

Hydro One Networks Inc.

8th Floor, South Tower
483 Bay Street
Toronto, Ontario M5G 2P5
www.HydroOne.com

Tel: (416) 345-5700
Fax: (416) 345-5870
Cell: (416) 258-9383
Susan.E.Frank@HydroOne.com

Susan Frank

Vice President and Chief Regulatory Officer
Regulatory Affairs



BY COURIER

May 17, 2010

Ms. Kirsten Walli
Secretary Ontario Energy Board
Suite 2700, 2300 Yonge Street
Toronto, ON.
M4P 1E4

Dear Ms. Walli:

EB-2009-0425 – Hydro One Networks' Section 92 Application – Toronto Midtown Transmission Reinforcement Project – Hydro One Networks Reply Submission

I am attaching two (2) copies of Hydro One Networks' Reply Submission

An electronic copy of the complete application has been filed using the Board's Regulatory Electronic Submission System (RESS) and the proof of successful submission slip is attached.

Sincerely,

ORIGINAL SIGNED BY SUSAN FRANK

Susan Frank

Attach.

c. Intervenor (electronic only)

HYDRO ONE REPLY SUBMISSION

1.0 INTRODUCTION

Hydro One has applied to the Board for an order granting leave to construct transmission line facilities in the City of Toronto pursuant to Section 92 of the *OEB Act for the Midtown Project*.

The work and the proposed line facilities, which are to be constructed, owned, and operated by Hydro One, involve:

- Building a three circuit 115 kV overhead line between Leaside TS and Bayview Jct. (approximately 1.7 km) to replace the existing L14W/L15W two circuit overhead line along existing right of ways. Two circuits will replace the existing circuits L14W and L15W and the third circuit will be used as a new circuit for supply to Bridgeman TS. The existing double-circuit towers will be replaced with higher towers to accommodate the additional circuit.
- Installing two underground cable circuits between Bayview Jct. and Birch Jct. in a rock tunnel approximately 60 to 70 meters deep and 2.2 km in length, primarily along existing rights-of-way, City of Toronto property, Hydro One property, and Toronto road allowance. One cable circuit will replace the existing L14W cable which has reached the end of its service life and the second cable will be used as a new circuit to address the need for increased supply to Bridgman TS.
- Reconductoring and uprating the two circuit overhead line section of the L14W circuit between Birch Jct. and Bridgman TS (about 1.4 km). The uprated idle circuit will be used as a new circuit for supply to Bridgman TS.

1 In conjunction with the proposed new transmission line facilities, Hydro One is also
2 proposing station work which includes a new 115 kV circuit breaker at Leaside TS,
3 reconfiguration at Bridgman TS and associated protection, control and
4 telecommunication facilities to connect the new circuit.

5
6 The planned in-service date for the proposed line and station facilities is April, 2013.
7 The total estimated cost is \$105 million.

8
9 In Hydro One's view, the proposed line facilities are in the public interest because they
10 will:

- 11
- 12 • Maintain reliable electricity supply to consumers in the Midtown Toronto Area
13 through the replacement of end-of-life equipment;
 - 14 • Increase capacity in the Midtown Toronto Area to meet expected load growth in a
15 reliable manner through installation of additional transmission capacity;
 - 16 • Maintain required quality of supply; and
 - 17 • Have no material impact on the price of electricity.
- 18

19 The need for this project, to relieve overloading of the existing lines between Leaside TS
20 and Birch Junction, was originally approved in EB-2006-0501. The core need has
21 remained unchanged.

22
23 In the remainder of this Reply submission, Hydro One will focus on the items that remain
24 at issue and not those (like Need) where parties are either in agreement or no comments
25 have been made.

**2.0 NORTH ROSEDALE RATEPAYERS ASSOCIATION (NRRA) and
ENERGY PROBE SUBMISSIONS**

NRRA is a ratepayers association representing ratepayers living south of the CPR railway line and east of Mount Pleasant Road. As such it represents landowners who are predominately not directly affected by the Midtown Project. NRRA's submission focuses on the portion of the project between Birch Junction and Bayview Junction only, and is concerned with routing, construction techniques and associated costs. NRRA has proposed a modified route which involves a combination of trenching and soft-ground tunnelling (the "Hybrid Solution") in this area.

Energy Probe is recommending that further evidence is required to evaluate both the Hydro One preferred tunnel option and the NRRA option.

For the reasons discussed below, Hydro One does not agree with NRRA's proposed Hybrid Solution between Birch Junction and Bayview Junction and it also disagrees with Energy Probe's recommendation that further evidence is required. In Hydro One's view, there is sufficient evidence on the record for the Board to determine that the Hybrid Solution is inferior (and in fact infeasible in parts) compared to Hydro One's proposed deep-rock tunnel option.

Before getting into the details below, Hydro One notes as a general comment (and as similarly noted by Board Staff), NRRA has provided little evidence to support its Hybrid Solution with regard to cost or route advantages. An example of the lack of evidence is contained at page 1 of the NRRA submission:

"The Hybrid Solution would result in substantially lower costs and a much shorter construction schedule, while at the same time avoiding most of the difficulties inherent in co-ordinating schedules and making the necessary arrangement with the CPR."

1
2 NRRA has provided no evidence to support the assertions above, either in its evidentiary
3 submission or in its interrogatory responses to Board Staff (see for example the NRRA
4 response to Staff Interrogatory 1). The lack of supporting evidence in NRRA's
5 submissions is a consistent shortcoming and Hydro One suggests the Board should
6 accordingly give little weight to those submissions.

7
8 Hydro One's detailed comments on NRRA's Hybrid Solution along the various segments
9 of the line are as follows:

10
11 **Section I: Birch Junction to East Side of Summerhill Subway Station on**
12 **Shaftesbury Avenue**

13
14 NRRA suggests that the tunnel proposed by Hydro One does not need to be 3 metres in
15 diameter or 50-60 metres deep, and that on this section of the route a shallow, soft ground
16 tunnel can be used. This is incorrect. As Hydro One indicated in Board Staff Interrogatory
17 response Exhibit C, Tab 1, Schedule 5, part c), shallow, soft ground tunnelling across
18 Yonge Street is not feasible at the Birch Junction for geo-technical reasons. Additionally,
19 as noted in the response it is typically more expensive and requires longer construction
20 time to tunnel through soft ground compared to rock.

21
22 **Section II: Balance of Shaftesbury Avenue**

23
24 NRRA has suggested trenching on the remaining portion of Shaftesbury Avenue, using
25 street pavement wherever possible and on road allowance only to the extent absolutely
26 necessary. In Exhibit C, Tab 1, Schedule 5 part a), Hydro One indicated that in its view
27 the amount of below-ground infrastructure congestion at the depth required for a cable
28 trench makes trenching infeasible along Shaftesbury Avenue. Further, in Exhibit C, Tab
29 3, Schedule 5, Attachment 2, Hydro One provided a diagram showing the significant
30 underground congestion along this section of the route. The amount of congestion along
31 the road would require situating the trench on road allowance where many existing

1 utilities are already located. Hence, the trench would need to be located on the remaining
2 road allowance even closer to area residences which, given the small front yards of
3 properties in the area, would significantly impact the properties' front entrances during
4 the construction period. Additionally, contrary to the claim made by NRRA, once
5 removed under the trenching option, trees would not be replanted over the high voltage
6 cables due to thermal and soil resistivity requirements of the cable system. One of the
7 reasons the existing cables are at a pre-mature end-of-life and require replacement is poor
8 soil resistivity caused in part by existing trees removing moisture from the cable backfill
9 causing undesirable thermal conditions.

10
11 Hydro One notes that NRRA does not represent the residents living on Shaftesbury
12 Avenue. In fact, Hydro One has received a letter of support for the project from "One
13 Shaftesbury Community Association" (filed as Exhibit B, Tab 6, Schedule 2) and the
14 Board Secretary has received letters from residents on Shaftesbury Avenue expressing
15 their concerns over the trenching option (see for example letters from Ruork and
16 Hanson).

17
18 As a result of the above-noted problems with soft-ground tunnelling across Yonge Street
19 and trenching along Shaftesbury, Hydro One submits that its proposed deep rock tunnel is
20 the option with the fewest community and construction impacts and lowest cost and
21 schedule risk.

22
23 **Sections III and VI: David Balfour Park from Shaftesbury Avenue to Mt. Pleasant**
24 **Road and Moore Park Ravine**

25
26 NRRA has suggested that the new line can be trenched through Balfour Park and through
27 the Moore Park ravine. However, in Hydro One's assessment trenching would have
28 larger environmental impacts and would disturb a large portion of Balfour Park.
29 Trenching through Moore Park ravine would involve a stream-crossing and disturbance
30 of the surrounding natural habitat. Post-construction, if trenching was done, significant

1 environmental remediation would be required. All of these considerations have not been
2 addressed in NRRA's evidence yet they are likely to result in cost and schedule impacts
3 compared with Hydro One's tunnel option.

4
5 **Section IV – Mount Pleasant Road to East End of Hydro One Lands Immediately**
6 **North of CPR**

7
8 Hydro One agrees with NRRA that this area can be trenched. However, if the preceding
9 and following sections are in a tunnel (which Hydro One submits would be the case),
10 then it would not be feasible to trench this section as the tunnel option cannot, for
11 technical and cost reasons, alternate between sections of deep tunnel and sections of
12 trench.

13
14 **Sections V and VII – East End of Hydro One Lands to Moore Park Ravine and**
15 **Moore park Ravine to Bayview Junction**

16
17 As NRRA has noted, trenching in both of these sections impacts local landowners by
18 requiring easement acquisitions on residential properties. However, NRRA has provided
19 no evidence regarding the cost or landowner impacts of trenching along these sections.
20 These impacts, in Hydro One's view, are likely to be substantial as the properties are
21 heavily treed and located in the middle of a prosperous residential area where land values
22 are high. As indicated in the response to the NRRA motion request in Exhibit C, Tab 3,
23 Schedule 5, Appendix A, page 1, property values along the Midtown right-of-way range
24 between \$500 thousand and \$13 million per acre. Easement rights are accordingly likely
25 to be expensive and could also involve expropriation proceedings, leading to significant
26 cost and schedule risks for the Midtown project if trenched compared with the tunnel
27 option.

28
29 Hydro One notes that NRRA does not represent landowners along this section whose
30 land would be required for easement purposes under their proposed trenching option as
31 these properties lie along the north side of the CPR railway line.

Other Comments on the NRRA Submission

NRRA asserts at page 4 of its submission that since “substantial contingencies have been built into the budget for this Project, tunnelling is very clearly viewed by Hydro One as much more risky and potentially expensive than trenching.” In Hydro One’s response to Board Staff’s Interrogatory, Exhibit C, Tab 1, Schedule 12 c) and reiterated in Exhibit C, Tab 3, Schedule 5, it was explained why the contingency for Midtown is above the contingency budgeted for the John x Esplanade Project (EB-2004-0436). The increased contingency is related to unknown soil testing and contractor bids not having been tendered, not the result of Hydro One’s view of the riskiness of tunnelling.

NRRA commented at page 4 that preliminary technical studies had yet to be completed to establish the feasibility of a deep rock tunnel when the Application was filed, and quoted Hydro One’s evidence at Exhibit B, Tab 4, Schedule 2 (page 4, lines 8-14). NRRA is correct in its assertion. However, subsequent to the pre-filing Hydro One provided updated evidence by way of a response to an Energy Probe Interrogatory (Exhibit C, Tab 4, Schedule 9d), which indicated that the depth of rock and underground conditions have since been confirmed by a geotechnical and geophysical study. As such, NRRA’s concern regarding the feasibility of the tunnel option is no longer applicable.

Hydro One disagrees with NRRA’s comments contained at the bottom of page 1 of its submission that its Hybrid Solution would avoid most of the schedule co-ordination difficulties with CPR. Depending on how close the trench location is to CPR property, whether partly or wholly on private property, it could still fall within CPR’s “Zone of Influence” and would require scheduling arrangements to be made with CPR. Avoiding the Zone of Influence entirely would involve moving the trench location even further onto residential properties, which would result in further property impacts and could require a larger easement taking. This would in turn impact costs, landowners, and vegetation (e.g., trees, landscaping) in the area.

1
2 NRRA expressed concerns for the costs and construction time associated with tunnelling
3 in comparison to trenching. Hydro One has provided evidence comparing the costs of
4 tunnelling and trenching. All of this evidence indicates that the costs of each are
5 comparable (see for example Exhibit C, Tab 3, Schedule 5, Table 1 and Exhibit C, Tab
6 1, Schedule 5, part f), and that as a result of that comparability in costs, tunnelling is
7 preferred for its significantly reduced construction and community impacts and lower
8 schedule risks (see Exhibit C, Tab 1, Schedule 1, part e).

9
10 Finally, with respect to Real Estate costs, contrary to NRRA's assertion Hydro One has
11 provided detailed information on its estimated real estate requirements and costs in
12 Exhibit C, Tab 3, Schedule 5, Appendix A.

13 14 **3.0 CONCLUSION**

15
16 For all of the above reasons, Hydro One believes that NRRA's Hybrid Solution would be
17 inferior to Hydro One's tunnel option in regard to cost, landowner and community
18 impacts, and schedule risk. Hydro One therefore suggests that the Board should reject it
19 as a feasible option. Further, no additional study of the Hybrid Solution is warranted as
20 suggested by Energy Probe.

21
22 Hydro One believes that the tunnel option it has proposed is the best alternative for the
23 Midtown Project and accordingly requests the Board to find the Project to be in the
24 public interest and to grant the requested relief.

25
26 All of which is respectfully submitted for the Board's consideration.
27