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Joanne Richardson Director, Major Projects and Partnerships Regulatory Affairs

BY EMAIL AND RESS

September 21, 2021

Ms. Christine E. Long Registrar Ontario Energy Board Suite 2700, 2300 Yonge Street P.O. Box 2319 Toronto, ON M4P 1E4

Dear Ms. Long:

EB-2017-0194 – Hydro One Networks Inc.'s Section 92 – East West Tie Station Project – Quarterly Report

On December 20, 2018, Hydro One Networks Inc. ("Hydro One") received approval from the Ontario Energy Board (OEB) to construct the EWT Station Project to upgrade existing transmission station facilities in the Districts of Thunder Bay and Algoma. On July 29, 2019, the OEB issued reporting requirements to Hydro One to monitor the progress of Hydro One's EWT Station Project. On October 11, 2019 and subsequently on January 5, 2021, the OEB sent letters to Hydro One outlining further reporting requirements.

In accordance with the aforementioned filing requirements, this Quarterly Report captures activities for the quarter ending August 2021.

An electronic copy of the complete Quarterly Report has been filed using the Board's Regulatory Electronic Submission System (RESS).

Sincerely,

Joanne Richardson



Hydro One - East-West Tie Station Project OEB File Number EB-2017-0194 Quarterly Report Period Ending August 31, 2021

Introduction

On December 20, 2018, Hydro One Networks Inc. (Hydro One or HONI) received approval from the Ontario Energy Board (OEB) to construct the EWT Station Project. The EWT Station project involves upgrades to Hydro One's Wawa Transmission Station, Marathon Transmission Station, and Lakehead Transmission Station located near the cities of Wawa, Marathon and Thunder Bay and is required to connect a new 230 kV transmission line (EWT Line) being constructed by NextBridge. The combined EWT projects have been identified as a priority in both the Ontario government's 2010 and 2013 Long-Term Energy Plans and the 2016 Order-in-Council.

In order to complete the connections at the three stations, Hydro One needs to modify some station facilities and install required station upgrades. On July 29, 2019, the OEB issued reporting requirements to Hydro One to monitor the progress of Hydro One's EWT Station Project. On October 11, 2019, the OEB sent a letter to Hydro One outlining further reporting requirements. Specifically, the additional reporting requirements requested that Hydro One (a) provide a status update on co-ordination efforts with NextBridge, (b) enhance the level of detail provided in the summary of the Status Upgrades Project progress to date, and (c) make a modification to the Project Cost table. On September 24, 2020, in response to a delay to the NextBridge schedule to construct the EWT line, the OEB asked that an up-to-date estimate and detailed schedule for the stations upgrades be provided in Hydro One's next quarterly report to be filed in December 2020.



Hydro One - East-West Tie Station Project OEB File Number EB-2017-0194 Quarterly Report Period Ending August 31, 2021

Introduction - continued

Consequently, on January 5, 2021, OEB Staff requested that Hydro One provide further specifics on the forecast cost increases referenced in the December Progress Report. This includes providing details on the quantum of the forecast cost increases due to COVID-19 and other costs, as well as clarifying what specifically comprises and is driving the other costs referenced in the December Progress Report. If the forecast cost increases are derived from high-level estimates, Hydro One should still provide such information, but indicate that the forecast costs are high-level estimates.

This report addresses all aforementioned reporting requirements.

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1. Summary of Quarterly Activities

The primary focus this quarter has been in efforts to support commissioning activities both indoors and outdoors at all three stations. LAN (local area network) equipment being completed at Lakehead TS and Marathon TS has allowed for the passing of status and control information between the protection IED (Intelligent Electronic Device) devices and equipment in the yard as well as between the station and the OGCC. Wawa TS is not too far behind with it's LAN being commissioned at the beginning of next quarter. Most of the outdoor yard equipment such as breakers, reactors, switches and CVT's have been commissioned and are ready to be monitored and/or controlled by their protection devices in the new and old buildings.

A majority of new protection IED devices for equipment consisting of breakers, transformers, bus conductors, and lines have been programmed at all three stations and are ready to be cutover to replace the old protections based on an overall staging plan utilizing outage windows of opportunity. This quarter has seen the first wave of protections at Lakehead TS being cut-over with roughly half of the new protections now active, replacing the old ones. Next quarter will see the rest of the Lakehead TS protections move over as well as for Wawa TS and Marathon TS.

A majority of 230kV breakers and protections, control and tele-protection devices at Lakehead TS have been placed in-service. The reactor at Lakehead TS is scheduled to be commissioned and placed in-service in October while the capacitor bank will be placed in-service with the new 230kV circuits early next year. With all the equipment received and installed, the focus is to have them commissioned and wired up to their associated protection devices.

All three PCT buildings have officially been placed in-service as they are now complete and being used for their intended purpose. The AC/DC station service equipment at Lakehead TS and Marathon TS are complete having been placed in-service. The AC/DC station service equipment at Wawa TS are in the final stages of being complete and will be placed in-service in October.

Civil work at all three stations are winding down with remaining work consisting of fencing, gate installation, grading and yard stoning. All foundations and cable trench installation have been completed. Much of the civil work involves supporting electrical activities of equipment and grid grounding.

Electrical work across all three stations continues to be the terminating of cables, equipment and grid grounding as well as supporting commissioning efforts in the form of preparing for an outage and the planned activities during the outage timeframe. Work continues at the existing control buildings at Lakehead, Marathon and Wawa with removals of old control and protections equipment that are being replaced by protections in the new Control building. Fire alarm, heating and air conditioning upgrades continue at Lakehead.

1. Summary of Quarterly Activities (continued)

Scheduled work has been able to proceed as planned in the midst of having outages cancelled and re-scheduled. For the most part, the Staging Plan has had enough flexibility to absorb small changes in regards to scheduled outage windows. One of the most important outage windows on the critical path has been approved to perform work at Marathon TS in late August so work is proceeding. This outage was achieved as a result of all parties actively working in planning outages and creating backup plans when advance notice of outages change.

The availability of outages, and maintaining approved outages based on system needs, remains the critical part in the sequence of work according to the Staging Plan. It represents the greatest risk to the project at this time. The flexibility of the Staging Plan and the ability to maintain the critical outage windows, has allowed Hydro One to keep our schedule and stay on track.

Forest fires in the north, north-west has had no affect on Hydro One work at any of the stations to date so work is continuing as planned. Hydro One is still on track to meet its schedule of having stations connected to the NextBridge lines and commissioned to have power flow.

Hydro One continues to have monthly discussions with NextBridge to review their status and outage requirements. Outages planned for NextBridge activities, are still on track with no issues of obtaining the required dates. The commissioning schedule provided by Hydro One to NextBridge has been reviewed by NextBridge and seems to be acceptable. All issues of constructability have been resolved. Only contractual items between the two parties are remaining and being worked on.

A. Lakehead TS - Construction Activities

i. Summary of Activities from last Reporting Period to Next Reporting Period

• Work completed between Jun 01, 2021 – Aug 31, 2021

• Civil Construction

- Drainage activities are ongoing with 35% being complete
- Water test for Oil Water Separator and Spill Containment pit is complete
- Cable trench in section 7 has been installed
- Installation of fence is ongoing with 35% being complete
- Yard stoning in yard expansion is ongoing with 60% being complete

• Electrical Construction

- Continued with grid grounding around capacitor bank, PT & switches for stage 2
- Installation of bus supports and switch supports complete for shunt capacitor
- All outdoor control cabling have been pulled
- Installation of both reactor structures are complete
- Termination of AC station service cables is ongoing with 50% complete

• Equipment

• installation of one disconnect switches for the capacitor bank is complete

o **Buildings**

- New PCT building
 - All internal cables to building have been pulled cables and terminated
- Existing Control building –work performed
- HVAC work is ongoing with 75% being complete and 25% of fire alarm complete

• Commissioning

- 3x PLC radios have been installed and commissioned
- T7, T8, H bus, P bus, inter building CTMs, PL22, PL24, PL37, HL23, HL25, HL38 A&B protections have been put into service during the June 27th outage
- HCVT & PCVT have been put into service during the June 27th outage
- HL38, W1L38, W1L37, PL37 breakers have been commissioned and are ready for service aiming for the end of September (replacement for cracked busing of one breaker to be repaired beginning of September)

A. Lakehead TS - Construction Activities - continued

i. Summary of Activities from last Reporting Period to Next Reporting Period

• Anticipated work to be completed between Sep 2021 - Nov 2021

• Civil Construction

- Complete all remaining yard drainage
- Complete all access road to finish grading
- Complete installation of up to 80% of fencing and gates
- Removal of reactor scaffolding
- Complete up to 80% of yard stoning in yard expansion

• Electrical Construction

- Complete reactor R1 installation
- Complete shunt capacitor bank installation including 4 lightning spikes, rigid bus work and strain bus
- Replace M23L line switch, associated ground switch and existing M23L CVT's
- Finalize remaining grid grounding

• Equipment

- install a capacitor bank with two associated breakers and disconnect switches
- o **Buildings**
 - New PCT building
 - Support commissioning activities
 - Existing Control building –work performed
 - Continue with heating, air conditioning and fire alarm work
 - Support commissioning activities

• Commissioning

- Staging Loop Cutovers
- Wawa x Marathon Line protections (8) Power Line Carriers (PLC)
- Transformer protections T1 and T2 for 'main A' and alternate 'B' racks
- Instrument Transformer ACVT, HCVT, W35MCVT, W36MCVT commissioning
- Commissioning of breakers and switches
- Commissioning of controls for RTU & LAN devices

ii. Life-to-Date Status of Major Items

Lakehead TS

Approvals	<u>Rec'd</u>	<u>% Comp</u>
ECA drainage	Yes	100

Civil / Electrical Installation	<u>Project</u> <u>Total</u>	<u>Unit of</u> <u>Measure</u>	Installed	<u>% Comp</u>
Civil / Electrical	Installation - On	Track		
Foundations	2	ea	2	100.0%
Footings - Piers	223	ea	223	100.0%
Cable Trench	1500	m	1500	100.0%
Grounding Grid	3330	m	2660	79.9%
Structures	101	ea	85	84.2%
Rigid bus	390	m	312	80.0%
Strain bus	2210	m	1650	74.7%

Equipment Installation	<u>Project</u> <u>Total</u>	<u>Unit of</u> <u>Measure</u>	<u>Rec'd/</u> <u>Built</u>	Installed	<u>Wired</u>	<u>Comm'd</u>	<u>% Comp</u>
Equipment Installation -	On Tra	ck					
Breakers	8	ea	8	6	5	4	63.8%
Reactors/Cap Banks	2	ea	2	1	1	0	35.0%
Switches - Line, Disc & Grnd	20	ea	20	18	14	12	73.0%
CVT (Current Voltage Transformer)	25	ea	25	15	15	15	64.0%
AC Station Service	4	ea	4	4	4	4	100.0%
DC Station Service	2	ea	2	2	2	2	100.0%
Protection racks (IED modules)	116	ea	116	116	116	40	73.8%
Control equipment	13	ea	13	13	13	13	100.0%
Telecom/Teleprotion racks (IED modules)	71	ea	62	62	62	20	63.7%

Definition of terms used:

Rec'd/Built - represents either inventory delivered and sitting at site/warehouse or racks built for building **Installed** - represents equipment being installed on a structure, foundation, floor or in a rack

Wired - represents having all wiring and terminations completed to the equipment

Comm'd - represents 'Commissioned' being able to function as designed, for it's intended purpose

% Compl - represents % complete weighting: 10% for rec;d, 20% for Installed, 30% for wired, 40% for commissioned

Building Install	ation	<u>Project</u> <u>Total</u>	<u>Unit of</u> <u>Measure</u>	<u>Found'n</u>	<u>Walls</u> /Roof	<u>Mech/</u> <u>Elect</u>	<u>Comm'd</u>	<u>% Comp</u>
	Building Installation - On Tr	ack						
PCT (Protection/	'Control/Telecom) Building	1	%	100.0%	100.0%	100.0%	100.0%	100.0%

Definition of terms used:

Found'n - represents the concrete foundation slab

Walls/Roof - represents the pre-cast walls and roof being erected

Mech/Elect - represents having all HVAC, fire alarm, lighting and distribution panels completed in building **Comm'd** - represents 'Commissioned' being substantially complete as designed, for it's intended purpose **% Compl** - % complete weighting: 20% foundations, 40% Walls/Roof, 30% Mech/Elect, 10% commission

iii. Progress Photos - Civil & Electrical



Lakehead TS - newly grounded SC21 area including Cap bank switch, steel and insulators



Lakehead TS - newly upgraded strain bus and insulators (P bus and H bus)



Lakehead TS - Wired HVAC units outside A building



Lakehead TS - newly installed HVAC control panel

iv. Progress Photos – Commissioning/Protections





Lakehead - PLC radios

Lakehead -Transformer and Bus A protection rack

B. Marathon TS - Construction Activities

i. Summary of Activities from last Reporting Period to Next Reporting Period

• Work Completed between Jun 01, 2021 – Aug 31, 2021

• Civil Construction

- Drainage activities are ongoing with 85% being complete
- Installation of fence & gates are ongoing with 20% being complete
- Installation of Oil Water Separator (OWS) is ongoing with 80% being complete
- Backfilling is ongoing with 70% being complete

• Electrical Construction

- Continued to install grid & equipment grounding
- All ATS cables to outdoor equipment have been installed
- All outdoor cables have been terminated with the exception of reactors
- All cables from AC Station Service to equipment have been pulled

o **Buildings**

- New PCT building
 - All cables to outdoor equipment in Bays 4-8 have been terminated
- Existing Control building –work performed
 - Completed installation of fiber to tower for W35M & W36M circuits

• Commissioning

- Commission was complete for 2 ETL600 MxL PLC Racks and 2 NSD570's for Teleprotection on existing M23L/M24L Protections
- Commission was completed for 2 Battery Ground Detectors for new 230kV A and B 250VDC Batteries
- Commissioning completed on Station Gateway Main and Alt, Event Gateway
- Commissioning completed for D20MX RTU 5 Cabinets
- Commissioning of Satellite Clocks A and B are complete
- Commissioning of LAN Switches X 16 are complete
- D25 RTU's X 10 have been commissioned

B. Marathon TS - Construction Activities - continued

i. Summary of Activities from last Reporting Period to Next Reporting Period

• Anticipated work to be completed between Sep 2021 - Nov 2021

• Civil Construction

- Complete all drainage activities
- Complete installation of all fences & gates
- Complete 75% of backfilling to underside of yard stone
- Complete up to 75% of all yard grading and stoning
- Form and pour hatches for OWS
- Water test OWS

• Electrical Construction

- Install breaker platforms
- rigid and strain bus upgrades based on outage requirements
- replace M23L line and ground switch
- bus protection cutovers from old to new to support commissioning activities
- install new yard lighting
- Complete installation of reactors R3 & R4 (strain bus, surge arrestors)
- Begin removals of old protection equipment

o **Buildings**

- New PCT building
 - Support commissioning activities
- Existing Control building –work performed
 - Provide commissioning support during outages in the form of removal and adding cables
- Commission the following protections:
 - H Bus main 'A' and alternate 'B' protections
 - Transformer T12 main 'A' and alternate 'B' protections
 - W21M main 'A' and alternate 'B' protections
 - HL35 main 'A' and alternate 'B' protections
 - HL38 main 'A' and alternate 'B' protections
 - HL21 main 'A' and alternate 'B' protections
 - HL24 main 'A' and alternate 'B' protections
- In-service the following protections
 - New Instrument transformer HCVT's (3) will be placed into service

ii. Life-to-Date Status of Major Items

Marathon TS

Approvals	<u>Rec'd</u>	<u>% Comp</u>
EA approvals	Yes	100.0%
ECA drainage	Yes	100.0%

Civil / Electrica	l Installation	<u>Project</u> <u>Total</u>	<u>Unit of</u> <u>Measure</u>	Installed	<u>% Comp</u>
	Civil / Electrical Installati	ion - On	Track		
Foundations		3	ea	3	100.0%
Footings - Piers		376	ea	376	100.0%
Cable Trench		1663	m	1663	100.0%
Grounding Grid		4220	m	3610	85.5%
Structures		97	ea	95	97.9%
Rigid bus		1247	m	938	75.2%
Strain bus		3090	m	2483	80.4%

Equipment Installation	<u>Project</u> <u>Total</u>	<u>Unit of</u> <u>Measure</u>	<u>Rec'd/</u> <u>Built</u>	<u>Installed</u>	<u>Wired</u>	<u>Comm'd</u>	<u>% Comp</u>
Equipment Installation -	On Tra	ck					
Breakers	12	ea	12	12	12	7	83.3%
Reactors	2	ea	2	2	0	2	70.0%
Switches - Line, Disc & Grnd	36	ea	36	30	30	17	70.6%
CVT (Current Voltage Transformer)	24	ea	24	24	24	12	80.0%
AC Station Service	2	ea	2	2	2	2	100.0%
DC Station Service	2	ea	2	2	2	2	100.0%
Protection racks (IED's)	132	ea	132	132	132	0	60.0%
Control equipment	15	ea	15	15	15	5	73.3%
Telecom/Teleprotion racks (IED's)	83	ea	83	83	80	0	58.9%

Definition of terms used:

Rec'd/Built - represents either inventory delivered and sitting at site/warehouse or racks built for building

Installed - represents equipment being installed on a structure, foundation, floor or in a rack

Wired - represents having all wiring and terminations completed to the equipment

Comm'd - represents 'Commissioned' being able to function as designed, for it's intended purpose

% Compl - represents % complete weighting: 10% for rec;d, 20% for Installed, 30% for wired, 40% commission

Building Instal	ation	<u>Project</u> <u>Total</u>	<u>Unit of</u> <u>Measure</u>	<u>Found'n</u>	<u>Walls</u> /Roof	<u>Mech/</u> <u>Elect</u>	<u>Comm'd</u>	<u>% Comp</u>
	Building Installation - On Tr	ack						
PCT (Protection,	/Control/Telecom) Building	1	%	100.0%	100.0%	100.0%	100.0%	100.0%

Definition of terms used:

Found'n - represents the concrete foundation slab

Walls/Roof - represents the pre-cast walls and roof being erected

Mech/Elect - represents having all HVAC, fire alarm, lighting and distribution panels completed in building Comm'd - represents 'Commissioned' being substantially complete as designed, for it's intended purpose % Compl - % complete weighting: 20% foundations, 40% Walls/Roof, 30% Mech/Elect, 10% commission

iii. Progress Photos - Civil & Electrical



Marathon TS - newly upgraded rigid H bus in Bay 3



Marathon TS - newly wired R3 reactor breaker



Marathon TS - newly installed strain/rigid bus in Bay 8(East side of yard)



Marathon TS - R4,R3,W35M,W35M CVT's(East side of yard)

iv. Progress Photos - Equipment & Building



Marathon TS – D25 RTU X 10 controller



Marathon TS – Satellite clock



Marathon TS – Ground detector

C. Wawa TS - Construction Activities

i. Summary of Activities from last Reporting Period to Next Reporting Period

• Work Completed between Jun 01, 2021 – Aug 31, 2021

• Civil Construction

- All yard stoning complete for next year
- 3 BPE tower footings have been installed (to accept new lines)
- Fence and gate installation complete for this year

• Electrical Construction

- Three quarters of grid grounding installed as a part of yard expansion
- Installation of flexible strain bus from breakers to adjacent bus is complete in Bay 1 and three quarters complete in Bay 3
- Five out of six breaker platforms have been installed
- Four out of five telecom fibers have been spliced
- Continued with installation and grounding of breaker disconnect switches
- Pulling of AC station service cables are complete

• Equipment

- Breaker in Bay 1 has been wired
- All new CVT's have been wired except the CVT for W21M slated for next year
- Two thirds of AC station service cables have been pulled and terminated

• Buildings

- New PCT building
 - All internal cables pulled in new Control Building is complete. All cables required by P&C have been terminated
- Existing Control building

• All equipment required by P&C has been installed including the temporary terminal rack

• Fiber and 25 pair cables are all complete except the fiber for the OPGW that will be supplied with new lines. Some temporary cables have been pulled

• **Commissioning**

• Protection relays are 90% programmed and tuned with 20% of interconnect jumpers in place

• New DC Station Service is in-service with both supplies

• Outage for commissioning of W21M & W22M PLC's was moved to October but preparation work is 90% complete

C. Wawa TS - Construction Activities - continued

i. Summary of Activities from last Reporting Period to Next Reporting Period

• Anticipated work to be completed between Sep 2021 - Nov 2021

• Civil Construction

- All civil work for this year has been completed so no civil work is expected for the rest of this year
- Electrical Construction
 - Complete remainder of grid grounding in yard expansion
 - Complete 250m of grounding around line entrance BPE structures
 - Install remainder of flexible strain bus from breakers to adjacent bus
 - Install remaining one breaker platform
 - Splice one end of the optical telecom fiber
 - Pulling of the remaining AC station service cables
 - Complete installation and grounding of breaker disconnect switches

• Equipment

- Mount new boxes for existing instrument transformers and pull cables
- Completion of pulling and termination of all AC station service cables

• Buildings

- New PCT building
 - Terminate all cables required by P&C as required
- Existing Control building
 - Install all equipment required by P&C. Install temporary terminal rack
 - Pull temporary cables, 25pr cable and fiber cable

• Commissioning

- Commission 4-Breakers, 2-Line Disconnect switches, and 2-Ground Switches
- Commission 4-Breaker current transformers and 2-Bus instrument transformers
- Install jumpers and Function Test protections
- In service new control RTU and LAN equipment
- Continue with cutover plans, to put new protections in service replacing old
- Commission W21/22M PLC's

ii. Life-to-Date Status of Major Items

Wawa TS

Approvals	<u>Rec'd</u>	<u>% Comp</u>		
EA approvals	Yes	100.0%		
Civil / Electrical Installation	<u>Project</u> <u>Total</u>	<u>Unit of</u> <u>Measure</u>	Installed	<u>% Comp</u>
Civil / Electrical Installati	on - On	Track		
Foundations	n/a	n/a	n/a	n/a
Footings - Piers	163	ea	163	100.0%
Cable Trench	962	m	962	100.0%
Grounding Grid	2320	m	1900	81.9%
Structures	88	ea	88	100.0%
Rigid bus	384	m	335	87.2%
Strain bus	1310	m	1205	92.0%
Lines intermediate structures	3	ea	0	0.0%

Equipment Installation	<u>Project</u> <u>Total</u>	<u>Unit of</u> <u>Measure</u>	<u>Rec'd/</u> <u>Built</u>	<u>Installed</u>	<u>Wired</u>	<u>Comm'd</u>	<u>% Comp</u>
Equipment Installation -	On Trad	ck					
Breakers	6	ea	6	6	6	0	60.0%
Reactors/Cap Banks	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Switches - Line, Disc & Grnd	19	ea	19	16	5	10	55.8%
CVT (Current Voltage Transformer)	15	ea	15	12	12	0	50.0%
AC Station Service	2	ea	2	2	0	0	30.0%
DC Station Service	2	ea	2	2	2	2	100.0%
Protection racks	64	ea	64	64	64	20	72.5%
Control equipment	15	ea	15	15	13	5	69.3%
Telecom/Teleprotion racks	64	ea	64	64	55	0	55.8%

Definition of terms used:

Rec'd/Built - represents either inventory delivered and sitting at site/warehouse or racks built for bulidng Installed - represents equipment being installed on a structure, foundation, floor or in a rack

Wired - represents having all wiring and terminations completed to the equipment

Comm'd - represents 'Commissioned' being able to function as designed, for it's intended purpose

% Compl - represents % complete weighting: 10% for rec;d, 20% for Installed, 30% for wired, 40% commission

Building Instal	lation	<u>Project</u> <u>Total</u>	<u>Unit of</u> <u>Measure</u>	<u>Found'n</u>	<u>Walls</u> /Roof	<u>Mech/</u> <u>Elect</u>	<u>Comm'd</u>	<u>% Comp</u>
	Building Installation - On Tra	ick						
PCT (Protection,	/Control/Telecom) Building	1	%	100.0%	100.0%	100.0%	100.0%	100.0%

Definition of terms used:

Found'n - represents the concrete foundation slab

Walls/Roof - represents the pre-cast walls and roof being erected

Mech/Elect - represents having all HVAC, fire alarm, lighting and distribution panels completed in building Comm'd - represents 'Commissioned' being substantially complete as designed, for it's intended purpose % Compl - % complete weighting: 20% foundations, 40% Walls/Roof, 30% Mech/Elect, 10% commission

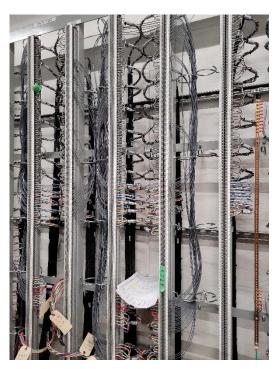
iii. Progress Photos - Civil & Electrical



Wawa - ATS install for existing breakers



Wawa – AC Station work



Wawa – terminal racks for cable pulling and terminations



Wawa – Bay 3 1000MCM strain bus installation

iv. Progress Photos - Equipment & Building



Wawa - new various protection racks



Wawa – new breaker protections



Wawa – fuse and protection racks

2. Co-ordination efforts with Upper Canada Transmission Inc., operating as NextBridge Infrastructure, LP (NextBridge)

- A. Station Connection:
 - i. Hydro One and NextBridge project teams continue to hold monthly meetings (conference calls) to discuss the project status, review and update schedules, as well as engineering, construction and outage issues related to connection of the NextBridge lines to Hydro One stations.
 - ii. The Construction Cost Recovery Agreement (CCRA) between Hydro One and NextBridge, is on track to be completed by the end of 2021. Along with the CCRA, a Connection Facility Agreement (CFA) is also being formulated between both parties which contains more technical and operational details to be completed by the end of Q1 of 2022 just prior to energization of the lines. For the most part, the content has been established for the two agreements with only the legal terms and conditions being reviewed.
- B. Occupancy of Hydro One Property
 - i. The Easement Agreements for the EWT line on Bill 58 lands for Wawa TS station has been finalized and is complete.
- C. Staging Plan and Support
 - i. Hydro One continues to support NextBridge with their outage requirements. Planned outages continue to be successfully executed according to the Staging Plan.
 - ii. The commissioning plan between Hydro One and NextBridge to schedule tower and lines placement outside each station, has been finalized and accepted by NextBridge.
 - iii. Hydro One continues to assist NextBridge in their Work Protection activities related to outages for lines construction, by providing for training and support.

3. Project Schedule Update:

Station Related Work Lakehead TS	Baseline Forecast	Current Forecast	Status
Drainage Environmental Compliance Approval (ECA) received	1-Apr-19	1-Apr-19	Complete
Station Readiness (infrastructure) to accept lines (2)	19-Apr-21	15-Jul-20	Complete
Station ready for In-Service (3)	31-Aug-21	31-Oct-21	Delayed
Connection from towers into station (2), (1)	11-Feb-22	11-Feb-22	On Track
In-Service with Power Flowing through M37L/M38L circuits (4)	31-Mar-22	31-Mar-22	On Track

Station Related Work Marathon TS	Baseline Forecast	Current Forecast	Status
Re-submission of ECA permit application	1-Nov-18	1-Nov-18	Complete
NextBridge EWT IEA approval obtained	1-Mar-19	1-Mar-19	Complete
Drainage ECA received	1-Oct-19	1-Oct-19	Complete
HONI EA approval	15-Oct-19	15-Oct-19	Complete
Tree cutting commencement	15-Oct-19	15-Oct-19	Complete
Station Readiness (infrastructure) to accept lines (2)	19-Apr-21	19-Apr-21	Complete
Station ready for In-Service (3)	30-Sep-21	17-Dec-21	Delayed
Connection from towers into station (2), (1)	4-Feb-22	4-Feb-22	On Track
In-Service with Power Flowing through M37L/M38L & W35M/W36M circuits (4)	31-Mar-22	31-Mar-22	On Track

Station Related Work Wawa TS	Baseline Forecast	Current Forecast	Status
Direction from MECP to Hydro One regarding Screening Level EA and Part II Order Request	8-Nov-18	8-Nov-18	Complete
NextBridge EWT IEA approval obtained	1-Mar-19	1-Mar-19	Complete
HONI EA approval	30-Sep-19	30-Sep-19	Complete
Tree cutting commencement (no permits required)	1-Oct-19	1-Oct-19	Complete
Station Readiness (infrastructure) to accept lines (2)	7-Dec-20	7-Dec-20	Complete
Station ready for In-Service (3)	28-Oct-21	28-Oct-21	On Track
Connection from towers into station (2), (1)	25-Feb-22	25-Feb-22	On Track
In-Service with Power Flowing through W35M/W36M circuits (4)	31-Mar-22	31-Mar-22	On Track

Nextbridge Related Interface Work	Baseline Forecast	Current Forecast	Status	
Lines/Grounding Spec deliverables for Lakehead TS	19-Oct-20	19-Oct-20	Complete	
Lines/Grounding Spec deliverables for Marathon TS	19-Oct-20	19-Oct-20	Complete	
Lines/Grounding Spec deliverables for Wawa TS	19-Feb-21	19-Feb-21	Complete	
Connection structures ready outside Lakehead TS (1)	4-Feb-22	4-Feb-22	On Track	
Connection structures ready outside Marathon TS (1)	11-Feb-22	11-Feb-22	On Track	
Connection structures ready outside Wawa TS (1)	25-Feb-22	25-Feb-22	On Track	
Conductor/OPGW/OHGW complete to structure outside Lakehead TS (1)	4-Feb-22	4-Feb-22	On Track	
Conductor/OPGW/OHGW complete to structure outside Marathon TS (1)	11-Feb-22	11-Feb-22	On Track	
Conductor/OPGW/OHGW complete to structure outside Wawa TS (1)	25-Feb-22	25-Feb-22	On Track	

Note (1): Project Schedule change as per request by NextBridge to accommodate for COVID-19 related delays Note (2): "Station Readiness" and "Connection to towers" have been separated into their own category to make more sense. "Station Readiness" is when the station is ready to accept incoming lines from NextBridge where as "Connection to towers" is the actual stringing of conductors into station Note (3): Additional time required for commissioning of station Note (4): Added this note to address commissioning time after connection from towers into station

4. Project Cost Update:

	Hydro One-Stations Upgrades Project Reporting Costs Table									
ACTUALS SPENT			ORIGINAL BUDGET	FORECAST BUDGET VARIANCE						
COST CATEGORIES FOR HYDRO ONE'S STATION UPGRADES PROJECT REPORTING		A SPENT THIS REPORTING PERIOD \$	B TOTAL SPENT TO DATE \$	C BUDGET PER LTC APPLICATION \$ 000S	D FORECAST BUDGET CHANGE FROM LAST REPORT \$	E FORECAST BUDGET CHANGE FROM LAST REPORT %	F REVISED TOTAL BUDGET	G=F-B BUDGET REMAINING \$	H=G/F*100 BUDGET REMAINING %	REASONS FOR CHANGE
1	Materials	215,937	64,213,378	51,337,000	0	0.00%	64,840,000	626,622	0.97%	none
2	Labour	3,627,071	45,530,439	56,895,000	-500,000	-0.88%	54,194,000	8,663,561	15.99%	adjust to forecast
3	Equipment Rental and Contractor Costs	883,181	14,747,556	8,920,000	0	0.00%	23,072,000	8,324,444	36.08%	none
4	Sundry	1,940,068	7,171,814	1,305,000	0	0.00%	5,263,000	-1,908,814	-36.27%	none
5	Contingencies	0	0	19,227,000	0	0.00%	3,750,000	3,750,000	100.00%	none
6	Overhead	562,492	14,221,016	13,367,000	0	0.00%	16,577,000	2,355,984	14.21%	none
7	Allowance for Funds During Construction	1,225,154	9,513,367	6,264,000	0	0.00%	13,504,000	3,990,633	29.55%	none
8	Other Costs									
	TOTAL CONSTRUCTION COSTS	8,453,904	155,397,570	157,315,000	-500,000	0%	181,200,000	25,802,430	14.24%	

For clarification, this table captures all costs incurred up until Aug 31, 2021.

6. Risk Management Update:

Risk Description	Likelihood of Risk Occurring (High, Medium, Low)	Description of Impact of the Risk on the Project	Impact of the Risk on the Project	Mitigation of Risk and/or Impact	
Outage Cancellations- North West region has limited transmission resources, long distances and far less lines to transfer the energy to our customers. For these reasons executing outages is more restrictive & challenging while maintaining System Security, Reliability, Voltage and Stability. Furthermore low water levels in 2021 creates further challenges in receiving hydraulic generation/voltage support required for the outage postures and local reliability. Forest fires in 2021 have also made it challenging.	High	In-service delay / cost overrun	High	Creation of contingency dates for alternative outage dates. Continous communications with the various stakeholders to provide awareness. Delays could cause activities to slide affecting both schedule and cost.	
Outage availability considerations due to COVID-19 pandemic disruption	Meduim	Project delays/ cost overrun	High	Coordinate and bundle outage requirements. Delays could cause activities to slide affecting both schedule and possibly cost.	
NextBridge not being able to meet Hydro One's deliverable commitments and/or the in-service date	Meduim	Project delays/ cost overrun	High	Communication with NextBridge and tracking the Staging Plan. By not meeting HONI standards could cause re-design and delays to project schedule.	
Cost & Schedule impacts due to COVID- 19 pandemic disruption.	Low	Project delays/ cost overrun	High	Looking for efficiency gains in work methods. Monitor affect of working with new social distancing measures and make adjustments as required.	
NextBridge dead-end structure not designed to Hydro One standards	Low	Project delays/ cost overrun	Medium	Communication with NextBridge and monitoring of design. By not meeting HONI standards could cause re-design and delays to project schedule.	
Delays in obtaining required EA approvals for Wawa TS	No risk - complete	Project delays/ cost overrun	High	Complete – approval granted	
Delays in construction of 230kV Control building due to EA approval delay	No risk - complete	Project delays/ cost overrun	High	Complete – approval granted	
Delays in obtaining required EA approvals for Marathon TS	No risk - complete	No impact	No impact	Complete – approval granted	
Delays in obtaining funding for engineering and long-lead material	No risk - complete	No impact	No impact	Complete – funding received	
Material delivery delay considerations	No risk - complete	Delay in procurement/delivery	Low	Monitor material status reports and contact vendor on a periodic basis. Delays could cause activities to slide affecting both schedu and possibly cost	
Soil conditions do not match samples in soil report	No risk - complete	No impact	No impact	Complete - risks have been mitigated using alternative construction measures.	
Commissioning resource availability due to compressed schedule	No risk - complete	Project delays/ cost overrun	No impact	Complete - resources acquired	