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Joanne Richardson
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BY COURIER

October 15, 2018

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
Suite 2700, 2300 Yonge Street
P.O. Box 2319
Toronto, ON M4P 1E4

Dear Ms. Walli:

**EB-2017-0364 – Hydro One Networks Inc.’s Section 92 – Lake Superior Link Project
Application – Undertaking Response**

Please find enclosed response to undertaking JT4.1 from the Oral Hearing held on October 9, 2018 in regards to the above proceeding.

This filing has been submitted electronically using the Board’s Regulatory Electronic Submission System (RESS) and two (2) hard copies will be sent via courier.

Sincerely,

ORIGINAL SIGNED BY JOANNE RICHARDSON

Joanne Richardson

UNDERTAKING – J4.1

Reference

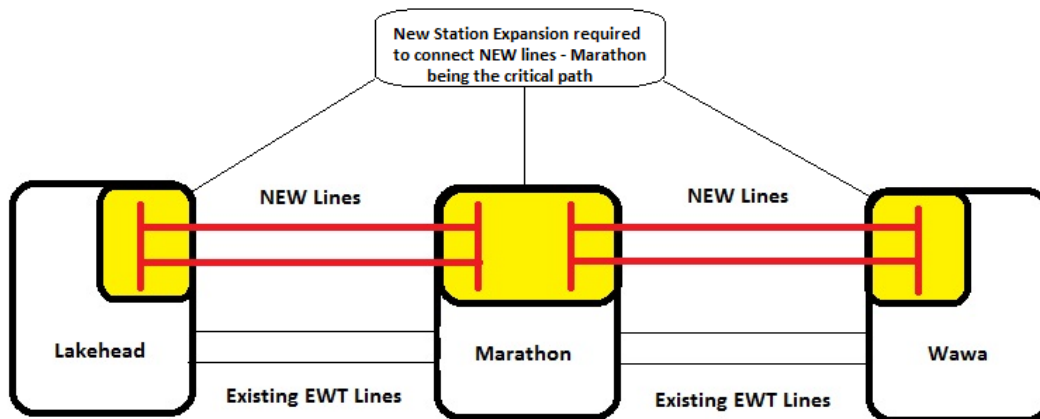
Undertaking

To make best efforts to provide updated construction schedules for Marathon, Lakehead and Wawa.

Response

Hydro One has reviewed the EWT Station Project schedule based on the latest information available as of October 10, 2018 and updated the start and finish dates of the major activities accordingly.

The schedule presented in this update is driven by the critical path activities identified at the Marathon TS. As seen in the representation below, the Marathon Station requires the largest infrastructure and land expansion to accommodate the NEW Line (EWT or LSL) connections and therefore, will dictate the overall schedule for in servicing the NEW Line project. The Wawa and Lakehead schedules are a subset of the overall schedule.



Previous Schedule Updates and Associated Risks

- Hydro One in their Section 92 application, EB- 2017-0194 Exhibit B, Tab 7 Schedule 1 titled "Apportioning Project Costs and Risks", provided a detailed schedule of approval, design and construction for the EWT Station Project as filed in Exhibit B, Tab 11, Schedule 1.
- In addition, as explained in OEB Staff Interrogatory Response # 4 (Exhibit I, Tab 1 Schedule 4) dated January 25, 2018 item f) , Hydro One has completed a risk review titled "Risk Review Board Meeting" included in the IR response and

- 1 identified "Risks associated with schedule delays" at Marathon as follows:
2 " ... Any delays due to section 92, building specification and tendering of reactors,
3 breakers & capacitor banks can cause significant delays to the ISD"
4 " The current schedule for Environmental permitting and sequencing with the new
5 EA process is aggressive. Any delay will impact overall schedule delay by six
6 months"
- 7 • The initial schedule as filed in the Section 92 application was based on an
8 optimized schedule with a start date of May 2018 and In-Service by November
9 2020.
 - 10 • Given the fact that MECP approval has tied the EWT Station Project to the EWT
11 Line individual EA, HONI cannot submit any applications for permits until the
12 individual EA is approved.
 - 13 • Additionally, as part of the Class EA process for the Marathon TS Expansion,
14 HONI has committed to undertaking the clearing of trees within prescribed
15 windows to mitigate potential environmental effects.
 - 16 • To minimize the impact of the new schedule at Wawa TS and Lakehead TS, some
17 preparatory civil work commenced in areas within the existing Hydro One
18 properties.
 - 19 • Similarly, to minimize the impact of the new schedule at Marathon TS certain
20 materials were procured.

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22 **Updated Project Schedule**

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24 The updated schedule below is based on the assumption that S92 approval would be
25 granted before January 2019 and the EA process would be completed by March 1, 2019.
26 Hydro One, has analyzed at a high level the possibilities that are available to reduce
27 timelines. The schedule below takes into account the best estimates available today. This
28 schedule, depending on the exact delivery of the EA and approvals, as well as favorable
29 winter weather, may be reduced in the order of 4-6 weeks from the In-service date of
30 September 23, 2021 detailed below. (Updated Oct 10, 2018 for Marathon TS - critical
31 path)
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	Deliverable	Timeline	Additional Details
1	¹ NextBridge Individual EA approval and final Class EA Notice of Completion	March 01, 2019	
2	Permitting applications (including drainage ECA typically 12 months and MNRF Forest Resource License	March 01, 2019 to March 01, 2020	These permits are expected to be issued after the Individual EA
3	² Land Purchase from MNRF (for new diameter)	March 01,2019 to April 1, 2019	This step is dependent on item # 1
4	Install new 230kV control building – Critical Path	March 05, 2019 to May 07, 2020	This step is dependent on item # 3 See note # 6
5	³ Early tree cutting opportunity (see 8,9,10)	April 01, 2019 to April 23, 2019	This item is dependent on item # 3 See notes # 1 and 2
6	Install concrete footings for structures	May 28, 2019 to September 21, 2020	This step is dependent on item # 3 and 5. See notes # 3 and 4
7	Install steel structures	September 03, 2019 to March 08, 2021	This step is dependent on item # 6 See note # 5
8	³ Relocate Shack Lake trail	September 16, 2019 to October 21, 2019	This step is dependent on item # 3
9	³ Clear trees in new ‘diameter’	October 22, 2019 to November 06, 2019	This step is dependent on item # 8
10	³ Site stripping of land (removal of 24” of soil)	November 07, 2019 to January 29, 2020	This step is dependent on item # 9
11	Install 230kV breakers and equipment	October 15, 2019 to December 15, 2020	This step is dependent on item # 7 See note # 7
12	Install cables between structures and insulators	March 25, 2020 to June 22, 2021	This step is dependent on item # 7 and partially 11. See note # 7
12	Commission all equipment – Critical path	May 07, 2020 to August 17, 2021	This step is dependent on item # 4 and partially 11 and 12. See notes # 8 , 9

13	Connect new transmission lines to station diameter	June 15, 2021 to August 25, 2021	This step is dependent on items above activities and completion of the line
14	Final Staging Outages - New diameter In-Service	September 23, 2021 ⁴	

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¹ The Class EA process for Marathon met the requirements of the MNRF Class EA for Crown Land acquisition. This schedule assumes MNRF will provide final clearance on the Class EA immediately upon approval of the NextBridge Individual EA to allow submission of the Class EA Notice of Completion.

²HONI has previously obtained a Land Use Permit (LUP) which will allow for the construction/siting of the required expansion on the required MNRF subject lands. This estimated timeline represents the conversion from HONI LUP to Patented Purchase (Fee Simple acquisition by HONI) this does not impact the construction start date.

³To mitigate for birds, bats and caribou at Marathon TS, tree removal can only occur between Sept 15 - Nov 30 and April 1-23. HONI will seek the earliest opportunity to complete this work. However, an MNRF Forest license is required prior to cutting. Typically this would take 2-3 months to obtain; therefore it is unlikely that the early clearing window is feasible.

⁴The in-service date defined in this schedule relates to all undertakings in the EWT Station Project that are necessary for connecting the EWT (or LSL) Line Project. Some work will continue to be done on the three Hydro One stations into the Q4 2021.

Additional Notes regarding the Marathon TS schedule

1. Approvals are required before land clearing and major civil work (ex. Drainage, Spill containment)
2. Land clearing is required before site preparation can commence.
3. The site preparation, excavation, forming, setting of footings and concrete work precedes the initial steel work to the point that sufficient footings are available to commence steel installation. The initial activities including land prep, excavation, forming and pouring concrete takes approximately two months and the activities to allow the concrete to cure, strip, backfill and compact each area takes another additional month. This approximately three month initial period is required to prepare

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- 1 sufficient area for the steel work to begin immediately after. The same sequence
2 would continue afterwards multiple times, for each installation.
- 3 4. The preparation for construction of the footings, cable tray and relay buildings civil
4 work is sequenced to allow for efficiency of crews and work groups. Weather is a
5 major consideration in this area affecting the timing of the work. The current
6 schedule contemplates pausing during winter months (January/February) due to -35C
7 temperatures and impact on the concrete work. Weather permitting work will
8 continue during these months.
- 9 5. As the concrete work progresses, subsequent steel work and construction begins.
10 Some of this work can occur in the winter months with the exception of inclement
11 weather and heavy snowfall.
- 12 6. The New Control Building defines the overall critical path.
- 13 7. As structural work and building work progresses, yard equipment can be installed and
14 connected. No cable work is planned for winter months due to the impact of cold
15 temperature on conductors and difficulties in handling.
- 16 8. After equipment is installed and connected work can commence on the setup,
17 verification and testing for breakers, switches, control equipment, protections,
18 telecommunication and signals to the Control Centre etc.
- 19 9. As the work intensifies in the yard several disciplines will converge – station civil &
20 station electrical construction, lines construction, protection & control and electrical
21 maintenance. The associated activities need to be coordinated to ensure crowding and
22 overlapping activities do not jeopardize safety.
- 23 10. Towards the end the final commissioning will verify all equipment, protection,
24 control and telecommunication to ensure lines are safe to be energized and are
25 properly protected to meet NERC PRC and NPCC standards.

1 **Wawa and Lakehead Station schedules**

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 3 (Updated Wawa Station Schedule - Oct 10, 2018)

Deliverable	Timeline
Permitting applications	March 01, 2019
*NextBridge Individual EA approval	March 01, 2019
Clear trees in new area for 230kV control building – Critical Path	April 01, 2019 to April 05, 2019
Site stripping of land (removal of 24" of soil) – Critical path	April 08, 2019 to April 19, 2019
Install new 230kV control building – Critical Path	April 22, 2019 to May 08, 2020
Install concrete footings for structures	June 25, 2018 to August 25, 2019
Install steel structures	June 25, 2019 to August 21, 2020
Install 230kV breakers and equipment	May 30, 2019 to July 29, 2020
Install cables between structures and insulators	March 25, 2020 to June 22, 2021
Commission all equipment – Critical Path	May 11, 2020 to July 25, 2021
Connect new transmission lines to station diameter	April 12, 2021 to June 23, 2021
*Final staging outages - New diameter In-Service	July 25, 2021

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 5 * On July 26, 2018, Michipicoten FN (MFN) submitted a Part II order request to the Ministry of
 6 Environment, Conservation and Parks (MECP) to require Hydro One to conduct an individual EA. The
 7 Wawa Transformer Station (TS) work met the criteria to be “Screened Out” of a full Category B Class EA.
 8 MECP is considering the request and will determine whether to deny the request, or require Hydro One to
 9 proceed with an individual EA. The potential delay resulting from this request may be as long as 12 months
 10 and deferring the EWT Station Project completion.

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 12 (Updated Lakehead Station Schedule - Oct 10, 2018)

Deliverable	Timeline
Permitting applications	March 01, 2019
NextBridge Individual EA approval	March 01, 2019
Install roadway to new area for 230kV control building	September 03, 2018 to October 19, 2019
Site stripping of land (removal of 24" of soil)	October 22, 2018 to November 02, 2019
Install new 230kV control building – Critical Path	March 05, 2019 to May 07, 2020
Install concrete footings for structures	November 05, 2018 to December 06, 2019
Install steel structures	April 22, 2019 to June 19, 2020
Install 230kV breakers and equipment	June 24, 2019 to August 28, 2020
Install cables between structures and insulators	March 25, 2019 to May 28, 2021
Commission all equipment – Critical Path	May 11, 2020 to August 13, 2021
Connect new transmission lines to station diameter	May 28, 2021 to July 09, 2021
Final staging outages - New diameter In-Service	August 13, 2021

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 14 As noted in the three schedules, the Control Buildings define the overall Critical Path
 15 with all activities from land clearing, building construction to final commissioning of
 16 control equipment, being consequential.

1 In summary, while current schedule delays are completely outside of Hydro One control,
2 we are committed to continue and look for opportunities to accelerate the In-service of
3 the EWT Station Project. Given the consequential nature of the station work and the fact
4 that Hydro One cannot submit any applications for permits until the individual EA is
5 approved, the EWT Station Project is expected to be in service by September 2021.