

## APPENDIX 2.0-C

### *Neighbours on the Line Route Evaluation*



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# 1.0 Introduction

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The Neighbours on the Line (NOTL), a community group made up of members of the Kaministiquia community, expressed concerns about the preliminary preferred route identified in January 2023 by Hydro One Networks Inc. (Hydro One) for the Waasigan Transmission Line (the Project or undertaking). NOTL requested that Hydro One evaluate a new alternative route proposed by the group for the Phase 1 (Shuniah to Atikokan) portion of the Project. The purpose of this memo is to describe the evaluation completed and provide the findings of that analysis.

## 1.1 Context

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Hydro One is completing a comprehensive environmental assessment (EA) for the Project. The Project is a proposed new double-circuit 230 kilovolt (kV) transmission line between the Lakehead Transformer Station (TS) in the Municipality of Shuniah and the Mackenzie TS in the Town of Atikokan, and a new single-circuit 230 kV transmission line between the Mackenzie TS and the Dryden TS in the City of Dryden. The length of the two transmission line segments will be approximately 360 kilometres (km) in total, of which 190 km are within the portion from Shuniah to Atikokan (Phase 1).

The EA is being prepared in accordance with the Amended Terms of Reference (ToR) (Hydro One 2021), which was approved by the Minister of the Environment, Conservation and Parks in February 2022. As part of the ToR development, alternative routes for the transmission line were identified for evaluation in the EA process (Hydro One 2021). The EA process to date has consisted of a systematic evaluation of potential environmental effects of alternatives and weighing the advantages and disadvantages of proceeding with the proposed undertaking. Potential effects to the natural and socio-economic environment that could result from the construction, operation, and maintenance of the Project have been identified. In doing so, Hydro One attempted to prevent or minimize adverse environmental effects through the application of avoidance and mitigation measures. At the same time, Hydro One considered the benefits of the undertaking in the EA process.

As part of the EA process, Hydro One completed an evaluation of the alternative routes from the ToR to identify a preliminary preferred route for the Project. Additional details on this process are provided in Appendix 2.0-A. The preliminary preferred route was shared with Indigenous communities, government agencies and officials, interested persons and members of the public in January 2023 for review and comment. Members of the Kaministiquia community expressed concerns with the identified preliminary preferred route and requested that Hydro One evaluate a route proposed by their community. Hydro One committed to evaluating this route using the same criteria that it evaluated the other alternative routes. The purpose of this memo is to describe that evaluation and provide the findings to the Kaministiquia community.



## 2.0 Project Overview

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The Independent Electricity System Operator's (IESO's) assessment of northwestern Ontario's electricity forecast identified that additional capacity will be required in the region, and the Project is critical to meet Ontario's future electricity delivery needs, and in particular, to support growth and maintain a reliable electricity supply to areas west of Thunder Bay and north of Dryden (IESO, 2018). Additional information on the need for the Project is included in Section 1.0 of the Final EA report.

The Project includes the following main components:

- New overhead Alternating Current (AC) 230 kV transmission lines and associated components that will be located within a typical 46 m wide transmission line right-of-way (ROW), approximately 360 km in length.
- Modifications to existing infrastructure at the Lakehead TS, Mackenzie TS and Dryden TS, and separation of the existing 230 kV transmission lines (circuits F25A and D26A) out of the Mackenzie TS in Atikokan.
- Development of temporary supportive infrastructure associated with construction including, but not limited to, temporary access roads, temporary workspaces (including helicopter staging areas), construction camps, laydown areas, and waterbody crossings.
- Development of aggregate pits to support the Project.
- Development of associated permanent infrastructure, such as access roads and waterbody crossings, to support the operation and maintenance phase of the Project.



## 3.0 Methodology

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The ToR outlined the alternative routes to be assessed as part of the EA. Section 6.3 of the ToR outlined the evaluation process to be completed for the assessment of the alternative routes identified in the ToR and for the selection of a preferred route. Section 6.3.3 notes that local refinements to the Project footprint will be considered during the EA process. Entirely new alternative routes are not required to be considered during the EA stage because the identification of alternative routes was completed, consulted on, and approved during the multi-year ToR stage. However, Hydro One understands the concerns from the NOTL, and has therefore agreed to consider the NOTL route and complete a comparative analysis with the preliminary preferred route.

### 3.1 Neighbours on the Line Route Development and Overview

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On February 22, 2023, NOTL provided an alternative route concept, approximately 243 km in length, that it believed was superior to the preliminary preferred route shared by Hydro One in January 2023. The NOTL route covers the Phase 1 portion between Shuniah and Atikokan. Hydro One met with members of NOTL on March 15, 2023 to discuss the NOTL route concept, and understand how the route was developed and what constraints were considered. NOTL noted it considered the following factors during the development of the route (Hydro One 2023a):

- Avoid impacts to residences, staying 500 m away from houses;
- Consideration of access and keeping as close to roads as possible;
- Maximize use of Crown land as much as possible;
- Maximize upland sites and avoid swamps and low-lying areas;
- Make the transmission line as straight as possible;
- Limit water crossings to 200 to 400 m (most are 100 m or less);
- Remain 200 to 300 m from pipelines; and
- Make efforts to avoid spawning areas, provincial parks, conservation reserves and areas, private property, tourist resorts and cottage areas.



NOTL also identified the criteria that was most important in the development of its route and provided the following ranking (Hydro One 2023a):

- 1) Avoiding homes
- 2) Avoiding private land and maximizing routing on Crown land
- 3) Maximizing existing access

## 3.2 Route Optimization and Constructability Improvements

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Once Hydro One received the route from NOTL, Hydro One's engineering contractor completed an optimization exercise to identify constructability improvements for the NOTL route. The types of changes implemented include:

- Adjusting the ROW to align with the preferred ingress into the Lakehead TS and Mackenzie TS;
- Adjusting the ROW so that the ROW would immediately parallel existing linear infrastructure (where intended);
- Adjusting the ROW to avoid large waterbody crossings; and
- Adjust the ROW to reduce the number of corners.

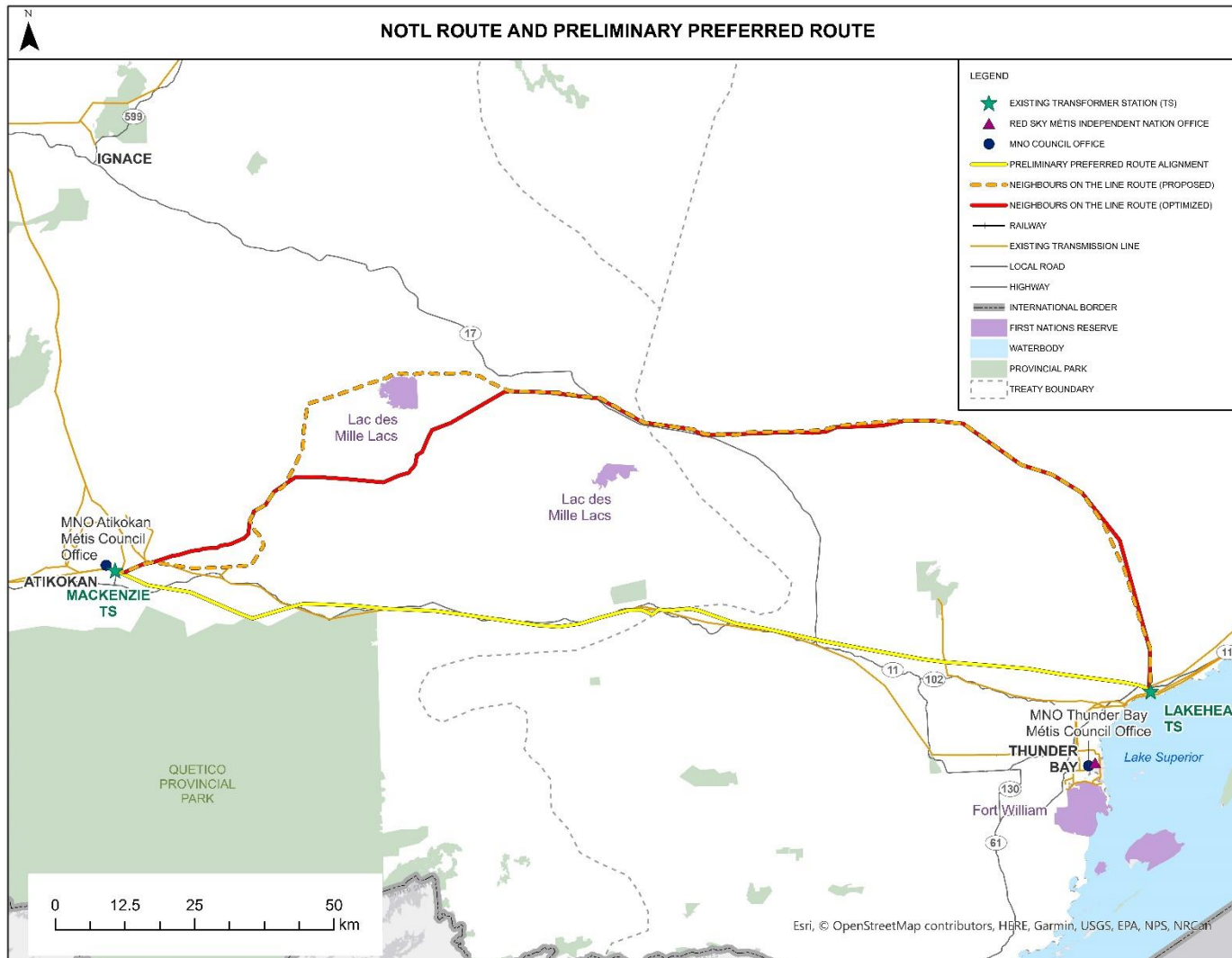
On March 15, 2023, Hydro One met with NOTL to provide an update on the work being completed to evaluate the NOTL route. In this meeting, NOTL outlined proposed changes to its original route including:

- The original alignment deviated east around Sapawe. Based on engagement with local landowners, the route was shifted to run north of Sapawe Lake, which reduced the length of the NOTL route by 6 km.
- The original alignment was located approximately 140 m north of the Lac des Mille Lacs First Nation reserve. NOTL identified an alternative south of the reserve that would reduce the length of the NOTL route by 6 km. NOTL indicated that either route would be acceptable. For the purposes of this analysis, the route south of the Lac des Mille Lacs First Nation reserve was considered.

Hydro One's engineering contractor reviewed the two changes listed above to identify potential optimizations and constructability changes. Hydro One provided an overview of the optimized route, including the two route changes provided by NOTL, in a meeting on March 21, 2023. NOTL indicated it did not have concerns with the optimized NOTL route (Hydro One 2023b).

These adjustments reduced the overall length of the NOTL route from 243 km to 231 km. The original NOTL route and optimized NOTL route are shown on Figure 3.2-1.





**Figure 3.2-1: NOTL Route and Preliminary Preferred Route**



### 3.3 Route Evaluation Methodology

Section 6.3 of the ToR outlined the evaluation process to be completed to assess the alternative routes identified in the ToR and for the selection of a preferred route. This included the identification of four main criteria categories for the assessment including: natural environment, socio-economic environment, Indigenous community culture, values and land use and technical and cost. Criteria were developed for each of these criteria categories. The criteria categories and their respective criteria that were used for the identification of the preliminary preferred route are provided in Table 3.3-1. These same criteria categories and their respective criteria were used to assess the NOTL route. All four criteria categories were given equal weight, which is consistent with the approach used in the alternative route evaluation for the selection of the preliminary preferred route as well as consistent across Hydro One projects.

Criteria weights were used to develop bar charts to visually compare the two routes for each criteria category and for an overall comparison. The criteria weights used for the NOTL evaluation were the same weights used to identify the preliminary preferred route. The land use criterion, which includes effects to residences, was given the highest weight in the socio-economic criteria category based on feedback received from NOTL and the importance of minimizing effects to residences.

**Table 3.3-1: Project Criteria Categories and Criteria**

Criteria Category	Criteria
Natural Environment	<ul style="list-style-type: none"> <li>● Physiography, Geology, Surficial Geology and Soils</li> <li>● Provincial Parks, Conservation Reserves and Areas of Natural and Scientific Interest</li> <li>● Surface Water</li> <li>● Groundwater</li> <li>● Vegetation and Wetlands</li> <li>● Species at Risk                             <ul style="list-style-type: none"> <li>• Little Brown Myotis and Northern Myotis (<i>Myotis lucifugus</i>);</li> <li>• Eastern whip-poor-will (<i>Antrostomus vociferus</i>); Barn Swallow (<i>Hirundo rustica</i>); Bank Swallow (<i>Riparia riparia</i>); Bobolink (<i>Dolichonyx oryzivorus</i>); Chimney swift (<i>Chaetura pelagica</i>); American white pelican (<i>Pelecanus erythrorhynchos</i>); Least Bittern (<i>Ixobrychus exilis</i>)</li> <li>• American Badger (<i>Taxidea taxus</i>); Gray Fox (<i>Urocyon cinereoargenteus</i>)</li> <li>• Lake sturgeon (<i>Acipenser fulvescens</i>) (Great Lakes – Upper St. Lawrence population); Lake sturgeon (Saskatchewan – Nelson River population); American eel (<i>Anguilla rostrata</i>)</li> </ul> </li> <li>● Wildlife and Wildlife Habitat</li> <li>● Fish and Fish Habitat</li> </ul>





Criteria Category	Criteria
Socio-Economic Environment	<ul style="list-style-type: none"> <li>● Land Use (including residences)</li> <li>● Infrastructure and Community Services</li> <li>● Recreation and Tourism</li> <li>● Visual Landscape</li> <li>● Archaeology</li> <li>● Built Heritage Resources and Cultural Heritage Landscapes</li> </ul>
Technical and Cost	<ul style="list-style-type: none"> <li>● Project Size</li> <li>● Existing Community Infrastructure</li> <li>● Constructability</li> <li>● Existing Right-of-Ways</li> <li>● Cost</li> </ul>
Indigenous Culture, Values and Land Use	<ul style="list-style-type: none"> <li>● Indigenous Community Rights/Interests and Use of Land and Resources for Traditional Purposes</li> <li>● Cultural and Spiritual Areas and Sites</li> <li>● Other Applicable Criteria/Indicators Identified by Communities</li> </ul>



## 4.0 Results

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The results of the NOTL route evaluation, which are based on the criteria categories and criteria listed in Table 3.3-1, are provided in Table 4.0-1. The criteria weights used, which are the same as those used in the alternative route evaluation (Appendix 2.0-A), are also provided in Table 4.0-1.



**Table 4.0-1: Comparative Evaluation – NOTL and Preliminary Preferred Route**

Criteria	Criteria Weight	Results	NOTL	Preliminary Preferred Route
<b>Natural Environment</b>				
Physiography, Geology, Surficial Geology and Soils	5	<ul style="list-style-type: none"> <li>NOTL route crosses a smaller area of productive soils (e.g., agricultural areas).</li> </ul>	35 ha	108 ha
Provincial Parks, Conservation Reserves and Areas of Natural and Scientific Interest	14	<ul style="list-style-type: none"> <li>NOTL route does not cross protected areas, while the preliminary preferred route crosses a portion of one Area of Natural and Scientific Interest and is within 500 m of one Provincial Park.</li> </ul>	0 ha	0.7 ha crossed 96 ha within 500 m
Surface Water <sup>(a)</sup>	11	<ul style="list-style-type: none"> <li>NOTL route requires additional off-ROW access roads that is expected to result in more disturbance to surface water features.</li> <li>NOTL route crosses substantially more water crossings(b), which is based on:               <ul style="list-style-type: none"> <li>NOTL crosses substantially more unmapped water crossings; and</li> <li>NOTL route crosses less lakes/ponds, but crosses substantially more watercourses.</li> </ul> </li> </ul>	146 watercourses 30 lakes/ponds 331 unmapped waterbodies	82 watercourses 55 lakes/ponds 32 unmapped waterbodies 19 undefined channels
Groundwater	8	<ul style="list-style-type: none"> <li>NOTL route is not in proximity to water wells, while the preliminary preferred route is in proximity to a few wells.</li> <li>NOTL route crosses a larger area of high potential aquifer deposits (49% increase in area).</li> </ul>	Routes considered equal	
Vegetation and Wetlands	12	<ul style="list-style-type: none"> <li>NOTL route crosses substantially more vegetation-related candidate Significant Wildlife Habitat (58% increase in area).</li> <li>NOTL route crosses a substantially greater area of wetlands (78% increase in area).</li> </ul>	22,759 ha (SWH) 10,669 ha (wetlands)	14,408 ha (SWH) 6,001 ha (wetlands)
Little Brown Myotis and Northern Myotis (bats)	10	<ul style="list-style-type: none"> <li>NOTL route crosses a greater area of candidate/known bat maternity roost habitat.</li> </ul>	17,224 ha	15,453 ha
Eastern whip-poor-will	1	<ul style="list-style-type: none"> <li>NOTL route crosses a smaller area of candidate or known eastern whip-poor-will habitat (open/sparsely forested habitats).</li> </ul>	8,439 ha	9,660 ha
Barn swallow	1	<ul style="list-style-type: none"> <li>Both routes cross a similar area of candidate or known barn swallow habitat.</li> </ul>	Routes considered equal	
Bank swallow	1	<ul style="list-style-type: none"> <li>NOTL route crosses a smaller area of candidate or known bank swallow habitat (licensed aggregate pits have potential to support bank swallow breeding colonies).</li> </ul>	14 ha	397 ha
Bobolink	1	<ul style="list-style-type: none"> <li>NOTL route does not cross any bobolink candidate or known habitat, while the preliminary preferred route does (agricultural fields and grasslands habitat).</li> </ul>	0 ha	123 ha
Chimney swift	1	<ul style="list-style-type: none"> <li>NOTL route crosses a smaller area of candidate or known chimney swift habitat.</li> </ul>	330 ha	405 ha
American white pelican	1	<ul style="list-style-type: none"> <li>Both routes do not cross islands within large waterbodies that would serve as potential habitat for American white pelican nesting.</li> </ul>	Routes considered equal	
Least Bittern	1	<ul style="list-style-type: none"> <li>Both routes cross a similar amount of candidate or known least bittern habitat (large wetlands).</li> </ul>	Routes considered equal	
American Badger	1	<ul style="list-style-type: none"> <li>Both routes are removed from the current known distribution of American badger in northwestern Ontario.</li> </ul>	Routes considered equal	
Gray Fox	2	<ul style="list-style-type: none"> <li>NOTL route crosses a smaller area of known gray fox home ranges.</li> </ul>	0 ha	535 ha
Lake sturgeon (Great Lakes – Upper St. Lawrence population)	2	<ul style="list-style-type: none"> <li>Both routes do not cross locations with known occurrences for this species. Although the native range for this species includes both routes.</li> </ul>	Routes considered equal	
Lake sturgeon (Saskatchewan -Nelson River population)	2	<ul style="list-style-type: none"> <li>NOTL route does not cross any locations with known occurrence records. Preliminary preferred route crosses four water crossings with a hydrological connection within 5 km to locations with known occurrences for this species. The greenfield nature of the NOTL route means less work has been completed historically in this area which is what generates historical occurrence records. Therefore, no occurrence records near the NOTL route does not mean the species is not present. The native range for this species includes both routes. Therefore, the routes are considered equal.</li> </ul>	Routes considered equal	

Criteria	Criteria Weight	Results	NOTL	Preliminary Preferred Route
American eel	2	<ul style="list-style-type: none"> <li>Both routes do not cross locations with known occurrences for this species. Although, both routes are within the introduced range for the species.</li> </ul>	Routes considered equal	
Wildlife and Wildlife Habitat	12	<ul style="list-style-type: none"> <li>NOTL route is only 10% immediately parallel to or crosses existing linear infrastructure compared to the preliminary preferred route (98%) due to less existing and straight linear corridors available near the NOTL route. NOTL route will create separate linear corridors and contribute negatively to wildlife habitat fragmentation.</li> <li>NOTL route crosses greater area of wildlife-related candidate Significant Wildlife Habitat (41% increase).</li> <li>NOTL route requires additional off-ROW access and pull sites at heavy angle structures that result in more disturbance to wildlife habitat.</li> </ul>	10% immediately parallel or crossing 72,337 ha (SWH)	98% immediately parallel or crossing 51,415 ha (SWH)
Fish and Fish Habitat <sup>(a)</sup>	12	<ul style="list-style-type: none"> <li>NOTL route is only 10% immediately parallel to or crosses existing linear infrastructure compared to the preliminary preferred route (98%) due to less existing and straight linear corridors available near the NOTL route. NOTL route will create separate linear corridors and contribute negatively to fisheries habitat fragmentation.</li> <li>NOTL route requires additional off-ROW access roads that is expected to result in more disturbance to fish habitat.</li> <li>NOTL route crosses substantially more water crossings<sup>(b)</sup>, which is based on:                             <ul style="list-style-type: none"> <li>NOTL crosses substantially more unmapped water crossings; and</li> <li>NOTL route crosses less lakes/ponds, but crosses substantially more watercourses.</li> </ul> </li> </ul>	146 watercourses 30 lakes/ponds 331 unmapped waterbodies	82 watercourses 55 lakes/ponds 32 unmapped waterbodies 19 undefined channels
<b>Socio-economic Environment</b>				
Land Use	25	<ul style="list-style-type: none"> <li>NOTL route crosses substantially less private land and is in proximity to substantially fewer potential residences, including permanent and seasonal, and major outbuildings.</li> </ul>	0 crossed 17 within 500 m	9 crossed 296 within 500 m
Infrastructure and Community Services	16	<ul style="list-style-type: none"> <li>No significant difference between routes with respect to existing infrastructure and community services (e.g., proximity to active waste management facilities).</li> </ul>	Routes considered equal	
Recreation and Tourism	20	<ul style="list-style-type: none"> <li>NOTL route is within 500 m of fewer cabins and cottages.</li> <li>NOTL route crosses a smaller area of trapline.</li> </ul>	1 cabin/cottage 36% of footprint overlaps trapline areas	10 cabins/cottages 90% of footprint overlaps trapline areas
Visual Landscape (Aesthetics)	21	<ul style="list-style-type: none"> <li>NOTL route is within 1 km of substantially fewer mapped/known public scenic viewpoints.</li> </ul>	541	1,010
Archaeology	10	<ul style="list-style-type: none"> <li>NOTL route crosses substantially more area with archaeological potential (88% increase).</li> </ul>	314 ha	167 ha
Built Heritage Resources and Cultural Heritage Landscapes	8	<ul style="list-style-type: none"> <li>PPR crosses one known cultural heritage landscape. NOTL does not cross any known resources; however, field work has not been completed to identify potential resources and Indigenous communities have not been engaged to provide Indigenous cultural heritage resources. Therefore, this criterion is considered equal across the routes.</li> </ul>	Routes considered equal	
<b>Technical</b>				
Project Size	16	<ul style="list-style-type: none"> <li>NOTL ROW is 41 km longer than the PPR (22% longer).</li> <li>Greenfield nature of the NOTL route requires more off-ROW access.</li> <li>NOTL route requires more corners, which require more temporary pull sites.</li> </ul>	231 km	190 km
Existing Community Infrastructure	17	<ul style="list-style-type: none"> <li>NOTL route crosses fewer rail lines and roads, but crosses more pipelines.</li> </ul>	Routes considered equal	

Criteria	Criteria Weight	Results	NOTL	Preliminary Preferred Route
Constructability	20	<ul style="list-style-type: none"> <li>NOTL route has less existing access within 400 m.</li> <li>NOTL route requires more corners that require more costly deflection structures.</li> <li>NOTL route crosses a greater area of wetlands.</li> <li>NOTL route has a section that parallels an existing pipeline that will require additional cathodic protection measures.</li> <li>NOTL route requires substantially more water crossings.</li> </ul>	24% of ROW with existing access 33 corners greater than 15°	45% of ROW with existing access 12 corners greater than 15°
Existing Right-of-Ways	25	<ul style="list-style-type: none"> <li>Only 17% of NOTL route has existing roads or transmission right-of-ways within 200 m compared to the preliminary preferred route (99%).</li> </ul>	17%	99%
Cost	22	<ul style="list-style-type: none"> <li>Construction cost for NOTL route is approximately 30 to 40% higher.</li> <li>Operations cost for NOTL route is approximately 22% higher.</li> </ul>	30-40% increase in construction cost 22% increase in operations cost	No increase in cost
<b>Indigenous Values</b>				
Indigenous Community Rights/Interests and Use of Land and Resources for Traditional Purposes	40	<ul style="list-style-type: none"> <li>NOTL route crosses a greater area of land where Indigenous communities primarily exercise their Indigenous treaty rights and interests.</li> <li>NOTL route is only 6% immediately parallel to existing linear infrastructure compared to the preliminary preferred route (97%) which is important to Indigenous communities.</li> <li>NOTL route crosses substantially more Significant Wildlife Habitat that could provide habitat for traditionally used vegetation and wildlife species (e.g., wild rice and waterfowl).</li> </ul>	998 ha (Indigenous use land) 84,327 ha (SWH)	583 (Indigenous use land) 56,641 (SWH)
Cultural and Spiritual Areas and Sites	30	<ul style="list-style-type: none"> <li>NOTL route crosses substantially more area with archaeological potential (88% increase).</li> </ul>	314 ha	167 ha
Other Applicable Criteria/ Indicators Identified by Communities	30	<ul style="list-style-type: none"> <li>NOTL route is within 4.6 km of the nearest First Nation Reserve (Lac des Mille Lacs 22A2) compared to the preliminary preferred route, which is within 17.6 km of the nearest reserve (Fort William First Nation reserve).</li> </ul>	4.6 km to nearest reserve	17.6 km to nearest reserve

NOTL = Neighbours on the Line; ROW = right-of-way; SWH = Significant Wildlife Habitat

a) Baseline sources used to determine surface water and fish and fish habitat potential are similar to those documented within the baseline report.

b) Water crossings include watercourses (i.e., depression in the ground with flowing water) (e.g., streams, rivers) and lakes and ponds (i.e., body of water with no discernable flow)



## 4.1 Criteria Category Summary

### 4.1.1 Natural Environment

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The NOTL route is preferred for soils, protected areas and some species at risk criteria. For the SAR preferred for NOTL, these are species that use anthropogenic habitats (i.e., eastern whip-poor-will, bobolink, bank swallow and chimney swift and gray fox) which is more present along the preliminary preferred route. However, when considering the greenfield nature of the NOTL route and that the NOTL route only parallels existing linear infrastructure for approximately 6% even after optimization, the NOTL route is less preferred for surface water, fish and fish habitat, vegetation, wildlife and wildlife habitat, and some species at risk criteria. The additional length of the NOTL ROW and the expected additional off-ROW access roads are expected to result in greater effects to wildlife species dependent on less disturbed and complex habitat including moose, furbearers (gray wolf) and breeding birds.

The NOTL route is not preferred for bats (i.e., little brown myotis and northern myotis) which are very sensitive to disturbance and a species of particular importance to MECP SARB due to adverse effects associated with whitenose syndrome. The NOTL route is within 1 km of several abandoned mines that may provide SAR bat hibernation habitat including: Sapawa, Pattison, G.E., Walsh, J.J., Minto, and Silver Glance. These features would require study to determine if they are bat hibernacula. Additional potential hibernacula not found in the AMIS database (e.g., natural features and tunnels) may be present along the NOTL route. Further study would be required to determine potential bat hibernacula along the NOTL route, and bat use of these features. Prior to the additional studies, it is not possible to determine how the NOTL route and the preliminary preferred route compare in terms of impacts to bat hibernacula. However, the NOTL route crosses a greater area of bat maternity roost habitat and therefore the NOTL route is considered less preferred for bats.

For surface water and fish and fish habitat, the NOTL route crosses more water crossings, which will require more in-water work. NOTL crosses substantially more unmapped water crossings. NOTL crosses substantially more watercourses and fewer lakes/ponds. Often, the ROW crossings of lakes or ponds can minimize in-water work by diverting access and maintenance roads; however, watercourse road crossings are harder to avoid. Therefore, watercourse crossings often have potential for more direct impacts to surface water and fish and fish habitat where in-water work cannot be avoided. Fish SAR have range mapping that overlaps both routes and were considered equal in the assessment. As such, the NOTL route has the potential for increased direct impacts to surface water features and fish and fish habitat where in-water work cannot be avoided due to the substantial increase in water crossings.

The longer ROW and larger overall footprint (longer ROW, more temporary pull sites and greater number of off-ROW access roads) will result in a larger disturbance to vegetation and wetland, wildlife and wildlife habitat, as well as surface water and fish habitat. This includes crossing a greater area of wetlands, vegetation-related significant wildlife habitat (e.g., milkweed



patches, wild rice) and wildlife-related significant wildlife habitat (e.g., amphibian breeding habitat). Further, the NOTL route will result in greater fish and wildlife habitat fragmentation both from the ROW that largely does not parallel existing linear disturbances and by the increased off-ROW access roads, which are additional linear corridors that fragment the landscape. Overall, the NOTL route is expected to have a greater adverse effect on the natural environment compared to the preliminary preferred route as shown in Figure 4.1-1.



Figure 4.1-1: Natural Environment Results

#### 4.1.2 Socio-economic Environment

There is no significant difference between routes with respect to existing infrastructure and community services (e.g., proximity to active waste management facilities) and the routes are considered equal for built heritage resources and cultural heritage landscapes, as described in Table 5-2. The NOTL route crosses a substantially greater area of archaeological potential than the preliminary preferred route. However, for most social criteria it has more advantages, including crossing less private land and being in proximity to fewer residences. The NOTL route also does not directly cross residences compared to the preliminary preferred route. Further, the NOTL route crosses, and is in proximity to, fewer recreational features. The NOTL route is also in proximity to substantially fewer mapped/known public scenic viewpoints. As a result, the NOTL route is expected to have lower adverse effects on the socio-economic environment as shown in Figure 4.1-2.



Figure 4.1-2: Socio-economic Environment Results



### 4.1.3 Indigenous Culture, Values and Land Use

Based on the criteria considered, the NOTL route is less preferred and has more disadvantages compared to the preliminary preferred route with respect to the Indigenous Culture, Values and Land Use criteria category. The NOTL route crosses substantially more Crown land, which is off-reserve land where Indigenous communities primarily exercise their Indigenous treaty rights and interests. Further, the greenfield nature of the route results in the crossing of more vegetation and wildlife habitat that could support traditionally used vegetation and wildlife species (e.g., wild rice and waterfowl). The NOTL route also crosses substantially greater area with archaeology potential, which may contain resources of importance to Indigenous communities that needs to be protected. As a result, the NOTL route is expected to have greater adverse effects on Indigenous culture, values and land use as shown in Figure 4.1-3.



Figure 4.1-3: Indigenous Values Results

### 4.1.4 Technical and Cost

Based on the criteria considered, the NOTL route is less preferred (Figure 4.1-4). The technical and cost disadvantages of the NOTL route include:

- Route is 41 km longer (22% increase);
- Route crosses a greater area of wetlands, which are more challenging to cross from a construction perspective;
- Requires more corners, which require more robust structures with greater cost. Corners also require temporary pull sites outside the ROW to provide additional space to string the conductor;
- Requires more off-ROW access roads due to the greenfield nature of the route;
- Substantially less parallel to existing infrastructure compared to the preliminary preferred route. Paralleling existing linear infrastructure enables the use of existing access within the existing ROW and minimizes off-ROW access;
- Increase in ROW length requires additional infrastructure to be installed at the transformer station sites due to additional line loss; and





- Higher costs associated with both construction and operation and maintenance, which would negatively effect Ontario rate payers.

Hydro One acknowledges that the NOTL route crosses less private property, which will lower the associated land agreement costs to Hydro One (e.g., easement agreements or property acquisition). However, the increased construction costs associated with an additional 41 km of ROW and the associated greater off-ROW access are 30-40% greater. Further, longer-term costs associated with operation and maintenance of the NOTL route will be higher due to the additional 41 km of ROW.



Figure 4.1-4: Technical and Cost Results

#### 4.1.5 Overall Findings

The preliminary preferred route is considered preferred in the natural environment, Indigenous culture, values and land use, and technical and cost criteria categories. The NOTL route is considered preferred in the socio-economic criteria category, particularly with respect to decreased impacts on residences, private land and recreational features. All four criteria categories were given equal weight, which is consistent with the approach used in the alternative route evaluation for the selection of the preferred route as well as consistent across Hydro One projects. The evaluation concluded the NOTL route, on balance, has more disadvantages than the preferred route (Figure 4.1-5). When taken into consideration with the findings of the other criteria, the advantages of decreased impacts on residences and private land, which is the most important consideration for NOTL, do not outweigh the disadvantages in the other criteria categories. The greenfield nature of the route and the larger overall footprint (i.e., longer ROW, more off-ROW access roads and greater number of corners requiring pull sites) will result in more adverse effects to Indigenous interests, archaeology, surface water, fish and fish habitat, vegetation, wildlife and wildlife habitat, some species at risk criteria and technical and cost considerations.



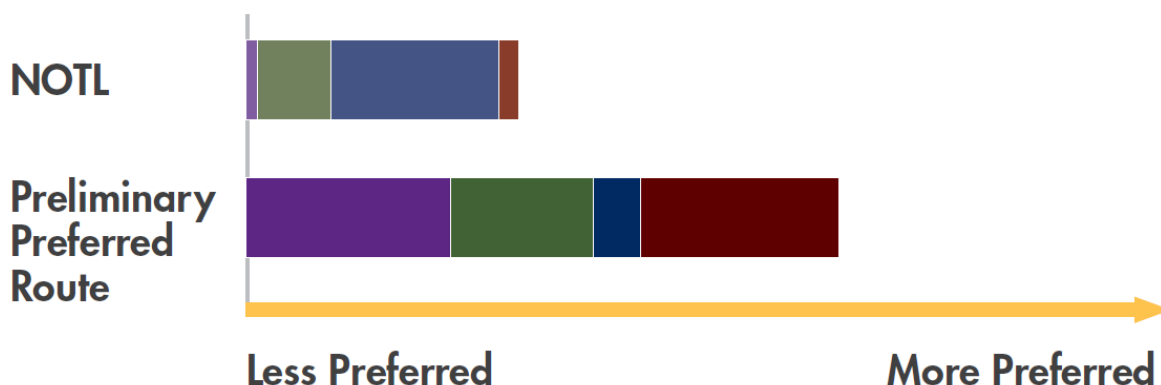


Figure 4.1-5: Overall Results

## 4.2 Further Route Optimization

Hydro One understands that NOTL is interested in continuing to refine the NOTL route based on the results of this analysis. Hydro One does not believe that it is possible to refine the NOTL route to such a degree that the overall conclusions of this route evaluation would change. This conclusion is based on the disadvantages of the NOTL route outlined in Section 5.2 and 5.3, which is in large part tied to the 22% increase in length and that the route is largely a greenfield route that crosses areas with less disturbance and requires substantially more off-ROW access compared to the preliminary preferred route that follows an existing transmission line to limit adverse effects.

NOTL also shared a second alternative route for Hydro One's consideration on April 20, 2023. While the second route proposed by NOTL does avoid landowners in the Kaministiquia community, it involves new private properties outside of the study area. Also, the proposed NOTL route has additional length when compared to the preliminary preferred route and does not parallel existing linear disturbances which results in the potential for larger impact on the natural environment and increasing wildlife habitat fragmentation. As a result, similar to the first NOTL route proposed, this would contemplate introducing limited benefits to one criteria category at the expense of the other three, which would experience additional impacts and, therefore, this second alternative route was not accepted.

Hydro One is committed to working with NOTL and affected landowners in a meaningful and collaborative way on how to minimize adverse effects to landowners to the extent possible, including investigating local route refinements to the preferred route.



## 5.0 Conclusion

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Hydro One completed a detailed review and analysis of the NOTL route using the same criteria categories and criteria used to identify the preliminary preferred route. The results of this analysis indicate that the preliminary preferred route has more advantages and fewer disadvantages compared to the NOTL route. As described in Section 4, based on the direction in the approved ToR, Hydro One is required to select a preferred route that best balances the Indigenous culture, values and land use, natural environment, socio-economic environment, and technical and cost considerations.

The preliminary preferred route between Thunder Bay and Atikokan crosses less private property and has fewer nearby residences compared to the other alternative routes identified in the approved ToR. Hydro One recognizes that the NOTL route, which was not identified in the ToR, would further minimize effects to landowners in the Kaministiquia area; however, given the many criteria that must be assessed in the evaluation of alternatives, selecting the NOTL route based primarily on private land considerations would not be consistent with the alternative route evaluation methodology nor compliant with the direction in the ToR. This is reinforced by the requirements outlined in the approved ToR and under various acts and regulations including:

- **Approved Amended ToR** – Outlines the need to consider four criteria categories for the selection of a preferred route including Indigenous culture, values and land use, natural environment, socio-economic environment, and technical and cost. The preliminary preferred route best balances these criteria categories.
- *Environmental Assessment Act* – This act outlines the need to protect the environment which is defined broadly as the natural, social, economic, cultural and built environments. Overall, the NOTL route will have greater adverse effects on the environment.
- *Endangered Species Act, 2007* – This act outlines the need to protect and minimize adverse effects to species at risk and habitat. The NOTL route is preferred for some bird species while the preliminary preferred route is preferred for bats which are species sensitive to development. Overall, the additional length of the NOTL route increases the potential for disturbance to individuals of SAR which can increase the risk of incidental take during construction for terrestrial species and increase the risk of affecting aquatic SAR habitat due to placement of more in-water structures needed for substantially more watercourse crossings.
- *Migratory Bird Convention Act, 1994* – This act outlines the need to protect and minimize adverse effects to migratory birds. The NOTL route would have greater likelihood for adverse effects on migratory birds due to the larger footprint and the greenfield nature of the NOTL route.



- *Fisheries Act* – This act outlines the need to protect fish and fish habitat. The NOTL route crosses substantially more watercourses and sensitive headwater drainage features that support fish and fish habitat.
- *Ontario Energy Board Act* – This act requires Hydro One to submit a Leave to Construct application to justify the cost of the Project to the OEB. The OEB has a mandate to ensure that the costs for new infrastructure projects are prudent and in the best interest of the Ontario rate payers. The cost of the NOTL route is substantially higher for both construction and operation and maintenance.

## 5.1 Next Steps

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Hydro One understands that NOTL may continue to have concerns with the preliminary preferred route. Hydro One is committed to working with NOTL and affected landowners in a meaningful and collaborative way. As described in Section 4.2, Hydro One is investigating local route refinements and talking to individual landowners about site-specific mitigation measures to minimize adverse effects to landowners, to the extent possible. Since the release of the Draft EA Report, Hydro One incorporated multiple local route refinements based on discussions with individual landowners. These route refinements are discussed in Section 2.2.5 of the Final EA Report. Hydro One looks forward to continuing to work collaboratively with NOTL and working together to resolve comments and concerns through the EA process.



## References

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Hydro One (Hydro One Network Inc.). 2021. Amended Terms of Reference for the Waasigan Transmission Line. Submitted to the Ministry of the Environment Conservation, and Parks. June 2021

Hydro One. 2023a. Meeting Notes: Hydro One & Neighbours on the Line Technical Discussion. Submitted to Neighbours on the Line. March 14, 2023.

Hydro One. 2023b. Meeting Notes: Hydro One & Neighbours on the Line Technical Discussion. Submitted to Neighbours on the Line. March 23, 2023.

