveys. The environmental baseline conditions in the study area are summarized in section 3 of this ESR.

2.3 Identification and Evaluation of Alternative Methods

The *EA Act* and the Class EA process require identification and evaluation of alternative methods of carrying out the undertaking. Alternative methods of carrying out the undertaking are distinct from alternatives to the undertaking. Alternatives to the undertaking are functionally different approaches to achieving the purpose of the undertaking and are presented in section 1.4.

Alternative methods refer to different means of carrying out the same task to achieve the purpose of the undertaking (e.g. different routes, sites). Potential alternative methods are identified based on the presence of environmental features, technical and cost factors, input received during the consultation process, and compliance with the *Provincial Policy Statement* (PPS) (2014). Following the identification of alternative methods for the undertaking, evaluation criteria are established, and evaluation and selection of preferred alternative occurs. Section 5 describes this process in detail.

The IRRP considered two alternative methods to address the need for the proposed undertaking. The first option was to upgrade approximately eight kilometres of the existing circuit A4K. The second option was to upgrade just less than two kilometres of the existing circuit A5RK. The IRRP determined that upgrading the circuit A4K might not provide the required supply capacity to the area due to the ampacity rating of the circuit. Based on this technical constraint and the longer length of the proposed upgrade on circuit A4K, the IRRP recommended that the preferred alternative was to upgrade circuit A5RK.

2.4 Draft Environmental Study Report and Final Notification

This draft ESR describes and documents the Class EA process undertaken for the planning of the proposed project. The information contained within this ESR consists of the following:

- a. Name and description of the proposed project (section 1);
- b. A description of the need for the proposed project (section 1.1);
- c. A description of the alternatives to the undertaking and the preferred alternative (section 1.4);
- d. A description of a study area for the proposed project and the existing environment (section 3);
- e. A description of the potential environmental effects (positive and negative) (section 7);
- f. A description of the alternative methods considered for the project (section 5.1);
- g. A description of the preferred alternative (section 5.2);
- h. A description of the consultation that was undertaken (section 4)
- i. A description of other applicable permits and approvals required for the proposed project (section 1.5.3);
- j. A description of mitigation measures and predicted net effects (section 7); and
- k. A description of any required environmental monitoring (section 8).

Upon completion of the draft ESR, a Final Notification (i.e. Notice of Completion) is to be distributed to all interested parties including: First Nations and Métis communities, government officials and agencies, and potentially affected and interested persons to advise that the report is complete and the review period is commencing. Details regarding the Final Notification and the draft ESR review period can be found in section 4.8.

Issues and concerns received by Hydro One during the draft ESR review period will be recognized, considered, addressed and documented. The final ESR will be prepared for the proposed project in accordance with the Class EA process. Upon completion of the Class

EA process, the final ESR will be filed with the MOECC. Copies of the report will also be forwarded to any organization or individual upon request.

3 Environmental Features in the Study Area

As described in the Class EA process, information was collected for the environmental features listed below:

- Agricultural Resources
- Forestry Resources
- Cultural Heritage Resources (i.e., built heritage resources, cultural heritage landscapes and archeological resources)
- Human Settlements
- Mineral Resources
- Natural Environment Resources (e.g., air, land, water, wildlife, etc.)
- Recreational Resources
- Visual and Aesthetic Resources (i.e., appearance of the landscape)

The following sections summarize the environmental baseline conditions in the project study area. Information for the factors was based on literature review, reports commissioned by Hydro One, databases, mapping, consultation, and field surveys completed in 2016. Dillon Consulting was retained by Hydro One on this project to provide support and carry out field studies. Figure 3-1 presents known environmental features within the study area.

The resources identified within the study area, as discussed in this section will be carried forward and considered in the evaluation of potential environmental effects and mitigation (section 7).

The project study area is located in an urban area of Ottawa. Based on a review of the Ministry of Natural Resources and Forestry's (MNRF) Ontario Agricultural Resource Inventory and the Land Information Ontario database (LIO), it was determined that agricultural resources, forestry resources, and mineral resources are not present within the study area. Therefore, these resources will not be discussed further and are not carried forward for assessment.

3.1 Archaeological and Cultural Heritage Resources

Hydro One screened the proposed Project using the Ministry of Tourism, Culture, and Sport's (MTCS) Criteria for Evaluating Archaeological Potential checklist (2015) to determine whether the project area exhibited archaeological potential. The project area is located within urban and previously disturbed land on an existing transmission line RoW, has no known burial sites or cemeteries, and is not located within 300 m of a known archaeological site or water source. It was therefore determined that the proposed Project area does not exhibit archaeological potential. As per Ontario Regulation 875 of the *Ontario Heritage Act* (1990), there were no known properties designated as an archeological site within the project area and an archaeological assessment was screened as not being required. However, should an artifact be found during construction, Hydro One crews will be directed to immediately stop work and contact the MTCS.

In regards to cultural heritage, Hydro One screened the proposed project using the MTCS Criteria for Evaluating Built Heritage Resources and Cultural Landscapes checklist (2016). Based on this checklist, it was concluded that the project will not impact cultural heritage resources. As previously noted, the project area is within an existing transmission line RoW. The only structures occurring within the RoW are transmission structures, which are exempt from the 40 years or more criteria in the checklist. It is also noted that the project area is not located in a City of Ottawa Heritage Area, as per the City of Ottawa's Zoning By-Law No. 2008-250 – Heritage Overlay (Sec. 60). Therefore, as defined by Ontario Regulation 9/06 of the *Ontario Heritage Act* (1990), there are no known properties of cultural heritage value within the project area and a cultural heritage impact assessment was screened as not being required.

Copies of the completed checklists were emailed to the MTCS on August 24, 2016. Based on these screenings, there are no anticipated negative effects to archaeological or cultural heritage resources from the proposed project.

3.2 Human Settlements

The study area is located within the urban area of the City of Ottawa and contains a mixture of commercial, government/institutional, open area, parks/recreation, residential, and resource/industrial areas. In general, the City of Ottawa has a population of close to one million people, a land base of approximately 2,800 square kilometres, and is the capital city of Canada.

3.2.1 Land Use Planning

With respect to existing land use designations, land uses in the study area are guided by the PPS (2014), and the City of Ottawa's Official Plan (2003), which is regulated by the City of Ottawa's Zoning By-law (2008).

The PPS (2014) provides the Government of Ontario's policy direction on land use planning to promote strong communities, a strong economy, and a clean and healthy environment (e.g., the efficient management of land and infrastructure, the protection of resources, and appropriate employment and residential development). The City of Ottawa's Official Plan (2003) and other planning documents are required to comply with the PPS to ensure consistency.

Section 3.1 of the City of Ottawa's Official Plan (2003) permits public utilities and public utility features, including electricity transmission lines, in any land use designation. The study area of the proposed Project contains the following designated land uses:

- **The Employment Area** designation covers the northern extent of the study area southerly to Belfast Road. Employment Areas are lands reserved primarily for "places of business and economic activity" and are to be protected for the long term (City of Ottawa Official Plan, Section 3.6.2).
- **The Mixed Use Centre** designation covers the study area from Belfast Road to Coronation Avenue. The Mixed Use Centre designation is applied "to areas that have been identified as strategic locations on the rapid-transit network and lie adjacent to

major roads” and encourages diverse land uses (City of Ottawa Official Plan, Section 3.6.2).

- **The General Urban Area** designation covers the southern part of the study area south of Coronation Avenue. The General Urban Designation permits “a full range and choice of housing types to meet the needs of all ages, incomes and life circumstances, in combination with conveniently located employment, retail, service, cultural, leisure, entertainment, and institutional uses” (City of Ottawa Official Plan, Section 3.6.1).
- **The Urban Natural Feature** designation covers the far south-west edge of the study area. The purpose of this designation is “to preserve natural features that are currently managed for conservation or passive leisure uses” (City of Ottawa Official Plan, Section 3.2.3).

The study area’s land uses are also regulated by the City of Ottawa’s Zoning By-law (2008), however, utilities such as electricity transmission lines are not subject to the provisions of the Zoning By-law (City of Ottawa By-law 2008-250, Section 91). The various zoning designations in the study area are summarized in Table 3-1. The table lists the zones in the order that they appear in the study area from north to south.

Table 3-1: Study Area Zoning Designations

Zone	Zone Code	Purpose of Zone ¹
Parks and Open Space Zone – Hydro RoW Subzone	O1P	Modification of the O1 zone that allows accessory uses of abutting properties to extend up to 120 m onto the lands zoned O1P, as long as the accessory use is not a building.
Parks and Open Space Zone	O1	Permit parks, open space and related and compatible uses.
Light Industrial Zone	IL	Permit a wide range of low impact light industrial uses, as well as office and office-type uses in a campus-like industrial setting.
General Mixed Use Zone	GM	Allow residential, commercial and industrial uses, or mixed use development.
Community Leisure Facility Zone	L1	Permit recreational uses that meet the needs of the surrounding community.
Residential Third Density Zone	R3	Allow a mix of residential building forms ranging from detached to townhouse dwellings.
Residential First Density Zone	R1	Restrict the building form to detached dwellings.
General Industrial Zone	IG	Permit a wide range of low to moderate impact, light industrial uses.
Transit Oriented Development Zone	TD	Establish minimum density targets needed to support LRT and accommodate a wide range of transit supportive uses.
Mixed-Use Centre Zone	MC	Accommodate a combination of transit supportive uses.
Residential Fourth Density Zone	R4	Allow a wide mix of residential building forms ranging from detached to low rise apartment dwellings.

General Land Use mapping of the project study area is provided in Appendix B.

¹ This table does not specify subzones or special exceptions (except for the O1P zone).

The National Capital Commission (NCC) owns vacant lands within the study area adjacent to Highway 417. However, these federal lands are not anticipated to be impacted by the project during or after construction. No provincial land use plans, such as the Greenbelt Plan nor Niagara Escarpment Plan are applicable to the study area.

Portions of the transmission line RoW are provincially owned and managed by Hydro One. They include the sections of the RoW between Overbrook TS and Highway 417, to the west of Avenue N, and between Industrial Avenue and Balena Park. All three of these sections of the RoW are zoned as Open Space Hydro Corridor Subzone (O1P) by the City of Ottawa. This open space subzone is privately owned land and the City of Ottawa's Official Plan (2003) specifies that public use and access to privately owned open space for any purpose is not permitted without consent from the owner.

3.2.2 Socio-economic Characteristics

The transmission RoW is adjacent to residential neighbourhoods, commercial uses, and industrial uses. The residential neighbourhoods were established in the post WWII era (City of Ottawa, 2016a). The study area begins in the Overbrook neighbourhood in the north, crosses through the neighbourhood of Eastway Gardens and terminates in the Riverview neighbourhood in the south. The broader Overbrook-McArthur area, which includes Eastway Gardens and the neighbourhood to the north, has a total population of 11,600. The broader Elmvalle-Riverview Park West area which includes the study area south of Highway 417 has a population of approximately 18,700 (City of Ottawa, 2016a). North of Highway 417, the study area falls within the Rideau-Rockcliffe Ward (Ward 13) of the City of Ottawa. South of Highway 417, the study area falls within the Alta Vista Ward (Ward 18) of the City of Ottawa.

Within the residential neighbourhoods there are two municipal parks, including Cecil Morrison Park in Eastway Gardens, and Balena Park in Riverview. There is also a place of worship, the Ottawa Church of Christ located at 1515 Chomley Crescent; adjacent to the RoW to the south of Coronation Avenue. There are approximately sixty residential dwellings that back onto the transmission RoW. Most of the residential development is made up of

single detached dwellings, with an apartment complex located on Coronation Avenue. In many cases, people living adjacent to the RoW have been using it to plant vegetable gardens and other vegetation, or for other personal uses. The primacy of use of the RoW is for the purposes of transmission or distribution and is not meant to provide adjoining landowners with any property extension into the RoW.

There is an industrial area in the northern part of the study area with office buildings and light industrial businesses are common. There are also commercial areas in the study area. The most significant shopping area is the Ottawa Train Yards located between Industrial Avenue and Belfast Road. The shopping complex includes over 750,000 square feet of retail space over a 110 acre property. The transmission RoW runs through the Ottawa Train Yards and three of the existing towers that are proposed to be replaced through this project are located within or directly adjacent to the Ottawa Train Yards parking lots.

Based on a review of the City of Ottawa's geoOttawa mapping (2016b), there do not appear to be land uses such as hospitals, nursing homes or other such sensitive receptors within the study area. The General Campus of the Ottawa Hospital is located outside of the study area, directly to the south.

3.2.3 Transportation

The transmission RoW crosses a variety of transportation infrastructure including the Queensway (Highway 417), which is a provincially controlled highway and a major east-west transportation corridor for Ottawa. The City of Ottawa's Official Plan - Schedule E (2003) identifies the following roads within the study area as part of the "Urban Road Network":

- Highway 417 (Provincial Highway);
- Coventry Road (Arterial);
- Industrial Avenue (Arterial);
- Belfast Road (Major/Minor Collector);
- Tremblay Road (Major Collector);
- Terminal Avenue (Minor Collector);
- Coronation Avenue (Minor Collector); and,

- Unnamed Proposed Arterial (at the southern extent of the study area).

The RoW also crosses a Canadian National (CN) rail line directly east of the Ottawa VIA rail station located at 200 Tremblay Road, and the light rail transit (LRT) “Confederation Line” that is currently under construction. OC Transpo provides public transit in Ottawa, and several local and express bus routes run through the study area. The nearest major transit stations are located at the St. Laurent Mall and at the Ottawa VIA rail station. Both of these stations will include LRT stations when the Confederation Line is completed in 2018.

The southern part of the transmission RoW is identified in the City of Ottawa’s Official Plan - Schedule I as a “Multi-Use Pathway – Off Road City-wide Route”, connecting through the Ottawa Train Yards shopping complex to Belfast Road in the north and continuing south past the Ottawa Hospital General Campus. There is no formal or continuous north-south pathway running through the transmission RoW at this time. However, people walk and cycle along the RoW for recreation, and to access destinations including the Ottawa Hospital and Balena Park. As mentioned in section 3.2.1, the section of the corridor between Industrial Avenue and Balena Park is provincially owned open space land that is managed by Hydro One. Therefore, public use and access for any purpose is not permitted without consent from the owner (Amendment #13, September 8, 2004). The City of Ottawa will need to obtain a Secondary Land-Use License from Hydro One prior to the installation of a formal multi-use pathway on transmission RoWs.

3.2.4 First Nation and Métis Lands

There are no First Nations Reserve Lands located in the study area (Aboriginal Affairs and Northern Development Canada, 2015). However, the Algonquins of Ontario have a land claim over the entirety of eastern Ontario, including the study area and have been identified by the Crown as having a potential interest in this project.

3.3 Natural Environment Resources

This section considers areas of environmental sensitivity including the air, land, water and wildlife resources and features within the study area. The assessment is based on the

requirements outlined in the PPS (2014) and following the *Natural Heritage Reference Manual* (MNR, 2010).

Baseline information on the physical and biological condition in the study area is discussed and includes the following:

- physical environment
- surface and groundwater hydrology
- designated or special natural areas
- natural heritage features

3.3.1 Physical Environment

The study area lies over Upper Ordovician bedrock consisting of shale, limestone, dolostone, and sandstone (Ontario Geological Survey, 1991). The physiography of the area is described as till plains with scattered drumlins (Chapman & Putnam, 1984). The soil within the study area generally includes sandy loams, which are highly impacted from development activity and site alteration over the years.

3.3.2 Atmospheric Environment

The City of Ottawa is located in the Great Lakes/St. Lawrence climate region and experiences humid continental climate conditions with influence from the Great Lakes to the west (ECCC, 2016a).

The closest Environment and Climate Change Canada (ECCC) meteorological station to the proposed project with sufficient data is the Ottawa MacDonald-Cartier International Airport (World Meteorological Organization Station Identifier [ID] 6106000). This station is located approximately 12 km south of the proposed project. Data presented in this section is based on the available 1981-2000 Climate Normal data (ECCC, 2016b).

Temperature

The climate normal mean annual temperature at the Ottawa MacDonald-Cartier International Airport is 6.4 degrees Celsius. The climate normal daily average temperature varies between -10.2 degrees Celsius (January) and 21.0 degrees Celsius (July). Extreme climate normal temperatures range from -36.1 to 37.8 degrees Celsius.

The climate normal frost free period is from April 30 to October 7 (159 days).

Precipitation

Precipitation is distributed throughout all four seasons, with snowfall typical from October to April, and rainfall typical from May to September. Climate normal days with precipitation is 163.6 days per year.

Climate normal monthly precipitation varies between 18.7 millimetres (February) and 92.8 millimetres (June). The climate normal total annual precipitation is 943.4 millimetres, where 223.5 millimetres typically falls as snowfall and 758.2 millimetres as rainfall. Extreme daily rainfall depths from 36.3 millimetres (December) to 135.4 millimetres (September) are climate normal. Average snow depths range from zero to 28 centimetres (February).

Wind

The following wind rose, presented in Figure 3.2, represents five consecutive years of data (January 1, 1996 - December 31, 2000) at the ECCC climate station (Ottawa Airport, ID 6106000). At this location, winds are primarily blowing from the southwest and northwest with an average wind speed of 3.25 metres per second (m/s).

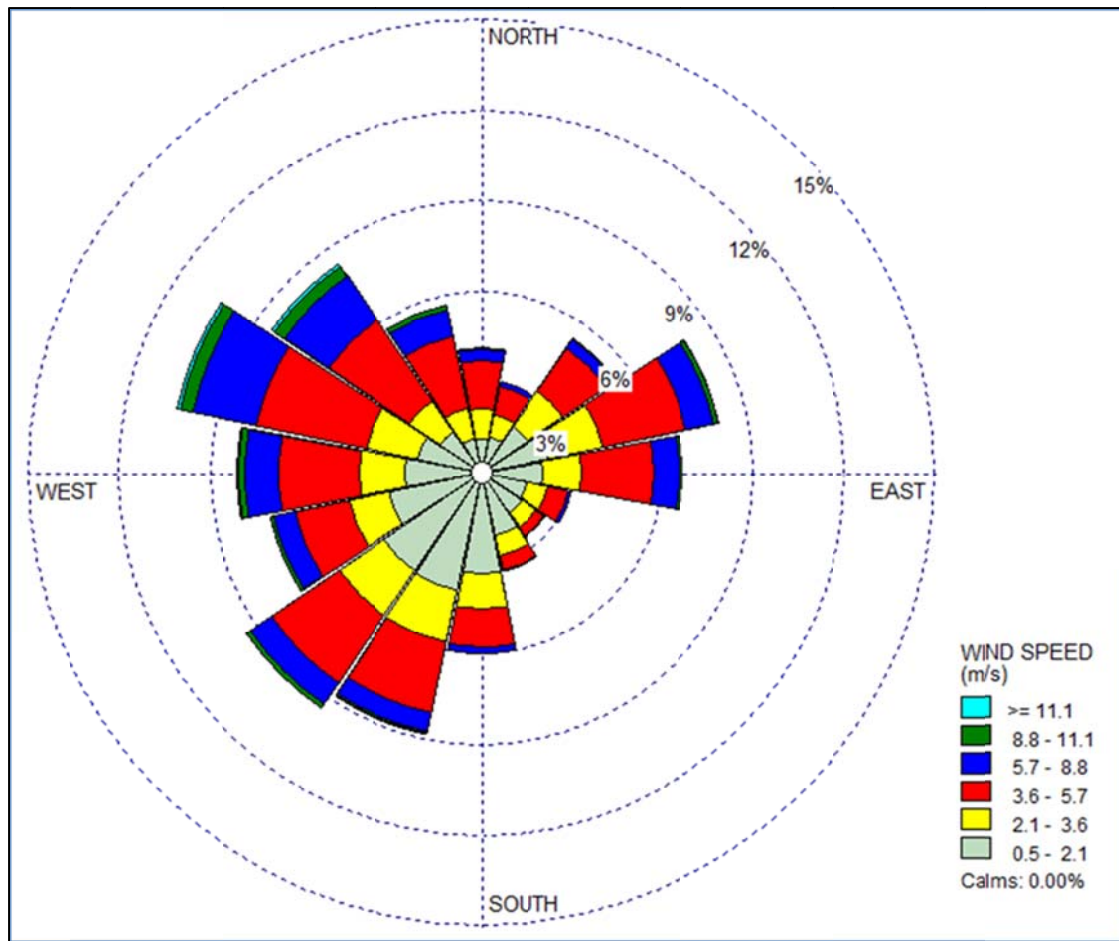


Figure 3-1: Wind Speed Direction (Blowing From) Ottawa International Airport

Air Quality

The assessment of background air quality is focused on criteria air contaminants, in particular:

- Carbon monoxide (CO);
- Nitrogen oxides (NO_x) (expressed as nitrogen dioxide [NO₂]);
- Particulate matter, including suspended particulate matter (SPM), particles nominally smaller than 10 micrometres in diameter (PM₁₀), and particles nominally smaller than 2.5 micrometres in diameter (PM_{2.5}); and

- Sulphur dioxide (SO₂).

These are described in further details in the following sections, along with a summary of ambient air monitoring data.

Carbon Dioxide

Carbon monoxide is most commonly a product of incomplete combustion from fossil fuels, and is commonly emitted from vehicles. It can also be emitted from residential wood heating and forest fires. The presence of CO in the atmosphere has impacts on human health such as limiting the blood's capacity to carry oxygen, and can be particularly dangerous to those with respiratory diseases, as well as infants and the elderly (ECCC, 2013).

Nitrogen Oxides

The primary source of NO_x is the combustion of fossil fuels for transportation, industrial, heating, and other purposes. NO_x is composed of nitric oxide (NO) and nitrogen dioxide (NO₂). NO reacts with ozone in the atmosphere to create NO₂. Emissions of NO_x result from the operation of stationary equipment such as incinerators, boilers and generators, as well as the operation of mobile sources such as vehicles, trains and other transportation sources (ECCC, 2013).

The presence of NO₂ in the atmosphere has known health effects, such as respiratory irritation and environmental effects, such as acidification (ECCC, 2013). As a result, regulatory guideline levels for NO_x are based on NO₂ emissions and concentrations.

Particulate Matter

Particulate emissions occur due to anthropogenic activities, such as agricultural, industrial and transportation activities, as well as natural sources. Particulate matter is classified based on its aerodynamic particle size, primarily due to the different health effects associated with particles of different diameters.

Fine particulate matter (PM_{2.5}) is of primary concern as these particles can penetrate deep into the respiratory system and cause health effects such as asthma, bronchitis, emphysema and heart disease (ECCC, 2013).

For the area surrounding the proposed project, no monitoring data are available for SPM or PM₁₀; however, an estimate of the background SPM and PM₁₀ concentrations can be determined from the available PM_{2.5} monitoring data. Fine particulate matter is a subset of PM₁₀, and PM₁₀ is a subset of SPM. Therefore, it is reasonable to assume that the ambient concentrations of SPM will be greater than corresponding PM₁₀ levels, and PM₁₀ concentrations will be greater than the corresponding levels of PM_{2.5}. Overall levels of PM_{2.5} in Canada have been found to be about 50% of the PM₁₀ concentrations and about 25% of the SPM concentrations (Health Canada, 1998). By applying this ratio, background SPM and PM₁₀ concentrations were estimated for the region.

Larger particles (i.e., SPM) can result in nuisance effects, such as soiling (dust) or reduced visibility and, therefore, must be taken into consideration.

Sulphur Dioxide

Sulphur dioxide (SO₂) is a colourless gas and is produced primarily by coal, oil, and metal-containing ores in smelters and refining processes. SO₂ forms sulphates which can cause adverse health effects including breathing problems and respiratory illness, as well as environmental harm such as damage to vegetation and acidification (ECCC, 2013).

Air Monitoring Data

Regional air quality is continuously monitored through a network of air quality stations operated by ECCC's National Air Pollution Surveillance Program (NAPS). The nearest station is approximately four kilometres northwest of the project area (NAPS Station ID 60104 – Ottawa Downtown). Baseline air quality levels are based on monitored air quality measurements from this station for the year 2015. Air monitoring data from the station represents the combined effect of emissions from nearby sources, as well as the effect of emissions transported into the region.

Air quality criteria used for assessing ambient air quality in the study area includes provincial criteria, and federal standards and objectives where provincial criteria are not available. Specifically, the MOECC has issued guidelines related to ambient air concentrations, which are summarized in Ontario’s Ambient Air Quality Criteria (AAQC) which are applied to CO, NO₂, SPM, PM₁₀, and SO₂ (MOECC, 2014).

Contaminants which do not have an AAQC, namely PM_{2.5}, are compared to the Canadian Ambient Air Quality Standards (CAAQS). The CAAQS include standards for PM_{2.5} that must be achieved by 2020. For 24-hour PM_{2.5}, the pending CAAQS value of 27 micrograms per metre cubed (µg/m³) (2020 phase-in date) is applied. The annual PM_{2.5} values are compared to the pending CAAQS of 8.8 µg/m³ (2020 phase-in date).

The 90th percentile of the available monitoring data can be considered a conservative estimate of background air quality, as demonstrated by the monitored data in Table 3-2. The mean of the 90th percentile of the measured concentrations was used to represent background air quality for parameters with shorter averaging periods (i.e., 1-hour and 24-hour). Annual background values were based on the mean of the available hourly data.

Table 3-2: Criteria Air Contaminant Monitored Data for Ottawa Downtown (NAPS Station ID 60104) in 2015

Criteria Air Contaminant	Averaging Period	Regulatory Document	Maximum Monitored Data (ppm)	Maximum Monitored Data (µg/m ³)	Regulatory Criteria (µg/m ³)	Maximum Percentage of Regulatory Criteria
CO	1-Hour	Ontario AAQC	0.3	340	36,200	1%
	8-Hour	Ontario AAQC	0.3	340	15,700	2%
NO ₂	1-Hour	Ontario AAQC	0.016	30	400	8%
	24-Hour	Ontario AAQC	0.015	28	200	14%
SPM*	24-Hour	Ontario AAQC	-	52	120	43%
	Annual	Ontario AAQC	-	28	60	47%
PM ₁₀ *	24-Hour	Ontario AAQC	-	26	50	52%
PM _{2.5}	24-Hour	CAAQS	-	13	27	48%
	Annual	CAAQS	-	7	8.8	80%
SO ₂	1-Hour	Ontario AAQC	0.0008	2	690	0.3%
	24-Hour	Ontario AAQC	0.0008	2	275	0.7%
	Annual	Ontario AAQC	0.0003	0.8	55	1%

*Estimated based on a ratio of monitored PM_{2.5} values as described above.

No exceedances were observed for any of the monitored contaminants during the baseline monitoring period. Monitored values were below regulatory criteria.

Noise

A desktop review of publicly available data was completed to identify noise-sensitive receptors within the study area, and to establish existing noise conditions. Existing land uses within the study area consist of a mixture of commercial, government/institutional, open area, parks/recreation, residential, and resource/industrial (see section 3.2.1 for more details about land uses in the study area). In accordance with the MOECC publication NPC-300 “Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning” noise-sensitive receptors (or Points of Reception [PORs]) are defined as sensitive land uses, which include: dwellings; institutional use (educational, nursery, hospital, health care facility, community center, place of worship or detention center); and commercial use (hotel or motel) (MOECC, 2016). A number of PORs were identified to represent the noise-sensitive receptors in the vicinity, all being residential dwellings.

Ambient noise conditions within the study area were established through a review of publicly available information and the professional opinion of Hydro One’s environmental consultant based on experience on similar projects. Ambient noise conditions within the study area are generally expected to be dominated by anthropogenic activities. These activities include, but are not limited to: transportation (road, rail and distant air traffic); light industrial activities; commercial activities; institutional activities; and residential activities. The actual ambient noise levels at a given POR depend on a number of factors, including type of noise source, distance to the noise source, and influences from intervening areas (e.g., structures, woodlots, topography) that could provide shielding between the noise source and POR. Ambient noise levels are expected to vary throughout the various periods of the day (i.e., Daytime [07:00-19:00], Evening [19:00-23:00], and Nighttime [23:00-07:00]), days of the week, and seasons of the year.

Ambient noise levels in the study area are likely influenced by the following noise emissions, in order of expected significance:

- Ottawa Station rail station;
- Rail traffic along rail corridors;
- Local and distant road traffic, particularly along the Queensway (Hwy 417); and
- Institutional, commercial and residential activities.

3.3.3 Surface and Groundwater Hydrology

The study area lies within the Rideau Falls reach of the Lower Rideau River sub-watershed. However, no watercourses (permanent or ephemeral) or waterbodies were observed within the study area during background review or the field survey. Surface water within the study area generally flows into the local storm water system and is treated accordingly.

The Rideau Valley Conservation Authority (RVCA) identified a portion of Highly Vulnerable Aquifer (HVA) within the study area in response to Hydro One's request for information. Located east of Belfast Road and under the railway, the HVA is within the study area but not within the transmission RoW. Mapping provided by the RVCA is provided in Appendix B.

3.3.4 Designated or Special Natural Areas

Designated or special natural areas are identified by federal or provincial agencies, municipalities, and the public, through legislation, policies, or approved management plans. These areas typically have special or unique values that result in conservation land initiatives. Such areas may have a variety of ecological, recreational, and aesthetic features and functions that are highly valued.

The City of Ottawa's natural lands comprise the city's significant wetlands, forests, rivers and their tributaries (City of Ottawa, 2006). A small portion of the Hospital Woods – East Urban Natural Area is located at the very southern edge of the study area as shown in the Natural Heritage Features Map in Appendix B. This area is identified in the City of Ottawa's Greenspace Master Plan (2006), and evaluated to have a moderate environmental value to biodiversity and wildlife in the area. It is comprised of native tree species including Ash,

Maples, and Trembling Aspen and provides habitat for other plants and wildlife common to the urban environment.

3.3.5 *Natural Heritage Features*

As defined in the PPS (2014), natural heritage features and areas include: significant wetlands, significant coastal wetlands, fish habitat, significant woodlands south and east of the Canadian Shield, significant valleylands south and east of the Canadian Shield, significant habitat of endangered species and threatened species, significant wildlife habitat, and significant areas of natural and scientific interest. These natural heritage features and areas are important for their environmental and social values as a legacy of the natural landscapes of an area. Furthermore, section 2.1.8 of the PPS (2014) states that development and site alteration shall not be permitted on adjacent lands to natural heritage features “unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.”

The key natural heritage features that are defined in the PPS (2014) are considered below. To identify potential occurrences of natural heritage components within the study area, a background information review was initially conducted. This involved the collection and summary of natural environment data from secondary source information, including: the MNRF’s Natural Heritage Information Centre (NHIC) database, City of Ottawa’s Official Plan mapping and secondary plans, and relevant RVCA reference material. In addition, digital base map information such as Natural Resources and Values Information System was collected from Land Information Ontario (LIO).

Wildlife atlas information was also reviewed to identify species likely to occur in the area and possible Species at Risk or Species of Conservation Concern that may have required further evaluation. Background information within one kilometre of the study area boundary was collected from the following sources:

- Government of Ontario:
- Species at Risk by Area (MNRF, 2016a);

- MNRF's Natural Heritage Information Centre (NHIC), including:
- Biodiversity Explorer (MNRF, 2016b);
- Ontario Odonata Atlas (MNRF, 2016b);
- Various wildlife atlases and counts, including:
- Ontario Reptile and Amphibian Summary Atlas (Ontario Nature, 2013);
- Ontario Breeding Bird Atlas [Squares 18VR42 and 18VR43, 2001-2005] (Birds Ontario, 2001); and
- Atlas of the Mammals of Ontario (Dobbyn, 1994).

An information request was also sent to both the MNRF and RVCA to inform them of the project and to request information they may have on sensitive features or species in proximity to the study area. MNRF's response to Hydro One's request for information indicated that there is no known natural heritage features (e.g., Provincially Significant Wetlands, Areas of Natural and Scientific Interest [ANSI], etc.) identified on or in close proximity to the study area.

In addition, a field survey was conducted on June 29, 2016 along the transmission RoW, with a focus on the natural areas in the southern portion of the RoW. As there are no watercourses documented along the route, no aquatic field work was required.

- **Ecological Land Classification** - In order to document the diversity and significance of vegetation communities present, a scoped version of the Ecological Land Classification System (ELC) for Southern Ontario (Lee, et al., 1998) was used to characterize natural vegetation in the study area. Given the potential for underground utilities along the RoW, no soils surveys were undertaken.
- **Botanical and Tree Survey** - A botanical survey was conducted along the route to further characterize the natural vegetation along the RoW. Dominant vegetation was recorded for each of the major communities identified. In addition, trees larger than ten centimetres in diameter were recorded along the RoW using industry standard best practices to identify and assess. Distinctive trees, defined by the City of Ottawa as trees with a diameter at breast height (DBH) of 50 centimetres or more, were also

searched for. These trees are protected by the City of Ottawa's Municipal Trees and Natural Areas Protection Bylaw No. 2006-279 (2006).

- **Wildlife and Wildlife Habitat** - Incidental wildlife observations were recorded during the field site visit. In addition, notable wildlife habitat was also identified and delineated during ELC investigations. Delineation of wildlife habitat was completed using a combination of information contained in the *Significant Wildlife Habitat Technical Guide* (MNR, 2000) and the associated *Ecoregion 6E Criterion Schedule* (MNRF, 2015).

The field survey identified five vegetated Ecological Land Classification (ELC) communities within the study area, as shown in the Natural Heritage Features Map in Appendix B. These communities include:

- Fresh-Moist Green Ash – Hardwood Lowland Deciduous Forest (FODM7-2) - This forest community is associated with the two woodlands located in the southern most portion of the Study Area, adjacent to Balena Park. Dominant tree species within this woodland include; Green Ash (*Fraxinus pennsylvanica*) [infested with Emerald Ash Borer], Trembling Aspen (*Populus tremuloides*), Red Maple (*Acer rubrum*), and White Elm (*Ulmus americana*). These woodlands also contain vernal pool inclusions that are seasonally wet and contain sedges and other wetland type species.
- Dry – Fresh Forb Meadow (MEFM1) - This community is located at the very north of the study area adjacent to the Overbrook TS. Species observed in this area include; Queen Ann's Lace (*Daucus carota*), Buttercup (*Ranunculus sp.*), Wild Parsnip (*Pastinaca sativa*), Glossy Buckthorn (*Rhamnus cathartica*), and Wild Grape (*Vitis riparia*).
- Buckthorn Deciduous Shrub Thicket (THDM2-6) - This community is located between Terminal Avenue and the railway to the north, and to a lesser extent north of the railway. The dominant species within this community is Glossy Buckthorn (an invasive species). Within this community is also a Dry-Fresh Forb Meadow consisting primarily of regenerating native and non-native forb species.

- Graminoid Meadow (MEG) - This community is located within the transmission RoW between Balena Park and Coronation Avenue. Consisting of native and non-native grasses, this area also contains residential gardens, fruit trees, cedar hedges, and ornamental flowers. Portions of this area have also been mowed by local residents.
- Parkland (CGL_2) – This constructed green space is located within Balena Park in the south of the study area and beside Belfast Road, south of Coventry Road. These two areas primarily consist of mowed lawn.

The field investigation also identified a few large trees within the immediate vicinity of the existing transmission RoW. Several ornamental Apple trees (*Malus pumila*) were observed beside Belfast Road, south of Coventry Road. In addition, another mature Apple tree was observed within the RoW, north of Bathurst Avenue.

In addition, several large, and likely distinctive trees, defined by the City of Ottawa's Municipal Trees and Natural Areas Protection By-law No. 2006-279 (2006) as trees 50 centimetres in diameter or greater, were observed on private property adjacent to the transmission RoW. Specifically, two large Carolina Poplar (*Populus x canadensis*) and one large White Willow (*Salix alba*) were observed in the backyards of three properties fronting on Avenue N, south of Tremblay Road. However, no distinctive trees were noted within the existing RoW.

In regards to wildlife, a number of common birds and small mammals were observed during the field investigations. All species observed were common to the urban environment in Ottawa. Species observed included:

- Song Sparrow (*Melospiza melodia*);
- American Robin (*Turdus migratorius*);
- American Crow (*Corvus brachyrhynchos*);
- Gold Finch (*Spinus tristis*);
- Grey Squirrel (*Sciurus carolinensis*);
- Grey Catbird (*Dumetella carolinensis*);

- House Sparrow (*Passer domesticus*); and,
- Seagull (*Laridae sp.*).

The identification of Natural Heritage Features in the study area was based on the findings summarized above.

Wetlands

Based on background reviews and consultation with the MNRF, there were no wetland features including Provincially Significant Wetlands (PSW) identified within the study area. This was confirmed during the site investigations, which only identified wetland indicator plants within a few small drainage ditches and small vernal pools within both the Fresh-Moist Green Ash – Hardwood Lowland Deciduous Forest communities in the very southern portion of the study area.

Fish Habitat

No permanent or ephemeral watercourses or waterbodies were observed during the site investigation. This is consistent with the information provided by the RVCA during background reviews and through consultation.

Woodlands

A small portion of a Significant Woodland intersects the study area in the extreme southern portion of the RoW (Hospital Woods – East Urban Natural Area). Following the guidelines outlined in the *Natural Heritage Reference Manual* (MNR, 2010), this 11.3 hectare woodlot meets the size criteria to be considered significant. This is based on a forest cover of 7.1% within the Rideau Falls catchment area.

Valleylands

No valleylands were identified during the background review or field investigation.

Species at Risk

Based on the review of background information and consultation with the MNRF, the following species at risk have the potential to occur within the study area:

- Chimney Swift (*Chaetura pelagica*)[Provincially Threatened];
- Barn Swallow (*Hirundo rustica*)[Provincially Threatened];
- Pale-bellied Frost Lichen (*Physconia subpallida*)[Provincially Endangered];
- Butternut (*Juglans cinerea*)[Provincially Endangered]; and
- Bobolink (*Dolichonyx oryzivorus*) [Provincially Threatened].

While these species were flagged as having the potential to occur, they were not observed during field investigations. However, it is possible that chimneys located in residential and commercial buildings adjacent to the transmission RoW may provide habitat for Chimney Swift (*Chaetura pelagica*). No suitable structures that could provide barn swallow habitat were observed.

In Ontario, Pale-bellied Frost Lichen (*Physconia subpallida*) grows on the trunk of Hop Hornbeam (*Ostrya virginiana*). Since no Hop Hornbeam was observed during site investigations, it is not expected to occur within the study area.

Bobolink (*Dolichonyx oryzivorus*) or their regulated habitat was not observed during field investigations. This species favours large (>5 hectares) tracts of open meadow with tall grasses or hayfields. The manicured parkland and existing transmission RoW does not provide such habitat.

Wildlife Habitat

The presence of significant wildlife habitat was assessed according to the *Significant Wildlife Habitat Technical Guide* (MNR, 2000) and the *Significant Wildlife Habitat Ecoregion 6E Criterion Schedule* (MNRF, 2015) Habitat types considered include: seasonal concentration areas of animals, rare vegetation communities or specialized habitat for wildlife, habitat for species of conservation concern, and animal movement in RoWs.

No significant wildlife habitat was identified within the study area. As described previously, wildlife observed within the area is common to the urban environment. Vegetation communities, including those surveyed during the ELC surveys, were all common communities and not associated with significant wildlife habitats.

Significant Areas of Natural and Scientific Interest (ANSI)

There were no significant ANSIs identified during background reviews or based on consultation with the MNRF.

3.4 Recreational Resources

There are two City of Ottawa municipal parks located adjacent to the transmission RoW; Cecil Morrison Park in Eastway Gardens, and Balena Park in Riverview. Cecil Morrison Park is separated from the transmission RoW by a fence and vegetation. Balena Park is abutting the transmission RoW and the park is accessed from the west via the RoW. There is a baseball backstop located at the base of the transmission tower adjacent to Balena Park that will need to be removed as a result of this project. This backstop does not look like it is currently in use, as a portion of the chain-link fencing has been removed. Throughout the Class EA process, Hydro One has been consulting with the City of Ottawa's Parks and Facilities Planning Services department to discuss the proposed Project's potential effects to recreational resources and parks, including the removal of the baseball backstop. This consultation is further discussed in section 4.5.3.

As discussed in section 3.2.3, the southern part of the RoW is identified in the City of Ottawa's Official Plan (2003) as a Multi-Use Pathway – Off Road City-wide Route, though no formal infrastructure currently exists in the RoW. The City of Ottawa will require a Secondary Land-Use License from Hydro One prior to the installation of a formal multi-use pathway in the RoW.

No provincial or federal parks or conservation reserves exist within the study area, and there are no recreational waterways, hiking trails or scenic roads present.

3.5 Visual and Aesthetic Resources

This factor considers the physical appearances of different landscapes and their susceptibility to change due to the imposition of transmission facilities.

A visual assessment was completed based on a combination of desktop evaluation and field data collection. The visual assessment was conducted in three representative areas within the study area: the residential area in the southern portion of the study area, the commercial area in the middle of the study area, and the industrial area in the northern portion of the study area.

The existing landscape is highly urban with a number of existing utilities and other infrastructure obscuring the views. The area is not close to notable natural landscape features and does not present high value vistas or views. The topography of the study area is relatively flat with no distinguishing land forms or water bodies. There are two parks located within the study area, Balena Park and Cecil Morrison Park, which would be most sensitive to the introduction of new transmission infrastructure.

Dillon Consulting conducted a visual assessment of the proposed project using the following sources of data: MNRF (e.g., SOLRIS), topographical maps, aerial photography, and field interpretation.

Structure locations were determined relative to an existing tower structure dataset provided by Hydro One. The new structures were mapped in ArcGIS and exported as AutoCAD files for importing into 3DS Max. Base photographs were taken at select locations that would capture the landscape character of the three areas and to show the existing RoW. These locations were recorded and cameras were set as closely as possible in the digital model to replicate the photographs' scale and perspective. The resulting simulations were conducted to demonstrate two options being considered at each of the three representative locations relative to the existing surrounding landscape.

The process outlined above resulted in a few potential sources of error. First, it was assumed that the new structure locations would be in alignment with the existing towers. Their new locations were summarized in a table provided by Hydro One that was interpreted and mapped using ArcGIS. Second, the process of replicating camera locations and angles in the digital model may mean that the scale and perspective of the modelled

structures relative to the base photographs has a level of inherent inaccuracy. Reasonable attempts were taken to limit these sources of error.

The resulting simulations of the visual assessment and the potential effects to the existing visual and aesthetic environment of the study area are discussed in section 7.5.

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4 Consultation

Consultation is an important component of the Class EA process, as it provides those who may be interested in, or potentially affected by the proposed Project with timely and adequate information and opportunities to participate in the planning process. Consultation also allows the proponent to gain information and knowledge related to social, cultural, economic and environmental considerations of direct relevance to the proposed Project as well as the means to inform and explain the approach to and value of the proposed project.

The key principles that guide Hydro One's approach to communication and consultation include:

- Early, ongoing and timely communications and consultation;
- Clear project information;
- An open, transparent, and flexible consultation process;
- Respectful dialogue with First Nations and Métis communities, community officials, and project stakeholders;
- No surprised approach for elected officials, to ensure they have copies of all public facing materials before they are distributed to their constituents;
- The provision of ongoing opportunities for interested parties to learn about and provide meaningful input on the proposed undertaking; and,
- Full and fair considerations and documentation by the proponent of all input received during the consultation process and incorporation of such input, where feasible into project decision-making.

The consultation process incorporated methods to encourage two-way communication involving: the First Nations community identified by the Crown, government officials and agencies, potentially affected and interested persons, and interest groups. The project contact list and notification area is provided in Appendix A-1.

Consultation methods were selected to ensure a comprehensive and transparent consultation approach appropriate for the scope and complexity of the project and the anticipated project effects. They included:

- Letters, e-mails, community notices, and newspaper ads to announce and provide updates on the project;
- Establishment and maintenance of a project website (www.hydrone.com/Projects/OverbrooktoRiverview), which allows for the sharing of project information.
- A dedicated Community Relations representative, toll-free Community Relations telephone line and email address for project inquiries;
- Establishment of an electronic project contact list, through which interested parties can receive project updates;
- Individual meetings with, and on-going updates for local elected officials representing City of Ottawa Wards 13, and 18, and the Member of Provincial Parliament (MPP) for Ottawa South, where the proposed project is located;
- Individual meetings with residents living adjacent to the transmission corridor;
- A municipal coordination meeting;
- Individual meetings with business owners;
- A media tour of the transmission RoW;
- Public Information Centres (PICs), held in two locations within close proximity to the study area, which provided opportunities for interested parties to discuss the project with members of Hydro One's project team, pose questions, and complete comment forms;
- Individual follow-up emails and letters providing responses to the comments received at the PICs; and,
- Attendance at the annual general meeting for the Riverview Park Community Association to provide a project update.

As previously mentioned, although Hydro One is the project proponent, the Class EA for the proposed Project is being conducted on behalf of Hydro Ottawa to satisfy near-term electricity needs in central Ottawa. These needs are identified in the IRRP, which was prepared by the IESO in partnership with Hydro One and Hydro Ottawa. As such, representatives from the IESO and Hydro Ottawa have participated in the review of project information provided to First Nations communities and stakeholders, as well as participated in briefings to elected officials and the PICs held in September 2016.

The results of the consultation plan are summarized in the sections below. Input was considered by the project team and incorporated into the project planning where appropriate. A copy of the project correspondence log is provided in Appendix A-3. Copies of consultation materials, such as notices, notification letters, PIC displays and correspondence are included in Appendices A2 through A5.

4.1 Notifications

Bilingual notifications were sent to one First Nation community as directed by the Crown, government officials and agencies, potentially affected and interested persons, community associations, and the nearby residents.

The following notifications were issued to keep the community and interested parties up-to-date on the project and aware of opportunities and the processes for providing input. Details of these notices can be found in sections 4.1.1 to 4.1.3:

- Notice of Commencement of the Class EA;
- Notice to residents living adjacent to the transmission RoW requesting removal of personal items and plantings from the transmission RoW prior to March 31, 2017.
- Notice to residents living adjacent to the transmission RoW regarding a modified vegetation removal approach;
- Invitation to the PICs; and
- Notice of Completion of the draft ESR.

These notifications were sent via Canada Post to addresses within the project notification area, which included the study area and adjacent residential communities (a map of the Notification Area is provided in Appendix A-1). The adjacent residential community of Eastway Gardens was defined to stretch from Belfast Road in the west to Avenue U in the east between Tremblay Road and the railway corridor. In Riverview, notices were sent to addresses between Station Boulevard in the west, and Russell Road in the east, Coronation Road in the north, and the east-west transmission corridor in the south.

Notifications were sent via e-mail to the following groups. Details of the contact lists can be found in Appendix A-1:

- The First Nations community identified by the Crown;
- Local elected representatives (provincial, and local);
- Federal agencies;
- Provincial agencies;
- Municipal departments;
- Owners/property managers for multi-unit properties and condominiums;
- Community associations;
- Individuals who asked to be included on the project e-mail list; and,
- Other potentially impacted agencies and corporations.

Notices were also published in the free weekly community newspapers with distribution areas that include the project study area. These newspapers are the *Ottawa East Community Newspaper* and the *Ottawa South Community Newspaper*, which are both published by Metroland Media.

Two additional notices were hand-delivered to the residences directly adjacent to the transmission RoW. Details of these notices can be found in section 4.1.4.

4.1.1 *Notice of Commencement*

Hydro One contacted the Ministry of Energy early in the project planning process, on December 22, 2015, to confirm consultation requirements with regard to potentially interested First Nations and Métis communities. Additional information is presented in section 4.2.

Hydro One issued the Notice of Commencement to one First Nations community (Algonquins of Ontario), federal agencies (National Capital Commission, Public Works and Government Services Canada), municipal and provincial government officials and agencies, potentially affected and interested persons, and interest groups in May and June, 2016. The contact lists are provided in Appendix A-1.

The Notice of Commencement publicly announced the undertaking of the Class EA process for the proposed Project. It also identified the project need from the IRRP, the proposed Project study area, and outlined opportunities to provide input and comments. The Notice of Commencement was issued in both English and French and can be found in Appendix A-2.

The Notice of Commencement was distributed via email, letter mail, and newspaper advertisements. Advertisements were published in the *Ottawa South Community Newspaper* on June 9, 2016, and *Ottawa East Community Newspaper* on July 21, 2016. Notices were e-mailed to government official and agencies, property managers, and interested groups as discussed in section 4.1 on June 10, 2016.

Notices were sent via Canada Post to addresses within the study area and to the broader residential communities adjacent to the study area. One thousand and thirty (1030) letters were mailed via Canada Post on June 7, 2016. Of the mailed letters, only seven (7) were returned. The contact list was subsequently updated, removing duplicates and moving some property owners from the Canada Post mailing list to the e-mail contact list.

4.1.2 *Invitation to Public Information Centre (PIC)*

Hydro One issued an invitation to the PICs in September, 2016, which publicly announced Hydro One's plan to host PICs on September 21, and 22, 2016, to share information about the proposed project and to gather input. The invitation included details of where and when the events were being held and the planned format for the evenings. The Invitation to the PIC was issued in both English and French and can be found in Appendix A-2.

Invitations to the PICs were distributed via email, letter mail, and newspaper advertisements. Advertisements were published in the *Ottawa South Community Newspaper* on September 1, 2016, and *Ottawa East Community Newspaper* on September 1, 2016. In addition, notices were e-mailed to government official and agencies, property managers, and interested groups as discussed in section 4.1 on September 2, 2016. The Invitation to the PIC was also sent via e-mail to the list of individuals who asked to be added to project contact list.

Invitations were sent via Canada Post to addresses within the study area and to the broader residential communities adjacent to the study area. One thousand and seven (1007) letters were mailed via Canada Post on August 30, 2016. Note that the mailing list was updated after the Notice of Commencement to remove duplicates and move some property owners from the Canada Post mailing list to the e-mail contact list. Of the one thousand and seven (1007) mailed letters, only five (5) were returned. The contact list was subsequently updated so that these property owners were notified via e-mail or alternate addresses.

4.1.3 *Notice of Completion*

Hydro One issued the Notice of Completion in January 2017, which publicly announced that Hydro One had completed the draft ESR, and is seeking input during a 30-day public review and comment period as per the Class EA process. The Notice of Completion indicated that the draft ESR could be viewed on Hydro One's project website and the locations where hardcopies of the draft ESR could be viewed. The Notice of Completion also included information on how interested parties could submit written comments to Hydro One on the draft ESR and the process for submitting a request (a Part II Order request) to the Minister of the Environment and Climate Change requesting that the

proposed undertaking be subjected to a higher level assessment (an individual Environmental Assessment). The Notice of Completion was issued in both English and French and can be found in Appendix A-2.

The Notice of Completion was distributed via newspaper advertisements, e-mail, and Canada Post. Advertisements were published in the *Ottawa South Community Newspaper* on January 5 and 12, 2017, and *Ottawa East Community Newspaper* on January 5 and 12, 2017. Notices were e-mailed to government official and agencies, property managers, and interested groups as discussed in section 4.1 on January 12, 2017.

Notices were sent via Canada Post to addresses within the study area and to the broader residential communities adjacent to the study area. One thousand and seven (1007) letters were mailed via Canada Post on January 6, 2017.

4.1.4 Notifications to Adjacent Residences

In addition to the communications already mentioned, two notices were sent to properties immediately adjacent to the RoW to request their cooperation in preparing for the proposed construction activities. The following properties were included in this notification:

- Addresses on the west side of Avenue N and adjacent to the RoW on Tremblay Road;
- Adjacent addresses on Coronation Avenue and Bathurst Avenue;
- Addresses on the east side of Chomley Crescent between Coronation Avenue and the Church of Christ;
- Addresses on the west side of Caverley Street from Bathurst Avenue to where Caverley Street curves east;
- Addresses on the east side of Balena Avenue; and,
- Addresses on the west side of Sonata Avenue from Bathurst Avenue to where Sonata Avenue curves east.

Adjacent addresses on Avenue O were not included in these notifications since Hydro One has an easement with property owners in this section of the RoW. If access is required to

this section of the RoW during construction, Hydro One will contact property owners beforehand.

The first notification was hand delivered on June 27, 2016 and included information about the need for the project and requested that residents remove any personal items and from the RoW to allow for unimpeded access for construction, ongoing maintenance, and emergency repairs on this facility in the future. The letter asked that property owners remove the personal items and plantings before March 31, 2017. The letter also offered property owners with the option to meet individually with Hydro One representatives at their properties to discuss any questions they may have. Individual meetings with property owners were held in August 2016 and details of these meetings can be found in section 4.6.5.

A second notification was hand delivered to adjacent residences on September 14, 2016. The notification was prompted by the concerns raised during the individual meetings about the extent of the proposed removal of plantings/vegetation from the RoW. This second notification informed property owners that because of the concerns identified, Hydro One would modify its approach to vegetation clearing for the construction of the new transmission circuit to minimize the visual change for these residents who live adjacent to the corridor. Where possible, Hydro One will try to leave vegetation along the corridor edges if it will not interfere with the construction activities. Any vegetation left on the RoW will be reassessed during future RoW vegetation maintenance cycles by Hydro One forestry specialists to ensure it does not have the potential to interfere with the safe and reliable operation of the transmission line or to compromise the safety of individuals on the corridor.

The two notifications sent to adjacent residences can be found in Appendix A-2.

4.2 First Nations and Métis Communities

The consultation requirements of the Class EA process apply to First Nations and Métis communities. In adherence to the Crown's duty to consult and accommodate under section 35 of the *Constitution Act* (1982), Hydro One contacted the Ministry of Energy early in the

project planning process on December 22, 2015 and provided a description of the characteristics and location of the proposed Project. On April 15, 2016, the Ministry of Energy, on behalf of the Crown, confirmed the duty to consult and advised that the Algonquins of Ontario First Nations community be included in the project consultation plan.

4.2.1 Algonquins of Ontario

Throughout the consultation process, the Algonquins of Ontario First Nation were notified about the proposed Project and regularly informed of project updates and given opportunities to provide input. This was achieved by way of direct mailings of all notifications, provision of information and updates about the proposed Project, and offering to have the Hydro One project team meet with staff from the First Nation to hear the community's issues and concerns.

Hydro One initiated consultation by sending a project notification letter, via registered mail and email to the Algonquins of Ontario on May 9, 2016 and a copy of the Public Notice of Commencement via e-mail on June 10, 2016. This preliminary engagement activity took place early in the project planning process in order to ensure that the Algonquins of Ontario could provide input at an important stage in project planning. To follow up on the initial consultation, Hydro One phoned the Algonquins of Ontario on June 27 and 28, 2016 asking if there were any preliminary questions and offering to set up a meeting with the organization. Hydro One followed up again via e-mail and telephone on August 23, 2016. At that time, the Algonquins of Ontario advised that they were reviewing the materials and would respond if any concerns emerged.

On August 23, 2016, Hydro One phoned the Algonquins of Ontario and followed up with an email offering to schedule a meeting during the week of the upcoming PICs, to present the PIC material to Algonquins of Ontario staff. Hydro One did not receive a response and Hydro One followed up via email on October 14, 2016 to provide the Algonquins of Ontario with a copy of the PIC materials and a project update. In this email Hydro One

welcomed comments and feedback and offered to arrange a meeting to further discuss the project.

At the time of writing, no comments had been received from the Algonquins of Ontario regarding the proposed project.

4.3 Federal Government & Agencies

As part of the consultation plan for the project, the following federal government representatives and agencies were contacted:

- Public Works and Government Services Canada [Real Property]; and
- National Capital Commission (NCC)

Hydro One initiated consultation by sending a project notification letter in June 2016. Public Works and Government Services Canada and the NCC were included in project notifications because of real property holdings in the study area. These agencies were also sent an invitation to the PICs and the Notice of Completion.

As a result of the notices that were sent to the Public Works and Government Services Canada, a representative of the Royal Canadian Mounted Police (RCMP), which occupies a building adjacent to the transmission corridor on Coventry Road, contacted Hydro One to inquire about power outages to the building as a result of the project. Hydro One confirmed that no outages were expected to occur.

The NCC responded to Hydro One in September 2016, to confirm whether NCC lands would be impacted by the project or be needed for construction staging purposes. Hydro One confirmed that there were no plans to use NCC lands during construction.

Hydro One will provide the RCMP and the NCC with any relevant updates as the project move through the construction phase.

4.4 Provincial Government & Agencies

As part of the consultation plan for the project, the following provincial government representatives and agencies were contacted:

- Local Member of Provincial Parliament (MPP);
- Infrastructure Ontario;
- Ministry of Energy;
- Ministry of the Environment and Climate Change;
 - Environmental Assessment and Approvals Branch
 - Eastern Region Office
- Ministry of Natural Resources and Forestry – Kemptville District Office;
- Ministry of Tourism, Culture and Sport; and
- Ministry of Transportation – Eastern Region.

Hydro One initiated consultation by sending a project notification letter to provincial government agencies and the MPP for the project area in June, 2016. This preliminary engagement activity was hosted early in the project planning process in order to ensure that the provincial government and various agencies could provide input at an important stage in project planning. Infrastructure Ontario received these notifications in September, 2016.

An invitation to attend the PICs was emailed to the provincial government and various agencies listed above on September 2, 2016. The invitation included an update on the proposed project and a request for representatives to attend the PICs. The provincial agencies and MPP were also provided with a copy of the Notice of Completion.

Additional details on correspondence with the following provincial agencies can be seen in the sections below:

- Local Member of Provincial Parliament (MPP);
- Infrastructure Ontario;

- Ministry of the Environment and Climate Change;
- Ministry of Natural Resources and Forestry – Kemptville District Office; and,
- Ministry of Tourism, Culture and Sport.

The following provincial government and agencies did not respond to Hydro One's correspondence:

- Ministry of Energy; and
- Ministry of Transportation – Eastern Region.

A summary of the issues and concerns raised by the provincial government and various agencies throughout the consultation process is provided in section 4.7.

4.4.1 Local Member of Provincial Parliament (MPP)

Hydro One provided an in-person briefing to the constituency staff of the MPP for Ottawa South on June 9, 2016. The MPP was subsequently engaged in meetings with local residents who live adjacent to the RoW to hear their concerns with respect to the proposed removal of vegetation from the RoW to allow for construction of the project. The MPP also mentioned these concerns to Hydro One senior management. Following Hydro One's correspondence to the community that it would adopt a modified approach to vegetation removals on the RoW, the MPP sent a letter to Hydro One's President and CEO on September 15, 2016 indicating he was pleased with Hydro One's decision, and encouraged the Company to continue working with residents to resolve issues and concerns related to the project. The MPP also attended the PIC on September 22, 2016 in the Riverview community.

4.4.2 Infrastructure Ontario

Hydro One's Real Estate Coordinator contacted Infrastructure Ontario (IO) via telephone and e-mail to advise them of the proposed project description in September 2016. At this time, Hydro One provided an overview on the personal items and plantings in sections of the RoW owned by IO (on behalf of the Province of Ontario) and Hydro One's planned

approach to dealing with these encroachments in order to safely construct the project. IO was also made aware of all feedback received to date by Hydro One relating to the proposed removal of encroachments and vegetation on the RoW. Hydro One discussed with IO a letter received by Hydro One's Executive Vice President and Chief Legal Officer from legal counsel representing owners of a property adjacent to the RoW, and Hydro One's proposed response, outlining the primacy of the RoW for the transmission and distribution of electricity and that decisions regarding what shall be allowed on the RoW are at the sole discretion of Hydro One.

Infrastructure Ontario was subsequently added to the provincial government agency list for this project, and will receive all project updates going forward.

4.4.3 Ministry of the Environment and Climate Change

After receiving the Invitation to the PICs, the MOECC provided project comments by e-mail in November 2016. The MOECC recommended that Hydro One implement the standard mitigation and restoration measures for this project as outlined in Hydro One's *Environmental Guidelines for Construction and Maintenance of Transmission Facilities* (2009). The MOECC stated that they would likely not have concerns about the project, provided the mitigation and restoration measures were implemented. MOECC also cited environmental protection regulations that the project should follow and noted that Hydro One may need to register on the Environmental Activity and Sector Registry or obtain a Permit to Take Water if construction involves dewatering, taking, storing, or diverting water.

Hydro One responded by e-mail on November 10, 2016 advising that it will follow the 2009 guidelines and will mitigate noise, dust, erosion, sedimentation and spills accordingly. Hydro One also noted that they would apply for appropriate MOECC permits during the detailed design stage of the project, once the Class EA process is complete, and since soil contamination is expected to be limited with no water bodies in close proximity, Hydro One's protocol is to test or remediate soil on RoWs when transmission lines are decommissioned.

In the same e-mail, Hydro One provided a project update explaining that Hydro One is working to provide responses to the comments and questions received from members of the public and as a result would be delaying the draft ESR review period until early 2017. The MOECC acknowledged the receipt of this project update and expressed support for Hydro One's plan to delay the ESR review period in order to address questions from the public.

4.4.4 Ministry of Natural Resources and Forestry – Kemptville District

In addition to the consultations noted above, Hydro One sent a request for information to the MNRF in May 2016 to ask if there are known sensitive features or species in close proximity to the study area. The MNRF replied in September 2016 and indicated that there are no known natural heritage features (e.g., Provincially Significant Wetlands, Areas of Natural and Scientific Interest, etc.) identified on or in close proximity to the site.

4.4.5 Ministry of Tourism, Culture and Sport

The MTCS acknowledged receipt of the Notice of Commencement and provided general information on heritage and archaeological study requirements. Hydro One completed the MTCS heritage and archaeology screening checklists and deemed that no additional studies were necessary. The completed screening checklists were sent to the MTCS contact and can be seen in Appendix A-3. Upon receipt of the invitation to the PIC, the MTCS indicated that they had no comments on the project from a tourism perspective.

4.5 Municipal Government and Local Agencies

As part of the consultation plan for the proposed Project, the following municipal government representatives, departments and sub-departments were contacted:

- City of Ottawa, City Council (including Mayor and local Councillors, and City Clerk);
- City of Ottawa, Planning, Infrastructure and Economic Development Department (formerly Planning and Growth Management);
 - Forestry Planning

- City of Ottawa, Transportation Services Department;
 - Transportation Planning
 - LRT Implementation Office
- City of Ottawa, Parks, Recreation, Cultural and Facility Services Department;
 - Parks and Facilities Planning (formerly Recreation Planning and Facilities Management)
- Rideau Valley Conservation Authority (RVCA).

Hydro One initiated formal consultation with municipal government representatives via a Notice of Commencement in June 2016. These representatives were also sent an invitation to the PICs and the Notice of Completion via e-mail. In addition, the City of Ottawa contacts were invited to attend a municipal coordination meeting, which was held on September 21, 2016. The municipal coordination meeting was attended by representatives from Parks and Facilities Planning, Forestry Planning, and Transportation Planning. The presentation slides are provided in Appendix A-4.

At the time of writing, no correspondence had been received from the following municipal government representatives and agencies:

- LRT Rail Implementation Office; and
- Planning, Infrastructure and Economic Development (excluding Forestry Planning).

4.5.1 City of Ottawa Council

Pre-consultation with municipal elected officials took place early in the planning process, with introductory meetings and briefings with the two City Councillors whose wards are located within the study area (Ward 13 – Rideau-Rockcliffe and Ward 18 – Alta Vista). On May 24, 2016, Hydro One met with the local Councillors to discuss the project prior to the public Notice of Commencement, and asked them to identify any relevant community groups that may have an interest in the proposed undertaking. The Councillors were briefed on the project need, the proposed Class EA schedule, the type of construction activities that

would take place along the transmission RoW, the type of structures that were being proposed, the plan for consulting with local residents and businesses, the plan for dealing with personal items and plantings on the RoW to allow access for construction of the project, and the plan for remediation/restoration of the corridor post construction. Hydro One also committed to providing the Councillors with advance copies of any public notices or advertisements, so that they could be prepared for any calls that might be received from their constituents, and to keep them informed of feedback received from the community.

On June 24, 2016, Hydro One representatives took the Ward 18 Councillor and staff on a tour of the RoW to view the study area first-hand and discuss the project. Conversations were had along the way with some adjacent property owners. Staff from the Ward 18 Councillor's office attended both PICs in September 2016 (see section 4.6.6) and the Councillor and staff were also present for the Riverview Park Community Association's annual general meeting in October 2016 (see section 4.6.4). In addition, Hydro One has been collaborating with the Councillor's office to discuss potential opportunities for Hydro One to provide community benefits as part of this project.

4.5.2 Transportation Planning

Hydro One met with representatives of the City of Ottawa's Transportation Planning department via conference call in July 2016. In addition, a representative of the department attended the municipal coordination meeting held on September 21, 2016. The Transportation Planning department advised of their plans to develop multi-use pathways in sections of the study area. They also expressed an interest in the possibility of utilizing the material from Hydro One's temporary access roads after the completion of construction for this initiative. Hydro One will continue to work with the Transportation Planning department regarding this topic. It was also indicated that a road is currently under construction immediately south of the project study area and that an OC Transpo bus depot is located near the corridor. Hydro One will work with the City to coordinate with construction and to minimize any disruption to the OC Transpo depot.

Following the municipal coordination meeting, the representative from the Transportation Planning department requested additional information about the specifications of the temporary gravel access road and information about any soil samples that have been taken between Coronation Avenue and Bathurst Avenue. Hydro One provided some images of a typical temporary gravel access road and reported that soil samples would not be taken until after the Class EA process is complete.

4.5.3 Parks and Facilities Planning Services

A representative from the City's Parks and Facilities Planning Services department attended the municipal coordination meeting on September 21, 2016. The main concerns raised by this Department involve potential disruption and safety issues in Cecil Morrison Park and Balena Park during project construction. Another question raised was whether the project would lead to an increase in electric and magnetic fields (EMFs) in Balena Park, and if so, whether this posed a risk to people using the park.

On October 4, 2016 Hydro One sent a letter to the City of Ottawa about the forecasted EMF levels beneath the transmission lines. Hydro One's calculations indicate that EMFs on the transmission RoW with the new circuit are not expected to change significantly and in fact are expected to be reduced compared to the EMFs from the existing transmission line. This is as a result of two factors: 1) the addition of the second circuit will reduce the current flowing in each circuit, resulting in reduced EMFs; 2) EMF strength decreases rapidly with increasing distance from the source, hence, installing taller structures is expected to result in reduced EMFs at ground level.

At the same time, Hydro One asked the City of Ottawa about removing the baseball backstop that is located directly adjacent to the transmission tower in Balena Park.

4.5.4 Forestry Planning

A representative from the City of Ottawa's Forestry Planning group attended the municipal coordination meeting on September 21, 2016. Their questions revolved around the proposed tree removals that would be required for the project and whether Hydro One

intended to compensate for the tree removals. Hydro One responded that during the field survey that was conducted, no distinctive trees or Butternut trees were identified in the study area or are anticipated to be removed for this proposed Project. Hydro One will keep the City of Ottawa informed regarding any tree removals required for this project.

4.5.5 Rideau Valley Conservation Authority

Hydro One sent a request for information to the RVCA in May, 2016 asking about any known sensitive features in close proximity to the study area. The RVCA responded in June, 2016 and identified a portion of Highly Vulnerable Aquifer (HVA) within the study area. It was determined that the HVA, located east of Belfast Road is within the study area but does not extend into the transmission RoW. This was discussed in section 3.3.3 and mapping of the HVA is provided in Appendix B.

The RVCA was invited to the municipal coordination meeting on September 21, 2016 but declined, commenting that they expect to have no concerns with the proposed Project.

4.6 Potentially Affected and Interested Persons, Businesses and Interest Groups

Consultation opportunities were provided to potentially affected and interested persons, businesses and interest groups throughout the Class EA process. Notification about the proposed Project was achieved by means of hand delivered notices to residential and commercial units and buildings, Canada Post letter mail, e-mail and newspaper advertisements.

Hydro One had e-mail and telephone correspondence with many interested persons, businesses and interest groups throughout the duration of the Class EA process. Hydro One also held individual meetings with a number of residents and local business owners, as well as with the Riverview Park Community Association. In addition, Hydro One has encouraged interested persons to sign up for the e-mail project contact list to be notified on project updates. At the time of writing, approximately fifty-five (55) individuals had registered for the e-mail contact list.

A table summarizing the key issues and concerns raised by potentially affected and interested persons, businesses, and interest groups throughout the consultation process is presented in section 4.7. The table includes a summary of efforts to address concerns and mitigate potential effects, as well as commitments made.

4.6.1 Crown Corporations/Utilities

The following Crown Corporations/businesses were included in the contact list because of their existing infrastructure in or near the study area:

- The Bell Telephone Company of Canada (Bell);
- Canadian National Railway (CN);
- Enbridge;
- The Ottawa Hospital;
- Rogers Communications; and,
- Via Rail.

These organizations were notified by e-mail using known contact information or publically available contact details. These organizations were circulated the Notice of Commencement in June, 2016 to allow for early input. The organizations were also circulated invitations to the PICs and the Notice of Completion. Since Bell and Enbridge have offices located in the study area, they received project notifications via mail and e-mail. Details of the correspondence with the the Ottawa Hospital and Via Rail are provided below. At the time of writing, no correspondence had been received from the other organizations listed in this section.

On June 10, 2016, the Ottawa Hospital confirmed receipt of the Notice of Commencement stating that they would review the materials and contact Hydro One if they had any questions.

On June 13, 2016, Via Rail acknowledged receipt of the Notice of Commencement and provided Hydro One with the reference to design guidelines for overhead installations above rail lines (CAN/CSA-C22.3 No.1-10, 2011 or newer). Hydro One acknowledged this e-mail and advised Via Rail that these guidelines would be taken into consideration when completing the detailed design for the transmission line.

4.6.2 Potentially Affected and Interested Persons

Residential, commercial, and industrial property owners, and local residents who may be potentially affected by the proposed Project were contacted, as described in section 4.1.

In addition to the notifications discussed in section 4.1, Hydro One held PICs in two locations in September 2016 and attended the Riverview Park Community Association's annual general meeting in October 2016. Hydro One also held one-on-one meetings in person and over the phone with residents immediately adjacent to the corridor between July and September 2016. Hydro One has corresponded with a number of potentially affected and interested parties via e-mail/letter on an ongoing basis throughout the project. Further details are provided in sections 4.6.3 to 4.6.7 and in Appendix A.

4.6.3 Business Owners

Hydro One held meetings with local businesses and commercial property owners in the study area.

Meetings were held in July, August, and September and discussions topics included:

- The Class Environmental Assessment (Class EA) process;
- Proposed structure locations;
- Construction schedule and timing of notifications;
- Proposed size and locations of Hydro One work areas; and
- Impact of construction on traffic and business loading/unloading and parking areas.

Hydro One has been and will continue working with business owners to find ways to minimize effects of construction on their businesses.

4.6.4 Community Associations

As part of the consultation plan for the proposed Project, the following local community associations were contacted as described in section 4.1:

- Overbrook Community Association;
- Eastway Gardens Community Association; and
- Riverview Park Community Association.

At the time of writing, the Overbrook Community Association had not responded to Hydro One's correspondence. The Eastway Gardens Community Association acknowledged receipt of the Notice of Commencement and asked to be kept on the project contact list.

The Riverview Park Community Association corresponded with Hydro One via e-mail, and representatives attended the PIC held on September 22, 2016. In addition, the Riverview Park Community Association requested that Hydro One attend their annual general meeting on October 26, 2016. This meeting was held from 7:00 pm to 9:00 pm at Riverview Alternative School at 260 Knox Crescent in Ottawa. There were approximately forty-five (45) attendees present at the meeting, including the local Councillor and the local Member of Parliament.

Hydro One presented an overview of the project need, project description, consultation plan and a summary of the main questions and feedback received during the PICs held in September 2016. Hydro One also explained the next steps in the Class EA process including Hydro One preparing responses to send back to the people who submitted comment forms at the PICs. Meeting attendees asked about access to Balena Park during construction. Hydro One indicated that additional details about access during construction will be provided at a Pre-construction PIC after the Class EA process has been completed. Hydro One also indicated that it will facilitate residents' continued access to Balena Park by either establishing temporary pathways or having flag persons to facilitate safe crossing.

There were also some questions raised about the 30-day public review period for the draft ESR. Hydro One representatives explained that they will be sending out a notice to residents located within the notification/study area and publishing the notice in the Ottawa Community Newspapers and on the Hydro One project website. A resident also commented that the Brayden Avenue road RoW at Balena Park, a proposed main construction access, gets very wet. Hydro One explained that this should not be an issue for equipment and vehicles once the temporary gravel access road has been installed.

4.6.5 Meetings with Adjacent Residents

A notice was provided on June 27, 2016 to the residences immediately adjacent to the transmission RoW regarding the removal of personal items and plantings in the RoW. In the notice, Hydro One offered to hold one-on-one meetings with adjacent property owners including fifty-five (55) residences and one multi-residential property. Meetings were held on August 23, 2016, August 30, 2016, and August 31, 2016.

Hydro One attempted to schedule meetings with fifteen (15) residents who requested a meeting or who had expressed earlier concerns. Of these fifteen (15), thirteen (13) meetings were scheduled, but two (2) of the residents did not respond to Hydro One's multiple attempts to contact them. In addition to the scheduled meetings, Hydro One knocked on the doors of adjacent residents to attempt to hold impromptu meetings. Hydro One held impromptu meetings with twenty-five (25) residents in addition to the thirteen (13) scheduled meetings.

Key concerns that were raised at these meetings included:

- Confusion because Hydro One had previously planted some vegetation and hedges on the RoW between Coronation Avenue and Bathurst Avenue;
- Concerns about the potential removal of the hedges on the RoW causing a loss of privacy and loss of bird habitat;
- Concerns about the potential removal of trees on the RoW;
- Concerns about the potential removal of personal gardens on the RoW;
- Concerns about the lack of maintenance on the RoW; and,

- Concerns about future EMF levels and noise generated by the transmission lines.

During these meetings, Hydro One explained the need for the proposed Project and the construction activities that would be involved. Hydro One also explained that it is responsible for keeping the transmission RoWs free and clear at all times of physical obstructions and tall or fast-growing (incompatible) vegetation to ensure the safe and reliable operation of its power lines, unimpeded crew access for emergency repairs, and public safety. Hydro One reported that neither EMF nor humming noise from the conductor (wires) is expected to increase as a result of this project.

Approximately one-quarter of the meetings with residents had a positive tone, and approximately half of the meetings with residents had a neutral tone. A number of residents had a positive reaction to hearing that vegetation in the RoW would be removed, especially in instances where vegetation had been planted by a previous owner. A number of residents had a positive reaction to hearing that Hydro One would be able to conduct more regular maintenance on the RoW after construction when the corridor had fewer obstructions. As a result of the concerns raised by residents, Hydro One decided to modify its approach to vegetation removal on the RoW to reduce the change for those who live adjacent to the RoW. Where possible, Hydro One will try to leave vegetation along the RoW edges that will not interfere with construction activities. Upon completion of the project, Hydro One plans to reseed the area disturbed by construction with grass seed, and will have this area cut on a regular schedule, provided it remains free of obstructions.

4.6.6 Public Information Centres

On September 21, and September 22, 2016, Hydro One hosted two Public Information Centres (PICs) for the proposed Project. The first PIC was held on Wednesday, September 21, 2016. The event was held from 6:00 pm to 8:00 pm at the Overbrook Community Centre at 33 Quill Street in Ottawa. The Overbrook Community Centre is located approximately 500 metres northwest of the project study area. The second PIC was held on Thursday September 22, 2016 from 7:00 pm to 9:00 pm at the Riverview Alternative School

at 260 Knox Crescent in Ottawa. The Riverview Alternative School is located approximately 500 metres west of the project study area.

The purpose of the PICs were to provide information on the proposed Project, the Class EA process, construction methods and techniques that may be used for the proposed Project, next steps in the planning and approvals process, and to solicit input from the public. A set of 25 display panels were set up to allow attendees to obtain information about the proposed Project and to allow for one-on-one discussions and question-and-answer with the Hydro One project team. The panels are provided in Appendix A-5 and included information about the following:

- Current transmission infrastructure and the proposed Project;
- An overview of the need for the proposed Project;
- The study area including natural environment and socio-economic conditions;
- An overview of the IRRP for the Ottawa area, developed by the IESO, Hydro Ottawa and Hydro One that recommended the project as a solution to address near term electricity need in central Ottawa;
- An overview of the Class EA process;
- An overview of the possible construction methods for the proposed Project, and the activities and mitigation measures that can be expected by local residents and businesses during construction;
- An overview of the proposed restoration measures;
- Project timelines;
- Maps of the RoW with proposed steel pole tower locations; and,
- Map of the RoW with approximate construction zone along the centre.

Fifteen individuals attended the first PIC and sixty-five individuals registered at the second PIC. Participants at the PICs included local residents, representatives from the Riverside

Park Community Association, representatives from the local City Councillor's office, the MPP for Ottawa South, and a reporter from Metroland Media (which publishes the Ottawa Community newspapers).

Project team representatives including the Hydro One project manager, community relations representatives, representatives from the IESO and Hydro Ottawa, and subject matter experts were on hand to answer questions, have discussions with participants, and to listen to participants' input. Comment forms were also available to provide attendees with the opportunity to record comments and/or concerns and to provide feedback. A copy of the comment form is provided in Appendix A-5. In total, approximately fifty (50) completed comment forms were submitted between the two PICs. Approximately twenty (20) people attached the same multi-page typed list of questions and comments to their comment forms. The multi-page typed list of questions covered a wide range of issues.

The feedback from the comment forms and the discussions during the PICs included:

- Hydro One's approach to vegetation removal in preparation for the project;
- The possibility of preserving specific trees:
 - The trees surrounding the pet memorial in Balena Park;
 - The apple tree near Bathurst Avenue;
- Concerns about community disruptions during construction:
 - Access to Balena Park and the RoW;
 - Schedule and hours of work;
 - Noise/dust;
 - Temporary access road;
- Privacy of adjacent residents;
- Environmental effects during and after construction;
- Restoration plans and ongoing maintenance after construction;

- Drainage on the RoW; and,
- Safety concerns about the operation of the facility:
 - EMF;
 - Design and integrity of the towers to withstand extreme weather.

The following table summarizes the number of people who provided comments on the key themes identified from the PICs.

Further details about the PICs can be found in Appendix A-5. Section 4.7 provides a summary of the issues and concerns raised at the PIC and Hydro One efforts to address concerns or mitigate potential effects.

Table 4-1: Key Themes from the PICs

Theme	Number of Written Comments
Class EA Process	
Environmental Assessment Process	22
Consultation & PICs	30
Approval	19
Technical Design	
Project Need and Route Options	22
Engineering Options	22
Structure Locations	23
Structure Design	24
Drainage	22
Vegetation Removal /Encroachments	
Vegetation Removal and Encroachments	37
Pet Memorial in Balena Park	23
Natural Environment	
Natural Environment	24
Construction	
Communication	14
Schedule and Timing	25
Access Road	24
Construction Related Disturbances	28
Restoration Plan	29
Operations	
EMF	25
Noise	22
Future Plans	22
Other/Misc.	
Property Values	22

4.6.7 Hydro One Responses to PIC Comments and Questions

Following the PICs, Hydro One sent out individual responses to all of the people who submitted comment forms. In total, forty-four (44) responses were sent in early December 2016 via e-mail and Canada Post. For people who submitted the multi-page typed list of questions and comments, a comprehensive response document was prepared and included as an attachment with their response. The comprehensive response document can be found in Appendix A-5. For people who had individual comments, Hydro One provided personalized responses to their specific questions. The questions and concerns raised, as well as Hydro One's responses are summarized in Appendix A-5.

4.7 Summary of Key Issues

The below table summarizes the key issues and concerns raised during the Class EA process. A complete summary of questions and comments Hydro One received during the Class EA process is provided in sections 4.2 to 4.6 and Appendix A.

Table 4-2: Summary of Issues & Concerns Raised During the Class EA Process

THEME	ISSUE/CONCERN	RESPONSE FROM HYDRO ONE
Class EA Process		
Consultation	Adequate consultation opportunities	<p>Hydro One welcomes input at any time throughout the Class EA process. There are a number of ways to be involved and provide feedback.</p> <ul style="list-style-type: none"> • Call the Community Relations toll free number 1-877-345-6799 at any time • Email Community.Relations@HydroOne.com at any time • Sign up for the project contact list to receive project related information • Submit comments through the project website www.HydroOne.com/Projects/OverbrooktoRiverview <p>In addition, Hydro One organized and/or attended a number of consultation events and individual meetings, including:</p> <ul style="list-style-type: none"> • Meetings with local councillors and the local MPP • Hydro One offered one-on-one meetings to residents living adjacent to the transmission corridor and in August 2016 met with 37 residents to discuss encroachments and vegetation removals required for the project. Concerns and feedback received were documented for the consultation record. • Public Information Centres were held on September 21 and 22, 2016 in the project area • Hydro One delivered a presentation on October 26, 2016 at the annual general meeting of the Riverview Park Community Association. • Public consultation is an important part of our Class Environmental Assessment process and comments and feedback received is considered in project implementation plans. For instance, Hydro One is working with businesses in the area to place the transmission poles so that effects on traffic and busy parking areas are minimized. As a result of consultation with members of the community, Hydro One modified its proposed approach to vegetation removal.

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THEME	ISSUE/CONCERN	RESPONSE FROM HYDRO ONE
Technical Design		
Route Options	Considerations when selecting this corridor for the transmission upgrade.	The <i>Ottawa Area Integrated Regional Resource Plan</i> (IRRP) analyzed technical feasibility considerations such as the length of the circuit and the required capacity when determining the location of this transmission upgrade. The other potential route that was considered would have been four times longer and would not have provided enough capacity to reinforce the electricity system in central Ottawa. More information about this decision is available on page 42 of the IRRP.
Engineering Options	Burying the transmission line.	It is Hydro One's policy to build all transmission lines above ground unless no space is available or technical constraints do not allow overhead facilities. The cost of burying a transmission line is typically five to seven times higher than building overhead. Generally in the electricity industry, the cost of expanding the electricity system is based on a "beneficiary pay" principle. Since the cost of upgrading this transmission line will be borne by all Hydro Ottawa customers, Hydro Ottawa would have to decide if it is reasonable for its customers to pay the higher cost of burying the transmission line.
Structure Locations	Questions regarding what criteria Hydro One uses to determine the transmission structure placements.	<p>Hydro One takes into account a number of technical and environmental considerations when identifying structure placements. Some of the considerations include, existing structure locations and the area needed for their removal, new structure heights, span between structures, topography and soil conditions, road crossing clearances, traffic impacts, business and residential impacts, and environmental constraints.</p> <p>At the PICs, Hydro One presented a map showing proposed locations for the new structures. Steel poles are being proposed to replace the existing lattice steel and wood pole H-frame structures. Input received will be taken into consideration before finalizing the engineering design. Maps of the proposed locations for the new structures are available in Appendix B.</p>

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THEME	ISSUE/CONCERN	RESPONSE FROM HYDRO ONE
	<p>Feasibility of relocating the structures so that there are none between Bathurst and Coronation Avenues.</p>	<p>Hydro One confirmed that it would not be technically feasible to place one on the north of Coronation Avenue and the other south of Bathurst Avenue, so the existing structure in this area will be replaced with a new pole structure. The distances between the structures are constrained by the span and clearance height required for the transmission lines.</p>
	<p>Feasibility of relocating the structures in the vicinity of the Ottawa Train Yards shopping complex to reduce potential disturbances to traffic and businesses in this commercial area.</p>	<p>Hydro One agreed to look into reducing the effects of construction in the high traffic commercial area and determined that there is an opportunity to locate the proposed poles in the RoW to minimize construction disturbance to businesses and the public.</p>
	<p>Concern over the proximity of the transmission line to the residences on Avenue N and whether the line can be moved closer to the LRT.</p>	<p>The transmission line will remain in the centre-line of the RoW and will not be moved closer to the homes along Avenue N or closer to the LRT.</p>
<p>Structure Design</p>	<p>Concerns over the design and integrity of the proposed transmission structures to withstand extreme weather conditions (e.g. high winds, ice accumulation, earthquakes, and lightning strikes).</p>	<p>Hydro One's transmission towers are designed in accordance with Canadian Standards Association (CSA) standards to withstand severe weather conditions such as high winds and ice accumulation on conductors. In many cases, our design criteria exceed CSA requirements. Should extreme weather conditions prevail, transmission structures are designed to buckle or crumple in the direction of the right-of-way. The tension of the conductors (wires) pulling between towers also ensure they will buckle in the direction of the right-of-way. To date, there has never been a failure of a steel pole transmission structure, such as the ones Hydro One is proposing to use on this project.</p>

THEME	ISSUE/CONCERN	RESPONSE FROM HYDRO ONE
		<p>At this time there is no design code or requirement for seismic load (earthquake load) for transmission structures. It is not a design consideration in Canada, or even in California or Japan where earthquakes are more common. However, the transmission structures are flexible and would absorb the force of most earthquakes.</p> <p>To protect against lightning strikes, all transmission lines are designed with shield wires that are installed along the top of the poles.</p>
Vegetation Removal & Encroachments		
Vegetation Removal	Concerns about the extent of vegetation removal needed for this project.	<p>In response to feedback received from one-on-one meetings with adjacent property owners in August 2016, Hydro One decided to modify its approach to vegetation removal on the transmission corridor to reduce the change for those who live adjacent to the corridor. Where possible, Hydro One will try to leave vegetation along the corridor edges that would not interfere with the construction activities. The corridor is mostly 30 m wide and approximately 20 m along the centre will be used for construction to install a temporary gravel access road. Vegetation blocking access along the corridor will be removed.</p>
	Concerns over the potential loss of privacy and screening as a result of the existing vegetation being removed in the RoW at road crossings (e.g. hedges, Saskatoon berry bushes).	<p>Hydro One seeks to balance our operational and safety requirements with the community needs. However, the removal of the vegetation at these road crossing is essential to allow safe and unencumbered access for construction vehicles, and allow the line of sight needed to erect the new towers and pull the new conductor (wire) onto them. The Saskatoon berry bushes located on the north side of Coronation Avenue are located in the construction zone and will be removed to install a new structure in this section of the RoW. As a part of the project restoration plan, Hydro One is planning to replant compatible shrubs on the north side of Coronation Avenue. Unfortunately, Saskatoon berry bushes are not a compatible species on transmission corridors, as they can grow to heights within the clearance zones we require for the safe and reliable operation of the power lines.</p>

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THEME	ISSUE/CONCERN	RESPONSE FROM HYDRO ONE
	<p>Concerns over future vegetation management on the RoW.</p>	<p>Hydro One is responsible for keeping its transmission corridors free and clear at all times of physical obstructions and tall or fast-growing (incompatible) vegetation to ensure the safe and reliable operation of its power lines, unimpeded crew access for emergency repairs, and public safety. Vegetation maintenance on transmission corridors occurs on a six to eight year cycle. At each cycle, vegetation conditions are assessed by our forestry staff and maintenance is performed to provide safe clearances between vegetation and the energized wires until the next scheduled maintenance cycle.</p> <p>Transmission corridor maintenance is an ongoing program, separate and distinct from capital project work which might involve the construction of new facilities or upgrading of existing facilities, such as the Overbrook to Riverview Transmission Line Upgrade project.</p>
	<p>The preservation of the apple tree located on the north side of Bathurst Avenue and the trees at the Pet Memorial in Balena Park.</p>	<p>At this time, it appears the apple tree located north of Bathurst Avenue will be trimmed but not removed. The Pet Memorial area in Balena Park will not be affected by construction as it falls outside of the project construction zone.</p>
<p>Encroachments</p>	<p>Concerns regarding the removal of private gardens from the corridor for the construction of this project.</p>	<p>The primary purpose of the transmission corridor is for electricity transmission and distribution and, as such, it is at Hydro One's sole discretion to determine what will be allowed on the corridor lands. Private gardens are not authorized on transmission corridors.</p> <p>Hydro One will not actively remove gardens that are outside of the construction zone for this project. However, Hydro One cannot guarantee that gardens on the corridor will not be damaged due to construction activities, even those on the edge of the corridor. For this reason, we urge residents to transplant gardens onto their private property.</p>
	<p>Structural encroachments on</p>	<p>Structures such as sheds are not authorized on provincially owned transmission corridors.</p>

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THEME	ISSUE/CONCERN	RESPONSE FROM HYDRO ONE
	the corridor.	In June, Hydro One sent a letter to residents asking for their cooperation in removing personal items from the corridor by March 31, 2017.
	Replanting of gardens on the corridor.	On provincially owned corridors, such as this electricity corridor between Overbrook TS and Balena Park, private garden plots are an unauthorized use. After construction, if the community wishes to establish a community garden on the corridor this would have to be done in partnership with the City of Ottawa. The City of Ottawa would have to be willing to license the corridor lands for such purposes under the Provincial Secondary Land Use Program, and Hydro One would have to agree to this use.
	Concern regarding Hydro One's authority to remove vegetation on the transmission corridor that was previously planted by Hydro One.	Hydro One explained that during a previous forestry maintenance cycle, Hydro One cleared trees and a significant amount of vegetation located directly under the transmission lines. Hydro One, at its sole discretion, at that time chose to install vegetation screening in recognition of the vegetation removed under the transmission lines. However, the primacy of use of the Corridor Lands is for the purposes of transmission or distribution. Any vegetation remaining on the Corridor Lands is subject to Hydro One's future maintenance cycles to ensure the safe and reliable operation of the transmission lines and such future maintenance will be conducted in accordance with Hydro One's forestry standards in effect at that time.
Natural Environment		
Wildlife	Potential disruption to birds and their habitat.	Hydro One has modified its vegetation removal approach to limit the removal of the number of trees and hedges for the construction of the proposed project. During construction, Hydro One will comply with applicable legislation, such as the <i>Migratory Birds Convention Act</i> (MBCA). Vegetation removal during the migratory bird breeding season (mid April to late August in nesting zone C3) will be avoided to the extent feasible. If vegetation removal occurs during the breeding season, a non-intrusive breeding

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THEME	ISSUE/CONCERN	RESPONSE FROM HYDRO ONE
		<p>bird nest survey will be undertaken in compliance with the MBCA and nests found will not be disturbed until the young have fledged. Where active nests are found, a buffer zone reflective of the species will be established to restrict construction activities.</p>
	<p>Suitable animal habitat in the RoW after construction.</p>	<p>The proposed construction zone is an existing electricity corridor. The common wildlife species that occur in the study area are habituated to human activities and are mobile. They will likely relocate to habitat adjacent to the RoW during the construction period.</p> <p>As part of the Class EA, an Ecological Land Classification was completed for the RoW and confirmed that the RoW does not contain any significant wildlife habitat as defined by the Ministry of Natural Resources and Forestry's Significant Wildlife Habitat Technical Guide.</p>
Construction		
<p>Schedule and Timing</p>	<p>Construction timelines</p>	<p>Once the Class EA has been completed, detailed engineering and construction planning will begin. Details will be made available at a pre-construction PIC in spring 2017. Information shared at the PIC will include, construction activities, timelines, equipment used, construction hours, construction route, what residents could expect and who to contact if they have any questions or concerns. In early spring 2017, local residents will receive an invitation from Hydro One with the PIC details.</p> <p>Hydro One plans to begin the preliminary site-preparation activities for construction starting in spring 2017. The project is expected to be completed by fall 2018. Work at any given location will be intermittent during the construction period.</p> <p>In regards to the timing of construction, most work will be carried out during weekdays. If occasional weekend work is required, residents will be notified in advance. Work is also not anticipated to take place overnight.</p>

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THEME	ISSUE/CONCERN	RESPONSE FROM HYDRO ONE
Drainage	Parts of the corridor can be naturally very wet.	Hydro One advised that the naturally wet RoW should not be a problem for Hydro One vehicles or equipment once the temporary gravel access road is in place.
Access during construction	Construction access in the RoW.	<p>Hydro One plans to locate a temporary construction laydown/staging area in the corridor beside Balena Park. This area is planned to be the main access point for construction south of Bathurst Avenue. However, if circumstances change, access could be required from Bathurst Avenue.</p> <p>A site office will not be necessary for this project as existing local Hydro One office locations will be used for administrative work, crew safety briefings and job planning. Personal vehicles will normally be parked at one of Hydro One's facilities. During working hours, Hydro One vehicles will be used on the corridor.</p>
	Pedestrian accessibility during construction.	Hydro One will ensure residents continue to have access to these parks and church by either establishing temporary pathways or having flag persons available to facilitate safe crossing.
Construction Related Disturbances	Concerns regarding noise during construction.	There is always a certain amount of noise associated with construction activities. Hydro One will comply with the City of Ottawa's Noise By-law. Heavy equipment such as cranes, bulldozers, excavators, line pullers, and helicopters may be used during construction. More intrusive and noisy activities such as pile driving and blasting are not planned for this project.
	Concerns regarding mud, and dust during construction.	Hydro One follows standard construction practices, and will strive to minimize construction related nuisance effects and disturbances. Standard dust control, street cleaning, and traffic control measures will be implemented during construction.

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THEME	ISSUE/CONCERN	RESPONSE FROM HYDRO ONE
	Disruption to local businesses	Hydro One will try to minimize the amount of time and space (e.g. number of parking spaces blocked by construction) that is required for construction. In addition, Hydro One will ensure that the loading zones and fire routes are not blocked in commercial and industrial areas of the RoW.
Safety	Public safety of the community during construction.	During construction, the transmission corridor will be an active construction zone. To ensure public safety, fencing will be installed to identify the work zone and restricted areas, including the laydown/staging area in Balena Park. For safety reasons, we ask that everyone stay clear of the construction zone. Hydro One will also put appropriate traffic controls in place when equipment is being transported in and out of the corridor to minimize traffic impacts and protect pedestrian safety.
Restoration Plan	Restoration plan after construction.	Hydro One's restoration plan for the parts of the corridor disrupted by construction will be to reseed with a grass mix, which is consistent with the current appearance of the corridor and adjacent parks. Provided the restored area of the corridor remains free of encroachments after construction is completed, Hydro One will have a contractor cut the grass on a regular schedule.
	Questions regarding transitioning the RoW into a meadow with pollinating grass mix.	Some residents have expressed that they would like to see the corridor turned into a meadow with pollinator flowers. However, many residents have indicated that they prefer the appearance of cut grass and flat surface for this corridor. While Hydro One has considered reseeding the areas disturbed by construction with pollinator grass mix, Hydro One is planning to reseed with a native grass mix and maintain it (mow) to be consistent with the appearance of the adjacent parks in the project area.

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THEME	ISSUE/CONCERN	RESPONSE FROM HYDRO ONE
Operations		
Electric and Magnetic Fields (EMF)	EMF levels with the addition of the second 115 kilovolt circuit	Hydro One's calculations indicate that electric and magnetic fields (EMFs) on the transmission corridor between Overbrook TS and Balena Park with the new line will be reduced compared to the EMFs from the existing line. This is as a result of two factors: 1) the addition of the second circuit will reduce the current flowing in each circuit, resulting in reduced EMFs; 2) EMF strength decreases rapidly with increasing distance from the source, hence, installing taller structures will result in reduced EMFs at ground level.
	Potential health effects of EMF	Hydro One looks to the scientific expertise of organizations such as Health Canada and the World Health Organization to assess the scientific studies and provide advice and guidance. Health Canada monitors scientific research on EMFs and human health as part of its mission to help Canadians maintain and improve their health. Health Canada's conclusion about EMF is that <i>"there is no compelling scientific evidence that EMF in living and school environments, regardless of locations from power transmission lines, cause ill health."</i> EMFs are found everywhere electricity is used and come from home appliances, computers, office equipment, wiring in our homes and workplaces, and electric power facilities, such as substations, transmission lines and distribution lines. Additional information on EMF and related links is available in Appendix C.
Noise	Question regarding whether the new transmission lines will emit more noise.	Under certain conditions, transmission lines may emit noise called the corona effect. For this project, Hydro One will use larger conductors than the existing ones which will reduce the noise level associated with the transmission lines.

4.8 Draft ESR Review Period

Hydro One will provide a 30-day review period, from January 12, 2017 to February 10, 2017 to allow sufficient time for the review and comment of the draft ESR. Comments regarding the draft ESR are to be submitted to Hydro One by no later than 4:30 pm on Friday February 10, 2017 and sent to:

Jennifer Trotman
Environmental Planner
Hydro One Networks Inc.
483 Bay St., North Tower, 14th Floor
Toronto, ON, M5G 2P5

Email: Community.Relations@HydroOne.com
Tel: 1-877-345-6799

The Ontario *EA Act* has provisions that allow for interested parties to ask for a higher level of assessment for a Class EA project if they feel that outstanding issues have not been adequately addressed by Hydro One. This is referred to as a Part II Order request. Such requests must be addressed in writing to the Minister of the Environment and Climate Change, as well as the Director of the Environmental Approvals Branch (EAB) of the MOECC, and received no later than 4:30 pm on Friday February 10, 2017, at the following addresses:

Minister of the Environment and Climate Change
Ontario Ministry of the Environment and Climate Change
77 Wellesley Street West
11th Floor, Ferguson Block
Toronto, ON M7A 2T5
Email: Minister.MOECC@ontario.ca

Director, Environmental Approvals Branch
Ontario Ministry of the Environment and Climate Change
135 St. Clair Avenue West, 1st Floor
Toronto, ON M4V 1P5
Email: EAASIBgen@ontario.ca

A duplicate copy of a Part II Order request must also be sent to Hydro One at the address noted above.

4.9 Statement of Completion

At the completion of the draft ESR review period, Hydro One will incorporate comments received during the review period and finalize the ESR.

Should there be substantive issues or potential effects raised by a concerned party regarding the proposed Project that cannot be resolved by the proponent, the Class EA process allows that concerned parties may request that the level of assessment for the proposed Project be elevated to an Individual EA (referred to as a Part II Order request). If Part II Order requests are received, Hydro One will issue a response to the requestor, the EAB of the MOECC, and the Minister of the Environment and Climate Change addressing the issues that were raised. The Minister of the Environment and Climate Change will review the issues raised in the Part II Order request and Hydro One's response, and will issue a formal decision with the following outcomes:

- Accept the Part II Order request to elevate the level of assessment for the project to an Individual EA;
- Deny the Part II Order request; or
- Deny the Part II Order request with conditions.

If no Part II Order requests are received during the draft ESR review and comment period, or if Part II Order requests are received and subsequently denied by the Minister of the Environment and Climate Change, Hydro One will proceed with the final ESR.

The final ESR will be placed on the project website and sent to the EAB at the MOECC and the appropriate Regional EA Coordinator for filing. Hydro One will complete and submit the Statement of Completion form to the MOECC along with the finalized ESR. At this point, the Project is considered acceptable and can proceed as outlined in the final ESR.

5 Route Proposed

As previously described in section 2.4, the proposed route of the undertaking was predetermined during the development of the IRRP for the Ottawa area. The existing transmission RoW between Overbrook TS and Balena Park was the preferred route for an additional 115 kV circuit to reinforce the transmission infrastructure in central Ottawa because of its shorter distance and technical feasibility. The other option the IRRP considered was considerably longer and would not guarantee a reliable electricity supply.

5.1 Alternatives Considered

As mentioned previously in this document, the route of the proposed project was predetermined in the IRRP. During the Class EA process, Hydro One looked at alternative design options for the second 115 kV circuit. They included the option of installing the proposed circuit underground or replacing the existing transmission structures on the RoW, with narrower steel poles. To compare the alternative design options, Hydro One considered evaluation criteria to determine a preferred option, which included: technical requirements, cost, and effects to the environment (including effects to visual aesthetics, recreational resources, and businesses and residents).

Underground Cable

It was determined that the benefits of locating the proposed 115 kV circuit underground would not outweigh the negative effects and it was decided not to pursue the underground cable option.

The underground cable option only includes the installation of the new 115 kV circuit underground. This means that the existing 115 kV circuit would remain overhead and not be altered by the proposed Project. Therefore, there would be no visual change to the existing transmission line in the RoW. Based on the scope of work of the underground cable option, the following was identified:

- Cost - The installation of an underground circuit would be approximately five to seven times the cost of an overhead transmission line.
- Technical Requirements - The underground cable would require that a permanently fenced area, approximately 500 metres squared in size be constructed next to the existing transmission structure in Balena Park for the structures and equipment that are necessary to transition the underground cable to overhead line at the transmission junction. An example of a similar fenced junction is provided in Figure 5-1.
- EMF – Although the electric fields from the underground cable would be blocked by the steel casing, the magnetic fields at ground-level, directly above the cable would be higher than an overhead transmission line. Since, the existing circuit would remain overhead; the pre-existing EMF levels of this circuit would remain the same.
- Visual Effects – The existing steel lattice and H-frame structures would remain in the RoW. In addition, the fenced area in Balena Park would negatively affect the aesthetics of the park.
- Effects to Recreational Resources – The fenced area in Balena Park would reduce the existing open space in this area.
- Potential Disturbance to Businesses and Residents – If underground cable ducts were installed through the open trench method, the length of the RoW would have to be excavated, causing significant disturbances to businesses and residents. If underground cable ducts were installed through directional drilling, although the entire length of the RoW would not be excavated, excavation points along the RoW would still be required for the drilling equipment, which would also temporarily disturb some businesses and residents.
- Maintenance – There would be additional maintenance required for the equipment in the fenced junction area.



Figure 5-1: Photograph of Todmorden Junction in Toronto

Steel Pole Structures

The same evaluation criteria were considered for the overhead option. The majority of the existing steel lattice towers and H-frame structures would not be able to accommodate the addition of a second 115 kV circuit. Therefore, there is an opportunity to change the design of the transmission structures being installed in the RoW to steel pole structures. Based on the scope of work of the overhead transmission line option, the following was identified:

- Cost – The cost of this option would be significantly less than the cost to construct the underground cable option.
- Technical Requirements – Seven of the existing lattice and H-frame tower structures would be replaced with steel pole structures and the existing structure adjacent to Overbrook TS would be replaced with approximately nine tapping structures.
- EMF - The reduced current in each circuit and increased structure height would slightly lower EMF levels in the RoW compared to existing levels. EMF is further discussed in section 7.2.7.

- Visual Effects – The steel pole structures would have a narrower base and smaller footprint than the existing structures, and would improve the aesthetics in the RoW. Figure 5-2 shows images of the existing structures and the proposed structures. This figure was included in the Public Information Centre panels for public comment.
- Effects to Recreational Resources – After construction has been completed there will not be any permanent effects to recreational resources.
- Potential Disturbance to Businesses and Residents – Businesses and residents directly adjacent to the locations of the existing structures and proposed structures will be temporarily disturbed during the dismantling and installation activities. In addition, businesses and residents along the length of the RoW will be temporarily disturbed during the stringing of the conductors (wires) on the transmission line. Additional details about the construction activities are provided in section 6.2.
- Maintenance – The cost to maintain the upgraded overhead transmission line would be similar to the existing transmission line.

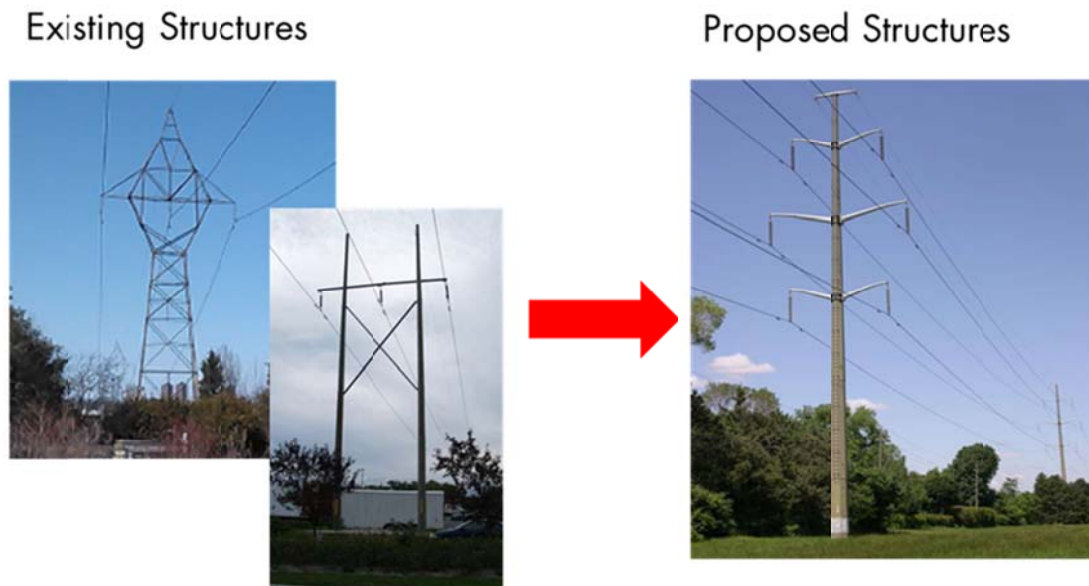


Figure 5-2: Existing vs. Proposed Structures

5.2 Evaluation and Selection of the Preferred Route

An evaluation of the two alternative methods is presented below in Table 5-1 based on section 5.1. The two alternative methods were scored for each criterion to compare their potential impacts and desirability. A better/higher score is the preferred option. The scores were assigned based on the following:

- 0 points (high impact/low desirability)
- 0.5 points (medium impact/ medium desirability)
- 1 point (low impact/high desirability)

Table 5-1: Evaluation of Alternative Methods

Criterion	Option 1 - Underground Cable	Option 2 - Overhead Transmission Line
Cost	High (0)	Low (1)
Technical Requirements	Medium (0.5)	Medium (0.5)
EMF	High (0)	Low (1)
Visual Effects	High (0)	Low (1)
Effects to Recreational Resources	High (0)	Low (1)
Effects to Businesses and Residents	High (0)	High (0)
Maintenance	Medium (0.5)	Medium (0.5)
Totals	1.0	5.0

This evaluation determined that pursuing the overhead option, using steel pole structures was the preferred alternative.

This preferred alternative was carried forward and presented to the First Nation community identified by the Crown and project stakeholders during the Class EA process. During the

PIC, Hydro One received a question about why underground cables were not being considered and provided a response based on the above evaluation.

6 Project Description

The proposed Project is similar to many other projects completed by Hydro One. This project will occupy a footprint just less than two kilometres of the existing transmission RoW, and consists of the following major components:

- Replacement of seven of nine existing transmission structures between Balena Park and Overbrook TS with steel pole structures;
- Replacement of the existing transmission structure adjacent to Overbrook TS with approximately nine tapping structures for the transmission conductors (wires) entering the station;
- Moving the existing transmission conductors (wires) and skywire from the existing structures to the new steel pole structures; and
- Stringing new transmission conductors (wires) and skywire for the second 115 kV circuit onto the new steel pole structures.

6.1 Design Phase

Following completion of the Class EA process, detailed engineering and design for the proposed Project will be undertaken. The final design plans will be based on necessary surveys and consultation, including a geotechnical survey, and consultation with stakeholders. Concurrent with finalization of the design, all required permits, licences and approvals, as listed in section 1.5.3 will be obtained. Hydro One will also finalize restoration plans in consultation with the appropriate municipal officials and local community, as necessary.

An Environmental Specification document will be prepared following the completion of the Class EA process that will provide specific directions to construction personnel, summarizing legislated requirements and environmental commitments set out in the final ESR. This will include all required monitoring, as specified in the monitoring plan (section 8).

6.2 Construction Phase

Construction activities will be guided by Hydro One standards and guidelines as well as project-specific documents; these are to be adhered to by all construction personnel including sub-contractors, and their standards and guidelines meet Hydro One's commitment to the environment. In addition, a project-specific Environmental Specification document, outlining specific requirements of the project, will be prepared and followed by construction crews during the construction phase of the proposed Project.

Construction will involve the following activities:

- Site preparation, including the removal of vegetation within the construction work area and the installation of temporary access roads on the ROW, where required, which will consist of crushed stone overlain on geotextile line;
- Set up of temporary laydown areas, including perimeter fence installation;
- Mobilizing equipment and installation of foundations at the new pole locations;
- Installation of temporary wood poles at road crossings as a safety barrier when relocating and stringing new transmission lines;
- Construction and installation of steel poles and moving the existing transmission conductors (wires) from the existing towers to the new poles;
- Dismantling the existing towers;
- Stringing the new transmission conductors (wires) on the new steel poles;
- Removing temporary wood poles, access roads and laydown areas; and
- Clean-up and restorations. This will include hydro seeding the areas disturbed by construction. After construction, the RoW will be maintained as per Hydro One's regular maintenance cycles, which is six times per year (once a month between May and October).

Prior to construction, a detailed construction plan will be developed. Construction activities will be restricted to designated work areas and protective barriers such as fencing will be erected to protect adjacent features from construction related effects. In addition, vegetation removal limits will be clearly demarcated.

During construction, the primary temporary laydown area for the proposed Project will be located in the RoW in Balena Park and Brayden Avenue will be used as the construction access route to this laydown area. A second laydown area will be located on the RoW outside of Overbrook TS. Both areas will be restored following removal of the temporary laydown areas post-construction. The current plan is to remove the geotextile and gravel used for temporary access roads in the RoW upon the completion of construction. The City of Ottawa has shown interest in the possibility of utilizing this material for their multi-use pathway project. Hydro One will continue to work with the City of Ottawa during the design and construction phases of the project to confirm the plan for the material. If the City of Ottawa is not going to use it for their project, Hydro One will remove it after construction and restore the RoW (reseeding).

Throughout the construction period, an Environmental Specialist will be available to address any unforeseen environmental effects and mitigation requirements. The Environmental Specialist will monitor activities to ensure that they are in conformance with the requirements set out in Hydro One's construction standards and guidelines, as well as the Environmental Specification that will be prepared for the proposed Project.

At the completion of construction, operation and maintenance staff will be provided with a briefing and "as constructed" documentation covering any ongoing commitments, including monitoring and notification requirements, if applicable.

Should any archaeological finds be uncovered during construction, work will stop immediately pending assessment by the project archaeologist and further consultation with the MTCS, as well as the appropriate First Nations & Métis communities.

6.3 Maintenance and Operation Phase

The proposed Project is scheduled to be in service by December, 2018. The transmission line and RoW will undergo regular maintenance in adherence with Hydro One's maintenance standards and regulatory requirements to maintain a safe and reliable electricity transmission system.

6.4 Project Schedule

The anticipated schedule for proposed Project activities is provided below in Table 6-1. This schedule shows key steps remaining in the Class EA process and subsequent anticipated timing of the start of construction and commissioning of the transmission line upgrade.

Table 6-1: Project Schedule

ACTIVITY	PERIOD
Release of draft ESR and start of review period	Early January 2017
Comment integration and issue resolution	January / February 2017
Filing of final ESR with the MOECC	February 2017
Construction start	Spring 2017
Planned in-service date	December 2018

7 Potential Environmental Effects and Mitigation Measures

This section describes the potential environmental effects and mitigation measures associated with both the short-term (construction) and long-term (operation) activities of the proposed Project. The assessment of potential environmental effects for the proposed Project considered the baseline information on the environmental features that was collected for the study area as presented in section 3. If resources were determined not present in the study area during the collection of the baseline information, they were not included in this section.

The potential environmental effects resulting from the construction and operation of the proposed Project are similar to other projects undertaken by Hydro One and are well understood. Hydro One has a strong track record of environmental compliance and stewardship and is committed to the completion of a comprehensive environmental analysis and mitigation of potential environmental effects.

The table below provides a summary of potential effects, their mitigation and residual effects for the proposed Project. The mitigation measures follow Hydro One's *Environmental Guidelines for Construction and Maintenance of Transmission Facilities* (2009) and are based on the following six principles:

- Avoidance of sensitive areas, where practical;
- Appropriate timing of construction activities, where practical, to avoid sensitive time periods, such as migratory bird nesting periods;
- Proactive communication with area residents and businesses on proposed project timelines and construction areas;
- Proactive communication with First Nations and Métis communities, government agencies, stakeholders and interest groups regarding the proposed Project;
- Implementation of conventional, proven mitigation measures during construction will be consistent with the criteria set out in Appendix J of the *Class Environmental*

Assessment for Minor Transmission Facilities (Ontario Hydro, 1992), and in accordance with all applicable legislative requirements; and

- Development of environmental enhancement or compensation measures to offset the unavoidable effects of construction and operation, where practical.

Based on the project design and the implementation of the proposed mitigation measures, no significant adverse or residual effects (i.e., effects following the implementation of mitigation) are expected.

Table 7-1 provides a summary of potential effects, the associated mitigation, and the residual effects identified for the proposed Project that are described in sections 7.1 to 7.5.

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Table 7-1: Summary of Potential Effects, Mitigation Measures and Residual Effects

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
EFFECTS TO ARCHAEOLOGICAL AND CULTURAL HERITAGE RESOURCES			
Archaeological and Cultural Heritage Resources	Based on the MTCS Criteria for Evaluating Archaeological Potential and Criteria for Evaluating Built Heritage Resources and Cultural Landscapes checklists, no effects are predicted during the construction, maintenance, or operation phases of the proposed project.	<ul style="list-style-type: none"> • If archaeological material is encountered during the course of the project, Hydro One will immediately cease all activities with the potential to affect the archaeological material and engage a licensed archaeologist, as well as the MTCS, and the Algonquins of Ontario. • In the event that human remains are encountered, Hydro One will immediately stop work in the area and notify the police, the coroner's office, MTCS and the Registrar of Cemeteries. 	No residual effects are predicted.
EFFECTS TO HUMAN SETTLEMENTS			
Nuisance Effects			
Air Quality	Exhaust emissions from vehicles during construction.	<ul style="list-style-type: none"> • Equipment used on site during construction and operation is maintained to minimize exhaust. • Adherence to Hydro One's Fleet Environmental Program which includes anti-idling requirements. 	No residual effects are predicted.
	Dust generation during construction.	<ul style="list-style-type: none"> • Use effective dust suppression techniques, such as on-site watering and road cleaning. 	No residual effects are predicted.
Noise	There is a potential for noise emissions from construction related activities.	<ul style="list-style-type: none"> • Maintain equipment to ensure that construction and operation conforms to normal noise parameters. • Noise is taken into account when deciding on equipment, construction work methods and schedule. • Take reasonable measures to control construction-related 	No residual effects are predicted. Effects on noise will be temporary and limited to

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ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
		<p>noise near residential areas.</p> <ul style="list-style-type: none"> Construction activities will conform to the City of Ottawa Noise by-law; if it is not possible, local residents and businesses will be informed if activities need to be extended to facilitate their completion. 	<p>the site preparation and construction periods.</p>
Vibration	Vibration from construction and maintenance equipment.	<ul style="list-style-type: none"> Vibration is taken into account when selecting equipment, construction work methods, and schedule; and Take reasonable measures to control vibration related to project construction near residential areas. 	<p>No residual effects are predicted.</p>
Mud	There is a potential for mud accumulation due to site preparation and construction activities.	<ul style="list-style-type: none"> Mud will be removed from roads, as required. Mud mats may be installed to reduce effects. Vehicles and equipment will be washed and maintained at work areas, as necessary. Formal cleanup and site restoration (e.g., grass seeding) will further minimize this potential project effect. 	<p>Mud will be temporary and limited to the site preparation and construction periods.</p> <p>No residual effects are predicted.</p>
Socio-economic Effects			
Existing land use and approved development	<p>Transmission corridor already co-exists with surrounding land uses.</p> <p>No access to the RoW during construction.</p> <p>Removal of unauthorized personal items from the provincially owned RoW.</p>	<ul style="list-style-type: none"> Adherence to the PPS and conforms to the City of Ottawa's Official Plan and avoids major developments. Early notice of project plans to adjacent property owners. On-going communication and consultation with adjacent property owners. 	<p>No residual effects are predicted.</p>

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ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
Local Economy	<p>Access to the Ottawa Train Yards shopping complex will be reduced and traffic disruptions may impact businesses during construction.</p> <p>Some local businesses may see a slight increase in activity from construction workers.</p>	<ul style="list-style-type: none"> Hydro One will attempt to minimize the length of time that construction activities are disrupting the parking area in the Ottawa Train Yards shopping complex. Hydro One plans to relocate two of the three structures outside of the Ottawa Train Yards shopping complex to reduce disruptions. Hydro One will continue to work with the property manager of the Ottawa Train Yards and take concerns into account when planning work methods. Entrances to businesses in the Ottawa Train Yards will remain accessible during construction. 	No residual effects are predicted.
Transportation			
Traffic disruption	Short-term disruption of traffic in project vicinity due to equipment and materials delivery and worker vehicular traffic.	<ul style="list-style-type: none"> Construction activities will be scheduled where possible to avoid significant inconvenience. Develop approved traffic control plan with the City of Ottawa, as necessary. Erect road signage and provide notification/pre-construction information to area residents on timelines and construction routes. Where appropriate, assign traffic control officers to assist construction truck entry and exit. Lane reductions will be required on the Queensway (Highway 417) during transmission line stringing activities. Hydro One will work with the MTO to obtain necessary approvals. Hydro One will continue consultation with the property manager of the Ottawa Train Yards to reduce parking disruptions as much as possible. 	No residual effects are predicted.

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ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
Public Safety			
Public safety	Public could be potentially exposed to typical construction hazards in the vicinity of the construction areas.	<ul style="list-style-type: none"> • Construction areas to be fenced and locked where necessary with appropriate signage. • The construction schedule to be discussed with the City of Ottawa's planning staff and provided to the local emergency services. • Nearby residents to be informed prior to construction 	No residual effects are predicted.
Human Health			
Electric and Magnetic Fields (EMF)	Exposure to EMF.	<ul style="list-style-type: none"> • Facilities are designed, sited and operated in accordance with all regulatory requirements. • The design of the transmission line will reduce EMF compared to existing levels based on reduced current and increased structure heights. 	There will be no residual effects from EMF.
EFFECTS TO NATURAL ENVIRONMENTAL RESOURCES			
Physical Environment			
Changes in Physiography	Potential changes in the physiography as a result of excavation activities during the construction phase	<ul style="list-style-type: none"> • Backfill, grading, and site restoration following construction. 	No residual effects are predicted.
Spills	Incidental spills of oil, gasoline and other liquids during construction.	<ul style="list-style-type: none"> • Refueling of all vehicles and equipment to be undertaken in a designated location. • Spill cleanup equipment to be nearby and in Hydro One vehicles. • Spills will be cleaned up as soon as possible and the site 	No residual effects are predicted.

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ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
		remediated after a spill. <ul style="list-style-type: none"> Any fuels, chemicals and lubricants are stored on level ground in properly contained storage areas. 	
Waste Generation	Solid and/or liquid waste will be generated during construction.	<ul style="list-style-type: none"> Minimize waste produced and segregate and recycle where possible. Test, handle, store, transport and dispose of waste in accordance with all applicable legislation prior to being recycled or disposed at a licensed landfill. Manage wastes in accordance with <i>Ontario Environmental Protection Act</i>, Reg. 347. 	No residual effects are predicted.
Atmospheric Environment			
Air Quality and Climate Change	Emissions from vehicles and equipment during the construction and maintenance phases.	<ul style="list-style-type: none"> Properly service and maintain equipment. Adherence to Hydro One's Fleet Services Environmental Program which includes anti-idling requirements and GPS installation in vehicles to optimize routing. Facilities will be engineered to adequately withstand the effects of climate change throughout the duration of their planned lifespan 	Negligible residual effects are predicted.
Particulate Emissions (dust)	Particulate emissions from vehicles during construction and maintenance.	<ul style="list-style-type: none"> Use of effective dust suppression techniques, such as on-site watering and street cleaning will be utilized, as required. 	No residual effects are predicted.
Noise	There is a potential for noise emissions from construction related activities.	<ul style="list-style-type: none"> Maintain equipment to ensure that construction and operation conforms to normal noise parameters. Noise is taken into account when deciding on equipment and construction work methods and schedule. 	No residual effects are predicted. Effects on noise will be

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ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
		<ul style="list-style-type: none"> Construction activities will conform to the City of Ottawa Noise by-law; if it is not possible, local residents and businesses will be informed if activities need to be extended to facilitate their completion. 	temporary and limited to the site preparation and construction periods.
Vibration	Vibration from construction and maintenance equipment.	<ul style="list-style-type: none"> Vibration is taken into account when deciding on equipment and work methods. 	<p>No residual effects are predicted.</p> <p>Effects will be temporary and limited to construction periods.</p>
Surface and Groundwater Resources			
Surface water	<p>Ponding or channelization of surface waters caused by rutting.</p> <p>Change to the ground surface substrate may result in changes to storm water drainage.</p>	<ul style="list-style-type: none"> Time activities to stable ground conditions. Use of temporary gravel access roads and working pads in unpaved sections of the RoW. Whenever warranted, the site will be returned to the natural grade. The area is restored to pre-construction drainage patterns. Site restoration including reseeded of disrupted areas. 	No residual effects are predicted.
Erosion	Soil may be lost during site preparation due to rainfall.	<ul style="list-style-type: none"> Mechanical erosion control devices will be used as required such as erosion control blankets and sedimentation fences. 	No residual effects are predicted.
Groundwater	There is a potential to encounter groundwater during construction.	<ul style="list-style-type: none"> Develop dewatering protection measures during the detailed engineering phase of the project, if required. Contain all collected water and conduct testing prior to disposal. Contaminated groundwater will be managed in accordance 	No residual effects are predicted.

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ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
		with provincial legislation and regulations. <ul style="list-style-type: none"> Follow spill management measures as listed under Physical Environment. 	
Designated or Special Natural Areas			
Designated Natural Areas	Effects to Designated Natural Areas during construction and maintenance activities.	<ul style="list-style-type: none"> The Hospital Woods Natural Area is located south of the RoW and outside the construction work area. No vegetation removal in this natural area will be required. 	No residual effects are predicted.
Natural Heritage Features			
Woodlands and Vegetation	Removal of vegetation within proposed construction activity areas in the RoW during construction and maintenance activities.	<ul style="list-style-type: none"> Construction activities will be restricted to designated work areas and protective barriers such as fencing are erected as required. Vegetation clearing limits will be clearly demarcated. Hydro One will work with the City of Ottawa regarding vegetation removal. Retention of all compatible vegetation one the edges of the RoW during construction. Reseed disturbed portions of RoW. 	No residual effects are predicted.
	Accumulation of cleared vegetation during the construction phase.	<ul style="list-style-type: none"> Disposal of all non-salvageable limbs by chipping or removal to designated areas. Stumps are cut flush with the ground where feasible. 	No residual effects are predicted.
Species at Risk (SAR)	Disturbance or loss of SAR as a result of habitat loss from construction and maintenance activities.	<ul style="list-style-type: none"> No SAR are anticipated to be present in the RoW. If avoidance of SAR is not possible, collaborate with the MNRF to mitigate the impact of transmission facilities. If required, an overall benefit permit will be obtained. 	No residual effects are predicted.

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ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
Wildlife Habitat	Disturbance to wildlife during the construction phase.	<ul style="list-style-type: none"> • Zero tolerance of harassment or harm to wildlife by employees or contractors that may be utilizing vegetated areas. 	No residual effects are predicted.
	Disturbance and displacement of nesting birds.	<ul style="list-style-type: none"> • Avoid site preparation and vegetation removal during the breeding bird season when feasible. • Complete a non-intrusive nest survey (by a qualified avian biologist) if vegetation removal is required during the breeding bird season. • Buffer any active nests found, as appropriate. No disturbance to bird nests found until the young have fledged. 	No residual effects are predicted.
EFFECTS TO RECREATIONAL RESOURCES			
Recreational resources	Disturbance to recreation resources during construction, including reduced access to Balena Park from the RoW.	<ul style="list-style-type: none"> • Safety precautions are utilized around construction areas to protect the public such as signage and fencing. • Work is scheduled, when possible, to avoid peak use periods. Hydro One is consulting with the Recreation Planning and Facility Development branch at the City of Ottawa. • Temporary access routes will be provided for local residents to safely access Balena Park from the west side during construction. • The pet memorial in Balena Park will not be affected by construction. 	No residual effects are predicted.

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ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
EFFECTS TO VISUAL AND AESTHETIC RESOURCES			
<p>Appearance of the landscape</p>	<p>Visual disruption will occur during project construction.</p> <p>Public views of the transmission RoW from adjacent properties and surrounding residential, commercial, and industrial neighbourhoods.</p>	<ul style="list-style-type: none"> • The project is located in an existing transmission RoW to minimize effects to the landscape; the area is already disturbed and the proposed project will not significantly alter or reduce landscape. • Visual effects on neighboring properties can be managed by maintaining a clean and organized workspace. • Disposal of all non-salvageable limbs by chipping or removal to designated areas. • Stumps are cut flush with the ground where feasible. • Topsoil and grass seed will be used to restore disturbed areas. • Existing steel lattice tower structures will be replaced with taller and slimmer poles that will have a smaller footprint. 	<p>Low to negligible residual effects predicted.</p>

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7.1 Archaeological and Cultural Heritage Resources

After considering the MTCS Criteria for Evaluating Archaeological Potential checklist (2015) and Criteria for Evaluating Built Heritage Resources and Cultural Landscapes checklist (MTCS, 2016), no effects on archaeological or cultural heritage resources are predicted during the construction, maintenance, or operation phases of the proposed Project.

If archaeological material is encountered during the course of the project, Hydro One will immediately cease all activities that have the potential to affect the archaeological material and engage a licensed archaeologist, as well as the MTCS, and the Algonquins of Ontario First Nation. In the event that human remains are encountered, Hydro One will immediately stop work in the area and notify the police, the coroner's office, MTCS and the Registrar of Cemeteries.

7.2 Human Settlements

The proposed Project will have limited effects to the human settlements in the study area, given the proximity to residences, commercial, and industrial uses. These effects are outlined in this section.

7.2.1 Nuisance Effects

Nuisance effects are subjective, and the magnitude of the effect will vary depending on the individual and their location in relation to construction activities; however, concerns regarding nuisance effects were raised during the consultation plan (see section 4). Noticeable nuisance effects relating to air quality, noise, vibration, and mud will occur intermittently during the construction phase of the project.

Air Quality

Construction activities have the potential to create temporary, localized effects on air quality in the immediate vicinity of the proposed Project (effects on air quality and associated mitigation are discussed further in section 7.3.2). Emissions from construction are primarily comprised of fugitive dust and combustion products from the movement and operation of

construction equipment and vehicles. These emissions, in turn, may create a nuisance or disturbance effect for local residents and land users during the construction phase.

Mitigation measures to reduce potential nuisance effects of dust and air emissions include:

- maintaining equipment used on-site to minimize exhaust;
- adhering to Hydro One's Fleet Environmental Program (anti-idling requirements and global positioning system [GPS] installation in vehicles to optimize routing); and
- utilizing effective dust suppression techniques, such as on-site watering and road sweeping, as necessary.

Emissions from maintenance activities during operation of the transmission line will be variable, are expected to be short in duration, and will occur periodically over the life of the proposed Project. Nuisance effects posed by these brief activities are expected to be negligible and will not result in noticeable or long-term changes to local air quality.

Noise

The proposed Project activities have the potential to affect ambient noise levels during the construction phase. These effects, in turn, may create a temporary nuisance or disturbance effect for local residents and land users.

Concerns regarding noise-related nuisance effects were raised by local residents during consultation (see section 4). It is important to note that noise effects will generally not be constant across the study area for the entirety of the construction phase. They will be introduced and diminish depending on where construction is actively occurring, thereby reducing the duration of nuisance effects to local residents, business operators, and land users.

Mitigation measures to reduce potential nuisance effects resulting from noise include:

- maintaining equipment such that construction and maintenance activities conform to typical noise parameters;

- considering noise when deciding on equipment, construction work methods, and schedule; and,
- taking reasonable measures to control construction-related noise near residential areas.

Construction activities will conform to the City of Ottawa's Noise By-law No. 2004-253 (2004) to the extent feasible. If exemptions to the by-law are necessary, Hydro One will obtain applicable approvals from the City of Ottawa. If construction activities need to be extended to facilitate their completion, Hydro One will inform local residents and businesses.

Vibration

The proposed Project activities have the potential to affect ambient vibration levels during the construction phase, causing nuisance and disturbance effects to local residents and land users in the vicinity of the proposed Project.

Mitigation measures to reduce potential nuisance effects resulting from vibration include:

- considering vibration when selecting equipment, construction work methods, and schedule; and,
- taking reasonable measures to control vibration related to project construction near residential areas.

Mud

Construction activities may result in the accumulation of mud in construction areas. Mud mats will be installed, as required, near site exits to loosen and shake off mud. Mud related to construction activities will be removed from access roads, and vehicles and equipment will be washed and maintained at work areas, as necessary. Formal cleanup and site restoration (e.g., grass seeding) will further minimize this potential project effect.

7.2.2 *Land Use Planning*

Since the proposed Project is located in an existing transmission RoW, no potential effects on land use planning have been identified. As part of the consultation plan, Hydro One will provide early notice to adjacent property owners and maintain on-going communication and consultation.

7.2.3 *Socio-economic*

As noted in section 3.2.2, there are cases where residents living adjacent to the RoW have personal items and plantings on the provincially owned RoW. For the proposed Project, Hydro One requires clear access on the RoW to construct the project safely. During consultation with residents, Hydro One agreed to only remove vegetation from the construction areas in the RoW, which is the area within 10 m from the centerline of the RoW (20 m wide in total) and to make best efforts not to disturb vegetation on the edges of the RoW during the construction of this project. Mapping of the construction areas is provided in Appendix B. Although the vegetation existing along the edges of the RoW may not be affected by the construction of this project, they could be subject to removal during future maintenance cycles at the discretion of Hydro One.

A portion of the existing transmission RoW crosses the Ottawa Train Yards shopping complex. During construction, access to the shopping complex and parking will be temporarily reduced. Hydro One has consulted with the Property Management of the Ottawa Train Yards and will attempt to minimize the length of time that construction activities are disrupting the parking area of the shopping complex. Hydro One is proposing to relocate two of the three existing structures from the shopping complex to reduce disruptions. Hydro One will also continue to work with the Property Management and consider their concerns when planning work methods. During construction, all entrances to businesses in the shopping plaza will remain open and accessible to the public.

7.2.4 *Transportation*

As indicated in section 3.2.3, the transmission RoW crosses a variety of transportation infrastructure including the Queensway (Highway 417), the CN rail line, the LRT

“Confederation Line”, as well as major arterial and collector roadways supporting bus routes. The City of Ottawa also identified an off-road multi-use pathway in the Ottawa Train Yards shopping complex and along the transmission RoW through the Riverview neighbourhood past the Ottawa Hospital General Campus.

During construction, there is the potential for disruption to vehicular and foot traffic, as well as available parking in the Ottawa Train Yards shopping complex. Hydro One is working with the property management of the Ottawa Train Yards to locate the proposed steel poles in locations that will not affect the current parking layout of the shopping complex. Hydro One will also continue consulting with the property manager of the Ottawa Train Yards to attempt to reduce traffic and parking disruptions during construction.

Lane reductions will be required on the Queensway (Highway 417) during the transmission line stringing activities and Hydro One will work with the Ministry of Transportation to obtain the necessary approvals.

Mitigation measures to reduce potential effects resulting to transportation in the area include:

- Developing an approved traffic control plan with the City of Ottawa, as necessary;
- Scheduling activities to avoid significant inconveniences, where possible;
- Erecting road signage and providing pre-construction information to local residents on timelines and construction routes; and,
- Working with the property management of the Ottawa Train Yards to reduce disruptions to parking as much as possible.

Overall, effects to transportation in the area will be temporary with no residual effects once construction is complete.

7.2.5 *First Nations Lands and Territory*

As indicated in section 3.2.4, there are no First Nations Reserve Lands located in the study area. However, the Algonquins of Ontario First Nation do have a land claim over the entirety of eastern Ontario.

Hydro One is committed to developing and maintaining relationships of mutual respect between Hydro One and First Nations and Métis communities. Hydro One recognizes that First Nations and Métis communities and their lands are unique in Canada, with distinct legal, historical and cultural significance. Hydro One is committed to continue to engage with the Algonquins of Ontario First Nation to provide regular project updates.

During the consultation process, the Algonquins of Ontario First Nation have not provided feedback regarding the proposed project. Hydro One will continue to welcome feedback and provide project updates.

7.2.6 *Public Safety*

Construction sites pose potential safety hazards to local land users and residents due to the operation of heavy construction equipment, if not appropriately controlled. Workplace safety and public safety are leading priorities at Hydro One. Hydro One mitigates safety issues by implementing safety measures in accordance with its Public Safety Policy during construction. This includes ensuring that the replacement and installation procedures are executed in accordance with applicable codes and regulations.

To minimize the effects of construction on public safety, Hydro One will undertake a wide range of safety measures such as:

- installing fencing and locks to construction laydown areas with appropriate signage to prevent unauthorized access;
- developing the construction schedule in consultation with the City of Ottawa;
- providing the final construction schedule to emergency and protective services; and,

- informing adjacent residents, landowners, and businesses of the proposed project activities prior to construction. Barriers will also be used to maintain public safety and prevent unauthorized access to work areas.

7.2.7 *Human Health*

Hydro One is committed to meet safe electric and magnetic field (EMF) exposure levels for all of our facilities. This commitment ensures that both our own employees maintaining our facilities, as well as members of the public in the vicinity of these facilities are not exposed to elevated EMF levels.

Regarding research on EMF, Health Canada's conclusion is that there is no convincing evidence that EMF are the source of health effects because research on EMF is inconclusive; there is no cause-effect relationship between exposure and adverse health effects. Exposure limit numbers are not meaningful in the absence of a clear causal relationship. Health Canada's Fact Sheet that addresses issues related to EMF is available in Appendix C.

Hydro One has received questions relating to EMF levels during public consultation (see section 4) and have calculated that the overall EMF levels in the RoW once the proposed 115 kV transmission circuit is installed will be reduced compared to the EMF from the existing 115 kV circuit. This is as a result of two factors. In general, the EMF strength is proportional to the circuit current. The addition of the second 115 kV circuit reduces the current in each circuit because the current is now shared by two circuits instead of one. This in turn results in reduced EMF. The EMF strength also decreases rapidly with increasing distance from the source (transmission line). Therefore, the higher structures result in reduced EMF at ground-level. The EMF also further decreases with distance from the centerline of the corridor, because of the increasing distance from the transmission line.

7.3 Natural Environment

Based on desktop data and field surveys, there are limited natural environment resources in the proposed Project study area. With avoidance and/or appropriate mitigation, there are no anticipated residual effects on natural environment resources.

7.3.1 *Physical Environment*

Physiography

The study area consists of sandy loams and has been highly impacted from development activity and site alteration over the years. As such, with backfill and site restoration following construction, physiography in the vicinity of the proposed Project is not predicted to be affected. Therefore, no residual effects on the physical environment have been identified.

Spills

During construction, there is the possibility of spills from the release of oils and fuels from construction vehicles and equipment. There are a number of mitigation measures to reduce the risk of spills and to minimize the effect in the unlikely event that a spill occurs. These measures include:

- refueling of all vehicles and equipment to be undertaken in a designated location;
- locating spill cleanup equipment nearby and in Hydro One vehicles;
- cleaning spills and remediating the site as soon as possible after a spill; and,
- storing any fuels, chemicals and lubricants on level ground in properly contained storage areas.

Waste Generation

Construction waste will be generated by the proposed Project, and will need to be disposed of in regional landfills and recycling facilities. Waste generated during construction will be tested, handled, stored, transported, and disposed of at licensed recycling and waste disposal facilities, as required, in accordance with applicable legislation. Waste produced will be minimized, segregated, and recycled where possible.

7.3.2 *Atmospheric Environment*

Air Quality

Construction activities have the potential to temporarily affect local air quality in the immediate vicinity of the proposed Project. Emissions from construction activities are primarily comprised of fugitive dust and combustion products from the movement and operation of construction equipment and vehicles. Potential effects associated with construction are anticipated to be minimal due to their short and intermittent duration. As a result, construction emissions are unlikely to have a long-term effect on local air quality.

Potential effects to air quality from construction activities can be mitigated through:

- proper servicing and maintenance of construction vehicles and equipment to assist in reducing combustion emissions;
- adhering to Hydro One's Fleet Services Environmental Program, which includes anti-idling requirements and GPS installation in vehicles to optimize routing; and,
- implementing best management practices, such as on-site watering and road sweeping to reduce the generation of fugitive dust.

Therefore, it is likely that the residual effects of construction activities on local air quality will be negligible and no additional mitigation is required.

During the operation of the transmission line, no additional emissions are expected with the exception of periodic maintenance activities, such as inspection from vehicles. Emissions from maintenance activities are expected to be short in duration, and will occur periodically over the life of the proposed facilities. These maintenance activities are not expected to result in long-term changes to local air quality. Therefore, residual air quality effects associated with maintenance and operation activities will be negligible. No additional mitigation is required.

Climate Change

It is important to note that the proposed Project is not a generation project and its operation will not emit greenhouse gases. However, as mentioned in the Air Quality section above, there will be fossil fuel emissions from the vehicles and equipment used to construct and maintain this transmission line upgrade. Hydro One adheres to initiatives such as anti-idling requirements and GPS installation in vehicles to optimize routing to reduce fossil fuel emissions. The emissions directly related to the construction and maintenance of this project will be minimal.

Hydro One recognizes that a changing climate is likely to result in an increase of unusual weather patterns and severe weather events, which could potentially damage or adversely affect infrastructure and other public facilities. Hydro One is satisfied that the facilities being planned for this project have been engineered to adequately withstand the effects of climate change throughout the duration of their planned lifespan.

Noise

Construction activities may be a potential source of short-term, intermittent local environmental noise. This is because the proposed Project is linear and construction activities will be planned sequentially. The duration of construction at any one location along the RoW will be limited and intermittent; thereby reducing the amount of time a given POR would be exposed to noise emissions resulting from the proposed Project.

All work is expected to be completed using common construction methods. The noise associated with the construction would most likely be a result of activities, such as general site grading, foundation work and construction traffic. All of these activities will require the use of various pieces of heavy equipment such as bulldozers, front-end loaders, small trucks, backhoes, bobcats, dump trucks, compactors, concrete trucks and/or cranes. The movement of delivery and worker vehicles will also add to the noise levels during the construction period.

Noise from construction activities is regulated at the municipal level through by-laws, which typically limit construction activities during certain days of the week and periods of the day. During construction, Hydro One will comply with the City of Ottawa's Noise By-law No. 2004-253 (2004). However, there may be instances where noise by-law exemptions are sought (e.g., after-hours or weekend work). If exemptions are necessary, the requirements of applicable approvals processes will be met. Hydro One will also notify local residents and businesses if the activities need to be extended to facilitate their completion.

In an effort to minimize noise, Hydro One will:

- take noise into account when deciding on equipment, construction work methods, and schedule; and,
- maintain equipment to ensure that construction and operation conforms to normal noise parameters such as the MOECC NPC documents *NPC-115 – Construction Equipment* (1978) and the MOECC *Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning, Publication NPC-300* (2013).

Noise sources and noise levels from maintenance activities after construction will be variable, are expected to be limited to a short duration, and will occur periodically over the life of the proposed facilities. With the exception of periodic maintenance activities (inspection from ground-based vehicles and vegetation maintenance), no additional noise sources are expected as a result of the transmission line upgrade during the maintenance and operation of the transmission line. Therefore, no additional mitigation is required for noise during the maintenance and operation of the transmission line.

Vibration

The proposed Project has the potential to affect ambient vibration levels during the construction phase. The MOECC NPC documents and the City of Ottawa's Noise By-law No. 2004-253 (2004), address vibration requirements.

Any construction vibration will be temporary in nature, occur only during specific activities, and limited to the immediate vicinity of the construction work area. The range in the

increased vibration levels associated with construction activities will depend primarily on the number and type of sources and their proximity to the PORs.

Mitigation measures to reduce potential nuisance effects resulting from vibration include: the consideration of vibration when selecting equipment and construction work methods, and determining work schedules for the proposed Project. Hydro One will take reasonable measures to control vibration related to construction near residential areas.

7.3.3 Surface and Groundwater Resources

As noted in section 3.3.3, there are no watercourses located in the vicinity of the study area. However, there is a potential for construction activities to alter the existing storm water drainage. To minimize the effects of construction on storm water, Hydro One will undertake mitigation measures such as:

- timing activities to stable ground conditions;
- using temporary gravel access roads and working pads in unpaved sections of the RoW;
- restoring the area to pre-construction drainage patterns, wherever possible; and,
- reseeding disturbed areas.

During the construction phase, it is possible that site preparation, clearing, and grading activities may result in minimal erosion of soils on site. Soil may also be lost during rainfall events. To mitigate erosion, sediment fences or erosion control blankets will be used, as needed.

In regards to groundwater, the RVCA identified a portion of HVA within the study area under the railway to the east of Belfast Road. The HVA does not, however, extend into the transmission RoW. Therefore, no effects to the HVA are anticipated.

Dewatering protection measures will be developed during the detailed engineering phase of the project, if required. Should discharge of wastewater from dewatering activities be needed, Hydro One will comply with MOECC guidelines and obtain all necessary approvals.

In order to avoid or minimize the potential effects on groundwater during construction and operation activities, the following mitigation measures will be implemented where appropriate:

- developing dewatering protection measures;
- containing all collected water and conduct testing prior to disposal;
- managing contaminated groundwater in accordance with provincial legislation and regulations; and,
- following spill management mitigation measures as specified in section 7.3.1.

7.3.4 Designated or Special Natural Areas

As indicated in section 3.3.4, a small portion of the Hospital Woods – East Urban Natural Area is located at the very southern edge of the study area. This natural area is considered to have a moderate environmental value to biodiversity and wildlife in the area, based on the the City of Ottawa’s Greenspace Master Plan (2006). The construction area for the proposed Project will be within the existing RoW and the Hospital Woods – East Urban Natural Area is not anticipated to be effected by the proposed Project.

7.3.5 Natural Heritage Features

The nature of the construction disturbance associated with the proposed Project is temporary and no effects on natural heritage features are anticipated during the construction, operation and maintenance of the upgraded transmission line.

Wetlands

No wetlands, including PSWs were identified in or adjacent to the study area. Therefore, there is no potential for the proposed Project to affect wetlands.

Fish Habitat

No permanent or ephemeral watercourses or waterbodies were identified in or adjacent to the study area. Therefore, there is no potential for the proposed Project to affect fish habitat.

Woodlands

A small portion of a Significant Woodland intersects the study area in the extreme southern portion of the RoW (Hospital Woods – East Urban Natural Area). Hydro One’s construction activities and laydown area will be located within the existing RoW in Balena Park and not within the woodland. Therefore, the Hospital Woods – East Urban Natural Area is not anticipated to be affected by the proposed Project.

The vegetation within the RoW is common to the urban environment in the City of Ottawa. To minimize effects, construction activities will be restricted to designated work areas and protective barriers such as fencing will be erected, as required, with vegetation clearing limits clearly demarcated. Hydro One will retain compatible vegetation along the edges of the RoW during construction and the disturbed portions of the RoW will be replaced with grass seed.

Valleylands

No valleylands were identified in the study area. Therefore, valleylands will not be affected by the proposed Project.

Species at Risk

Species at risk designations for species in Ontario are initially determined by the Committee on the Status of Species at Risk in Ontario (COSSARO), and if approved by the provincial Minister of Natural Resources and Forestry, species are added to the provincial *Endangered Species Act*, (2008). The legislation prohibits the killing or harming of species identified as ‘endangered’ or ‘threatened’ in the various schedules to the Act. The *Endangered Species Act* also provides habitat protection to all species listed as threatened or endangered. As of June 30, 2008, the Species at Risk in Ontario (SARO) List is contained in O. Reg. 230/08.

Subsection 9(1) of the *Endangered Species Act* prohibits the killing, harming or harassing of species identified as ‘endangered’ or ‘threatened’ in the various schedules to the Act. Subsection 10(1) (a) of the *Endangered Species Act* states that “No person shall damage or destroy the habitat of a species that is listed on the SARO List as an endangered or threatened species”.

General habitat protection is provided by the *Endangered Species Act* to all threatened and endangered species. Species-specific habitat protection is only afforded to those species for which a habitat regulation has been prepared and passed into law under the *Endangered Species Act*. The Act also has a permitting process where alterations to protected species or their habitats may be considered.

As noted above, species designated as either endangered or threatened under the *Endangered Species Act* are provided individual and habitat protection. Five SAR categorized as endangered or threatened under the *Endangered Species Act* were identified as having the potential to occur in the study area:

- Chimney Swift (*Chaetura pelagica*) [Provincially Threatened];
- Barn Swallow (*Hirundo rustica*) [Provincially Threatened];
- Pale-bellied Frost Lichen (*Physconia subpallida*) [Provincially Endangered];
- Butternut (*Juglans cinerea*) [Provincially Endangered]; and
- Bobolink (*Dolichonyx oryzivorus*) [Provincially Threatened].

While these species were flagged as having the potential to occur in the study area, they were not observed during field investigations. However, it is possible that chimneys located in residential and commercial buildings adjacent to the transmission RoW may provide habitat for Chimney Swift. No suitable structures that could provide Barn Swallow habitat were observed.

Bobolink or their regulated habitat was not observed during field investigations. This species favours large (>5ha) tracts of open meadow with tall grasses or hayfields. The manicured parkland and existing transmission RoW do not provide such habitat.

Both bird species are protected by the *Migratory Birds Convention Act* (MBCA), (1994). Vegetation removal during the migratory bird breeding season from mid-April to late August in nesting zone C3 (ECCC, 2016), will be avoided to the extent feasible. If vegetation removal occurs during the breeding season, a non-intrusive breeding bird nest survey will be undertaken in compliance with the MBCA, and nests found will not be disturbed until the

young have fledged. Where active nests are found, a buffer zone reflective of the species will be established to restrict construction activities.

In Ontario, Pale-bellied Frost Lichen grows on the trunk of Hop Hornbeam (*Ostrya virginiana*). Since no Hop Hornbeam was observed during site investigations, Pale-bellied Frost Lichen is not expected to occur within the study area.

Should other SAR or their habitat be encountered during construction activities, the required works will be assessed to determine the potential for modification of the work activities, schedule, or mitigation measures to avoid potential effects on SAR and their habitat. If avoidance of SAR is not possible, Hydro One will communicate with the MNRF, and if required, an overall benefit permit will be obtained.

Wildlife Habitat

As indicated in section 3.3.5, the presence of significant wildlife habitat was assessed according to the *Significant Wildlife Habitat Technical Guide* (MNR, 2000) and the *Significant Wildlife Habitat Ecoregion 6E Criterion Schedule* (MNRF, 2015) and no significant wildlife habitat was identified within the study area. As described previously, wildlife observed within the area was common to the urban environment. Vegetation communities, including those surveyed during the ELC survey, were all common communities and not associated with significant wildlife habitats. Therefore, there is no potential for the proposed Project to affect significant wildlife habitat.

Most wildlife species that occur in the study area are habituated to human activities and are mobile. Any sensitive resident animals can relocate temporarily to avoid noise and disturbance associated with construction activities and return after construction completion. Construction disturbance will be sufficiently local and transitory that little displacement of wildlife is anticipated.

To minimize the effects of construction on wildlife, Hydro One implements mitigation measures such as:

- zero tolerance of harassment or harm to wildlife by employees or contractors that may be utilizing vegetated areas;
- avoiding site preparation and vegetation removal during the breeding bird season when feasible;
- completing a non-intrusive nest survey (by a qualified avian biologist) if vegetation removal is required during the breeding bird season; and,
- buffering any active nests found, as appropriate to avoid disturbance to bird nests until the young have fledged.

Therefore, the effect of the proposed Project on wildlife will be minimal, and wildlife will not be harassed or harmed during construction.

Significant Areas of Natural and Scientific Interest

There are no ANSIs in the study area; therefore, no effects on significant areas of natural and scientific interest as a result of the proposed Project are anticipated.

7.4 Recreational Resources

As indicated in section 3.4, there are two municipal parks located adjacent to the RoW. Parts of the RoW are used by local residents as informal pathways to access Balena Park and the Ottawa Hospital General Campus.

It is predicted that some of these recreational resources may be temporarily disturbed during the construction phase, due to the establishment of laydown areas, the presence of construction equipment and workers, and construction activities in the RoW.

To reduce effects during construction, Hydro One will plan construction areas away from recreational resources to the extent feasible, and be as unobtrusive as possible. Hydro One is consulting with the Parks and Facilities Planning Services department at the City of Ottawa to try to minimize effects on both Balena Park and Cecil Morrison Park.

The pet memorial in Balena Park is located outside of the proposed construction area and will not be affected by construction. However, the baseball backstop is partly located in the

RoW and directly adjacent to an existing transmission structure that Hydro One will need to upgrade during construction. Hydro One has been in discussions with the Parks and Facilities Planning Services department regarding the removal of the baseball backstop from the RoW.

It is also expected that recreational users may face some temporary and intermittent loss of access to the RoW as an access route due to public safety considerations. However, this loss of access is expected to be short-term in nature, only during the construction phase. Access to Balena Park from the east will not be affected by construction, however, based on feedback received during consultation (see section 4), Hydro One has committed to maintaining an access route to Balena Park from the west and north sides of the park. Crews will provide temporary access route(s) around the edge of the fenced off laydown area for local residents to safely access Balena Park.

In addition, site restoration (e.g., restoration seeding) will be used, where feasible, to minimize long-term visual and environmental impacts to recreation areas.

7.5 Visual and Aesthetic Resources

As described in section 3.5, the proposed project is located within an existing transmission RoW in the urban landscape of Ottawa, which minimizes effects to the landscape. In general, the study area surrounding the RoW consists of a residential area in the south, a commercial area in the centre and a light industrial area in the north. Since the project is located within an existing transmission RoW, it is not anticipated to significantly alter the landscape.

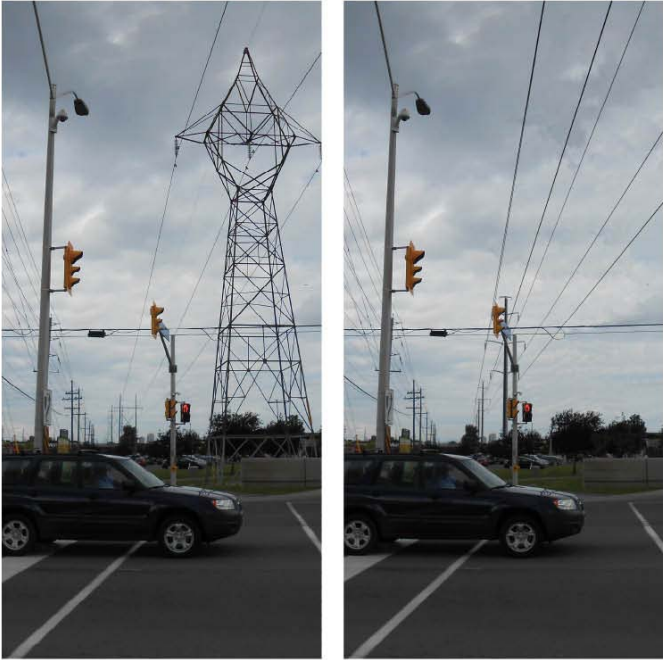
Hydro One is proposing to replace the existing steel lattice and H-frame structures with new steel pole structures that will be taller but have a smaller, slimmer footprint than the structures that exist. Dillon Consulting conducted a visual assessment of the proposed Project to compare the existing and proposed visual effects of the transmission line.

Figures 7-1, 7-2 and 7-3 show viewpoints from the three land uses in the study area (residential, commercial, and light industrial) that were selected to compare the visual effects of the existing and proposed structures in the RoW.

The visual assessment concluded that the proposed Project will not significantly alter the appearance of the landscape since it is a transmission line upgrade. It was determined through the visual assessment that the landscape is not of a visually high value and has already been impacted by the existing transmission RoW and other existing utility infrastructure. Further, the study area is located within a highly urbanized environment where utilities are an essential part of the landscape.



Figure 7-1: Residential Area Simulation (looking north from Balena Park in the Riverview neighbourhood)



Existing

Proposed

Figure 7-2: Commercial Area Simulation (looking north from Industrial Ave. at Trainyards Dr.)



Existing

Proposed

Figure 7-3: Industrial Area Simulation (looking north from Belfast Rd. railway overpass)

During construction, Hydro One will minimize visual impacts on properties adjacent to the proposed Project by:

- maintaining a clean and organized workspace;
- disposing all non-salvageable vegetation by chipping or removal to designated areas;
- cutting stumps flush with the ground, where feasible; and,
- restoring disturbed areas of the RoW post-construction (including grading and grass seeding).

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8 Effects Monitoring

The purpose of effects monitoring is to confirm the extent of the project's environmental effects, by comparing the actual effects with the predicted effects, to verify the effectiveness of implementation mitigation measures, and to determine whether additional measures are warranted. Monitoring also confirms that the commitments, conditions of approval, where applicable, and compliance with other environmental legislation are met. An Environmental Specialist will be assigned to the proposed Project for the duration of construction to monitor construction activities and provide guidance on needed field changes.

As previously noted in section 6, a project-specific Environmental Specification will be prepared following the completion of the Class EA process. The Environmental Specification will:

- summarize legislative requirements;
- summarize environmental commitments set out in the final ESR, and terms and conditions of approval, if any; and
- provide specific directions to construction personnel.

At the end of construction, an as-constructed plan will be prepared to guide ongoing operation and maintenance activities. The plan will document as-constructed conditions, as well as any ongoing monitoring requirements.

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9 Conclusions

Hydro One is conducting a Class EA under the *EA Act* to add an additional 115 kV circuit to the existing RoW between Overbrook TS on Coventry Road and Balena Park in the Riverview neighbourhood. The length of the proposed 115 kV circuit will be just less than two kilometres.

The proposed Project was recommended in the IRRP for the Ottawa area and is required to reinforce the transmission infrastructure in central Ottawa, to ensure a continued safe and reliable supply of electricity to Hydro Ottawa customers. The proposed undertaking is described in section 6 including: the design, construction, maintenance, operation, and project schedule.

The proposed route of the transmission upgrade was determined during the IRRP planning process as the preferred route because of its shorter distance and technical feasibility. As part of the Class EA process, Hydro One considered environmental, technical and cost criteria to determine overhead transmission line as the preferred design alternative over underground cable.

Potential short- and long-term environmental effects were identified for the proposed Project and corresponding mitigation measures were developed to address these effects. No significant adverse residual effects due to construction and operation activities were identified.

Hydro One has conducted a consultation plan to inform government officials and agencies, First Nations and Métis communities, and potentially affected and interested persons about the proposed Project; and to identify and resolve potential concerns. The consultation plan included PICs, which provided face-to-face opportunities for interested parties to discuss with and pose questions to the Hydro One project team and complete comment forms; meetings with key stakeholders, including a municipal coordination meeting; and individual face-to-face meetings with business owners and residents to address specific concerns and considerations.

This draft ESR will be made available to government officials and agencies, First Nation and Métis communities, potentially affected and interested persons for 30 days, from January 12, 2017 to February 10, 2017. Hydro One will respond to and make best efforts to resolve any issues raised by concerned parties during the review period. The comments and issues received during this period will be documented in the final ESR as required by the Class EA process.

The proposed Project will be implemented in full compliance with the requirements of the Class EA process as outlined in this ESR, incorporating input obtained throughout the planning process including the consultation plan. Hydro One will obtain the necessary environmental approvals and permits required for the proposed Project.

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