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BY EMAIL AND RESS

November 1, 2024

Ms. Nancy Marconi
Registrar
Ontario Energy Board
Suite 2700, 2300 Yonge Street
Toronto, ON M4P 1E4

Dear Ms. Marconi,

Re: EB-2011-0042 2024 Regional Planning Status Report of Hydro One Networks Inc.

Section 3C.3.3 of the Transmission System Code requires transmitters to submit an annual report to the Ontario Energy Board, on November 1st of each year, that identifies the status of regional planning for all regions.

Please find attached Hydro One Networks Inc.'s 2024 Regional Planning Process Annual Status Report, pursuant to the above noted Code section.

Sincerely,

Jason Savulak

Regional Planning Process

Annual Status Report

2024

November 1st, 2024

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EXECUTIVE SUMMARY

Transmitters are required under Section 3C.3.3 of the Transmission System Code[1] (TSC) to submit an annual report to the Ontario Energy Board (OEB or Board) on November 1st of each year which identifies the status of the regional planning for their respective regions. This is the Eleventh Annual Status Report produced by Hydro One Networks Inc. (Hydro One) and provides an update to the status of regional planning activities, recommended regional plans and accomplishments between November 2023 and October 2024.

Progress to Date:

The first and second cycles of regional planning for the 21 regions were successfully completed in 2017 and 2023 respectively as per the process developed by the Planning Process Working Group (PPWG)[2]. The third cycle of regional planning is currently underway. During these regional planning cycles, several lessons were learned and Hydro One has implemented improvements to the process. For instance, recent improvements were made with respect to enhanced coordination between electricity planning and municipal and natural gas planning. In Dec. 2022, OEB's Regional Planning Process Advisory Group (RPPAG) published a Municipal Information Guideline called, "Improving the Electricity Planning Process in Ontario: Enhanced Coordination between Municipalities and Entities in the Electricity Sector". This guideline provides a list of relevant municipal planning information that would assist Local Distribution Companies (LDCs) in developing a more accurate load forecast for regional planning purposes. In 2024, Hydro One transmission created a new template that can be used by municipal planners to provide this input. This template is consistent with the guideline and is an effective and efficient means for municipalities to provide their planning information to LDCs. Another step Hydro has taken with respect to enhanced coordination with municipalities is active involvement in regional planning webinars. For example, in April 2023, Hydro One presented at the "Association of Municipalities Ontario (AMO) Webinar on Regional Planning in Ontario" to bring further awareness to municipalities on the regional planning process and the Municipal Information Guideline. Hydro One is currently working with AMO again to organize a second webinar in 2025 that will discuss the regional planning process, the Municipal Information Guideline, and the new template Hydro One has prepared to provide continued awareness and education to municipalities.

Hydro One is also working with Enbridge Gas Inc. to enhance coordination between natural gas and electricity sectors. This year Hydro One has continued discussions with Enbridge on how to facilitate improved coordination and has also provided feedback to Enbridge related to electricity and gas demand forecasting as well as system capacity and constraints so that both Hydro One and Enbridge can take into consideration for their respective planning purposes.

Another area of improvement Hydro One has undertaken is continued enhancement of the Needs Assessment (NA) and Regional Infrastructure Plan (RIP) reports. Some of the key updates include a new section on "Sensitivity Analysis" in the NA report (beginning with third cycle Burlington to Nanticoke Region NA report), continued rationale and documentation with respect to "right sizing" equipment for major transmission asset replacement, and various updates to make the reports more reader friendly such as additional hyperlinks to associated reports and an appendix with a list of municipalities in the region.

As part of the third regional planning cycle there are three regions so far where the NA has been advanced due to emerging needs in their respective areas – Greater Ottawa (completed in Dec. 2022), London Area (to be completed in Nov. 2024), and Peterborough to Kingston (to be completed in Jan. 2025). Hydro One is keeping abreast of the needs in the province on a regional basis and will advance regional planning for any other regions where necessary.

Since the beginning of the second regional planning cycle, the following are the significant milestones that have been accomplished (see Table 1):

- Needs Assessment (NA) reports for the second cycle completed for all twenty (20) regions where Hydro One is the lead transmitter.
- Regional Infrastructure Planning (RIP) reports for the second cycle completed for all the twenty (20) regions where Hydro One is the lead transmitter.
- For the third regional planning cycle nine (9) NAs are completed and three are underway in 2024.
- Integrated Regional Resource Planning (IRRP) reports for the second cycle completed for fifteen (15) regions as required. For the third regional planning cycle, four (4) IRRPs are currently underway.

The status of regional planning for each region is summarized in Table 1.

Table 1. Regional Planning Status Summary

Region	Sub-region	2nd Cycle (2017-2023)				3rd Cycle (2022→)			
		NA (1)	**SA** (1)	**IRRP** (1)	**RIP** (1)	**NA** (1)(3)	**SA** (1)(3)	**IRRP** (1)(3)	**RIP** (1)
Burlington to Nanticoke	Brant	May. 2017	Aug. 2017	Feb. 2019	Oct. 2019	Sep. 2022	Dec. 2022	Nov. 2024	TBD
	Bronte								
	Greater Hamilton								
	Caledonia-Norfolk								
Toronto Area	Central Downtown	Oct. 2017	Feb. 2018	Aug. 2019	Mar. 2020	Dec. 2022	Mar. 2022	Mar. 2025	TBD
	Northern								
Windsor-Essex		Oct. 2017	Mar. 2018	Sep. 2019	Mar. 2020	Feb. 2023	May 2023	Nov. 2024	TBD
GTA North	York	Mar. 2018	Aug. 2018	Feb. 2020	Oct. 2020	Jul. 2023	Nov. 2023	Jun. 2025	TBD
	Western								
Greater Ottawa	Ottawa	Jun. 2018	Sep. 2018	Mar. 2020	Dec. 2020	Dec. 2022	Mar. 2023	Mar. 2025	TBD
	Outer Ottawa								
Kitchener-Waterloo-Cambridge-Guelph		Dec. 2018	May. 2019	May. 2021	Dec. 2021	Apr. 2024	Jul. 2024	Jan. 2026	TBD
GTA West		May. 2019	Aug. 2019	Jul. 2021	Feb. 2022	Aug. 2024	Nov. 2024	TBD	TBD
Greater Bruce/Huron		May. 2019	Sep. 2019	Sep. 2021	Apr. 2022	Sep. 2024	Dec.2024	TBD	TBD
East Lake Superior		Jun. 2019	Oct. 2019	Apr. 2021	Oct. 2021	Oct. 2024	Jan. 2025	TBD	TBD

Region	Sub-region	2nd Cycle (2017-2023)				3rd Cycle (2022→)			
		NA (1)	**SA** (1)	**IRRP** (1)	**RIP** (1)	**NA** (1)(3)	**SA** (1)(3)	**IRRP** (1)(3)	**RIP** (1)
GTA East	Pickering-Ajax-Whitby	Aug. 2019	*Not Required*	*Not Required*	Feb. 2020	Dec. 2024	TBD	TBD	TBD
	Oshawa-Clarington								
Peterborough to Kingston		Feb. 2020	May. 2020	Nov. 2021	May. 2022	Jan. 2025	TBD	TBD	TBD
South Georgian Bay/Muskoka	Barrie/Innisfil	Apr. 2020	Nov. 2020	May. 2022	Dec. 2022	Aug. 2025	TBD	TBD	TBD
	Parry Sound/Muskoka								
London Area	Greater London	May. 2020	*Not Required*	*Not Required*	Aug. 2022	Nov. 2024	TBD	TBD	TBD
	Alymer-Tillsonburg								
	Strathroy								
	Woodstock								
	St. Thomas								
Sudbury/Algoma		Jun. 2020	*Not Required*	*Not Required*	Dec. 2020	Oct. 2025	TBD	TBD	TBD
Northwest Ontario	North of Dryden	Jul. 2020	Jan. 2021	Jan. 2023	Aug. 2023	Nov. 2025	TBD	TBD	TBD
	Greenstone-Marathon								
	Thunder Bay								
	West of Thunder Bay								
Chatham/Lambton/Sarnia		Sep. 2021	Dec. 2021	*Not Required*	Aug. 2022	Jan. 2027	TBD	TBD	TBD
Niagara		May. 2021	Aug. 2021	Dec. 2022	Jul. 2023	Sep.2026	TBD	TBD	TBD
North/East of Sudbury		May. 2021	Aug. 2021	Apr. 2023	Nov. 2023	Sep. 2026	TBD	TBD	TBD
Renfrew		May. 2021	Aug. 2021	Dec. 2022	Jul. 2023	Sep. 2026	TBD	TBD	TBD
St. Lawrence (2)		Sep. 2021	*Not Required*	*Not Required*	Mar. 2022	Jan. 2027	TBD	TBD	TBD
North of Moosonee		Hydro One Transmission is not the lead transmitter in this region. Status to be provided by lead transmitter.							

Notes: (1): NA: Needs Assessment; SA: Scoping Assessment; IRRP: Integrated Regional Resource Plan; RIP: Regional Infrastructure Plan
(2): Note that St. Lawrence 2nd cycle NA was initiated two (2) months over the five (5) year period because of an error in oversight.
(3): These are tentative dates of completion based on Regional Planning Process timeline requirements.

TABLE OF CONTENTS

1. INTRODUCTION

The process for electric power system planning in the Province of Ontario underwent a procedural change in 2013. A new regional planning process, which enables transparent, coordinated and cost-effective planning of regional transmission and distribution systems, was mandated by the Ontario Energy Board (OEB or Board) on August 26, 2013 through amendments to both the Transmission System Code[1] (TSC) and the Distribution System Code[5] (DSC). This process is outlined in the Planning Process Working Group's (PPWG) Report to the Board, titled "The Process for Regional Infrastructure Planning in Ontario"[2], revised May 17, 2013.

As per Section 3C.3.3 of the TSC, transmitters are required to submit an annual report to the Board on November 1st of each year, which identifies the status of the regional planning process and its deliverables in their respective regions. This Eleventh (2024) Annual Status Report, produced by Hydro One Networks Inc. (Hydro One), provides an update to the accomplishments and progress status of the regional planning activities from November 2023 to October 2024. It also identifies plans and projects already in execution to address new and previously identified needs.

The Report is structured as follows:

- Section 2 provides a brief overview of the regional planning process.
- Section 3 identifies lessons learned and improvements made to the regional planning process.
- Section 4 discusses the various regional planning activities, plans, and projects completed or being undertaken.
- Section 5 provides a brief summary of the status of regional planning and its accomplishments over the last year.
- Section 6 lists all reference documentation.

2. REGIONAL PLANNING PROCESS OVERVIEW

Bulk System Planning, Regional Planning and Distribution Planning are the three levels of planning for the electricity system in Ontario. Bulk system planning typically looks at issues that impact the system on a provincial level and requires longer lead time and larger investments. Comparatively, planning at the regional and distribution levels look at issues on a more regional or localized level. Typically, the most essential and effective regional planning horizon is the near- to medium-term (1-10 years), whereas long-term (10-20 years) regional planning mostly provides a future outlook with few details about investments because the needs and other factors may vary over time. On the other hand, bulk system plans are developed for the long term because of the larger magnitude of the investments.

The regional planning process begins with a Needs Assessment (NA) which is led by the transmitter to identify, assess and document which of the needs a) can be addressed directly between the customer and the transmitter along with a recommended plan, and b) that require further regional coordination and identification of Local Distribution Companies (LDCs) to be involved in further regional planning activities for the region.

At the end of the NA, a decision is made by the Technical Working Group (TWG) as to whether further regional coordination is necessary to address some or all the regional needs. If no further regional coordination is required, recommendation to implement the recommended option and any necessary investments are planned directly by the LDCs (or customers) and the transmitter. The Region's TWG can also recommend to the transmitter and LDCs to undertake a local planning process for further assessment when needs a) are local in nature, b) require limited investments in wires (transmission or distribution) solutions, and c) do not require upstream transmission investments.

If coordination at the regional or sub-regional levels is required for identified regional needs, then the Independent Electricity System Operator (IESO) initiates the Scoping Assessment (SA) phase. During this phase, the IESO, in collaboration with the transmitter and impacted LDCs, reviews the information collected as part of the NA phase, along with additional information on potential non-wires or resource alternatives, e.g., Conservation and Demand Management (CDM), Distributed Generation (DG), etc., in order to make a decision on the most appropriate regional planning approach including Local Plan (LP), Integrated Regional Resource Plan (IRRP) and/or Regional Infrastructure Plan (RIP).

The primary purpose of the IRRP is to identify and assess both resource and wires options at a higher or macro level, but sufficient to permit a comparison of resource options vs. wire infrastructure to address the needs. Worth noting, the LDCs' CDM targets as well as contracted DG plans provided by IESO and LDCs are reviewed and considered at each step in the regional planning process.

If and when an IRRP identifies that resource and/or wires options may be most appropriate to meet a need, resource/wires planning can be initiated in parallel with the IRRP or in the RIP phase to undertake a more detailed assessment, develop specific resource/wires alternatives, and recommend a preferred wires solution.

As a final step of the regional planning process, Hydro One as the lead transmitter undertakes the development of a RIP with input from the TWG for the region and publishes a RIP report. The RIP

reports include a complete discussion of all options and recommended plans and wire infrastructure investments within each region. As a result, RIP reports are also referenced as supporting evidence in a cost of service or Leave-to-Construct approval application.

Figure 2-1 illustrates the various steps of the regional planning process that include NA, SA, LP, IRRP, and RIP.

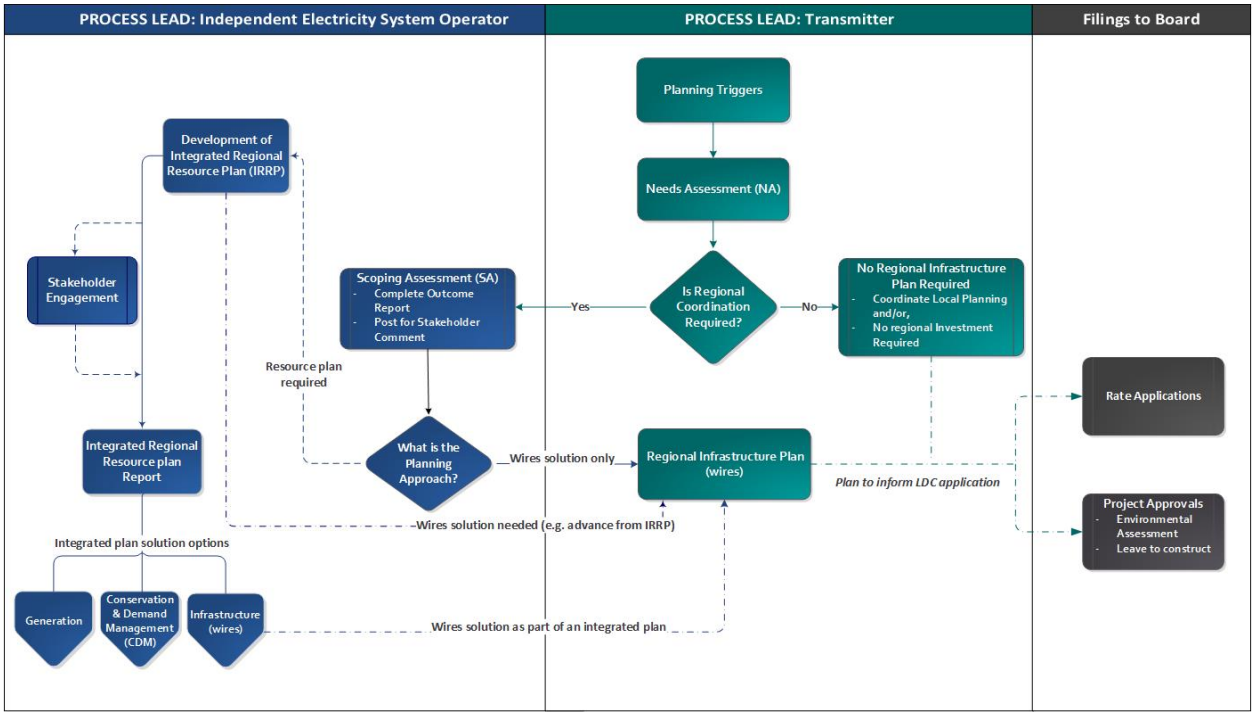

Figure 2-1. Regional Planning Process Flowchart

2.1 Regions

The province has been divided into 21 regions to undertake regional planning. In the first cycle, 21 regions were placed into 3 groups to manage and prioritize regional planning activities. Subsequently, regional planning is initiated every five (5) years or earlier if required to meet emerging needs.

Hydro One is the lead transmitter in all regions, except the **North of Moosonee** Region. For each regional planning activity at the regional or sub-regional level, a Technical Working Group (TWG) is established for each region with representatives from the IESO, Hydro One, and respective LDCs of the area. During the regional planning process, the TWG may further divide a region into two or more sub-regions based on electrical characteristics, contiguity and for efficient and effective assessment.

The planning regions are listed in Table 2 and shown pictorially in Figure 2-2.

Table 2. Regional Planning Regions

Burlington to Nanticoke	Northwest Ontario	Chatham/Lambton/Sarnia
Greater Ottawa	Windsor-Essex	Greater Bruce/Huron
GTA East	East Lake Superior[1]	Niagara
GTA North	London Area	**North of Moosonee**
GTA West	Peterborough to Kingston	North/East of Sudbury
KWCG	South Georgian Bay/Muskoka	Renfrew
Toronto (formerly Metro Toronto)	Sudbury/Algoma	St. Lawrence

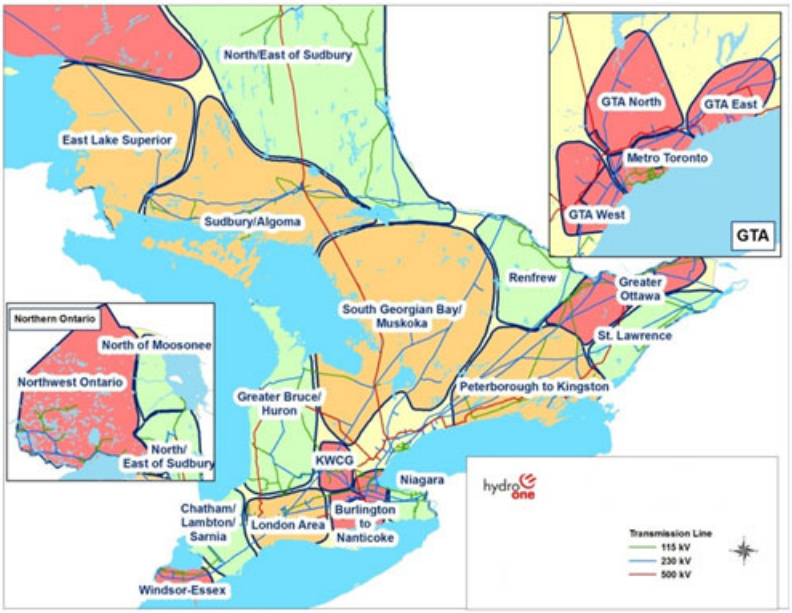

Figure 2-2. Regional Planning Regions

[1] Hydro One Sault Saint Marie, an affiliate of Hydro One Networks, is the lead transmitter for East Lake Superior. This Report includes the status of the regional planning activities in the East Lake Superior Region.

2.2 Conservation & Demand Management (CDM) and Distributed Energy Resources (DER)

CDM is considered at each step of the regional planning process. It is based on input from municipalities, requirements of individual LDCs to comply with conservation targets that are to be achieved through the provision of CDM programs to each customer segment in their service territories[6]. The CDM information is provided by the IESO and prepared jointly by the LDCs for regional planning assessments.

Consistent with Section 21.2.2 (g) of the IESO License and Section 3C.3 of the Transmission System Code[1] (TSC), the IESO provides peak demand offsets resulting from LDCs' CDM programs. It is worth noting that peak demand offsets resulting from LDCs' CDM programs are the total offsets to be achieved by the LDC within its service territory and hence may not be limited to or reflective of offsets within the specific region. The IESO also provides total installed and effective capacity of the IESO contracted DG projects which are either in service or are under development for regions or sub-regions for which an IRRP is completed. The CDM and DG summary provided by the IESO is attached in Appendix A.

Both, CDM and DG information is used to develop a net forecast from the gross load forecast provided by the LDCs.

3. LESSONS LEARNED AND PROCESS IMPROVEMENTS

Over the three regional planning cycles to date, Hydro One has identified several lessons and opportunities for improvement related to the regional planning process and its deliverables. These improvements include recommendations from the Ontario Energy Board's (OEB) Regional Planning Process Advisory Group ("RPPAG"), internal process and regional planning report updates, and feedback from regional Technical Working Groups (TWG) (consisting of Local Distribution Companies (LDCs), Independent Electricity System Operator (IESO), and Hydro One as lead transmitter). Hydro One has implemented these improvements over the last three regional planning cycles which have led to a more effective and efficient process along with its deliverables. Some key improvements since our 2023 Regional Planning Process Annual Status Report include the following:

- Hydro One created a new template that can be used by municipal planners to provide input to LDCs to inform the LDC's demand forecast. This template is aligned with OEB RPPAG's Municipal Information Guideline, "Improving the Electricity Planning Process in Ontario: Enhanced Coordination between Municipalities and Entities in the Electricity Sector." This template will streamline the information exchange between LDCs and municipalities as it provides the format and specificity of the information required by municipalities.

- Hydro One is actively working with the Association of Municipalities of Ontario (AMO) to organize a second webinar in 2025 that will discuss the regional planning process, the Municipal Information Guideline, and the new template Hydro One has developed to provide continued awareness and education to municipalities. In addition, Hydro One sends an annual email to all municipalities and LDCs to inform them about regional planning initiatives that will begin within the next 18 months so they can begin gathering their planning information. Hydro One also sends a reminder a few months before regional planning is triggered.

- Hydro One continues discussions with Enbridge Gas Inc. on how the two entities can enhance coordination between Natural Gas and Electricity Regional Planning. Hydro One has also participated and provided feedback at meetings held by Enbridge related to electricity and gas demand forecasting as well as system capacity and constraints so that both Hydro One and Enbridge can take into consideration for their planning purposes.

3.1 Other Process Improvements

Some other process improvements made by Hydro One are listed below:

- Regional Planning Report Templates – various updates to make the reports more reader friendly including additional hyperlinks to associated reports, new appendix with a list of municipalities in the region, new section on "Sensitivity Analysis" in the Needs Assessment (NA) report (beginning with third cycle Burlington to Nanticoke Region NA report), and other report updates.
- Continue utilizing revised local planning guidelines to aid the TWG in determining when specific needs that are local in nature can be more efficiently addressed by Hydro One and affected LDC(s).

- Pre-Regional Planning Input – since the second regional planning cycle, prior to start of the NA and Regional Infrastructure Planning (RIP) phase, Hydro One implemented one-on-one pre-Regional Planning meetings with key stakeholders such as LDCs to better understand their emerging needs and collect relevant information. These meetings have resulted in enhanced collaboration and efficiency during regional planning meetings with TWG members by having a head start in determining emerging needs, discussing specific LDC issues and concerns that may have an impact on regional planning, and overall report quality enhancements. The figures below show in detail how the pre-Regional Planning steps are integrated into the NA and RIP phases.

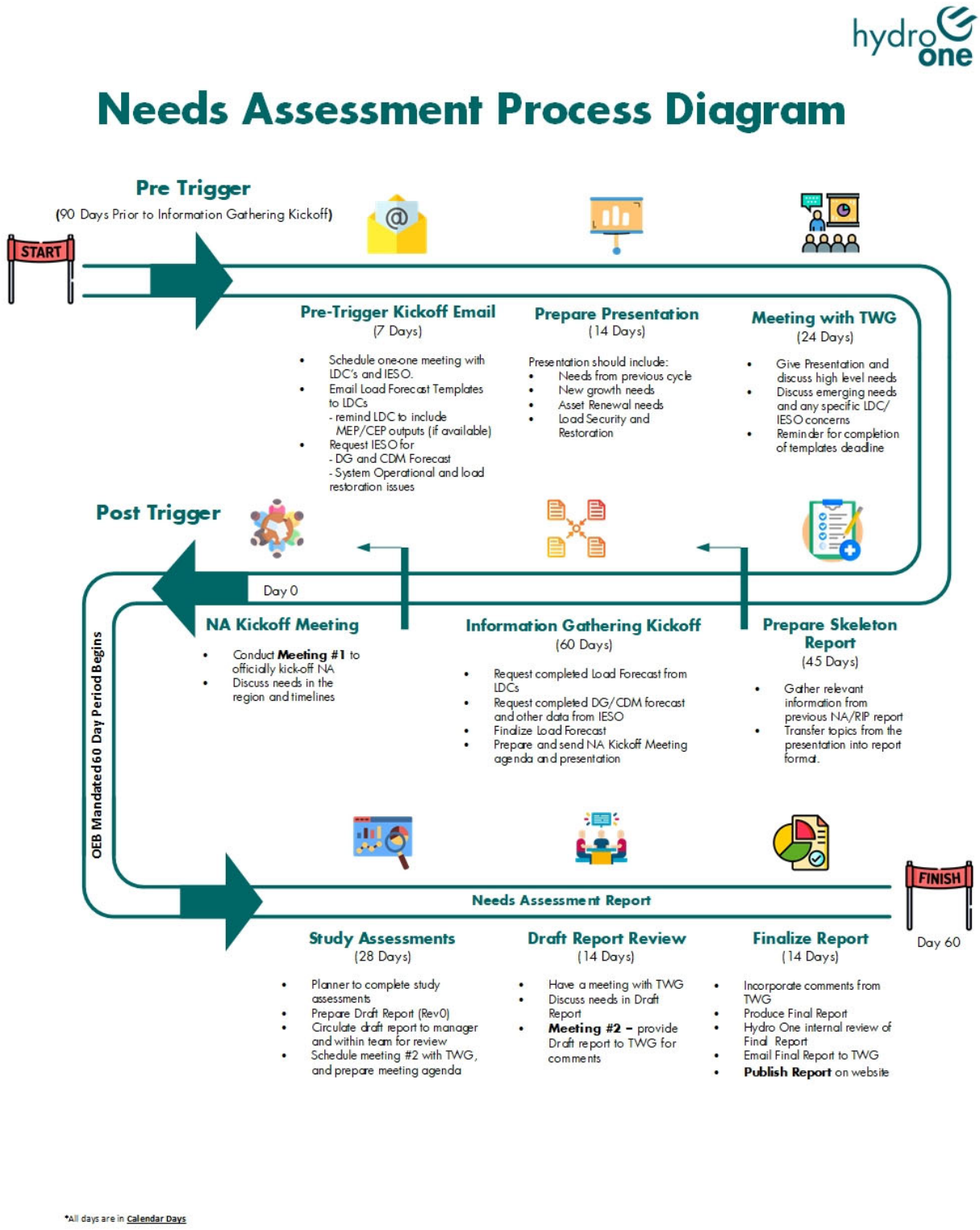

Figure 3-1. Needs Assessment (NA) Phase Diagram

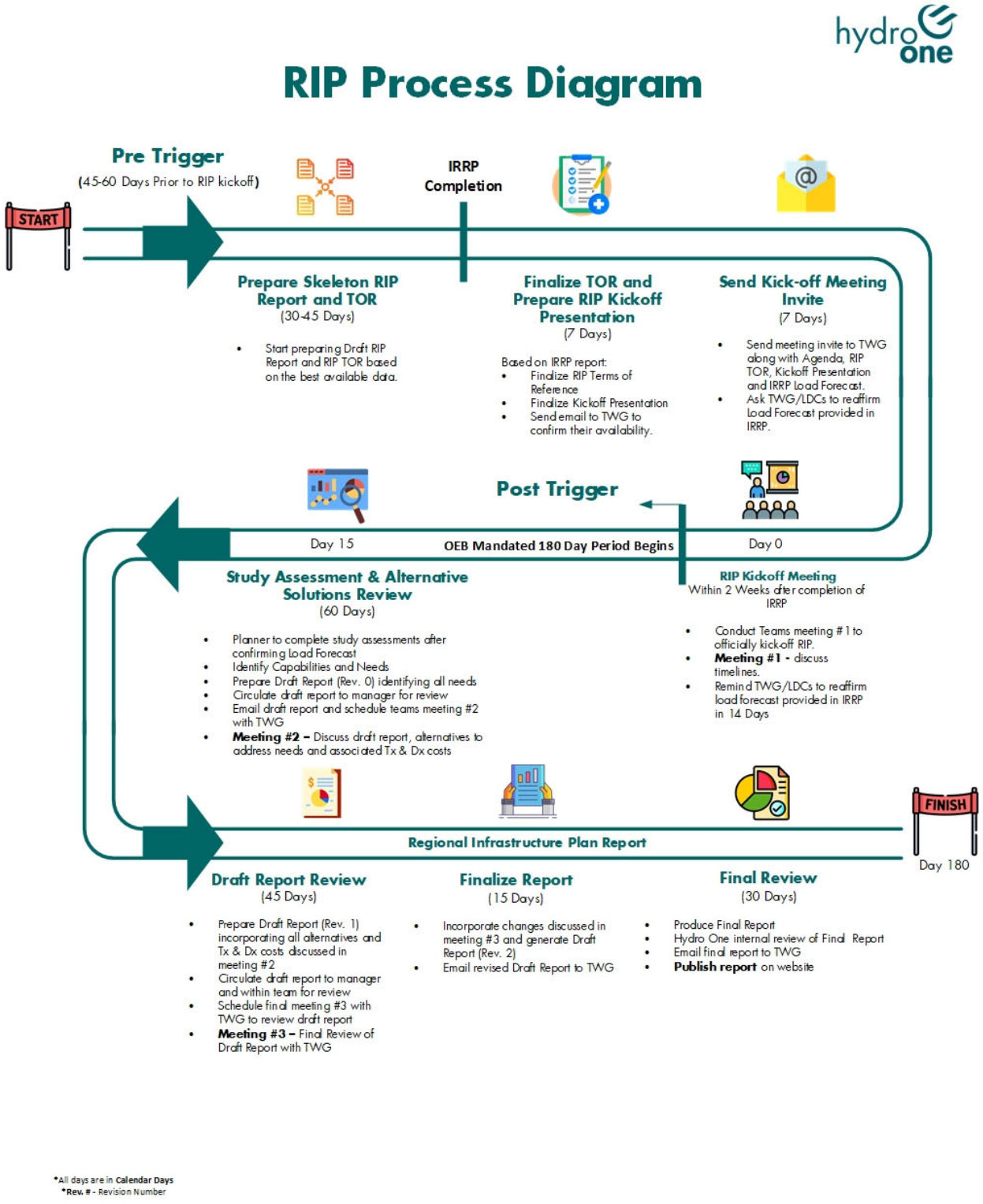

Figure 3-2. Regional Infrastructure Planning (RIP) Phase Diagram

4. STATUS OF REGIONS

Regional Infrastructure Plans (RIP) have been completed for all regions for the first and second cycles of the Regional Planning Process where Hydro One is the lead transmitter. As part of the second cycle, Independent Electricity System Operator (IESO) has completed Scoping Assessments (SA) for all the required sixteen (16) regions and Integrated Regional Resource Planning (IRRP) reports for fifteen (15) regions. Hydro One has also initiated the third regional planning cycle with NAs for nine (9) regions completed. Subsequently IESO completed six (6) SAs and six (6) IRRPs are currently underway. These reports are available on Hydro One's Regional Planning website.

As part of the third regional planning cycle, there have been three regions so far where the NA was advanced due to emerging needs in their respective areas – Greater Ottawa (completed in Dec. 2022), London Area (to be completed in Nov. 2024) and Peterborough to Kingston (to be completed in Jan 2025). Hydro One is keeping abreast of the needs in the province on a regional basis and will advance regional planning for any of the other regions as necessary based on emerging needs in the area.

4.1 Burlington to Nanticoke

Burlington to Nanticoke Region comprises the municipalities of Burlington, Hamilton, Oakville, Brantford, and the Counties of Brant, Haldimand, and Norfolk. The second regional planning cycle was completed with publishing of the RIP report in Oct. 2019. The third regional planning cycle for this region was initiated with the NA phase which was completed in Sep. 2022. Currently, the IRRP is underway with expected completion in Nov. 2024. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Gage TS Replacement of existing T3/T4, T5/T6 DESNs with new T10/T11 DESN and component replacement (completed in 2024)
- Kenilworth TS T3 and component replacement with replacement of existing T1/T4, T2/T3 DESNs with T2/T3 DESN (completed in 2023)
- Newton TS T1/T2 replacement (completed in 2020)
- Refurbishment of line section from Horning Mountain Jct. to Glanford Jct. 115 kV B3/B4 (completed in 2020)
- Elgin TS Replacement of existing T1/T2, T3/T4 DESNs with new T5/T6 DESN and component replacement (completed in 2019)
- Cumberland TS Power factor correction (completed in 2019)

Needs and Plans Underway:

1. **Line Capacity Needs**
   The following line supply capacity need was identified and is being reviewed by the Technical Working Group (TWG) in the current RP cycle:
   - Brant TS x Powerline MTS 115 kV B12/B13 Corridor

The following line capacity plan was recommended by the TWG previously and is underway:

- Burlington TS to Nelson Jct. 115 kV B7/B8 Corridor – The current planned in-service date is 2025.

2. Station Capacity Needs

The following station capacity needs were identified and are being reviewed by the TWG in the current RP cycle:

- Norfolk TS and Bloomsburg DS (Norfolk Area)
- Caledonia TS
- Nebo TS
- Mohawk TS

The following station capacity plans were recommended by the TWG previously and are underway:

- Dundas TS Load transfers/balancing – The current planned in-service date to build feeders required for load transfers from Dundas TS to Dundas TS #2 is 2025.
- Norfolk TS to Jarvis TS load transfers - The current planned in-service date to build feeders required for load transfers from Norfolk TS to Jarvis TS is 2026.
- Kenilworth TS Power Factor correction – The current planned in-service date for connecting a new additional capacitor bank at Kenilworth TS is 2026.
- Norfolk TS addition reactive support – The current planned in-service date for connecting a new additional capacitor bank at Norfolk TS is 2026.

3. Asset Renewal for Major HV Transmission Equipment

Based on asset condition assessment Hydro One identified the following major HV transmission asset for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.

- Newton TS Refurbishment of 115 kV breakers – The current planned in-service date is 2041.

4.2 Toronto

The Toronto Region comprises the area within the municipal boundary of the City of Toronto. The second regional planning cycle RIP was completed in March 2020. The third regional planning cycle for this region was initiated with the NA phase which was completed in Dec. 2022. Currently, the IRRP is underway with expected completion in Mar. 2025. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Fairbank TS T1/T2/T3/T4 replacement (completed in 2024)
- Copeland MTS Phase 2 second DESN (T2/T4) and backup transformer T5 (completed in 2024)
- Horner TS second DESN (completed in 2022)
- Strachan TS T12 and component replacement (completed in 2022)
- Runnymede TS T3/T4 and component replacement (completed in 2021)

- Sheppard TS T3/T4 and component replacement (completed in 2021)
- John TS T1, T2, T4 replacement (completed in 2019-2021)
- Clare R. Copeland 115 kV Switching Station and Copeland MTS (completed in 2019)
- Manby SPS Load Rejection Scheme (completed in 2019)
- Runnymede TS second DESN (completed in 2019)

Needs and Plans Underway:

1. Line Capacity Needs

The following line supply capacity needs were identified and are being reviewed by the TWG in the current RP cycle:

- Manby TS x Riverside Junction 115 kV K13J/K14J Corridor
- Parkway TS to Richview TS 230 kV P21R/P22R Corridor
- Leaside TS to Wiltshire TS 115 kV L13W/L14W/L18W/L15 Corridor

The following line capacity plan was recommended by the TWG previously and is underway:

- Richview TS to Manby TS 230kV Corridor – The current planned in-service date is 2026.

2. Station Capacity Needs

The following station capacity needs were identified and are being reviewed by the TWG in the current RP cycle:

- Sheppard TS
- Basin TS
- Glengrove TS
- Finch TS/Bathurst TS
- Warden TS
- Manby W TS (Autotransformer T12)
- Leaside TS (Autotransformer T16)

The following station capacity plan was recommended by the TWG previously and is underway:

- Strachan TS T14 and T13/T15 – The current planned in-service date for replacement of these transformers with upgraded units is 2026 for T14 and 2035 for T13/T15.

3. Asset Renewal for Major HV Transmission Equipment

Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.

- Strachan TS – T14, T13 and T15 transformers (45/75 MVA) will be replaced with 60/100MVA units. The current planned in-service date is 2026 for T14 and 2035 for T13/T15.
- Charles TS – T3 and T4 (45/75 MVA) transformers will be replaced with 60/100MVA units. The current planned in-service date is 2026.

- Duplex TS – T1/T2 (45/75 MVA) and T3/ T4 (45/75 MVA) transformers will be replaced with 60/100MVA units. The current planned in-service date is 2030 for T1/T2 and 2034 for T3/T4.
- Basin TS – T3 and T5 transformers (45/75 MVA) will be replaced with 60/100MVA units. The current planned in-service date is 2030
- Scarboro TS – T23 transformer (75/125 MVA) will be replaced with like-for-like unit. The current planned in-service date is 2024.
- Fairchild TS – T1, T3 and T4 transformers (75/125 MVA) will be replaced with like-for-like units. The current planned in-service date is 2034.
- Bermondsey TS – T3/T4 transformers (75/125 MVA) will be replaced with like-for-like units. The current planned in-service date is 2034.
- Malvern TS – T3 transformer (75/125 MVA) will be replaced with like-for-like unit. The current planned in-service date is 2028.
- Manby TS – Autotransformers T7, T9 and T12 will be replaced with similar 250MVA units, and the current planned in-service date is 2030. Transformer T13/T14 (56/93 MVA) is a non-standard size and will be replaced with the current standard size units (75/125 MVA). The current planned in-service date is 2030
- Leslie TS – Transformer T1 will be replaced with a standard unit of same size without dual LV voltages (i.e., a 230-27.6-27.6 kV 75/125 MVA unit). The current planned in-service date is 2034.
- Bridgman TS – Transformers T11/T12/T13/T14 (40/67 MVA) will be replaced with standard upgraded units 60/100 MVA. The current planned in-service date is 2024.
- Main TS – T3 and T4 transformers (45/75 MVA) will be replaced with 60/100MVA units. The current planned in-service date is 2024.
- John TS – Transformer replacement for (T5/T6) is expected to be completed in 2025.
- H1L/H3L/H6LC/H8LC – Conductors along the overhead section between Leaside Jct. to Bloor St. Jct. will be replaced with larger size conductors. The current planned in-service date is 2033.
- L9C/L12C – Conductors along the overhead section between Leaside TS and Balfour Jct. will be replaced with larger size conductors. The current planned in-service date is 2034.
- C5E/C7E – Underground cable replacement between Esplanade TS and Terauley TS is underway and expected to be completed in 2026.

4. Load Restoration Need

- Load restoration scenarios and options for the loss of 230kV circuits C14L/C17L and C18R/P22R are being further reviewed by the TWG in the current RP cycle.

4.3 Windsor-Essex

The Windsor-Essex region includes the most southerly portion of Ontario, extending from Chatham southwest to Windsor. It consists of the City of Windsor, the Municipality of Leamington, the Town of Amherstberg, the Town of Essex, the Town of Kingsville, the Town of Lakeshore, the Town of LaSalle, the Town of Tecumseh, and the Township of Pelee, as well as the western portion of the Municipality of Chatham-Kent. The second regional planning cycle was completed with publishing of the RIP report

in March 2020. The third regional planning cycle for this region was initiated with the NA phase which was completed in Feb. 2023. Currently, the IRRP is underway with expected completion in Nov. 2024. The status of the needs and plans recommended in this region are provided below:

Projects Recently Completed:

- Keith TS Replaced T11 T12 transformers replacement (completed in 2023)
- Kingsville TS T1/T3 replacement with 50/83 MVA T5 (completed in 2022)
- South Middle Road TS T3/T4 new DESN completed in 2022; second DESN expected I/S 2025)
- Lakeshore TS: Build new switching station at Leamington Junction (completed in 2022)
- Keith TS T1 decommissioning (completed in 2021)
- Reconfiguration of 230 kV and 115 kV circuits and 27.6 kV feeders at Keith TS to accommodate the construction of Gordie Howe International Bridge (completed in 2019)
- Leamington TS second DESN (completed in 2019)
- Tilbury TS decommissioning (completed in 2019)

Needs and Plans Underway:

1. **Station Capacity Needs**

   The following station capacity needs were identified and are being reviewed by the TWG in the current RP cycle:

   - Belle River TS
   - Lauzon TS T7/T8
   - Kingsville TS
   - Leamington TS
   - South Middle Road TS

   The following station capacity plan was recommended by the TWG previously and is underway:

   - Lauzon TS T5/T6 – The current planned in-service date for replacement of these transformers with upgraded units is 2026.

2. **Asset Renewal for Major HV Transmission Equipment**

   Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.

   - Keith TS – Phase angle regulator PSR5 installed in the J5D interconnection will be replaced. The current planned in-service date is 2026.
   - Lauzon TS – T5/T6 transformers (50/83 MVA) will be replaced with 75/125 MVA units. The current planned in-service date is 2026.
   - Lauzon TS – T1/T2 autotransformers (150/250 MVA) will be replaced with like-for-like units. The current planned in-service date is 2038.
   - Lauzon TS – T7/T8 transformers will be replaced with like-for-like units. The current planned in-service date is 2032.

3. **Load Security and Restoration Needs**
    - H75/H76 Load security and Restoration – Load restoration scenarios and options for the loss of 230kV circuits H75/H76 are being reviewed in the current RP cycle.

4.4 GTA North

The GTA North Region is approximately bounded by the Regional Municipality of York, and includes parts of the Cities of Toronto, Brampton, and Mississauga. The second regional planning cycle was completed with publishing of the RIP report in October 2020. The third regional planning cycle for this region was initiated with the NA phase which was completed in July 2023. Currently, the IRRP is underway with expected completion in June 2025. The status of the needs and plans recommended in this region are provided below:

Projects Recently Completed:

- Installation of Inline switches at Grainger Jct. (completed in 2018)
- Vaughan #4 MTS (completed in 2017)

Needs and Plans Underway:

1. **Line Capacity Needs**
   The following line supply capacity needs were identified and are being reviewed by the TWG in the current RP cycle:
    - Claireville TS x Brown Hill TS corridor
    - Parkway TS x Markham MTS#4 Jct. 230 kV P45/P46 corridor

2. **Station Capacity Needs**
   The following station capacity needs were identified and are being reviewed by the TWG in the current RP cycle:
    - Kleinburg TS
    - Northern York Area
    - Vaughan MTS #5
    - Markham MTS #5
    - Richmond Hill MTS #3

   The following station capacity plans were recommended by the TWG previously and are underway:
    - Toubner TS – The current planned in-service date for building new station is 2027.
    - Vaughan MTS #6 – The current planned in-service date for building new station 2027.

3. **Asset Renewal for Major HV Transmission Equipment**
   Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken “right sizing” into consideration.

- Woodbridge TS – T5 transformer (75/125 MVA) will be replaced with like-for-like unit. The current planned in-service date for the work is 2030.

4. Load Restoration Need

- Load Restoration and/or Security needs for 230kV circuits V43/V44, H82V/H83V, and V71P/V75P are being reviewed in the current RP cycle.

4.5 Greater Ottawa

Greater Ottawa Region covers the municipalities bordering the Ottawa River from Stewartville in the West to Hawkesbury in the East and North of Highway 43. The second regional planning cycle was completed with publishing of the RIP report in December 2020. The third regional planning cycle for this region was initiated with the NA phase which was completed in Dec. 2022. Currently, the IRRP is underway with expected completion in Mar. 2025. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Lincoln Heights TS Transformer T1/T2 Replacement (completed in2024)
- M30A/M31A – The 230 kV circuits replacement (completed in 2023)
- Arnprior TS - Transformers T1/T2 Replacement and Rebuilding (completed 2023)
- Cambrian MTS and South Nepean Transmission reinforcement: The section of S7M single circuit 115 kV lines was rebuilt as a double circuit 230 kV line. The two circuits were extended to supply the new MTS. (completed in 2022)
- King Edward TS T3 replacement (completed in 2021)
- Hawthorne TS T7/T8 replacement (completed in 2019) and T5/T6 replacement (completed in 2021)
- A4K supply capacity – new A6R Tap project (completed in 2019)

Needs and Plans Underway:

1. Line Capacity Needs

The following line supply capacity needs were identified and are being reviewed by the TWG in the current RP cycle:

- 115 kV L2M supply Capacity
- Kanata Stittsville Area Capacity

2. Station Capacity Needs

The following station capacity plans were recommended by the TWG previously and are underway:

- Merivale TS T22/T23 – The current planned in-service date for replacement of T22 and addition of T23 is 2029.
- Russell TS T1/T2 – The current planned in-service date for replacement of these transformers with upgraded units is 2027.

- Hawkesbury MTS T2 – The current planned in-service date for replacement of this transformer with an upgraded unit is 2026.
- Albion TS T1/T2 – The current planned in-service date for replacement of these transformers with upgraded units is 2031.
- Slater TS T1/T2/T3 – The current planned in-service date for replacement of these transformers (T2/T3) with upgraded units is Nov. 2024.
- Longueuil TS T3/T4 – The current planned in-service date for replacement of these transformers with upgraded units is 2025.
- New Piperville MTS – The current planned in-service date is Q1 2026.

3. Asset Renewal for major HV Transmission Equipment

Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.

- 115 kV S7M Line Refurbishment – Conductors and other components along the overhead section spread across multiple S7M line sections totaling 6.5 km will be replaced. The current planned in-service date is 2025.
- South March TS – T1/T2 will be replaced with similar like-for like units or upgraded units. The current planned in- service date is 2035.
- Lisgar TS – T1/T2 transformers (45/60/75MVA) will be replaced like-for like units or upgraded units. The current planned in- service date is 2028.
- Riverdale RS 115 kV breaker replacement – The 115kV breakers will be replaced. The current planned in-service date is 2038.

4. Voltage Performance Needs

- 79M1 Circuit – Voltage Regulation, there was low voltage observed on this circuit due to long distance and circuit loading, lower voltage can be expected at the end of the line. The previous Greater Ottawa RIP report identified that the voltage at Hawkesbury MTS will approach ORTAC limits under peak load with A2 out of service. As per the third cycle NA study, when Bilberry Creek TS is planned to be retired and the load move to stations supplied by the 230kV system, no voltage issues were found over the study period.

4.6 Kitchener-Waterloo-Cambridge-Guelph (KWCG)

The KWCG region includes the municipalities of Kitchener, Waterloo, Cambridge, and Guelph, as well as portions of Perth and Wellington Counties and the Townships of Wellesley, Woolwich, Wilmot, and North Dumfries. The second regional planning cycle RIP was completed in Dec. 2021. The third regional planning cycle for this region was initiated with the NA phase which was completed in April 2024. Currently, the IRRP is underway with expected completion in Jan. 2026. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Hanlon TS T1/T2 replacement (completed in 2022)
- Detweiler TS T2 autotransformer replacement (completed in 2020) and T4 autotransformer and component replacement (completed in 2021)
- Tower 157 near Freeport SS for D7F/D9F 115 kV refurbishment (completed in 2020/2021).
- Campbell TS T2 replacement (completed in 2019)

Needs and Plans Underway:

1. **Line Capacity Needs**

   The following station capacity needs were identified and are being reviewed by the TWG in the current RP cycle:

   - Galt Jct. x Cambridge #1 Jct. 115 kV M20D/M21D Corridor
   - Detweiler TS x Kitchener MTS#1 & #4 Jct. 115 kV D11K/D12K corridor

2. **Station Capacity Needs**

   The following station capacity needs were identified and will be further reviewed by the TWG in the current RP cycle:

   - Preston TS
   - Galt TS
   - Energy Inc MTS
   - Campbell TS (T3/T4)
   - Rush MTS
   - Waterloo North MTS #3
   - Cedar TS (T7/T8)
   - Cedar TS (T1/T2)
   - Kitchener MTS#7

   The following station capacity plan was recommended by the TWG previously and is underway:

   - Kitchener MTS#5 T9/T10 – The current planned in-service date for the replacement of these transformers with standard units is 2025.

3. **Asset Renewal for Major HV Transmission Equipment**

   Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.

   - B5C/B6C Circuit Refurbishment – 27 km 115 kV B5C/B6C line sections from Burlington TS to Westover CTS will be refurbished. The current planned in-service date is 2025.
   - Preston TS – T3/T4 transformers (75/125 MVA) will be replaced with standard like-for-like units. The current planned in-service date is 2027.
   - Fergus TS – T3/T4 transformers (75/125 MVA) will be replaced with like-for-like units. The current planned in-service date is 2040.

- Galt TS – breakers and component replacement. Hydro One will continue monitoring the condition of these components at Galt TS and proceed with the replacement plan as required.
- Campbell TS – breakers and component replacement. The current planned in-service date is 2034.

4. System Reliability, Operation and Restoration Needs

- Load security and load restoration scenarios and options for the loss of 230kV circuits M20D/M21D are being reviewed by the TWG in the current RP cycle.
- Load restoration scenarios and options for the loss of 230kV circuits D6V/D7V are being reviewed by the TWG in the current RP cycle.
- Voltage performance for the M20D/M21D contingency are being reviewed by the TWG in the current RP cycle.

4.7 GTA West

The GTA West Region covers the Regional Municipalities of Halton and Peel, and comprises the municipalities of Brampton, South Caledon, Halton Hills, Mississauga, Milton, Oakville and parts of Burlington. The second regional planning cycle was completed with publishing of the RIP report in Feb. 2022. The third regional planning cycle for this region was initiated with the NA phase which was completed in Aug. 2024. Currently, the SA is underway with expected completion in Nov. 2024. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Tremaine TS – Add 4 x 27.6 kV feeders (completed in 2020)
- R19TH/R21TH overload – A Key Operation Point (KOP) has been implemented in Hydro One control room to manage the N-1-1 post contingency thermal overload.

Needs and Plans Underway:

1. Line Capacity Needs

The following line supply capacity need was identified and will be further reviewed by the TWG in the current RP cycle:

- Transmission reinforcement plan in Milton Area.

The following line capacity plans were recommended by the TWG previously and are underway:

- H29/H30 reconductoring – The current planned in-service date is 2028.
- Richview X Trafalgar transmission circuit capacity – The current planned in-service date is 2026.

2. Station Capacity Needs

The following station capacity needs were identified and will be further reviewed by the TWG in the current RP cycle:

- Halton #2 TS

- Bramalea TS T1/T2
- Erindale T1/T2
- Cardiff TS T1/T2
- Cooksville TS T1/T2 and T3/T4
- Pleasant T5/T6
- Jim Yarrow T1/T2
- Goreway T5/T6

The following station capacity plans were recommended by the TWG previously and are underway:

- Bramalea TS T3/T4 – The current planned in-service date for replacement of these transformers with upgraded units is 2040.
- Erindale TS T5/T6 – The current planned in-service date for replacement of these transformers with upgraded units is beyond 2033.
- Lorne Park TS T2 - The current planned in-service date for replacement of this transformer with standard unit is 2034.
- Pleasant TS T1/T2 - The current planned in-service date for replacement of these transformers with standard units is TBD.

3. Asset Renewal for Major HV Transmission Equipment

Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.

- Palermo TS – T3/T4 transformers (50/83 MVA) will be replaced with 75/125 MVA units. The current planned in-service date is 2027.
- Tomken TS – T1/T2 transformers (75/125 MVA) (75/125 MVA) will be replaced with like-for-like units. The current planned in-service date is 2035.
- Halton TS – T3/T4 transformers (75/125 MVA) will be replaced with like-for-like units. The current planned in-service date is 2035.
- Pleasant – T5/T6 transformers (75/125 MVA) will be replaced with like-for-like units. The current planned in-service date is 2037.
- Bramalea TS – T3/T4 transformers (50/83 MVA) will be replaced with (75/125 MVA) units. The current planned in-service date is 2040.
- Lorne Park TS – T2 transformer (75/125 MVA) will be replaced with standard like-for-like unit in 2034.

4. System Reliability, Operation and Restoration Needs

- Load security scenarios of T38B/T39B corridor which will exceed load security limit of 600MW in 2029 are being reviewed by the TWG in the current RP cycle.
- Hydro One and IESO operation departments are coordinating to assess alternatives including Trafalgar TS Autotransformer tap changer position adjustment for high voltage at Trafalgar 230kV bus under light load conditions.

4.8 Greater Bruce/Huron

The Greater Bruce/Huron area is located to the west of the Kitchener-Waterloo region in southwestern Ontario. The region includes the municipalities of Arran–Elderslie, Brockton, Kincardine, Northern Bruce Peninsula and South Bruce. It also includes the township of Huron-Kinloss. The second regional planning cycle was completed with publishing of the RIP report in April 2022. The third regional planning cycle for this region was initiated with the NA phase which was completed in Sep. 2024. Currently, the SA is underway with expected completion in Dec. 2024. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Seaforth TS x Kirkton Jct. 115 kV L7S circuit capacity increase and clearance improvement (completed in 2022-2023)
- Bruce A TS 230 kV ABCB station refurbishment (completed in 2022)
- Stratford TS T1 and component replacement (completed in 2022)
- Hanover TS T2 and component replacement (completed in 2022)
- Detweiler TS T2/T4 autotransformers and component replacement (completed in 2021)
- Centralia TS T1 T2 T3 transformers replacement with T1 T2 transformers and component replacement (completed in 2019)

Needs and Plans Underway:

1. **Station Capacity Needs**
   The following station capacity need was identified and will be further reviewed by the TWG in the next phases of the current RP cycle:
   - Load transfer between Detweiler TS in KWCG region and Hanover TS.

2. **Asset Renewal for Major HV Transmission Equipment**
   Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken “right sizing” into consideration.
   - Wingham TS – T1/T2 transformers (50/83 MVA) will be replaced with like-for-like units. The current planned in-service date is 2024.
   - Bruce B SS – 500 kV ABCB circuit breakers will be replaced with new SF6 tank circuit breakers. The current planned in-service date is 2025.
   - Seaforth TS – T5/T6 autotransformers (150/250 MVA) and T1/T2 transformers (25/42 MVA) will be replaced with like-for-like units. The current planned in-service date is 2036.
   - Bruce A TS – 500 kV ABCB circuit breakers will be replaced with new SF6 tank circuit breakers. The current planned in-service date is 2027.
   - Owen Sound TS – T5 autotransformers (150/250 MVA) will be replaced with like-for-like unit. The current planned in-service date is 2029.
   - Douglas Point TS – T3/T4 transformers (50/83 MVA) will be replaced with like-for-like units. The current planned in-service date is 2029.

- Stratford TS – T2 transformer (50/83 MVA) will be replaced with like-for-like unit. The current planned in-service date is 2038.
- Bruce HWP B – T7/T8 transformers (60/100 MVA) will be replaced with like-for-like units. The current planned in-service date is 2040.

3. **System Reliability, Operation and Restoration Needs**
   - L7S Circuit - Circuit capacity increase and clearance improvement between Seaforth TS and Kirkton Jct. have been completed in 2022-2023 with replacement of deficient line components on various sections of this circuit to improve the delivery point performance. Hydro One will continue monitoring the performance of the remaining sections of this circuits and will proceed with corrective plans as required.

4.9 East Lake Superior

The ELS Region includes all of Hydro One Sault Ste. Marie's 560km of high-voltage transmission lines as well as ties to the rest of the provincial grid at Wawa TS in the northwest and Mississagi TS in the northeast. The region also includes Hydro One's 115 kV W2C circuit supplying the Town of Chapleau from Wawa TS. The second regional planning cycle was completed with publishing of the RIP report in Oct. 2021. The third regional planning cycle for this region was initiated with the NA phase which was completed in Oct. 2024. Currently, the SA is underway with expected completion in Jan. 2025. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Providing remote arming of Third Line TS Instantaneous Load Rejection ("ILR") scheme to the IESO (completed in 2023-2024)
- Echo River TS – Install new transformer and breaker replacement (completed in 2024).

Needs and Plans Underway:

1. **Line Capacity Needs**
   The following line supply capacity needs were identified and will be further reviewed by the TWG in the current RP cycle:
   - 115 kV Algoma No.1/No.2/No.3 circuits
   - 115 kV Sault No. 3 circuit

2. **Station Capacity Needs**
   The following station capacity needs were identified and will be further reviewed by the TWG in the current RP cycle:
   - Anjigami TS
   - Hollingsworth TS
   - Third Line TS
   - Tagona West TS

3. **Asset Renewal for Major HV Transmission Equipment**
   Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.
   - Third Line TS – P21G/P22G line protection replacement. The current planned in-service date is 2027.
   - Third Line TS – T2 autotransformer (150/250 MVA) will be replaced with like-for-like unit. The current planned in-service date is 2027.
   - 115 kV Sault No. 3 – existing conductor and wood pole to be replaced with new 115 kV rated line and structures. The current planned in-service date is 2026.
   - Batchawana TS – Components replacement. The current planned in-service date is 2024.
   - Goulais TS – Components replacement. The current planned in-service date is 2024.
   - Patrick St. TS – 115 kV breakers will be replaced with like-for-like units. The current planned in-service date is 2028.
   - Northern Ave TS – T1 transformers (20/26.7 MVA) will be replaced with like-for-like unit. The current planned in-service date is 2025.
   - Clergue TS – Metal clad switchgear to be replaced. The current planned in-service date is 2028.
   - Hollingsworth TS – Protection will be replaced. The current planned in-service date is 2031.
   - D.A Watson TS – Metal clad switchgear to be replaced. The current planned in-service date is 2034.
   - St. Mary's MTS and Tarentorus MTS – Stations to be refurbished/upgraded. The TWG recommends to further review the need in the current RP cycle.

4. **System Reliability, Operation and Load restoration Needs**
   - Third Line TS 115 kV voltage limitations - Existing voltage limit at Third Line TS 115 kV bus is restricted to operate between 118 kV - 124 kV range. TWG Recommended to monitor need until PUC Distribution replaces existing transformers with new units equipped with ULTC at St. Mary's MTS.
   - Voltage violation at Third Line TS can be mitigated by using Load Rejection (LR) schemes and/or Remedial Action Schemes (RAS). TWG Recommended to review the necessity of LRs and RAS contingencies at Third Line TS in the next phases of the current RP, in coordination with SIA for the new northeast bulk projects.

4.10 GTA East

GTA East Region comprises the municipalities of Pickering, Ajax, Whitby, Oshawa, and parts of Clarington and other parts of Durham Region. The second cycle RIP report was completed in Feb. 2020. The third regional planning cycle for this region was initiated with the NA phase which will be completed in Dec. 2024. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Wilson TS T1/T2 and switchyard refurbishment (completed in 2024)

- Seaton MTS commissioning of new MTS (completed in 2023)
- Cherrywood TS 230kV breaker replacement – Phase 1 (completed in 2023)
- Enfield TS commissioning of new 230/44 kV Enfield TS (completed in 2019)

Needs and Plans Underway:

1. **Asset Renewal for Major HV Transmission Equipment**
   Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.
   - Cherrywood TS 230 kV and 500 kV breaker Replacement – Existing 230 kV and 500 kV circuit breaker will be replaced in phases. The current planned in-service date of project is 2037.
   - Cherrywood TS LV Switchyard Refurbishment – 44 kV DESN switchyard will be replaced. The current planned in-service date is 2025.

4.11 London Area

The London Area includes the Cities of Woodstock, London and St. Thomas as well as the Counties of Middlesex, Elgin, and Oxford. The second regional planning cycle was completed with publishing of the RIP report in Aug. 2022. The third regional planning cycle for this region was initiated with the NA phase which will be completed in Nov. 2024. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Edgeware TS PCT and component replacement (completed in 2024)
- Tillsonburg TS component replacement (completed in 2023)
- Nelson TS station refurbishment (completed in 2022)
- Tillsonburg TS low voltage capacitor banks installation (completed in 2021)
- Sarnia Scott TS x Buchanan TS 230 kV N21W/N22W circuits tower structures refurbishment (completed in 2021)
- St. Thomas TS decommissioning and 115 kV W14 circuit re-termination work (completed in 2020)
- Strathroy TS T1 and component replacement (completed in 2019)
- Wonderland TS T6 replacement (completed in 2019)

Needs and Plans Underway:

1. **Asset Renewal for Major HV Transmission Equipment**
   Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.
   - Buchanan TS – T2/T3 autotransformers (150/250 MVA) will be replaced with like-for-like units. The current planned in-service date is 2033.

- Clarke TS – T3/T4 transformers (50/83 MVA) will be replaced with like-for-like units. The current planned in-service date is 2033.
- Talbot TS – T3/T4 transformers (75/125 MVA) will be replaced with like-for-like units. The current planned in-service date is 2032.
- Wonderland TS – Replacement of low-voltage switchyard components. The current planned in-service date is 2026.
- M31W/M32W – Removal of existing microwave link connecting Ingersoll TS to Buchanan TS and installation of OPGW fiber from Salford Jct. to Ingersoll TS. The current planned in-service date is 2032.
- W36/W37/W5NL/W6NL/W2S/N21W – Removal of existing metallic cable and installation of OPGW fiber for protection and SCADA applications. The current planned in-service date is 2032.

4.12 Peterborough to Kingston

The Peterborough to Kingston Region includes the area roughly bordered geographically by the municipality of Clarington on the West, North Frontenac County on the North, Frontenac County on the East, and Lake Ontario on the South. The region includes Frontenac County, Hasting County, North Humber land County, Peterborough County, and Prince Edward County and related municipalities.
The second regional planning cycle was completed with publishing of the RIP report in May 2022. The third regional planning cycle for this region was initiated with the NA phase which will be completed by Jan. 2025. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Belleville TS T1/T2 replacement (completed in 2022)
- Load Transfer from Otonabee TS to Dobbin TS (completed in 2022)
- Load transfer from Gardiner TS DESN 1 to Gardiner TS DESN 2 (completed in 2019)

Needs and Plans Underway:

1. **Line Capacity Needs**
   The following line supply capacity need was identified in the second RP cycle and will be further reviewed by the TWG in the current RP cycle:
   - Peterborough to Quinte West P15C/Q6S supply capacity.
   - Cataraqui TS autotransformers supply capacity.

2. **Station Capacity Needs**
   The following station capacity need was identified in the second RP cycle and will be further reviewed by the TWG in the current RP cycle:
   - Frontenac TS

   The following station capacity plans were recommended by the TWG previously and are underway:

- Gardiner TS T1/T2 – The current planned in-service date for replacement of these transformers with new standard units is 2027.
- Belleville TS New DESN – The current planned in-service date for a new 75/125 MVA 230/44 kV DESN is 2026.

3. Asset Renewal for Major HV Transmission Equipment

Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.

- Picton TS – T1 and T2 transformers (50/83 MVA) will be replaced with like-for-like units. The current planned in-service date is 2026.
- Port Hope TS – T3 and T4 transformers (50/83 MVA) will be replaced with like-for-like units. The current planned in-service date is 2036.
- Gardiner TS – T1/T2 transformers (75/125 MVA) will be replaced with standard like-for-like units. The current planned in-service date is 2027.
- Dobbin TS – T1 (150/250 MVA), T2 (36/78 MVA) and T5 autotransformers (115 MVA) will be replaced with 150/250 MVA units. The current planned in-service date is 2030.

4.13 South Georgian Bay/Muskoka

The geographical area of the South Georgian Bay/Muskoka Region is the area roughly bordered by West Nippising on the North-West, the Algonquin Provincial Park on the Northeast, Scugog on the South, Erin on the South-West, and Grey Highlands on the West. The second regional planning cycle was completed with publishing of the RIP report in Dec. 2022. The third regional planning cycle for this region will be initiated with the NA phase in April 2025. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Barrie area transmission upgrade (completed in 2023)
- Parry Sound TS T1/T2 replacement (completed in 2023)
- Orilla TS 230 kV motorized disconnect switches were installed for M6E and M7E circuits (completed in 2021)
- Minden TS T1/T2 replacement (completed in 2021)

Needs and Plans Underway:

1. Line Capacity Needs

The following line supply capacity need was identified in the second RP cycle and will be further reviewed by the TWG in the third RP cycle:

- Essa TS x Midhurst TS 230 kV M6E/M7E

2. Station Capacity Needs

The following station capacity needs were identified in the second RP cycle and will be further reviewed by the TWG in the third RP cycle:

- Everett TS
- Barrie TS
- Alliston TS
- Essa TS
- Minden TS

The following station capacity plan was recommended by the TWG previously and is underway:

- Waubaushene TS T5/T6 – The current planned in-service date for replacement of these transformers with upgraded units is 2028.

3. Asset Renewal for Major HV Transmission Equipment

Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.

- M6E/M7E – 50km line section from Orillia TS to Cooper Fls requires like for like refurbishment. The current planned in-service date is 2026.
- E8V / E9V – 112 km section from Orangeville TS to Essa Jct. requires like for like refurbishment. The current planned in-service date is 2037.
- D1M / D2M – 112 km section from Otter Creek Jct. to Minden TS requires like for like refurbishment. The current planned in-service date is 2028.
- Orangeville TS – T3/T4 (50/83 MVA) transformers will be replaced with 75/125 MVA units. The current planned in-service date is 2024.
- Orangeville TS – T1/T2 (75/125 MVA) nonstandard three winding 230/44/27.6 transformers will be replaced with new dual winding 230/27.6 83MVA units. The current planned in-service date is 2024.
- Wallace TS – T3/T4 transformers (42 MVA) will be replaced with new like-for-like units. The current planned in-service date is 2034.
- Midhurst TS – T4 transformer (75/125 MVA) will be replaced with like-for-like unit. The current planned in-service date is 2034.
- Orillia TS – T2 transformer (75/125 MVA) will be replaced with like-for-like unit. The current planned in-service date is 2025.
- Bracebridge TS – T2 transformer (50/83 MVA) will be replaced with like-for-like unit. The current planned in-service date is 2026.
- Waubaushene TS – T5/T6 transformers (50/83 MVA) will be replaced upgraded 75/125 MVA units. The current planned in-service date is 2028.
- Alliston TS – T3/T4 transformers (50/83 MVA) will be with like-for-like units. The current planned in-service date is 2028.

4.14 Sudbury/Algoma

The Sudbury/Algoma region includes the municipalities of Greater Sudbury and Espanola and surrounding areas. There are municipal Local Distribution Companies (LDCs) serving each of those municipalities and Hydro One Distribution serves the remainder of the Region. The area is supplied from transformer stations Clarabelle TS, Coniston TS, Elliot Lake TS, Larchwood TS, Manitoulin TS,

and Martindale TS. The second regional planning cycle was completed with publishing of the RIP report in Dec. 2020. The third regional planning cycle for this will be initiated with the NA phase in May 2025. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Martindale TS T21 T22 T23 autotransformers and component replacement (completed in 2022)
- Manitoulin TS CT ratio setting on the low voltage bushing of the transformer breaker was modified to allow full transformer LTR capability (completed in 2021)
- Algoma TS T5 T6 autotransformers replacement. (completed in 2022)
- Load transfer from Coniston TS to Martindale TS (completed in 2021)

Needs and Plans Underway:

1. **Line Capacity Needs**
   The following line capacity plan was recommended by the TWG previously and is underway:
   - Hanmer TS to Martindale TS 230 kV X25S/X26S unbundling– The current planned in-service date is 2024

2. **Asset Renewal for Major HV Transmission Equipment**
   Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.
   - Martindale TS – T25 and T26 transformers (75/125 MVA) will be replaced with standard equipment of similar size and capabilities. The current planned in-service date is 2032.
   - Elliot Lake TS – T1 transformer (25/42 MVA) will be replaced with like-for-like unit and T2 transformer (19 MVA) will be removed from service. The current planned in-service date is 2026.

4.15 Northwest Ontario

The Northwest Ontario region encompasses a large geographic area, stretching from the town of Marathon to the western and northern borders of the province, with diverse characteristics. The second cycle regional planning was concluded with completion of RIP report in Aug. 2023. The third regional planning cycle for this region will be initiated with the NA phase in July 2025. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Pine Portage SS component replacement (completed in 2024)
- East West Tie Reinforcement (completed in 2022)
- Wataynikaneyap Power Project Phase 1 (completed in 2022)
- Pickle Lake SS x Dinorwic Jct. 230 kV Watay connection (completed in 2022)
- Birch TS HV breaker and component replacement (completed in 2020)

Needs and Plans Underway:

1. **Line Capacity Needs**

   The following line supply capacity needs were identified in the second RP cycle and will be further reviewed by the TWG in the third RP cycle:

   - Ear Falls TS x Red Lake TS 115 kV E2R
   - Dryden TS x Ear Falls TS 115 kV E4D
   - Pic Jct. x Manitouwadge Jct. 115 kV M2W
   - The following line capacity plans were recommended by the TWG and are underway:
   - Wataynikaneyap Power Project Phase 2 – The current planned in-service date is 2024 and beyond

2. **Station Capacity Needs**

   The following station capacity needs were identified in the second RP cycle and will be further reviewed by the TWG in the third RP cycle:

   - Margach DS
   - White Dog DS
   - White River DS
   - Kenora MTS
   - The following station capacity plans were recommended by the TWG and are underway:
   - Sam Lake DS – The current planned in-service date for installation of fan monitoring is 2025.

3. **Asset Renewal for Major HV Transmission Equipment**

   Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.

   - Rabit Lake SS – 115 kV switchyard and components will be replaced. The current planned in-service date is 2024.
   - Whitedog SS – 115 kV breakers and component will be replaced. The current planned in-service date is 2024.
   - Mackenzie TS – T3 autotransformer (75/125 MVA) will be replaced with like-for-like unit. HV breakers and components will also be replaced. The current planned in-service date is 2025.
   - Wawa TS – T1 and T2 autotransformers (75/125 MVA) will be replaced with like-for-like units. The current planned in-service date is 2027.
   - Marathon TS – Replacement of 230 kV,115 kV breakers and associated equipment. The current planned in-service date is 2027.
   - Lakehead TS – Replacement of 230 kV,115 kV breakers and associated equipment. The current planned in-service date is 2027.
   - Lakehead TS – Condenser C8 will be replaced with a +60/-40 MVAR STATCOM. The current planned in-service date is 2027.
   - Fort Frances TS – Replacement of 230 kV breakers and associated equipment's. The current planned in-service date is 2035.

- Kenora TS – Replacement of 230 kV breakers and associated equipment's. The current planned in-service date is 2033.

4. System Reliability, Operation Load Restoration Need

- Fort Frances MTS - Installation of a second breaker and switch in Fort Frances MTS to create a second supply to the MTS. The current planned in-service date is 2033.
- E1C Operation – To open E1C end at Ear Falls TS and installation of a 10 – 15 MVAR shunt reactor at Pickle Lake SS. The current planned in-service date is 2026.
- Fort Williams TS – temporary capacitor banks will be replaced with permanent units. The current planned in-service date is 2027.
- Greenstone Marathon Area System Needs – Further assessment of alternatives for reinforcing the area will be conducted to determine their cost and feasibility. These assessments will be undertaken in the event of a request from customers for additional load and upon reaching an agreement with them.
- Supply to the Ring of Fire – As per the 2023 Northwest Ontario IRRP, there are a few options to energize the Ring of Fire area. With renewed interest in developing the Ring of Fire from both government and mining companies, the IESO is updating its Supply to the Ring of Fire study to help inform government policy and potential customers seeking connection. Preliminary findings were included in the 2023 Northwest IRRP. The scope and timing of the IESO's ongoing study will evolve with government policy direction.

4.16 Chatham/Lambton/Sarnia

The Chatham-Lambton-Sarnia region is located to the west of the Greater Toronto Area in southwestern Ontario. The region includes the municipalities of Lambton Shores and Chatham-Kent. It also includes the Townships of Petrolia, Plympton-Wyoming, Brooke-Alvinston, Dawn-Euphemia, Enniskillen, St. Clair, Warwick and the Villages of Oil Springs and Point Edward. The second regional planning cycle was completed with publishing of the RIP report in Aug. 2022. The third regional planning cycle for this region will be initiated with the NA phase in Sep. 2026. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Lambton TS station refurbishment (completed in 2024)
- Chatham SS: 230 kV capacitor bank replaced (completed in 2020).

Needs and Plans Underway:

1. Line Capacity Needs

The following line capacity plan was recommended by the TWG previously and is underway:

- L28C/L29C – Construction of new Lambton-by-Chatham 230 kV double-circuit transmission line. The current planned in -service date is 2028.

2. **Station Capacity Needs**
   The following station capacity needs were identified in the second RP and will be further reviewed by the TWG in the third RP cycle:
   - Wallaceburg TS and Kent TS area (Dresden Area)
   - Forest Jura HVDS

   The following Station capacity plan was recommended by the TWG previously and is underway:
   - St. Andrews TS T3/T4 – The current planned in-service date for replacement of these transformers with like-for-like units which will increase the station capacity by 20 MVA is 2026.

3. **Asset Replacement for Major HV Transmission Equipment**
   Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.
   - Scott TS – T5 autotransformer (150/250 MVA) will be replaced with like-for-like unit. The current planned in-service date is 2024.
   - St. Andrews TS – T3/T4 transformers (56/93 MVA) will be replaced with like-for-similar 50/83 MVA units. The current planned in-service date is 2026.
   - Kent TS – T2 transformer (75/125 MVA) will be replaced with like-for-like unit. The current planned in-service date is 2032.
   - N1S/N4S – Refurbishment of circuit section between Scott TS and Vidal Jct. The current planned in-service date is 2031.
   - N6C/N7C – Refurbishment of circuit section between Scott TS and St. Andrews TS. The current planned in-service date is 2031.
   - S2N – Refurbishment of circuit section between Scott TS and Adelaide Jct. The current planned in-service date is 2031.
   - N5K – Refurbishment of circuit section between Scott TS and Kent TS. The current planned in-service date is 2031.

4.17 Niagara

The Niagara Region comprises the municipalities of City of Port Colborne, City of Welland, City of Thorold, City of Niagara Falls, Town of Niagara-On-The-Lake, City of St. Catharines, Town of Fort Erie, Town of Lincoln, Township of West Lincoln, Town of Grimsby, Township of Wainfleet, and Town of Pelham. Haldimand County was also included in the Niagara Region. The second regional planning cycle was completed with publishing of the RIP report in July 2023. The third regional planning cycle for this region will be initiated with the NA phase in May 2026. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Gibson Jct. x Thorold TS D1A/D3A 115 kV line refurbishment (completed in 2024)
- Thorold TS T1 and component replacement (completed in 2024)

- 115kV D1A/D3A line refurbishment of 2.6km route length between Gibson JCT x Thorold TS. (completed in 2023).
- Port Colborne TS T61, T62 transformers and component replacement (completed in 2022)
- Stanley TS T2 transformer and component replacement (completed in 2022)
- Crowland Ts x Port Colborne TS 115 kV A6C line conductor replacement (completed in 2020)
- Beck SS #1 x Portal Jct. 115 kV Q4N Line was upgraded (completed in 2019)

Needs and Plans Underway:

1. Line Capacity Needs

The following line capacity plan was recommended by the TWG previously and is underway:

- Beck #2 TS x Alibi TS x Abitibi Consolidated Jct. 230kV Q28A Corridor – The current planned in-service date is 2027.

2. Station Capacity Needs

The following station capacity needs was identified in the second RP cycle and will be further reviewed by the TWG in the third RP cycle:

- Carlton TS – Complete load transfer at Bunting TS with available station capacity when required

The following station capacity plans were recommended by the TWG previously and are underway:

- Connect new DESN near Beamsville TS – The current planned in-service date for this new DESN is 2027.
- Crowland TS T5/T6 – The current planned in-service date for replacement of these transformers with 75/125 MVA 230/27.6 kV upgraded units is 2027.

3. Asset Renewal for Major HV Transmission Equipment

Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.

- Glendale TS – T1/T2 transformers (45/75 MVA) will be replaced with like-for-like units. The current planned in-service date is 2026.
- Crowland TS – T5/T6 (50/83 MVA) transformers DESN will be replaced with new 230/27.6 kV 75/125MVA DESN. The current planned in-service date is 2027.
- Murray TS – T11/12 transformers (45/75 MVA) and T13/T14 transformers (45/75 MVA) will be replaced with 60/100MVA units. The current planned in-service date for T11/T12 replacement is 2030 and T13/T14 replacement is 2035.
- Bunting TS – T1/T2 transformer (45/67 MVA) will be replaced with like-for-like unit. The current planned in-service date is 2024.
- Vansickle TS – Replacement of 14.2 kV metal clad. The current planned in-service date is 2036.

- Allanburg TS – T3 autotransformer (150/250 MVA) will be replaced with like-for-like unit. The current planned in-service date is 2034.

4. Load Security Need

- A6C/A7C – The TWG has recommended to reduce loading on circuits A6C and A7C by rebuilding Crowland TS as a 230/27.6 kV station supplied from and supplying it from a new 230kV circuit line to meet the load security need

4.18 North/East of Sudbury

The geographical area of the North/East of Sudbury Region is the area roughly bordered by Moosonee on the North, Hearst on the North-West, Ferris South and Kirkland Lake on the East.
The second regional planning cycle was completed with publishing of the RIP report in Nov. 2023. The third regional planning cycle for this region will be initiated with the NA phase in May 2026. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Kirkland Lake TS X Matachewan Jct. 10km 115 kV K4 line refurbishment (completed in 2024)
- Str. 141 x Kirkland Lake TS 90 km 115 kV A8K/A9K line refurbishment (completed in 2023)
- Kapuskasing area reinforcement – Install 115kV reactive devices (completed in 2023)
- Hanmer TS Northern station replacement (completed in 2022)
- Kapuskasing area reinforcement 115 kV H9K circuit upgrade (completed in 2020)

Needs and plans underway:

1. Line Capacity Needs

The following line supply capacity need was identified in the second RP cycle and will be further reviewed by the TWG in the third RP cycle:

- Dymond TS x Kirkland TS 115 kV D3K (80 km)

2. Station Capacity Needs

The following station capacity need was identified in the second RP and will be further reviewed by the TWG in the third RP cycle:

- Ramore TS

3. Asset Renewal for Major HV Transmission Equipment

Based on asset condition assessment Hydro One identified the following major HV transmission assets for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken “right sizing” into consideration.

- Kirkland Lake TS – Replacement of Instrument Transformers, P&C equipment, station service equipment and low voltage circuit breakers. The current planned in-service date is 2027.

- Hunta SS – Replacement of P&C and telecom equipment. The current planned in-service date is 2030.
- Porcupine TS – T8 autotransformer (216/360 MVA) and T3/T4 autotransformer (150/250 MVA) will be replaced with like-for-like units. The current planned in-service date is 2026.
- Otto Holden TS – T3/T4 autotransformers (60 MVA) and components will be replaced with upgraded 75/125 MVA units. The current planned in-service date is 2030.
- Hearst TS – Replacement of low voltage circuit breakers, switches, P&C Equipment. The current planned in-service date is 2033.
- Timmins TS – T2 transformer (50/83 MVA) will be replaced with standard like-for-like units. The current planned in-service date is 2032.
- Kapuskasing TS – Replacement of low voltage circuit breakers, switches, station service equipment and protections. The current planned in-service date is 2035.
- Dymond TS – Replacement of low voltage breakers, and associated P&C equipment. The current planned in-service date is 2036.
- Ansonville TS – Replacement of P&C equipment, Instrument transformers and station service equipment. The current planned in-service date is 2031.
- Crystal Falls TS – T5/T6 transformer (42 MVA) will be replaced with like-for-like units. The current planned in-service date is 2031.
- Trout Lake TS – T3/T4 transformers (75/125 MVA) will be replaced with like-for-like units. The current planned in-service date is 2036.
- T61S – Overhead Conductor replacement and circuit refurbishment between Timmins TS x Shiningtree Jct. The current planned in-service date is 2024.
- K1/K2 - Overhead Conductor replacement and circuit refurbishment between Kirkland Lake TS x American Barrick Jct. The current planned in-service date is 2029.
- A4H/A5H – Overhead Conductor replacement and circuit refurbishment between Tunis Jct. x Fournier Jct. The current planned in-service date is 2032.
- D2H/D3H – Overhead Conductor replacement and circuit refurbishment between Hunta SS x Abitibi Canyon SS. The current planned in-service date is 2031.

4. System Reliability, Operation and Restoration needs

Voltage control needs at following TS were identified and the TWG recommends monitoring the voltage performance:

- Dymond TS
- Kirkland TS
- Ansonville, Hunta, Kapuskasing TS

4.19 Renfrew

The Renfrew Region includes all of Renfrew County that is made up of 17 municipalities and City of Pembroke. The rough boundaries of this Region are Ottawa River on the North-East, Algonquin Provincial Park on the West, and Route 508 on the South. The second cycle regional planning was concluded with completion of RIP report in July 2023. The third regional planning cycle for this region will be initiated with the NA phase in May 2026. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- Cheneaux TS – T3/T4 autotransformer and component replacement (completed in 2021)

Needs and Plans Underway:

1. **Line Capacity Needs**
   The following line supply capacity need was identified in the second RP cycle and will be further reviewed by the TWG in the third RP cycle:
   - Des Joachims TS x Petawawa DS/Forest Lea DS 115 kV D6 line

   The following line capacity plans was recommended by the TWG previously and is underway:
   - Des Joachims TS x Petawawa/Craig DS 115 kV D6 Line refurbishment – The current planned in-service date is 2027.

2. **Station Capacity Needs**
   The following station capacity plans were recommended by the TWG previously and are underway:
   - Pembroke TS HVDS – The current planned in-service date for installation of new HVDS near Pembroke TS is 2036.
   - Forest Lea DS load transfer - The current planned in-service date for load transfer from Forest Lea DS to Craig DS is 2026.

3. **Asset Renewal for Major HV Transmission Equipment**
   Based on asset condition assessment Hydro One identified the following major HV transmission asset for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken “right sizing” into consideration.
   - 115 kV D6 line – 76.8 km line between Des Joachims TS and Petawawa/Craig DS will be refurbished. The current planned in-service date is 2027.

4.20 St. Lawrence

The St Lawrence Region covers the southeastern part of Ontario bordering the St Lawrence River. The region starts at Gananoque on the eastern end of Lake Ontario and extends to the inter-provincial boundary with Quebec. The City of Cornwall is supplied by Fortis Ontario with transmission lines from Quebec and is not included in this Region. The second cycle RIP was completed in March 2022. The third regional planning cycle for this region will be initiated with the NA phase in Sep. 2026. The status of the needs and plans recommended in this region are provided below.

Projects Recently Completed:

- St. Lawrence TS PSR33/PSR34 phase shifting transformer replacement (completed in 2022-2023)

Needs and Plans Underway:

1. **Asset Renewal for Major HV Transmission Equipment**
   Based on asset condition assessment Hydro One identified the following major HV transmission asset for replacement over the next ten years. The TWG recommendations for asset replacement plans have taken "right sizing" into consideration.
   - L22H – 65 km of 230 kV line in Easton Jct. x Hinchinbrook North Jct. will be refurbished. The current planned in-service date is 2026.

4.21 North of Moosonee

The lead transmitter for the region is Five Nations Energy Inc. The regional planning status will be provided by the lead transmitter.

5. CONCLUSION

The second regional planning cycle was completed in November 2023 and the third cycle is currently underway. The third cycle of regional planning was initiated in 2022, and nine (9) Needs Assessment (NA) reports have been completed and three are underway in 2024.

Representatives from Hydro One transmission, the Independent Electricity System Operator (IESO), and Local Distribution Companies (LDCs) actively participated on regional Technical Working Groups (TWG) during the various phases of the regional planning process. The TWGs were able to undertake the appropriate level of planning based on the needs and make efficient and effective decisions. For example, during the NA phase the TWG identifies needs, assesses options to address them, and finally recommends a preferred plan and/or further regional coordination as part of the next phases of the regional planning process, namely, Scoping Assessment (SA), Integrated Regional Resource Plan (IRRP), and/or Regional Infrastructure Plan (RIP). In addition, the concept of Local Planning is utilized for further assessment by a smaller TWG in cases where needs are local in nature and straightforward wires-only options are the appropriate solution. Accordingly, assessments for these needs do not require further regional coordination and are directly planned and coordinated for implementation by Hydro One Transmission and affected LDC(s) (or customers). Frequently, wires planning is also initiated in parallel with the IRRP phase when the TWG determines that a wires approach is the best alternative to address a need and allows for efficiencies in the process by starting the planning prior to triggering the RIP phase.

The sharing of information by TWG members and publishing of reports and other relevant information on Hydro One and IESO websites allows stakeholders to be aware of current and future plans that may influence their planning strategies. This transparency and stakeholder engagement were intended as one of the hallmarks of the regional planning process as envisioned by the Board.

During the third cycle of the regional planning process, Hydro One has been able meet mandatory timelines to complete each of the regional planning phases. To summarize, below are significant milestones that have been accomplished in the second cycle and third cycle to date:

- The second cycle of regional planning was completed in Nov. 2023. The NA and RIP reports for all twenty (20) regions where Hydro One is lead transmitter were published (Burlington to Nanticoke, Toronto, Windsor-Essex, GTA North, Greater Ottawa, East Lake Superior, GTA East, Sudbury/Algoma, Kitchener-Waterloo-Cambridge-Guelph, GTA West, Greater Bruce/Huron, London Area, Peterborough to Kingston, Chatham/Lambton/Sarnia, St. Lawrence, Southern Georgian Bay/Muskoka, Northwest Ontario, Niagara, North/East of Sudbury and Renfrew).
- Actively participated in the IRRP phase during the second regional planning cycle for fifteen (15) regions where IRRP was undertaken (Burlington to Nanticoke, Toronto Area, Windsor-Essex, GTA North, Greater Ottawa, Kitchener-Waterloo-Cambridge-Guelph, GTA West, Greater Bruce/Huron, East Lake Superior, Peterborough to Kingston, South Georgian Bay/Muskoka, Northwest Ontario, Niagara, North/East of Sudbury and Renfrew).
- The third cycle of regional planning was initiated in 2022, and nine (9) NA reports have been completed to date (Burlington to Nanticoke, Greater Ottawa, Toronto, Windsor-Essex, Kitchener-

Waterloo-Cambridge-Guelph, GTA West, Greater Bruce/Huron, East Lake Superior and GTA North).

- Actively participated in the third cycle's SA phase for six (6) regions to date (Burlington to Nanticoke, Greater Ottawa, Toronto, Windsor-Essex, Kitchener-Waterloo-Cambridge-Guelph, and GTA North)
- Actively participating in the third cycle's IRRP phase for six (6) regions to date (Burlington to Nanticoke, Greater Ottawa, Toronto, Windsor-Essex, Kitchener-Waterloo-Cambridge-Guelph, and GTA North)
- Hydro One is enhancing coordination with municipal and natural gas planning. Hydro One created a new template for municipalities to provide their planning input to LDCs which will inform the LDC's demand forecast. Further, Hydro One has undertaken various awareness activities with municipalities related to the regional planning process and will continue to participate in future regional planning process educational sessions and communication. Hydro One also met with Enbridge Gas Inc. to continue discussions on coordination and to provide feedback that both Hydro One and Enbridge can take into consideration for their planning purposes.
- Hydro One continues to implement the Ontario Energy Board's (OEB) Regional Planning Process Advisory Group (RPPAG) documents, "Load Forecast Guideline for Ontario: Guidance for the Development of Regional Planning Demand Forecasts" and Improving the Electricity Planning Process in Ontario: Enhanced Coordination between Municipalities and Entities in the Electricity Sector," as part of the regional planning process and reports.

From a wires infrastructure perspective, the RIP report for a region is the most important document as it provides a complete picture of the regional wires infrastructure plan. Specifically, the RIP report documents all the identified needs and wires infrastructure plans in the region including a consolidated account of needs and wires plans developed during earlier phases, i.e., NA, LP and IRRP for the region.

6. REFERENCES

[1] Ontario Energy Board "Transmission System Code". Last Revised October 01,2024 (Originally Issued on July 14, 2000).

[2] "Planning Process Working Group Report to the Board – The Process for Regional Infrastructure Planning in Ontario". March 13, 2013. Last Revised May 17, 2013.

[3] Regional Planning Process Advisory Group. "Load Forecast Guideline for Ontario". October 13, 2022.

[4] Regional Planning Process Advisory Group. "Municipal Information Document – Enhanced Coordination between Municipalities and Entities in the Electricity Sector". December 2, 2022.

[5] Ontario Energy Board. "Distribution System Code". Last Revised October 01, 2024 (Originally Issued on July 14, 2000).

[6] Ontario Energy Board. "Conservation and Demand Management Guidelines For Electricity Distributors". Last Revised December 20, 2021.

[7] Independent Electricity System Operator. "Ontario Resource and Transmission Assessment Criteria (ORTAC)". Issue 5.0. August 22, 2007.

APPENDIX A. CONSERVATION, DISTRIBUTED GENERATION, AND OTHER INITIATIVES

A.1 Conservation Achievement

In March 2019, Independent Electricity System Operator (IESO) received the following two Ministerial directives that include changes to reduce the cost of energy-efficiency program delivery in Ontario. The first directive of March 21, 2019 directed the IESO to centrally deliver energy-efficiency programs in the province by implementing a new Interim Framework to take effect from April 1, 2019 to December 31, 2020. The second, also received March 21, 2019 directed the IESO to discontinue and wind-down the 2015-2020 Conservation First Framework (CFF) and the Industrial Accelerator Programs.

By Ministerial Directives dated June 22, 2020 and June 10, 2021, the 2015-2020 CFF wind-down period was extended until June 30, 2021 and December 31, 2021 respectively to provide IESO the ability to assist entities delivering Conservation and Demand Management (CDM) programs impacted by COVID-19.

On September 30, 2020, the IESO received a Ministerial directive to implement a new 2021-2024 CDM Framework, which follows the conclusion of the 2019-2020 Interim Framework. The new 2021-2024 CDM Framework focuses on cost-effectively meeting the needs of Ontario's electricity system, including by focusing on the achievement of provincial peak demand reductions, as well as targeted approaches to address regional and/or local electricity system needs.
On April 4, 2022, the Minister provided a letter to the IESO in response to the 2022 Annual Acquisition Report (AAR). This letter requested the IESO to develop expedited options for new and expanded CDM programming to help address the system needs identified in the 2021 APO and further discussed in the 2022 AAR. Subsequently, the IESO proposed and received a directive to proceed with four new or expanded programs, to be launched in 2023.

The table below shows the estimated 2023 peak demand offsets resulting from energy efficiency projects reported to occur within the respective regions.

Table 3. Conservation Status Update

Region	Verified 2023 Peak Demand Savings (MW)
South Georgian Bay/Muskoka Region	2.41
Burlington-Nanticoke Region	4.56
East Lake Superior Region	0.331
Greater Bruce/Huron	0.517
GTA East	0.746
GTA West (Peel/Halton)	6.7
GTA North	4.05
KWCG	2.16
London Area	2.17

Niagara	0.81
North/East of Sudbury	0.874
Northwest Ontario	0.357
Greater Ottawa	2.56
South Georgian Bay/Muskoka	2.41
Peterborough to Kingston	1.55
Renfrew	0.312
Toronto	9.44
Windsor Essex	2.75

Note: Results have been mapped to planning region, and more granular results by sub-region and/or TS are not available.

A.2 Distribution Energy Resources

The table below shows the total installed and effective capacity of IESO Distributed Energy Resources ("DER") projects which have come into service or under development since the base year of the region/sub region load forecast. This does not include net or behind the meter generation. This table does not include projects which had already been in service prior to this date, except in cases where a new contract was formed to account for incremental capacity of a facility.

The equivalent effective capacity for these new generation sources is based on capacity factors consistent with the zonal assumptions applied in the region/sub region load forecast. Data is based on the IESO contract list as of August 31, 2023.

Table 4. DER Status Update

Sub region	Station	Installed Capacity (MW)	Effective Capacity (MW)	Base Year
	Alliston TS	0	0	
	Barrie TS	0	0	
	Essa TS	0	0	
	Everett TS	0	0	
	Midhurst TS	0	0	
Barrie/Innisfil	Stayner TS	0	0	2020
	TOTAL	**0**	**0**	
	BRANT TS	0	0	
Brant	BRANTFORD TS	0	0	
	POWERLINE MTS	0	0	
	Bronte TS	0	0	
Bronte	Cumberland TS	0	0	2022
	Burlington DESN	0	0	
	Norfolk TS (T1/T2)	0	0	
Caledonia Norfolk	Bloomsburg DS (T1/T2)	0	0	
	Caledonia TS (T1/T2)	0	0	

	Jarvis TS (T3/T4)	0	0	
Hamilton	Dundas TS #2 (T5/T6)	0	0	
	Dundas TS (T1/T2)	0.12	0.12	
	Newton TS	0	0	
	Elgin TS	0	0	
	Stirton TS	0	0	
	Gage TS (T3/T4)	0	0	
	Gage TS (T5/T6)	0	0	
	Gage TS (T8/T9)	0	0	
	Birmingham TS (T1/T2)	0	0	
	Birmingham TS (T3/T4)	0	0	
	Kenilworth TS (T1/T4)	0	0	
	Kenilworth TS (T2/T3)	0	0	
	Beach TS (T3/T4)	0	0	
	Beach TS (T5/T6)	0	0	
	Lake TS (T1/T2)	0	0	
	Lake TS (T3/T4)	0	0	
	Winona TS	0	0	
	Horning TS (T1/T2)	0	0	
	Horning TS (T3/T4)	0	0	
	Mohawk TS	0	0	
	Nebo TS (T1/T2)	0	0	
	Nebo TS (T3/T4)	0	0	
	TOTAL	0.12	0.12	
East Lake Superior Region	Echo River TS	0	0	2019
	Batchawana TS	0	0	
	Goulais Bay TS	0	0	
	Patrick St TS	0	0	
	St. Mary's MTS	0	0	
	Tarentorus MTS	0	0	
	Chapleau DS	0	0	
	DA Watson TS	0	0	
	Andrews TS	0	0	
	Mackay TS	0	0	
	Northern Ave. TS	0	0	
	TOTAL	0	0	
Greater Bruce/Huron	Douglas Point TS	0	0	2018
	Hanover TS	0	0	
	Owen Sound TS	0	0	
	Seaforth TS	0	0	
	Stratford TS	0	0	
	Wingham TS	0	0	
	Palmerston TS	0	0	
	Goderich TS	0	0	
	Constance DS	0	0	
	St. Mary's TS	0	0	
	Centralia TS	0	0	

	Grand Bend East DS	0	0	
	Bruce HWP B TS	0	0	
	Festival MTS #1	0	0	
	Customer CTS #1	0	0	
	Customer CTS #2	0	0	
	Customer CTS #3	0	0	
	Customer CTS #4	0	0	
	Total	**0**	**0**	
GTA East	Enfield TS	25.6	1.79	2016
	Thornton TS	0.38	0.13	
	Whitby TS	1.26	0.43	
	Wilson TS	12.1	1.35	
	TOTAL	**39.34**	**3.7**	
GTA west	Bramalea TS	0	0	2018
	Cardiff TS	0	0	
	Churchill Meadows TS	0	0	
	Cooksville TS	0	0	
	Erindale TS	0	0	
	Glenorchy MTS #1	0	0	
	Goreway TS	0	0	
	Halton TS	0	0	
	Jim Yarrow MTS	0	0	
	Lorne Park TS	0	0	
	Meadowvale TS	0	0	
	Oakville TS #2	0	0	
	Palermo TS	0	0	
	Pleasant TS	0	0	
	Tomken TS	0	0	
	Tremaine TS	0	0	
	Total	0	0	
GTA North	Holland TS	1.09	1.09	2017
	Armitage TS	0.47	0.47	
	Brown Hill TS	0.85	0.85	
	Buttonville TS	0.11	0.11	
	Markham 1 MTS	0.07	0.07	
	Markham 2 MTS	0.2	0.2	
	Markham 3 MTS	0.2	0.2	
	Markham 4 MTS	0.04	0.04	
	Richmond Hill MTS	0.09	0.09	
	Vaughan 1 MTS	0.26	0.26	
	Vaughan 2 MTS	0.06	0.06	
	Vaughan 3 MTS	0.24	0.24	
	Vaughan 4 MTS	-	-	
	Total	3.68	3.68	
KWCG	Arlen MTS	0	0	2018
	Cambridge #1	0	0	
	Campbell TS	0	0	

	Cedar TS	0	0	
	Detweiler TS	0	0	
	Elmira TS	0	0	
	Fergus TS	0	0	
	Galt TS	0	0	
	Hanlon TS	0	0	
	Kitchener #1	0	0	
	Kitchener #3	0	0	
	Kitchener #4	0	0	
	Kitchener #5	0	0	
	Kitchener #6	0	0	
	Kitchener #7	0	0	
	Kitchener #8	0	0	
	Kitchener #9	0.225	0.0567	
	Preston TS	0	0	
	Puslinch DS	0	0	
	Rush MTS	0	0	
	Scheifele TS	0.01	0.0025	
	Waterloo #3	0.22	0.0554	
	Wolverton DS	0.5	0.126	
	TOTAL	0.955	0.2406	
			Winter and Summer	2015
London Area	Aylmer TS	4.74	4.46 and 4.46	
	Buchanan TS	0.77	0 and 0.15	
	Clarke TS	2.77	0.71 and 1.09	
	Commerce Way TS	0.35	0 and 0.07	
	Edgeware TS	3.38	0 and 0.65	
	Highbury TS	1.26	0 and 0.24	
	Ingersoll TS	2.29	0.47 and 0.81	
	Longwood TS	0.86	0 and 0.16	
	Nelson TS DESN1	17.9	16.83 and 16.83	
	Strathroy TS	1.54	0 and 0.29	
	Talbot TS DESN1	0	0 and 0	
	Talbot TS DESN2	0.52	0 and 0.1	
	Tillsonburg TS	0.12	0 and 0.02	
	Wonderland TS	1.57	0 and 0.3	
	Woodstock TS	1.36	0.01 and 0.27	
	Total	39.43	22.47 and 25.43	
Niagara	Stanley TS	0	0	2022
	Niagara Murray TS	0	0	
	Kalar MTS	0	0	
	Bunting TS	0	0	
	Glendale TS	10	10	
	Carlton TS	0	0	
	Vansickle TS	0	0	
	Thorold TS	0	0	
	Beamsville TS	0	0	

	Vineland TS	0	0	
	Dunville TS	0	0	
	Allanburg TS	0	0	
	Niagara on the Lake#1 MTS	0	0	
	Niagara on the Lake#2 MTS	0	0	
	CNPI Station 11 MTS	0	0	
	CNPI Station 17 MTS	0	0	
	CNPI Station 18 MTS	0	0	
	Crowland TS	0	0	
	Port Colborne TS	0	0	
	Niagara West MTS	0	0	
	Total	10	10	
North/East of Sudbury	Crystal Falls TS	0	0	2020
	Dymond TS	0	0	
	Hearst TS	0	0	
	Kapuskasing TS	0	0	
	Kirkland Lake TS	0	0	
	North Bay TS	0	0	
	Ramore TS	0	0	
	Trout Lake TS	0	0	
	TOTAL	0	0	
Greenstone-Marathon	Beardmore DS # 2	0	0	2024
	Jellico DS # 3	0	0	
	Longlac TS	0	0	
	Manitouwadge DS	0	0	
	Manitouwadge TS	0	0	
	Marathon DS	0	0	
	Pic DS	0	0	
	Schreiber Winnipeg DS	0	0	
	White Dog DS	0	0	
North of Dryden	Cat Lake MTS	0	0	
	Crow River DS	0	0	
	Ear Falls TS	0	0	
	Perrault Falls	0	0	
	Red Lake TS	0	0	
	Slate Falls DS	0	0	
Thunder Bay	Birch TS	0	0	
	Fort William TS	0	0	
	Murillo DS	0	0	
	Nipigon DS	0	0	
	Port Arthur TS	0	0	
	Redrock DS	0	0	
West of Thunder Bay	Agimak DS	0	0	
	Barwick DS	0	0	
	Burleigh DS	0	0	
	Clearwater Bay DS	0	0	

	Crilly DS (Sturgeon Falls CGS)	0	0	
	Dryden TS	0	0	
	Eton DS	0	0	
	Fort Frances MTS	0	0	
	Keewatin DS	0	0	
	Kenora DS	0	0	
	Kenora MTS	0	0	
	Margach DS	0	0	
	Minaki DS	0	0	
	Moose Lake TS	0	0	
	Nestor Falls DS	0	0	
	Sam Lake DS	0	0	
	Sapawe DS	0	0	
	Shabaqua DS	0	0	
	Sioux Narrow DS	0	0	
	Valora DS	0	0	
	Vermillion Bay DS	0	0	
	Whiteriver DS	0	0	
	Total	0	0	
Greater Ottawa	ALBION TS	0.11	0.03	2018
	BILBERRY CREEK TS	0.08	0.02	
	BRIAN COBURN	0	0	
	BRIDLEWOOD MTS	0.02	0	
	CAMBRIAN MTS	0	0	
	CARLING TS	0.05	0.01	
	CENTRE POINT MTS	0.01	0	
	CUMBERLAND DS	0.02	0	
	CYRVILLE MTS	0	0	
	ELLWOOD MTS	0	0	
	FALLOWFIELD DS	0.06	0.01	
	GREELY DS	0.51	0.13	
	HAWTHORNE TS	0.08	0.02	
	BUS STATION TS	0	0	
	HINCHEY TS	27.05	16.75	
	KANATA MTS	0	0	
	KING EDWARD TS	0.03	0.01	
	LIMEBANK MTS	0.07	0.02	
	LINCOLN HEIGHTS TS	0.2	0.05	
	LISGAR TS	12.01	7.44	
	MANORDALE MTS	0.27	0.07	
	MANOTICK DS	0	0	
	MARCHWOOD MTS	0.02	0	
	MARIONVILLE DS	0.25	0.25	
	MERIVALE MTS	0.02	0	
	MOULTON MTS	0.01	0	
	NATIONAL AERONAUTICAL CTS	0	0	
	NRC CTS	0	0	

	NAVAN DS	0	0	
	NEPEAN EPWORTH MTS	0.02	0.01	
	NEPEAN TS	0.2	0.05	
	PIPERVILLE TS	0	0	
	ORLEANS TS	0	0	
	OVERBROOK TS	0.04	0.01	
	RICHMOND SOUTH MTS	0	0	
	RIVERDALE TS	0.04	0.01	
	RUSSELL DS	0	0	
	RUSSELL TS	0.03	0.01	
	SLATER TS	0	0	
	SOUTH GLOUCESTER DS	0	0	
	SOUTH MARCH TS	0.54	0.14	
	TERRY FOX MTS	0.08	0.02	
	UPLANDS MTS	0	0	
	WILHAVEN DS	0.02	0	
	WOODROFFE TS	0.27	0.07	
	Total	42.07	25.17	
South Georgian Bay/Muskoka	Bracebridge TS	0	0	2020
	Minden TS	0	0	
	Muskoka TS	0	0	
	Orillia TS	0	0	
	Parry Sound TS	0	0	
	Waubashene TS	0	0	
	TOTAL	0	0	
Peterborough to Kingston	Ardoch DS	0	0	2021
	Battersea DS	0	0	
	Belleville TS	0	0	
	Dobbin DS	0	0	
	Dobbin TS	0	0	
	Frontenac TS	0.5	0.05	
	Kingston Gardiner TS	0	0	
	(T1/T2, T3/T4)			
	Harrowsmith DS	0	0	
	Havelock TS	0	0	
	Hinchinbrooke DS	0	0	
	Lodgeroom DS	0	0	
	Napanee TS	0	0	
	Northbrook DS	0	0	
	Otonabee TS	0	0	
	Picton TS	0	0	
	Port Hope TS	0	0	
	Sharbot DS	0	0	
	Sidney TS	0	0	
	CTS	0	0	
	Total	0.5	0.05	
Renfrew	COBDEN DS	0	0	2021

	COBDEN TS	0.54	0.14	
	CRAIG DS	0	0	
	DEEP RIVER DS	0.11	0.03	
	DES JOACHIMS DS	0	0	
	FOREST LEA DS	0.1	0.03	
	MAZINAW DS	0	0	
	MOUNTAIN CHUTE DS	0	0	
	PEMBROKE TS	0.36	0.1	
	PETAWAWA DS	0.11	0.03	
	CHALK RIVER CTS	0	0	
	MEGELLAN CTS	0	0	
	Total	1.21	0.32	
Toronto	AGINCOURT TS	0	0	2019
	BASIN TS	0	0	
	BATHURST TS	0	0	
	BERMONDSEY TS	0	0	
	BRIDGMAN TS	0	0	
	CARLAW TS	0	0	
	CAVANAGH MTS	0	0	
	CECIL TS	0	0	
	CHARLES TS	0	0	
	COPELAND TS	0	0	
	DUFFERIN TS	0	0	
	DUPLEX TS	0	0	
	ELLESMERE TS	0	0	
	ESPLANADE TS	0	0	
	FAIRBANK TS	0	0	
	FAIRCHILD TS	0	0	
	FINCH TS	0	0	
	GERRARD TS	0	0	
	GLENGROVE TS	0	0	
	HORNER TS	0	0	
	JOHN TS	3.845	3.845	
	LEASIDE TS	0	0	
	LESLIE TS	0	0	
	MAIN TS	0	0	
	MALVERN TS	0	0	
	MANBY TS	0	0	
	REXDALE TS	0	0	
	RICHVIEW TS	0	0	
	RUNNYMEDE TS	0	0	
	SCARBORO TS	0	0	
	SHEPPARD TS	0	0	
	STRACHAN TS	0	0	
	TERAULY TS	0	0	
	WARDEN TS	0	0	
	WILTSHIRE TS	0	0	

	WOODBRIDGE TS	0	0	
	TOTAL	3.845	3.845	
Windsor Essex	Belle River TS	0	0	2018
	Chrysler WAP MTS	0	0	
	Crawford TS	0	0	
	Essex TS	0	0	
	Ford Annex MTS	0	0	
	Ford Essex CTS	0	0	
	Ford Windsor MTS	0	0	
	GM Windsor MTS	0	0	
	Keith TS	0	0	
	Kingsville TS	0	0	
	Lauzon DESN1	0	0	
	Lauzon DESN 2	0	0	
	Leamington TS	22.6	21.2	
	Malden TS	0	0	
	South Middle Road DESN 1 (T3/T4)	0	0	
	South Middle Road DESN 2 (T1/T2)	0	0	
	Tilbury West DS	0	0	
	Walker MTS#2	0	0	
	Walker TS #1	0	0	
	Customer CTS#1	0	0	
	Customer CTS #2	0	0	
	Customer CTS #3	0	0	
	Customer CTS #4	0	0	
	Customer CTS #5	0	0	
	Total	22.6	22.6	

A.3 Other Initiatives

Other Electricity System Initiatives, as identified by the IESO, include:

Sub region	Other Electricity System Initiatives
East Lake Superior Region	On August 27, 2024. OEB issued a decision on PUC/HOSSM's application for approval to construct a 230 kV transmission line and a new transformer station in Sault Ste. Marie.
GTA West/GTA North	The IESO and Ministry of Energy and Electrification are conducting the NWGTA Transmission Corridor Identification Study to identify and protect a corridor of land for future transmission infrastructure.
London Area	The IESO is currently undertaking a South and Central Bulk Study, which will look at supporting future generation connections and demand growth in key areas throughout southern and central Ontario. This study is a continuation of the investigations undertaken through the Pathways to Decarbonization ("P2D") and Powering Ontario's Growth (POG) reports. Within the South and Central Bulk Study, the sufficiency of the bulk transmission system between the Hamilton and Windsor areas are being studied in the context of future economic development.
North/East of Sudbury	The IESO is currently undertaking a North of Sudbury bulk study, which will look at demand growth in the Timmins and Kirkland Lake sub-areas as well as the impact of changing generation resources and potential retirements of gas fired generation facilities. The study will also address voltage control issues in the areas and reliance of Remedial Action Schemes (RAS).

Northwest Ontario	The IESO is studying supply options to the Matawa First Nations communities, which are currently supplied via diesel and unlock mining potential in the Ring of Fire to inform government policy. This study is expected to be completed by the end of 2024. The IESO published a System Impact Assessment for Phase 1 and Phase 2 of the Waasigan Transmission Line Project with an expected in-service date of 2025 and 2026, respectively.
Greater Ottawa	In 2019, in consultation with IESO staff, Hydro Ottawa submitted two proposals to Save On Energy's Local Program Fund (the "Fund"), a program application stream which allows LDCs to continue to design and deliver energy efficiency programs that serve the needs of their specific customers. Programs approved through the Fund must demonstrate cost-effectiveness based on the resulting net benefit when comparing the program investment (cost) against the provincial average avoided costs of providing electricity (benefit). So, while these investments will benefit ratepayers province-wide, these offerings are also expected to help reduce the reliability risk due to heavily loaded stations in Kanata-Stittsville. The IESO approved both of Hydro Ottawa's proposed programs for delivery in 2020, which include the Kanata North Retrofit+ Program and the Kanata North Smart Thermostat Program. Both of these programs leverage the existing delivery infrastructure of current electricity and natural gas province-wide programs, which reduces administrative costs, streamlines customer experiences, and avoids market duplication and confusion. These local programs are an example of using system cost- effective energy efficiency to help address local system needs and can inform similar approaches in the future. It is forecasted that these two initiatives could combine to offset more than 3 MW or 50% of the near-term peak load growth in the Kanata North area. In doing so, these programs could help address the 60 MW of capacity need in the Kanata-Stittsville region and support reliable supply until a long-term solution for the area is implemented. The IESO has directed increased efforts and investment to the Ottawa area these past several years, to encourage the adoption of energy efficiency process and technologies in businesses and communities. As part of the 2021-2024 CDM Framework , the IESO was directed to deliver a new competitive program to address regional and/or local system needs. The Local Initiative Program is now one tool that is available to target the delivery of additional CDM savings at specific areas of the province with identified system needs. The IESO is currently working with Hydro Ottawa to develop a local initiative program procurement in order to begin targeting the incremental savings opportunities described above and previously highlighted in the 2020 Ottawa IRRP. As part of the as part of the 2021-2024 CDM Framework Mid-Term Review, the IESO is also reviewing new opportunities for CDM to be targeted to address regional or local needs and available tools to do so. As part of this effort, the IESO should continue to explore opportunities to target savings in the Ottawa and Peterborough to Quinte regions in order to help address these emerging bulk and regional system needs.
Windsor Essex	The IESO continued planning for the Windsor-Essex region and surrounding area, with a West of London bulk study published in September 2021. Development work for the recommended transmission reinforcements is ongoing. The IESO's Grid Innovation Fund and OEB's Innovation Sandbox issued a joint call for proposals to support research and demonstration projects that test the capabilities of distributed energy resources. One successful proponent included a proposed local electricity market in the Leamington area, proposed by Essex Powerlines, NODES, Essex Energy Corp., and Utilismart Corp. More information can be found at the IESO's website here. The IESO continues offering an incentive for LED grow lights through the Retrofit program to help greenhouses in the Windsor-Essex and Chatham-Kent areas reduce their energy use. The IESO is currently undertaking a South and Central Bulk Study, which will look at supporting future generation connections and demand growth in key areas throughout southern and central Ontario. This study is a continuation of the investigations undertaken through the Pathways to Decarbonization ("P2D") and POG reports. Within the South and Central Bulk Study, the sufficiency of the bulk transmission system between the Hamilton and Windsor areas are being studied in the context of future economic development.

APPENDIX B. PLANNING STATUS LETTERS

The Transmission System Code (TSC) requires that letters be issued by the transmitter as per Section 3C.2.2 item (h):

> *(h) within 45 days of receipt of a request to do so, provide a letter to a licensed distributor or a licensed transmitter confirming the status of regional planning for a region, including any Regional Infrastructure Plan that is being developed for the region that includes the distributor's licensed service area or within which the requesting transmitter's transmission system is located, suitable for the purpose of supporting an application proposed to be filed with the Board by the distributor or requesting transmitter.*

In compliance with this requirement, Hydro One has provided four (4) Planning Status Letters to the following LDCs since November 2023:

- Essex Power Line Corporation (EPLC) Planning Status Letter – June 2024
- Greater Sudbury Hydro Planning Status Letter – June 2024
- Hydro Hawkesbury Planning Status Letter – August 2024
- Oshawa PUC Networks Inc. Planning Status Letter – October 2024