Ontario Energy Board | Commission de l'énergie de l'Ontario

DECISION AND ORDER

EB-2020-0188

HYDRO ONE NETWORKS INC.

Application for leave to construct electricity transmission line and associated facilities in the City of Toronto

BEFORE: Robert Dodds
Presiding Commissioner

Emad Elsayed
Commissioner

February 25, 2021

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1 INTRODUCTION AND SUMMARY

This is a Decision and Order of the Ontario Energy Board (OEB) on an application filed by Hydro One Networks Inc. (Hydro One) under sections 92, 97 and 21 of the *Ontario Energy Board Act, 1998* (OEB Act) for leave to construct approximately 5 circuit km of 230 kV underground electricity transmission line and associated facilities in the City of Toronto (the Application).

The transmission line will replace and upgrade Hydro One's existing 7.2 circuit km of 115 kV line between Esplanade Transformer Station (TS) and Terauley TS (circuits C5E/C7E). Hydro One has also applied to the OEB for approval of the forms of agreements it offers to affected landowners.

The transmission line and associated facilities proposed by Hydro One is referred to as the Power Downtown Toronto Project (the Project). A map showing the location of the Project is attached as Schedule A to this Decision and Order.

The OEB grants Hydro One's application for leave to construct approximately 5 circuit km of 230 kV underground electricity transmission line and associated facilities in the City of Toronto, the Project, under section 92 of the OEB Act and approves the forms of land use agreements set out in the Application. This approval is based on an examination of the Project need, costs, impact on price of electricity service, impact on reliability and quality of service, and land matters. The leave to construct is subject to the OEB's conditions of approval, attached as Schedule B to this Decision and Order.

2 THE PROCESS

Hydro One filed its Application on October 27, 2020. The OEB issued a Notice of Hearing on November 17, 2020. The Building Operators and Managers Association (BOMA) and Power Workers' Union (PWU) applied for intervenor status.

Procedural Order No. 1 was issued on December 10, 2020. It granted intervenor status to BOMA and PWU, established that BOMA is eligible to apply for an award of costs, and established the Application's procedural schedule, up to and including Hydro One's filing of its reply argument.

The City of Toronto (City) filed a letter of comment with the OEB on December 27, 2020. On January 5, 2021, the City applied for, and was granted, intervenor status.

OEB staff and BOMA filed interrogatories on December 16, 2020 and January 6, 2021, respectively, in accordance with the timeline established through Procedural Order No. 1. The City filed interrogatories on January 8, 2021, in accordance with the timeline established through an OEB letter dated January 5, 2021. The PWU did not file interrogatories.

On January 7, 2021, Hydro One filed a letter with the OEB stating that it intends to descope the mid-shaft at Sherbourne Street and Shuter Street from the construction work requested as part of the Application. Through ongoing detailed design work, Hydro One determined that the mid-shaft described in the Application is no longer necessary.

In response, the OEB issued Procedural Order No. 2 that allowed parties to file additional written interrogatories on the scope change described in Hydro One's January 7, 2021 letter. OEB staff filed interrogatories on January 11, 2021; no other party filed interrogatories.

Hydro One's responses to all interrogatories were received by the OEB on January 18, 2021. Hydro One also submitted an updated Application on January 18, 2021, to remove any references to the previously proposed mid-shaft.

OEB staff, BOMA, PWU and the City filed submissions on February 4, 2021. Hydro One filed its reply submission on February 19, 2021, in accordance with Procedural Order No. 3, which granted Hydro One a one-week delay to accommodate ongoing discussions with the City of Toronto on a land matter.

3 DECISION ON THE ISSUES

Section 92 of the OEB Act requires leave of the OEB for the construction, expansion or reinforcement of electricity transmission lines. Section 96(2) of the Act limits the scope of the OEB's review in an application under section 92 to the interests of consumers with respect to prices and the reliability and quality of electricity service, and, where applicable and in a manner consistent with the policies of the Government of Ontario, the promotion of the use of renewable energy sources.

The Power Downtown Toronto Project does not relate to any renewable energy sources issues, and therefore the OEB has considered the impact of the Project on prices and the reliability and quality of electricity service. As part of its review of a project's impact on prices, the OEB typically considers the need for a project and alternatives to the proposed project.

The OEB's findings on the Project's need, costs, impacts on prices (which includes an analysis of Project need and alternatives), reliability, quality of service, land matters, and conditions of approval are addressed in this chapter.

3.1 Project Need

The 115kV Hydro One circuits C5E/C7E provide electricity supply to the core of downtown Toronto. The circuits have been in service for over 60 years. Hydro One has determined that the circuits are at end-of-life and require replacement. According to Hydro One, end-of-life means that "an asset has a significant risk of failure, or loss of the ability to provide the intended functionality."[1]

The cable jackets and paper insulation were found to be in deteriorated condition which can lead to overheating, oil leaks, and cable failure. Hydro One advised that analysis of the paper insulation on the circuits revealed aging/degradation beyond what is normally seen in comparable Hydro One cables, by approximately 25%. Hydro One added that the oil pressure system has caused "many nuisance oil leaks" and is "obsolete with few spare part suppliers." [2]

Hydro One submitted that the Project is a sustainment project and that it is non-discretionary: it is being undertaken "to address end-of-life assets where replacement is

[1] Exhibit B / Tab 3 / Schedule 1 / p.1
[2] Ibid.

the only feasible alternative."[3] The existing cables were identified as facilities reaching end-of-life in the Toronto Regional Infrastructure Plan (RIP) in 2020.

In support of Hydro One's proposal, OEB staff submitted that the Project addresses a need and that the Project recommended alternative is a reasonable option for addressing that need.

In its reply submission, Hydro One stated that the Project addresses the replacement of end-of-life cables "[…] by installing 230 kV rated cables following the preferred route and installation method identified in the Class Environmental Assessment (EA) for Minor Transmission Facilities."[4] Hydro One added that "the installation of 230kV rated cables is the most cost-effective solution to address temporary overvoltages."[5]

Findings

The OEB finds that Hydro One has demonstrated the need for this Project and that it is prudent for Hydro One to proceed with the Project at this time given the age, sensitive location and deteriorating condition of the existing 115 kV cable. The circuits have been in service for over 60 years, are at end-of-life and require replacement. Failure of these circuits would impair Hydro One's ability to provide electricity supply to the core of downtown Toronto. The Project is a sustainment project and is non-discretionary.

3.2 Project Alternatives

Hydro One considered three replacement alternatives in its Application.

The first alternative would involve replacing the aging cable upon failure instead of beforehand. This option was rejected because it would result in, among other things, potential customer interruptions, reduced operational flexibility and potential oil leaks requiring environmental remediation. Hydro One estimated that this "restoration" option would likely to be more expensive than a "proactive planned replacement" of the deteriorating cables.

The second alternative is Hydro One's preferred undertaking: to replace the existing surface buried 115 kV cables with 230 kV tunnel-installed cables along a different route. Hydro One submitted that this preferred option is better than the other options considered. Hydro One stated that quantified advantages include lower Operations,

[3] Exhibit B / Tab 4 / Schedule 1 / p.2
[4] Hydro One Reply Submission, p. 4
[5] Ibid., pp. 4-5

Maintenance and Administration (OM&A) costs associated with locates, higher voltage withstand capability and related lower likelihood of damage as a result of faults during overvoltage conditions, and ability to re-use the tunnel and shafts with minimal civil work once the replacement cables reach their end of life.

Hydro One stated that qualitative benefits of this alternative include eliminated environmental risks associated with oil-filled cables, reduced reliability and safety risks associated with cables buried near the surface, reduced obsolescent risks associated with oil-filled cables, and ability to use the tunnel to accommodate two additional circuits in the future if practical and feasible.

The third alternative considered is similar to the second alternative, but with 115 kV cables. Hydro One stated that this option would address the reliability risks associated with operating end-of-life cables but would not address risks related to temporary overvoltages under fault conditions.

Hydro One recommended the second alternative, stating that it "provides a long-term cost-effective solution that improves reliability, mitigates customer and general public interruptions and addresses potentially imminent environmental risks."[6]

Hydro One also analyzed other alternatives, including installation methods and routes, as part its Class Environmental Assessment (EA) for the Project, which was initiated in May 2018 and completed in April 2020.

In its submission, BOMA stated that it accepts that "there are no non-wire or distribution system alternatives to replacing the aged cables to maintain reliability" and that Hydro One's proposed solution will "[…] be able to accommodate high temporary overvoltages during fault conditions, thus reducing the likelihood of damage requiring repair and improving long-term reliability."[7]

PWU submitted that it agrees with Hydro One that its proposed alternative "[…] provides a long-term cost-effective solution that improves reliability, mitigates customer and general public interruptions, and addresses potentially imminent environmental risks."[8]

[6] Exhibit B / Tab 5 / Schedule 1 / p.3
[7] BOMA Submission, pp. 3-4
[8] PWU Submission, p. 3

Findings

The OEB finds that Hydro One has selected the most prudent of three alternatives that were considered which is to replace the existing surface buried 115 kV cables with 230 kV tunnel-installed cables along a different route (the second alternative) at an estimated total capital cost of $107.8 million.

The OEB further finds that the incremental cost of $500,000 for the use of 230 kV cables versus 115 kV cables in the second alternative is a prudent incremental investment for long-term asset operation given the advantages of higher voltage withstand capability and related lower likelihood of damage as a result of faults during overvoltage conditions.

3.3 Project Costs

The estimated capital cost of the Project is $107.2 million, including overheads and capitalized interest but not including removal costs of $0.6 million. The total Project cost, including removal costs, is $107.8 million.

The Project cost estimate includes a contingency estimate of $8.266 million. The contingency estimate was developed through a risk workshop where the Project team and engineering consultants identified risks, assigned probability and impact ratings and considered past lessons learned and experiences from other tunnel projects in the Toronto area.

Hydro One stated that the key project risks considered in the contingency amount include risks related to permits and approvals from third party stakeholders, potential outage scheduling constraints which may result in schedule delay and additional costs, and construction risks related to building a tunnel under the city (such as rock and soil contamination, changes in ground conditions that were not anticipated and damage to adjacent utilities).

Contingencies that have not been included because of Hydro One's assessment of their low likelihood are labour disputes, safety or environment incidents and significant changes in the cost of materials since the estimates were prepared.

Hydro One submitted that the confidence of its Project cost estimate was developed consistent with American Association of Cost Engineering (AACE) standards and that the Project is characterized by an AACE Class 3 (-20% / +30%) level of confidence. Hydro One stated that its AACE Class 3 estimate was produced in partnership with the knowledge and expertise of its engineering consultants, including a tunnel consultant

experienced with tunneling in the Toronto area and a cable consultant experienced with XLPE cable installations.

Hydro One provided cost information for two comparator transmission line projects in its Application. Each involved the installation of 230 kV XLPE cable in newly built 3-meter diameter tunnels below the City of Toronto. Through interrogatory response, Hydro One outlined lessons learned during each comparator project and how they will be leveraged to the benefit of the Power Downtown Toronto Project.

The costs of Hydro One's circuits C5E and C7E between Terauley TS and Esplanade TS are now recovered through connection pool rates. Hydro One stated that the costs to replace the circuits will also be recovered through line connection rates, and that no customer contributions will be required because the Power Downtown Toronto Project is not driven by a load increase or customer load applications.

Findings

The OEB finds the estimated capital cost of the project at $107.8 million, which includes overheads, capitalized interest and costs of $0.6 million for removal of the existing cable, to be reasonable.

The finding of reasonableness is based on Hydro One using American Association of Cost Engineering (AACE) standards for cost estimates, use of two comparator transmission line projects and the utilization of the knowledge and expertise of its engineering consultants, including a tunnel consultant experienced with tunneling in the Toronto area and a cable consultant experienced with XLPE cable installations (Project team).

The OEB finds the contingency estimate of $8.266 million to be acceptable since it was developed through its Project team and Hydro One's recognition of the key project risks but notes that Hydro One has excluded low likelihood risks, based on experience.

3.4 Impact on Price of Electricity Service

Hydro One estimates that the Project will increase the currently approved connection pool rate by 3.09%, from $0.97 kW/month to $1.00 kW/month.

Hydro One estimated the Project will increase the typical monthly residential customer bill by $0.07 or 0.04%, assuming a consumption of 1,000 kWh per month.[9] The bill

[9] Exhibit B / Tab 9 / Schedule 1 / p. 3

impact on a typical residential customer consuming 720 kWh per month would be less: an increase of $0.05 or 0.03%.[10]

PWU submitted that the Project's monthly bill impact on customers is "immaterial".[11] OEB staff did not raise concern with respect to the Project costs.

In its reply submission, Hydro One stated that the Project "is most definitely in the public interest", given, among other things, its "immaterial customer bill impact.[12]

Findings

The OEB finds the estimated typical monthly residential customer bill impact of $0.07 or 0.04% to be reasonable and acceptable.

3.5 Impact on Reliability and Quality of Service

Hydro One filed the Final Expedited System Impact Assessment (SIA) prepared by the Independent Electricity System Operator (IESO) and the Final Customer Impact Assessment (CIA) prepared by Hydro One.

The SIA concluded that the Project is expected to have no material adverse impact on the reliability of the integrated power system, provided that the requirements in the IESO report are implemented. Hydro One confirmed that it will implement the requirements noted by the IESO in the SIA.

The CIA concluded that the Project will increase supply reliability for connected customers; that power flows, area station voltages and short circuit levels are not expected to be materially impacted; and that there will be no adverse impact on Hydro One transmission customers.

In its submission, PWU agreed with Hydro One that the Project will, among other things, improve reliability and mitigate customer and general public interruptions. BOMA stated that it accepts that the Project will reduce the likelihood of damage requiring repair and improve long-term reliability. OEB staff submitted that it does not have any concerns about the reliability and quality of service associated with the Project, considering Hydro One's evidence, interrogatory responses, and the conclusions of the SIA and CIA.

[10] Exhibit I / Tab 1 / Schedule 17
[11] PWU Submission, p. 3
[12] Hydro One Reply Submission, p. 5

Hydro One reiterated in its reply submission that the Project will increase supply reliability for customers.

Findings

The OEB concurs with the findings of the System Impact Assessment (SIA) and the Customer Impact Assessment (CIA) that the Project is expected to have no material adverse impact on the reliability of the integrated power system and will increase supply reliability for connected customers.

3.6 Land Agreements under section 97 of the OEB Act

Hydro One stated that it will rely primarily on existing land and legislated occupation rights to construct, operate and maintain the proposed new transmission facilities. Hydro One stated that it does not expect to require any early access agreements.

Where required, and if necessary, Hydro One proposed to employ temporary land rights agreements that have been previously approved by the OEB.

Hydro One will seek temporary rights for a storage/staging area at 75 Elizabeth Street, a City of Toronto property adjacent to Terauley TS. The City of Toronto expressed concern over Hydro One's plan to use 75 Elizabeth Street during construction because, according to the City, the property has been identified for future "redevelopment and use for public purposes according to a timeline which will conflict with the timeline for Hydro One's proposed use of the City Property as currently proposed."[13] In response to a City of Toronto Interrogatory, Hydro One confirmed that it is "willing to work with the City to promote the progress of both projects." [14]

OEB staff submitted that it has no issues or concerns with Hydro One's proposed forms of agreements and that they "are consistent with the agreements approved previously by the OEB as part of Hydro One's Barrie Area Transmission Upgrade Project."[15]

The City of Toronto submitted that Hydro One should commit to providing the City with information "that demonstrates that the Terauley TS property boundaries are insufficient for the construction requirements for the exit shaft at Terauley TS and that that there are no other reasonably adjacent properties that could be used for a temporary staging

[13] Exhibit I / Tab 3 / Schedule 3 and City of Toronto Submission, p. 3
[14] Exhibit I / Tab 3 / Schedule 3
[15] OEB staff Submission, p. 12

area." Alternatively, the City submitted that Hydro One be required to provide such information as a condition of the OEB's leave to construct approval.[16]

Hydro One submitted that it "has no concerns with the condition requested by the City" and that "in accepting the condition, Hydro One believes that the technical details the City sought have now been provided through a presentation provided to the City" at a meeting between Hydro One and the City on February 16, 2021.[17] Hydro One stated that the presentation, which Hydro One included as an attachment to its reply submission, outlined the "limitations of the Terauley TS property boundaries, the need for access to the property adjacent to Terauley TS, and why some other properties were deemed unsuitable to complete the Project."[18]

Hydro One concluded in its reply submission that the property at 75 Elizabeth Street is necessary "to provide sufficient space to utilize a drill rig to construct the temporary shoring around the shaft […] and provide sufficient space for a crane (and swing radius within the site) to facilitate the excavation and concrete forming activities expected to build the shaft". Hydro One underscored that "75 Elizabeth Street is the only site that can accommodate this work."[19] Hydro One submitted that it "believes that both parties will work together", that "Hydro One does not anticipate any issues to arise as far as land matters are concerned", and that "Hydro One will continue to engage with the City should additional information be required to reach an agreement."[20]

Findings

The OEB finds that Hydro One's proposed forms of land use agreements are consistent with the agreements approved previously by the OEB and are approved for the Project.

3.7 Conditions of Approval

Under subsection 23(1) of the OEB Act, the OEB may, in making an order, impose such conditions as it considers proper.

OEB staff supported Hydro One's proposal and submitted that leave to construct the Project should be granted subject to five conditions of approval proposed by OEB staff

[16] City of Toronto Submission, p. 3
[17] Hydro One Reply Submission, p. 2
[18] Ibid.
[19] Ibid., p. 3
[20] Ibid., pp. 3-4

in an interrogatory.[21] OEB staff noted that its proposed conditions are based on the standard set of conditions the OEB has previously approved in leave to construct applications. Hydro One stated that it does not have any concerns with OEB staff's proposed conditions of approval.

In addition to having no concerns with the conditions proposed by OEB staff, Hydro One stated in its reply submission that it accepts the condition requested by the City that it be furnished with information regarding 75 Elizabeth Street or that the information be made a condition of the OEB's leave to construct. However, Hydro One submitted it "believes that this condition has been satisfied vis a vis the presentation provided" at the February 16, 2021 meeting between the City and Hydro One and attached to Hydro One's reply submission in this proceeding, and is therefore not necessary.[22]

Findings

The OEB approves the leave to construct the Project with the five conditions proposed by OEB staff and supported by Hydro One as appended in Schedule B.

Regarding the information requested by the City of Toronto about the use of the 75 Elizabeth Street property, the OEB finds that this information was provided by Hydro One at the February 16, 2021 meeting between Hydro One and the City of Toronto, and that there is no need to add this as a condition of this leave to construct approval.

Hydro One is encouraged to work closely with the City of Toronto throughout the Project to resolve any issues that may arise.

[21] Exhibit I / Tab 1 / Schedule 22
[22] Hydro One Reply Submission, pp. 3-4

4 ORDER

THE ONTARIO ENERGY BOARD ORDERS THAT:

1. Hydro One Networks Inc. is granted leave, pursuant to section 92 of the OEB Act, to construct the Power Downtown Toronto Project as described in the Application.

2. Leave to construct is subject to Hydro One Networks Inc. complying with the Conditions of Approval set forth in Schedule B.

3. The OEB approves the proposed forms of agreements that Hydro One Networks Inc. has offered or will offer to each owner of land affected by the Power Downtown Toronto Project.

4. Eligible intervenors shall file with the OEB and forward to Hydro One their respective cost claims in accordance with the OEB's Practice Direction on Cost Awards on or before **March 4, 2021**.

5. Hydro One shall file with the OEB and forward to intervenors any objections to the claimed costs of the intervenors on or before **March 15, 2021**.

6. If Hydro One objects to any intervenor costs, those intervenors shall file with the OEB and forward to Hydro One their responses, if any, to the objections to cost claims on or before **March 22, 2021**.

7. Hydro One Networks Inc. shall pay the OEB's costs of, and incidental to, this proceeding upon receipt of the OEB's invoice.

All materials filed with the OEB must quote the file number, **EB-2020-0188**, and be submitted in a searchable/unrestricted PDF format with a digital signature through the OEB's web portal at https://p-pes.ontarioenergyboard.ca/PivotalUX/. Filings must clearly state the sender's name, postal address, telephone number, fax number and e-mail address. Parties must use the document naming conventions and document submission standards outlined in the Regulatory Electronic Submission System (RESS) Document Guidelines found at www.oeb.ca/industry. Parties are encouraged to use RESS; however, parties who have not yet set up an account, may email their documents to registrar@oeb.ca.

All communications should be directed to the attention of the Registrar and be received no later than 4:45 p.m. on the required date.

Email: registrar@oeb.ca
Tel: 1-888-632-6273 (Toll free)
Fax: 416-440-7656

DATED at Toronto February 25, 2021

ONTARIO ENERGY BOARD

Original Signed By

Christine E. Long
Registrar

SCHEDULE A

DECISION AND ORDER

HYDRO ONE NETWORKS INC.

EB-2020-0188

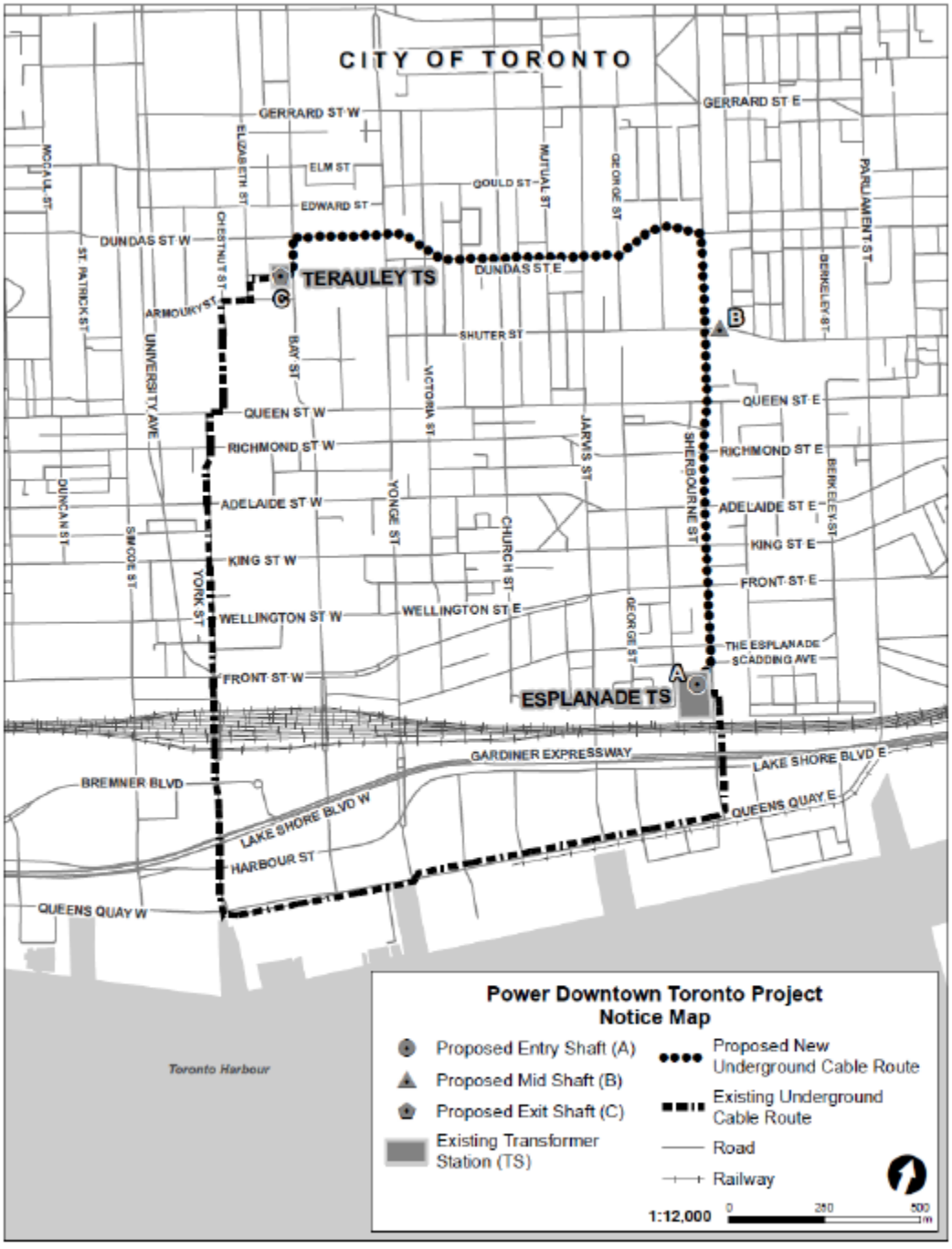
FEBRUARY 25, 2021

SCHEDULE A – POWER DOWNTOWN TORONTO PROJECT MAP

APPLICATION UNDER SECTION 92 OF THE OEB ACT

HYDRO ONE NETWORKS INC.

EB-2020-0188



SCHEDULE B

DECISION AND ORDER

HYDRO ONE NETWORKS INC.

EB-2020-0188

FEBRUARY 25, 2021

SCHEDULE B – CONDITIONS OF APPROVAL

APPLICATION UNDER SECTION 92 OF THE OEB ACT

HYDRO ONE NETWORKS INC.

EB-2020-0188

1. Hydro One shall fulfill any requirements of the SIA and the CIA, and shall obtain all necessary approvals, permits, licences, certificates, agreements and rights required to construct, operate and maintain the Project.

2. Unless otherwise ordered by the OEB, authorization for leave to construct shall terminate 12 months from the date of the Decision and Order, unless construction has commenced prior to that date.

3. Hydro One shall advise the OEB of any proposed material change in the Project, including but not limited to changes in: the proposed route, construction schedule, necessary environmental assessment approvals, and all other approvals, permits, licences, certificates and rights required to construct the Project.

4. Hydro One shall submit to the OEB written confirmation of the completion of the Project construction. This written confirmation shall be provided within one month of the completion of construction.

5. Hydro One shall designate one of their employees as project manager who will be the point of contact for these conditions, and shall provide the employee's name and contact information to the OEB and to all affected landowners, and shall clearly post the project manager's contact information in a prominent place at the construction site.