

A tall, dark-colored electrical transmission tower stands prominently in the center of the image, silhouetted against a bright, cloudy sky. The tower has multiple cross-arms and guy wires. It is situated in a dense forest of evergreen trees, with rolling hills visible in the background under a blue and white sky.

**REGIONAL INFRASTRUCTURE PLAN  
REPORT  
GREATER OTTAWA**

# Regional Infrastructure Plan Report

Greater Ottawa

February 09, 2026

Lead Transmitter:

Hydro One Networks Inc.

Prepared by:

Greater Ottawa Technical Working Group



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## Disclaimer

This Regional Infrastructure Plan (RIP) Report for the Greater Ottawa region was prepared for the purpose of developing an electricity infrastructure plan to address electrical supply needs identified in previous planning phases and any additional needs identified based on new and/or updated information provided by the RIP Technical Working Group (TWG).

The preferred solution(s) that have been recommended in this report may be reevaluated based on the findings of further analysis. The load forecast and results reported in this RIP report are based on the information provided and assumptions made by the participants of the RIP TWG at the time.

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## Executive Summary

<b>REGION</b>	<b>Greater Ottawa (the “Region”)</b>		
<b>LEAD</b>	Hydro One Networks Inc. (“HONI”)		
<b>START DATE:</b>	August 18, 2025	<b>END DATE:</b>	February 09, 2026

The Regional Infrastructure Plan (RIP) is the final step of Regional Planning Process for the Greater Ottawa region, preceded by, the publication of Needs Assessment (NA) report in December 2022 by Hydro One which was triggered early due to high growth in the region followed by the Scoping Assessment (SA) & Integrated Regional Resource Plan (IRRP) which were published in March 2023 and in July 2025 respectively, by the Independent Electricity System Operator (IESO).

Hydro One as the lead transmitter undertakes the development of a RIP with input from the Technical Working Group (TWG) for the region (includes representatives from Hydro One Transmission, IESO and LDCs and publishes a RIP report. The RIP report includes a discussion of all options and plans identified in earlier phases and recommends a preferred wires plan to address the near, medium, and long - term needs over a twenty-year study period.

The objectives and scope of the RIP are:

- A consolidated report of the needs and relevant wires plans to address near, and medium-term needs (2025-2034) identified in previous planning phases (i.e., Needs Assessment, Scoping Assessment, Local Plan, or Integrated Regional Resource Plan).
- Identify any new need(s) over the 2025-2034 that may have emerged since previous planning phases. Assess and develop wires plans to address these new needs.
- Identify investments in transmission and distribution facilities or both that should be developed and implemented on a coordinated basis to meet the electricity infrastructure needs within the region.
- Consideration of long-term needs identified in the Ottawa area sub-region IRRP, Bulk system studies or as identified by the TWG.

Since the IRRP study addressed needs only for the Ottawa Area Sub-region, the RIP as per TWG discussions developed a new load forecast for stations outside the IRRP scope and revised forecasts for certain stations. For the remaining stations, the IRRP load forecast was adopted for the RIP study, as no material changes were identified. During the IRRP stakeholder engagement process, IESO received municipal input on future load growth for consideration in the IRRP load forecast.

The list of major infrastructure investments recommended by the TWG in the region is given below. The needs include those previously identified in the NA and IRRP, as well as any new needs identified during the RIP phase, if any.

Station/Circuit Name	Recommended Plan	Lead	Planned ISD	Budgetary Cost (\$M)
<b>Asset Renewal Needs</b>				
South March TS	Replacement of T1/T2 transformers with upgraded units based on asset conditions and capacity needs.	Hydro One	2029	\$40M
Albion TS	Replacement of T1/T2 transformers with upgraded units based on asset condition and capacity needs.	Hydro One	2031	\$60M
Nepean TS	Replacement of T3/T4 transformers based on asset condition	Hydro One	2034	\$30M
S7M	Refurbishment of line section between Manotick JCT x Richmond South MTS and S7M 673N x Manordale JCT	Hydro One	2030	\$5M
<b>Station Capacity Needs</b>				
South March TS	Replacement of T1/T2 transformers with upgraded units based on asset conditions and capacity needs.	Hydro One	2029	\$40M
Carling TS	Replacement of limiting LV cables.	Hydro One	2030	\$10M
Lisgar TS	Replacement of T2 transformer and LV cables/breakers - Greenfield	Hydro One	2034	\$50M
	Replacement of T2 transformer and LV cables/breakers – In Situ	Hydro One	2031	\$30M
King Edward TS	Replacement of LV cables and breakers.	Hydro One	2033	\$20M

Cyrville MTS	Station voltage conversion from 115kV to 230kV to increase station rating and upgrade station transformation capacity.	Hydro One/ Hydro Ottawa	2029	\$85M*
Moulton MTS	Relocate 50 MVA ,115kV transformers from Cyrville MTS after voltage conversion to increase station rating at Moulton TS.	Hydro Ottawa	2029	\$5M
Bronson MTS	Build a new 115kV Transformer Station east of Carling TS by converting existing Bronson distribution station	Hydro One/ Hydro Ottawa	2031	\$110M*
Greenbank MTS	Build new Transformer Station to meet demand growth and need for 28kV supply west of Merivale TS.	Hydro One/ Hydro Ottawa	2028	\$100M*
Kanata North MTS	Build a new Transformer Station by connecting 230 kV C3S and new transmission line from South March TS	Hydro One/ Hydro Ottawa	2028	\$100M*
Marionville DS	Install a second transformer to increase station rating.	Hydro One Dx	2029	\$12M*
Greely DS	Install Scada Fan monitoring to increase transformer rating.	Hydro One Dx	2026	\$2M*
Rockland DS	Install Scada Fan monitoring to increase transformer rating.	Hydro One Dx	2026	\$2M*
Rockland East DS	Install Scada Fan monitoring to increase transformer rating.	Hydro One Dx	2027	\$3M*

<b>Transmission Line Capacity Needs</b>				
M4G/M5G	Upate Line section between Merivale TS x Carling TS	Hydro One	2030	\$30M
L2M	Upate line section between Merivale TS x Limebank JCT	Hydro One	2032	\$30M
<b>System Reliability, Operation and Load restoration Needs</b>				
Kanata Area	Kanata Area Transmission Reinforcement	Hydro One	2033	\$250M
Nepean TS – Load Security Criteria	Second 230 kV Supply to station	Hydro One	2032	\$70M
M1R+L2M	Split Breaker position for M1R and L2M at Merivale TS	Hydro One	2032	\$45M
East Ottawa Area	Supply to East Ottawa	Hydro One	2029-2030	\$165M*

\* These investment costs include associated distribution system costs.

Note:

- a) The planned in-service dates are tentative and subject to change.
- b) Costs are high-level planning estimates and actual costs may vary.

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## 1. INTRODUCTION

The Regional Infrastructure Plan (RIP) is the final step of the Regional Planning Process. Hydro One as the lead transmitter undertakes the development of a RIP with input from the Technical Working Group (TWG) for the region (includes representatives from Hydro One Transmission, IESO and LDCs) and publishes a RIP report. The third cycle of the Regional Planning process for the Greater Ottawa region was initiated early due to high growth in the region with the publication of Needs Assessment (NA) and the report was published in December 2022 by Hydro One. This was followed by the Scoping Assessment (SA) & Integrated Regional Resource Plan (IRRP) only for the Ottawa Sub-Region Area which were published in March 2023 and July 2025 respectively, by the Independent Electricity System Operator (IESO).

This RIP report is for the “Greater Ottawa Region” and includes the municipalities bordering the Ottawa River from Arnprior in the West to Hawkesbury in the East and North of County Road 43 (Highway 43) and includes a common discussion of all the options and recommended plans and preferred wire infrastructure investments identified in earlier phases to address the near- and medium-term needs.

This report was prepared by the Greater Ottawa TWG, led by Hydro One Networks Inc. The report presents the results of the assessment based on information provided by Hydro One, the Local Distribution Companies (LDC), the Municipalities and the IESO. Participants of the TWG are listed below in Table 1-1.

**Table 1-1: Greater Ottawa region TWG Participants**

Sr. no.	Name of TWG Participants
1	Hydro One Networks Inc. (Transmission)
2	Independent Electricity System Operator (IESO)
3	Hydro One Networks Inc. (Distribution)
4	Hydro Ottawa Limited
5	Hydro Hawkesbury
6	Renfrew Hydro Inc.
7	Hydro 2000 Inc.
8	Ottawa River Power Corp.

## 2. OBJECTIVES AND SCOPE OF REGIONAL INFRASTRUCTURE PLAN

This RIP report examines the needs in the Greater Ottawa region. Its objectives are to:

- Provide a comprehensive summary of needs and wires plans to address the needs of the Greater Ottawa region.
- Identify new supply needs that may have emerged since previous planning phases (e.g., Needs Assessment, Scoping Assessment, Local Plan, and/or Integrated Regional Resource Plan).
- Assess and develop wires plans to address these new needs.
- Identify investments in transmission and distribution facilities or both that should be developed and implemented on a coordinated basis to meet the electricity infrastructure needs within the region.

The RIP reviewed factors such as the load forecast, asset renewal for major high voltage transmission equipment, transmission and distribution system capability along with any updates with respect to local plans, Electricity Demand Side Management (“eDSM”) forecasts, renewable and non-renewable generation development, and other electricity system and local drivers that may impact the need and alternatives under consideration.

The scope of this RIP is as follows:

- A consolidated report of the needs and relevant wires plans to address near and medium-term needs 2025-2034 identified in previous planning phases (i.e., Needs Assessment, Scoping Assessment, Local Plan, or Integrated Regional Resource Plan).
- Identification of any new needs over the 2025-2034 period and wires plans to address these needs based on new and/or updated information.
- Consideration of long-term needs identified in the Ottawa area sub-region IRRP, Bulk system studies or as identified by the TWG.

### 3. REGIONAL PLANNING PROCESS & RIP METHODOLOGY

#### 3.1 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 require longer lead time and larger investments. Comparatively, planning at the regional and distribution levels looks 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 little 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 investments.

The regional planning process begins with a Needs Assessment which is led by the transmitter to identify, assess, and document which of the needs that,

- a) can be addressed directly between the customer and transmitter along with a recommended plan, and.
- b) 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 TWG as to whether further regional coordination is necessary to address some or all the regional needs. If no further regional coordination is required, the recommended options are implemented, 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 IESO initiates the 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., Electricity Demand Side Management ("eDSM"), Distributed Generation (DG), etc., in order to make a decision on the most appropriate regional planning approach including Local Plan (LP), IRRP and/or RIP.

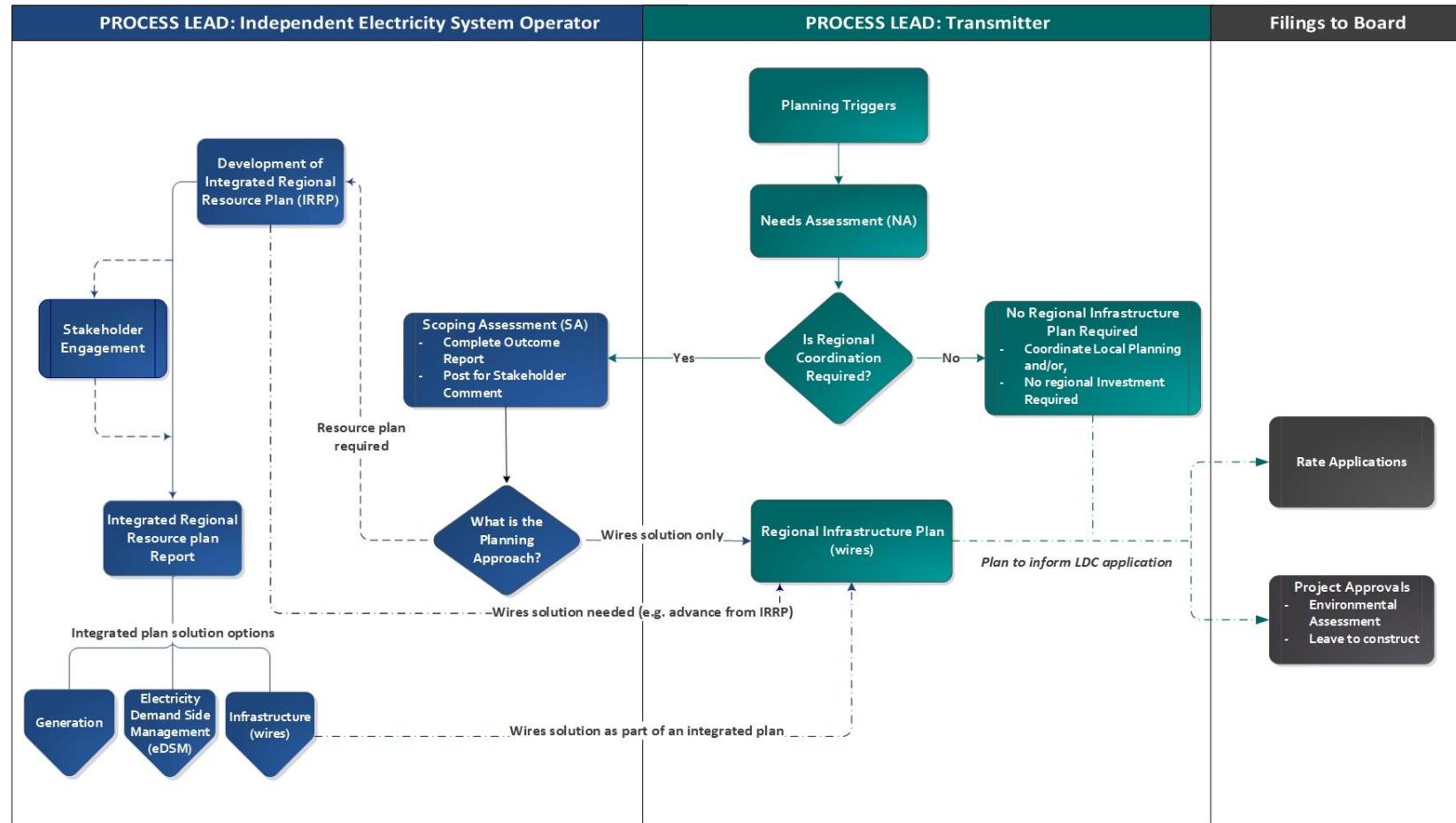
The primary purpose of the IRRP is to identify and assess both resource and wires options at a higher or macro level, but sufficient to permit a comparison of resource options vs. wire infrastructure to address the needs. Worth noting, the LDCs' eDSM targets as well as contracted DG plans provided by 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.

The RIP phase is the final phase of the regional planning process and involves discussion of previously identified needs and plans; identification of any new needs that may have emerged since the start of the planning cycle; and development of a wires plan to address these needs. This phase is led and coordinated by the transmitter and the deliverable is a comprehensive and consolidated report of a wires plan for the region. Once completed, this report is also referenced in transmitter's rate filing submissions and as part of LDC rate applications with a planning status letter provided by the transmitter to the LDC(s). Respecting the OEB timeline provision of the RIP, planning level stakeholder engagement is not undertaken during this phase. However, stakeholder engagement at a project specific level will be conducted as part of the project approval requirement.

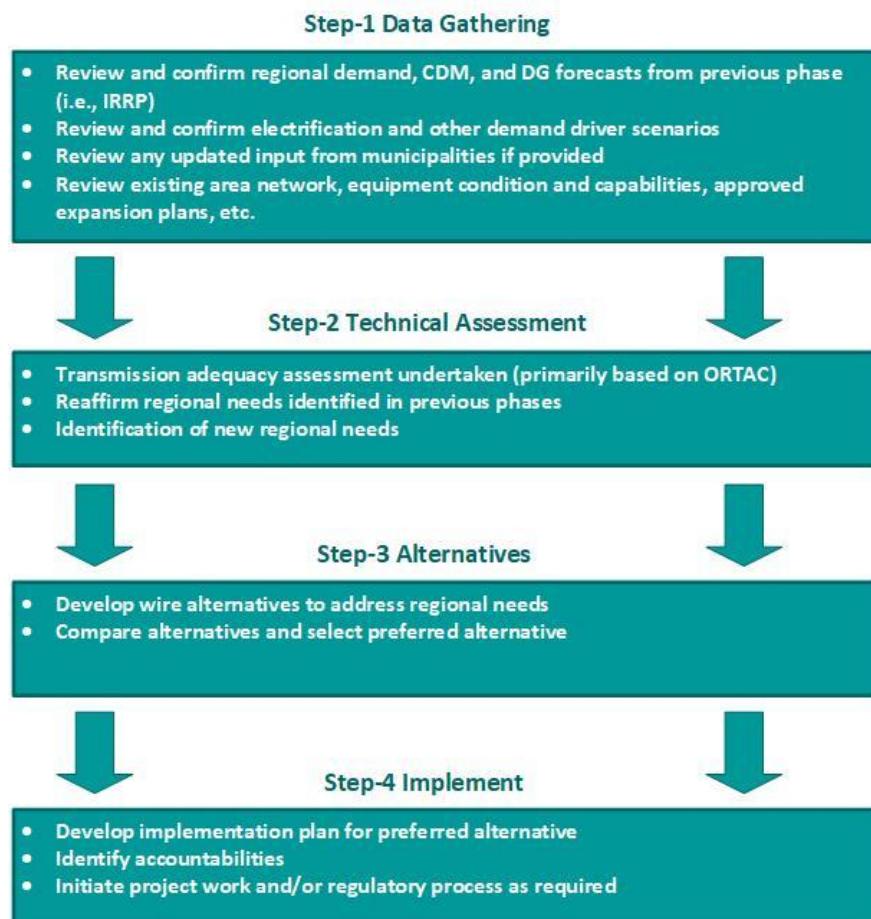
The various phases of Regional Planning Process (NA, SA, IRRP, and RIP) and their respective phase trigger, lead, and outcome are shown below in Figure 3-1.

Figure 3-1 Regional Planning Process Flowchart



## 3.2 Regional Infrastructure Plan Methodology

Figure 3-2 Regional Infrastructure Plan Methodology



Regional Infrastructure Plan phase is a four-step process which are described below:

### 3.2.1. Data Gathering:

The first step of the RIP process is the review of planning assessment data collected in the previous stages of the regional planning process. Hydro One collects this information and reviews it with TWG to reconfirm or update the information as required. The data collected includes:

- Net peak demand forecast at the transformer station level. This includes the effect of any distributed generation or eDSM programs. As agreed by TWG members, the load forecast from the Ottawa Area sub-region IRRP was used for this RIP with modifications to some stations and developed a load forecast for the outer Ottawa stations which were not covered in the IRRP.

- Review and confirm electrification and other growth scenarios which affect the projects recommended in previous stages.
- Existing area network and capabilities including any bulk system power flow assumptions.
- Other data and assumptions as applicable such as asset condition, load transfer capabilities, and previously committed transmission and distribution system plans.

### **3.2.2. Technical Assessment:**

The second step is a technical assessment to review the adequacy of the regional system including any previously identified needs. Additional near and medium-term needs may be identified at this stage.

### **3.2.3. Alternative Development:**

The third step is the development of wires options to address the needs and determine a preferred alternative based on an assessment of technical considerations, feasibility, environmental impact, and costs.

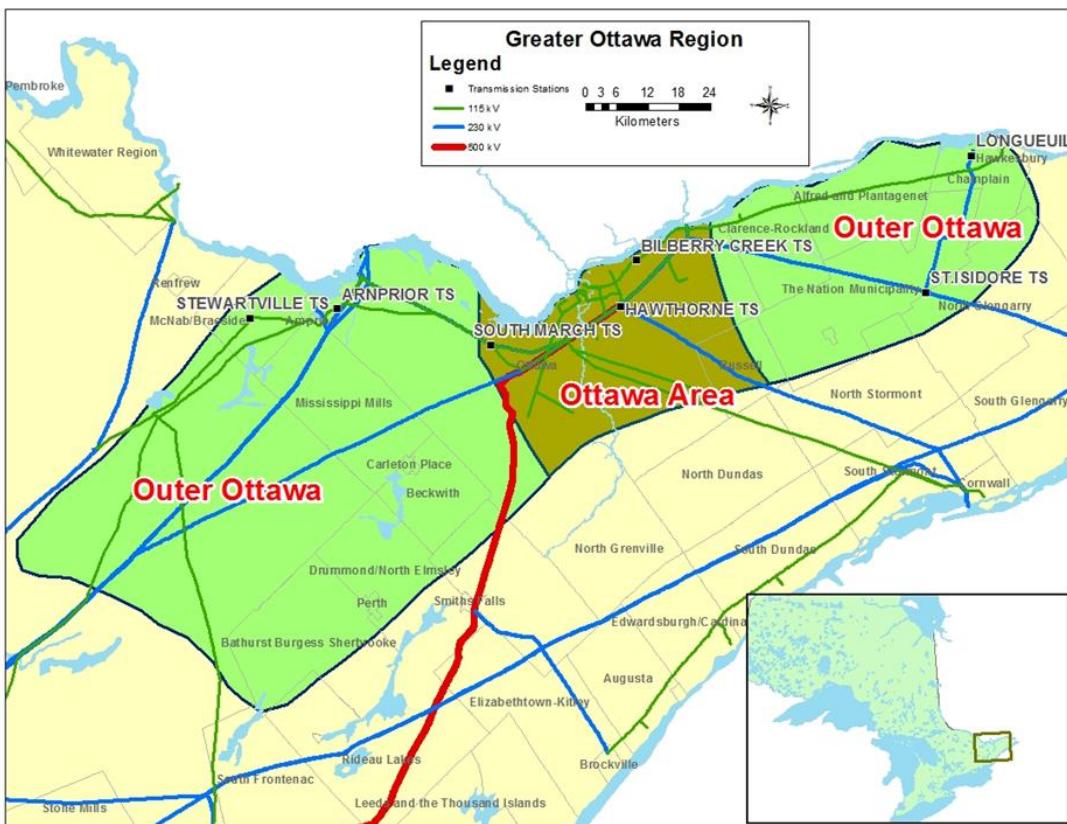
### **3.2.4. Implementation Plan:**

The fourth and last step is the development of the implementation plan for the preferred alternative, identify accountabilities and initiate project work or obtain permissions from the Regulatory Commission if any.

## 4. REGIONAL DESCRIPTION AND CONNECTION CONFIGURATION

The Greater Ottawa Region covers the municipalities bordering the Ottawa River from Arnprior in the West to Hawkesbury in the East and North of County Road 43 (Highway 43). At the center of this region is the City of Ottawa. Electrical supply to the Region is provided from fifty-two (52) 230 kV and 115 kV step-down transformer stations. The boundaries of the Region are shown in Figure 4-1 below. The outer regions are referred to as the East and West Outer Ottawa sub-regions. The central region comprising of City of Ottawa is referred to as the Ottawa sub-region

Figure 4-1: Map of Greater Ottawa Regional Planning Area

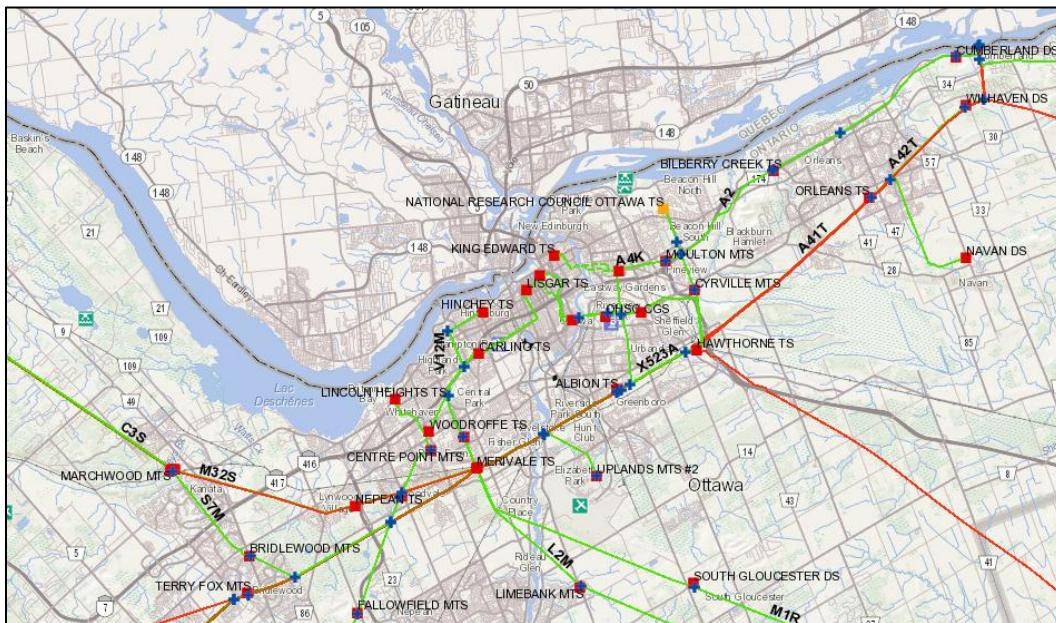


Bulk electrical supply to the Greater Ottawa Region is provided through the 500/230 kV Hawthorne TS autotransformers and a network of 230 kV and 115 kV transmission lines and step-down transformation facilities. The area has been divided into two sub-regions as shown in Figure 4-1 and described below:

The Ottawa Area Sub-region comprises primarily the City of Ottawa. It is supplied by two (2) 230/115 kV autotransformer stations (Hawthorne TS and Merivale TS), eight (8) 230 kV and thirty-three (33) 115 kV transformer stations stepping down to lower voltages. Local generation in the area consists of the 74 MW

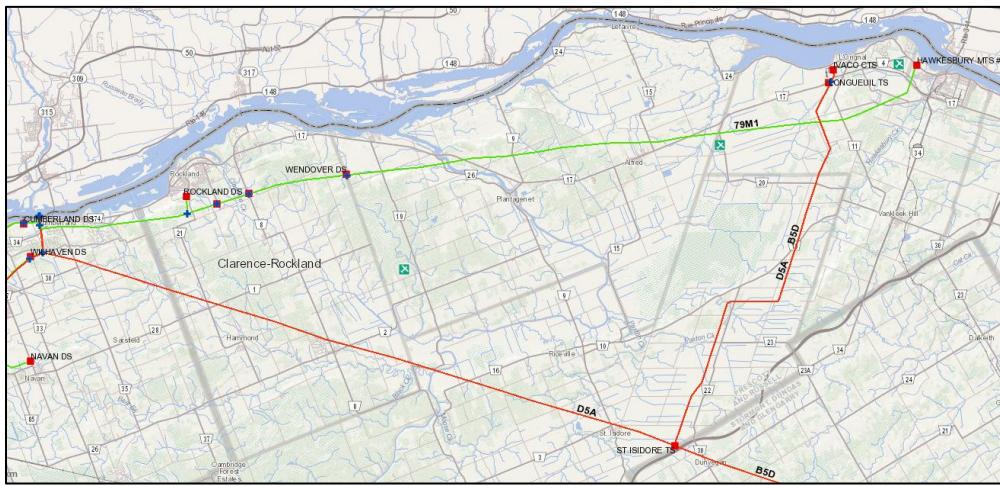
Non-Utility Generator (“NUG”) CGS-2 located near the downtown area and connected to the 115 kV network. The Ottawa Area Sub-region is shown in Figure 4-2 below. Hydro Ottawa is the main LDC that serves the electricity demand for the City of Ottawa. Hydro One Distribution supplies load in the outlying areas of the sub-region. Both Hydro Ottawa and Hydro One Distribution receive power at the step-down transformer stations and distribute it to end users, including industrial, commercial and residential customers.

Figure 4-2: City of Ottawa Sub-Region Map



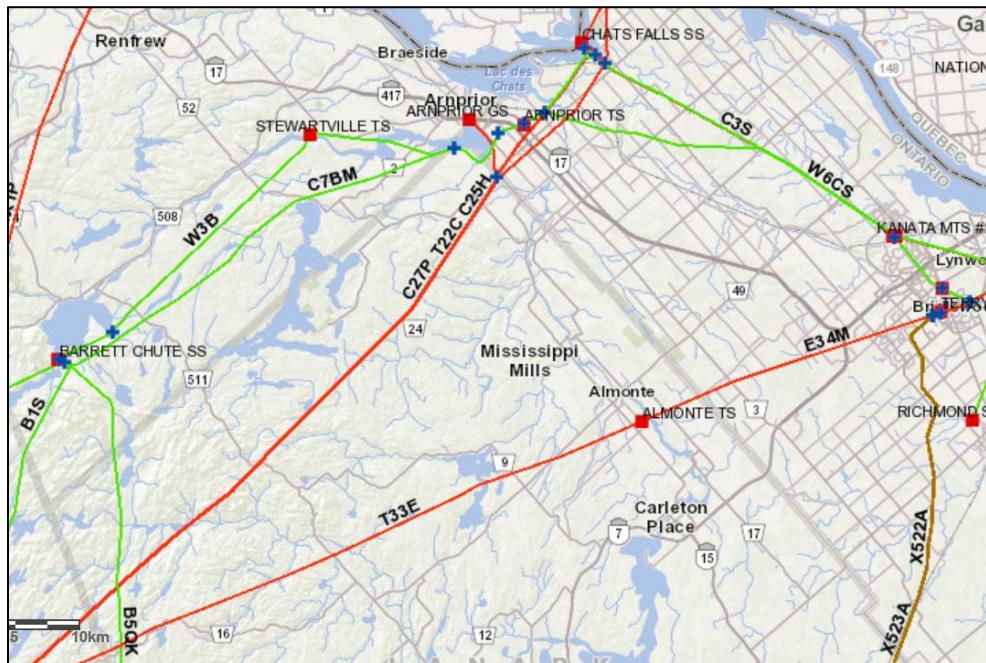
The Outer Ottawa Sub-Region covers the remaining area of the Greater Ottawa Region. The eastern area as shown in Figure 4-3 below is served by three (3) 230 and five (5) 115 kV step-down transformer stations. Hydro One Distribution and Hydro Hawkesbury are the LDCs in the area that distribute power from the stations to their end use customers. Hydro 2000 is an embedded LDC that supplies its customers from Longueuil TS via Hydro One Distribution's 44kV feeders. It also includes a large industrial customer, in L'Orignal, Ontario.

Figure 4-3: Outer Ottawa Sub-Region Map (Eastern Part)



The western area of the Outer Ottawa Sub-Region, shown in Figure 4-4 is served by one (1) 230 kV and two (2) 115 kV step-down transformer stations. Hydro One Distribution is the LDC that supplies its end use customers from these stations. Ottawa River Power Corp. is an embedded LDC that supplies its customers from Almonte TS via Hydro One Distribution's 44kV feeders. Renfrew Hydro is an embedded LDC that supplies its customers from Stewartville TS via Hydro One Distribution's 44kV feeders. The area includes the following generating stations: Barrett Chute GS, Chats Falls GS and Stewartville GS with a peak generation capacity of about 450 MW.

Figure 4-4: Outer Ottawa Sub-Region Map (Western Part)



Electricity demand in the region is projected to grow steadily over the forecast horizon, primarily driven by municipal expansion, increased commercial development, and the accelerating impacts of electrification and decarbonization initiatives. A key factor influencing long-term demand and supply requirements is the planned phase-out of natural gas heating, which is expected to significantly increase electricity consumption in the sub-region, particularly in the latter years of the forecast period. The circuits and stations of the area are summarized in Table 4-1 below:

**Table 4-1: Transmission Station and Circuits in the Greater Ottawa region**

115kV circuits	230kV circuits	Hydro One Transformer Stations		Generation Stations
A2	B5D	Albion TS	Marchwood MTS	CGS-1
A3RM	C3S	Almonte TS	Marionville DS	CGS-2
A4K	D5A	Arnprior TS	Merivale MTS	Chat Falls GS
A5RK	E34M	Bridlewood MTS	Moulton MTS	Stewartville GS
A6R	L24A	Bilberry Creek TS**	CTS -2	Barret Chute GS
A8M	M30A	Cambrian MTS	NRC TS	
C7BM	M31A	Carling TS	Navan DS	
F10MV	M32S	Centrepoint MTS	Nepean Epworth MTS	
H9A		Clarence DS	Nepean TS	
L2M		Cumberland DS	Orleans TS	
M1R		Cyrville MTS	Overbrook TS	
M4G		Ellwood MTS	Richmond South MTS	
M5G		Fallowfield MTS	Riverdale TS	
S7M		Greely DS	Russell DS	
V12M		Hawthorne TS*	Russell TS	
W6CS		Hawkesbury MTS #1	Rockland DS	
79M1		Merivale TS*	Rockland East DS	
		Hinchey TS	Slater TS	
		CTS-1	South Gloucester DS	

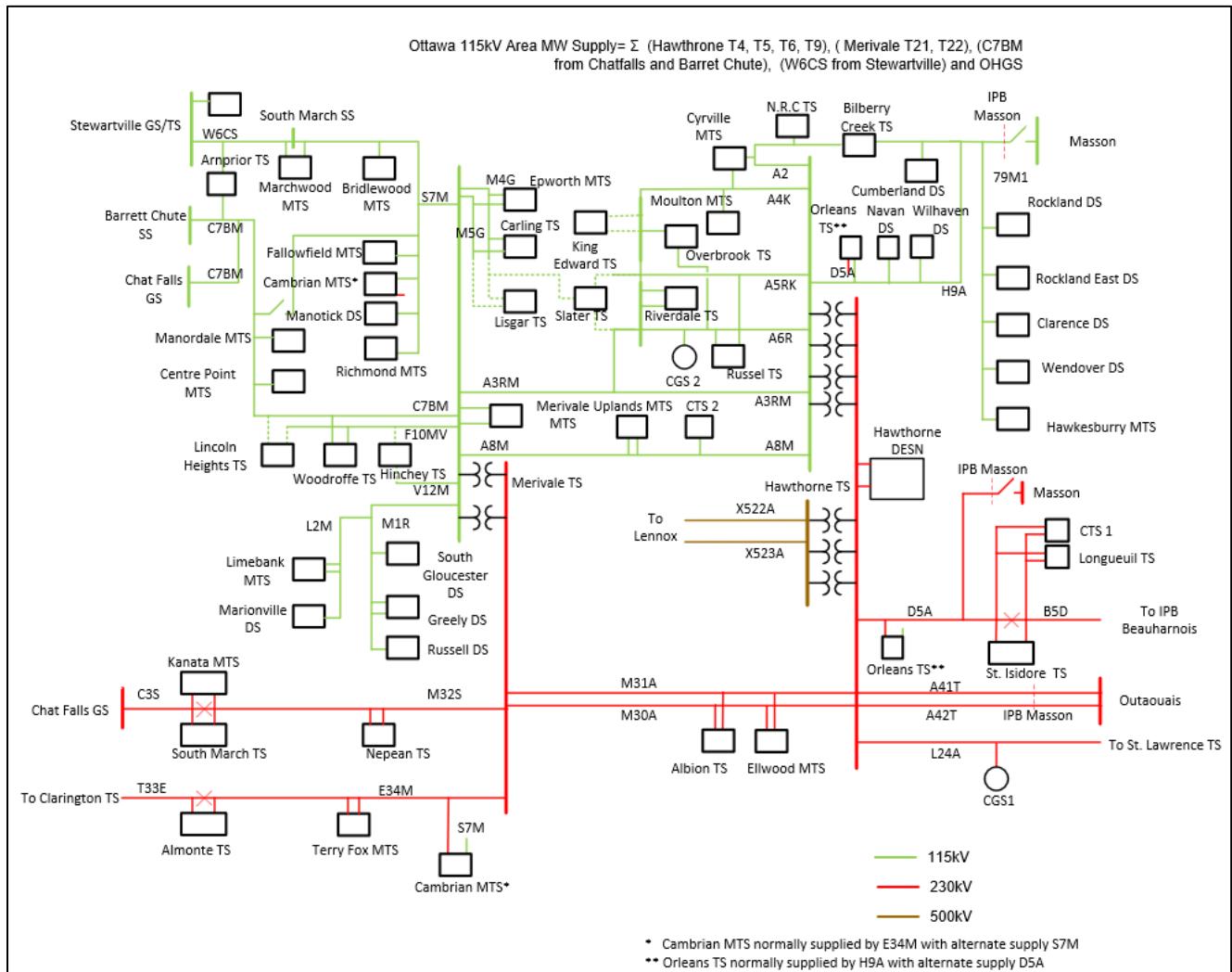
		Kanata MTS King Edward TS Limebank MTS Lincoln Heights TS Lisgar TS Longueuil TS Manotick DS	South March TS St. Isidore TS Stewartville TS Terry Fox MTS Uplands MTS Wendover DS Wilhaven DS Woodroffe TS	
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\*Stations with Autotransformers installed

\*\* Planned to decommission

The single line diagram of the existing Transmission Network of Greater Ottawa region is shown in Figure 4-5 below.

Figure 4-5: Greater Ottawa Transmission Single Line Diagram



## 5. TRANSMISSION FACILITIES COMPLETED IN THE LAST TEN YEARS AND/OR ARE UNDERWAY

In this section a complete list of all the projects that were completed in the past ten years or are currently underway is provided and is briefly discussed in the sub-sections. As a part of this or previous Regional Planning Cycle(s), several “Major HV Transmission Projects” were recommended in the **Greater Ottawa region** to improve the supply capability and reliability.

Hydro One Transmission, Hydro Ottawa Ltd and Hydro Hawkesbury are the Transmission Asset Owner (TAO) in the region and have undertaken the execution of the projects recommended in the past ten years. A summary and brief description of all the projects completed or are currently underway is given below:

### I. Following Major projects were completed during the last ten years:

1. Build New Orleans TS (2015) – built a new step-down transformer station in East Ottawa supplied from 230 kV circuit D5A and 115 kV circuit H9A. This station provides additional load meeting capability to meet Hydro One Distribution and Hydro Ottawa requirements. It provides improved reliability for Hydro One Distribution customers in the Orleans-Cumberland area.
2. Hinchey TS (2015) – Connected idle winding of transformers T1/T2 to new Hydro Ottawa metalclad switchgear to provide additional load meeting capability at the station.
3. Add 230 kV inline breaker on 230 kV circuit M29C at Almonte TS (2015) – added breaker to improve reliability of supply for Almonte TS and Terry Fox MTS and split line M29C into E34M and E29C (now T33E)
4. Overbrook TS (2017): Replaced 45/60/75 MVA, 115/13.8 kV step down transformers with new 60/80/100 MVA, 115/13.8 kV based on asset condition assessment\_replaced transformers with higher capacity units to provide additional load meeting capability at the station due to anticipated load growth.
5. Hawthorne TS (2019): Replaced 50/67/83 MVA, 230/44 kV step down transformers with new 75/100/125 MVA, 230/44 kV units based on asset condition assessment replaced transformers with higher capacity units to provide additional load meeting capability at the station due to anticipated load growth.
6. Change supply to Overbrook TS (2019) – Reduced the loading on A4K by modifying the supply to Overbrook TS by connecting transformer T1 to A6R instead of A4K. This was accomplished by rebuilding the line section of A5RK from Riverdale JCT to Overbrook TS as a double circuit 115 kV line and tapping A6R at Riverdale JCT.
7. Connection of CGS 1 wind farm (2020) – connection of 100 MW wind farm to 230 kV circuit L24A.

8. Hawthorne TS T5 and T6 autotransformer replacement (2021): Replace 225 MVA, 230/115 kV autotransformers T5 and T6 with new 250 MVA, 230/115 kV autotransformers to provide additional 230/115 kV transformation capacity.
9. King Edward TS transformer T3 replacement (2021): Replacement of 45/60/75 MVA, 115/13.8 kV step down transformer T3 with upgraded 60/80/100 MVA, 115/13.8 kV to match the existing rating of T4 and to provide additional load meeting capability at the station.
10. Connection of Cambrian MTS (2022): connect a new Hydro Ottawa owned transformer station in the South Nepean area. The station is supplied from 230kV circuit E34M with alternate supply from 115kV circuit S7M. S7M was rebuilt as a double circuit line from the main line (S7M STR673JCT to Cambrian JCT (~10.9km) with a 1.3km extension to Cambrian MTS.
11. Overbrook TS LV cable review (2022): the transformer cable capacity limitation review was analyzed. The transformer LTR was increased based on the result of the study.
12. Arnprior TS T1/T2 replacement (2023): The two 25/33/42 MVA 115.5kV/44kV transformers were replaced like-for-like with new standard 25/33/42 MVA 110kV/44kV transformers.
13. M30A/M31A upgrade (2023): Increase the power interface limit between Hawthorne TS and Merivale TS by replacing the existing conductor 1843.2kcmil with new twin bundled 1443.7 kcmil conductor (2 conductors per phase).
14. Slater TS T2/T3 replacement (2024): Replaced 38/63 MVA, 110/12 kV step down transformers T2 and T3 with new 60/80/100 MVA, 110/14.2 kV units based on asset condition assessment replaced transformers with higher capacity units to provide additional load meeting capability at the station.
15. Lincoln Heights TS T1/T2 (2024): Like-for-like replacement of the two 45/60/75 MVA 110kV/14.2kV transformers.
16. Longueuil TS T1/T2 replacement (2025): Replacement of 50/75/93 MVA 235kV/44kV transformers T1/T2 with standard 50/67/83 MVA 215.5kV/44kV units.
17. Lisgar TS T1 replacement (2025): Replacement of 45/60/75 MVA 110/14.2-14.2 kV transformer T1 with standard 60/80/100 MVA 110/14.2-14.2kV unit.

## II. Following Major projects are underway:

1. Piperville MTS – Connection of Hydro Ottawa's new transformer station to 230 kV L24A circuit with in-service date in Q2 2026.
2. Russell TS – T1/T2 transformers (45/60/75 MVA) will be replaced with 60/80/100 MVA transformers. The planned in-service date is 2027.
3. Connection of Hydro Rd. MTS – Connection of new Hydro Ottawa station to 230kV circuits M30A/M31A near Hawthorne TS. Building ~500m line tap to the new station. The planned in-service date for connection of this new station is October 2027.
4. Connection of Mer Bleue MTS - Connection of new Hydro Ottawa station to 230kV circuits D5A about 10km east of Hawthorne TS. The planned in-service date for connection of this

new station is July 2027. This project is also planned to connect to circuit A25 with expected in-service in June 2029. Please refer to section 8.4.5 for further information.

5. Connection of South March BESS – Connection of new 250MW Battery Energy Storage System to 230kV circuit C3S about 11.5km from South March TS. The planned in-service date for connection is Q2 2027.
6. Connection of Trail Road BESS - Connection of new 159MW Battery Energy Storage System to 230kV circuit E34M about 275m from Cambrian JCT. The planned in-service date for connection is 2027.
7. Hawkesbury MTS: Project for transformer upgrade with a new 15MVA transformer unit is underway and is being led by Hydro Hawkesbury. The planned in-service date is 2027-2028.
8. Merivale TS T22/T23 – The planned in-service date for replacement of autotransformer T22 and addition of new autotransformer T23 and for replacement of six (6) 230 kV circuit breakers and four (4) 115 kV circuit breakers is 2029.
9. Bilberry Creek TS – The station is expected to be retired around 2030. Its load will be transferred to Mer Bleue MTS and Orleans TS. Please refer to section 8.4.5 for further information.
10. Orleans TS – The station will be upgraded from dual supply of 230/27.6 kV 115/27.6 kV to 230/27.6 kV DESN. The planned in-service date is June 2029. Please refer to section 8.4.5 for further information.

Note: The planned in-service year for the above projects is tentative and is subject to change.

## 6. LOAD FORECAST AND STUDY ASSUMPTIONS

### 6.1. Load Forecast

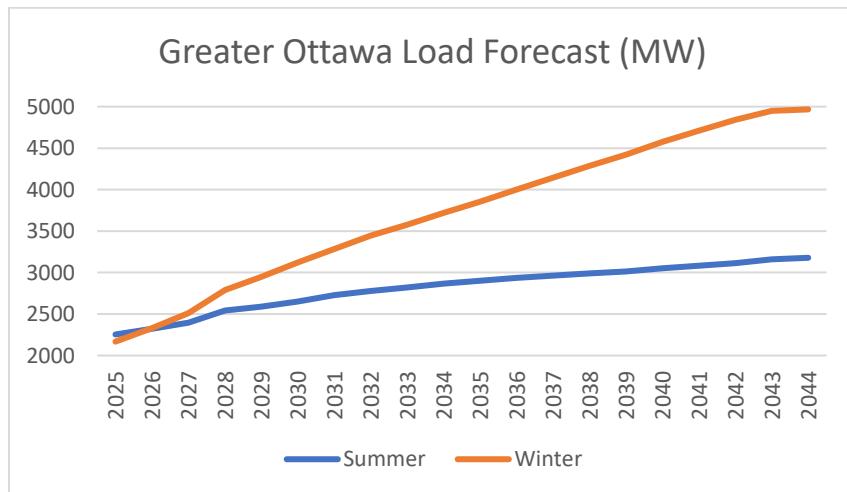
The TWG developed a load forecast for stations in the Outer Ottawa area as these were outside the IRRP scope. The LDCs also reviewed the IRRP forecast and provided revisions for some of the stations. For the remaining stations, the IRRP load forecast was adopted for the RIP study, as no changes were required by the LDCs. TWG participants, including representatives from LDCs, IESO and Hydro One provided information and input for the IRRP and RIP Load forecasts. During the IRRP stakeholder engagement process, IESO received municipal input on future load growth for consideration in the IRRP load forecast.

During the study period, the load in the Greater Ottawa region is expected to grow at an average annual rate of approximately 2% in summer and 4% in winter from 2025 to 2044. The region is currently summer-peaking, however based on the forecast it is expected that the region will transition to winter-peaking in the near future. This shift is largely driven by electrification such as the ongoing transition of heating systems from natural gas to electric or hybrid solutions, which will significantly increase electricity demand during winter months.

Figure 6-1 shows the Greater Ottawa region extreme summer/winter weather net load MW forecast from 2025 to 2044. The load forecasts from the Ottawa sub-region were updated from the IRRP forecast as agreed by the TWG.

The forecast for the individual stations in the region is available in Appendix A and is used to determine any need in the region.

**Figure 6-1: Greater Ottawa region summer/winter Net Peak Load Forecast**



## 6.2. Other Study Assumptions

The following other assumptions are made in this report.

- The study period for the RIP assessments is 2025-2044.
- LDCs have reviewed the forecast and provided updates where necessary and reconfirmed load forecasts up to 2044 in the area.
- All planned facilities for which work has been initiated and are listed in section 4 are assumed to be in-service.
- The Region is currently summer peaking but expected to become winter peaking within the study period, so this assessment considers both summer and winter peak loads.
- Station capacity adequacy is assessed by comparing the station peak load with the station's normal planning supply capacity, assuming a 90% lagging power factor for stations having no low-voltage capacitor banks and 95% lagging power factor for stations having low-voltage capacitor banks.
- Normal planning supply capacity for transformer stations in the region is determined by the summer 10-day Limited Time Rating (LTR) based on 35°C ambient temperature.
- Adequacy assessment is conducted as per ORTAC.

## 7. SYSTEM ADEQUACY AND REGIONAL NEEDS

This section reviews the adequacy of the existing Transmission Systems and Transformer Station facilities supplying the Greater Ottawa region and lists the facilities requiring reinforcement over the near and midterm period. The adequacy assessment assumes that all the projects that are currently underway, listed in “**Section 5**” are completed as per their respective in-service dates.

In the current regional planning cycle, the following regional assessments were completed, and their findings were used as inputs to this RIP report:

- Greater Ottawa region Third cycle Needs Assessment Report, Completed in December 2022 by Hydro One
- Greater Ottawa region Third cycle Scoping Assessment Report, Completed in March 2023 by the IESO
- Greater Ottawa region Third cycle Integrated Regional Resource Plan Report, Completed in July 2025 by the IESO

The Technical Working Group identified several regional needs based on the forecasted load demand over the near to mid-term period in the reports mentioned above. The results of the Adequacy Assessment to define the needs are discussed in sub-sections “7.1 to 7.4” and a detailed description and status of plans to meet these needs are given in “**Section 8**” of this report.

### 7.1. Asset Renewal Needs for Major HV Transmission Equipment

In addition to the asset renewal needs identified in the previous regional planning cycle, Hydro One and TWG have also identified new asset renewal needs for major high voltage transmission equipment that are expected to be replaced over the next 10 years in the Greater Ottawa region. The complete list of major HV transmission equipment requiring replacement in the Greater Ottawa region is provided in Table 7-1 in this sub-section. Hydro One along with Hydro Ottawa Ltd and Hydro Hawkesbury are the only Transmission Asset Owner (TAO) in the Region

Asset Replacement needs are determined by asset condition assessment. Asset condition assessment is based on a range of considerations such as:

- Equipment deterioration due to aging infrastructure or other factors,
- Technical obsolescence due to outdated design,
- Lack of spare parts availability or manufacturer support, and/or
- Potential health and safety hazards, etc.

The major high voltage equipment information shared and discussed as part of this process is listed below:

- 230/115kV autotransformers
- 230 and 115kV load serving step down transformers
- 230 and 115kV breakers where:
  - replacement of six breakers or more than 50% of station breakers, the lesser of the two

- 230 and 115kV transmission lines requiring refurbishment where:
  - Leave to Construct (i.e., section 92) approval is required for any alternative to like-for-like
- 230 and 115kV underground cable requiring replacement where:
  - Leave to Construct (i.e., section 92) approval is required for any alternative to like-for-like

Table 7-1: Major HV Transmission Asset assessed for Replacement in the region planned in next 10 years

Station/Circuit	Need Description	Planned ISD
South March TS	T1/T2 Transformers replacement	2031
Albion TS	T1/T2 Transformers replacement	2031
Nepean TS	T3/T4 Transformers replacement	2034
S7M	Refurbishment of line section between Manotick JCT x Richmond South MTS and S7M 673N x Manordale JCT	2030

Note: The planned in-service year for the above projects is tentative and is subject to change.

## 7.2. Station Capacity Needs

Over the study period **2025 -2044** RIP reviewed the capacity of all the 230kV and 115kV Transforming stations within the **Greater Ottawa region**. The NA and IRRP studies had previously indicated that the following stations require capacity relief within the study period. This RIP has further confirmed those needs and based on the load forecast, the stations which require capacity relief during the study period are shown in Table 7-2 below. The need timeframe defines the time when the peak load forecast exceeds the most limiting seasonal (summer and winter) Limited Time ratings.

Table 7-2: Greater Ottawa region Station Capacity Needs in the study period

Sr.no.	Station Name	Station LTR (MW) (Summer/Winter)	2024 Loading (MW) (Summer/Winter)	Need Date (Summer/Winter)	High Forecast Need Date (Summer/Winter)
1	Albion TS	86.5/101.7	57.4/47.0	-/2034	2043/2030
2	Arnprior TS	54.9/59.4	36.9/37.5	2044/-	2043/-
3	Bridlewood MTS	23.5/23.5	29.6/19.7	2035/2030	2029/2027
4	Cambrian MTS	114/123.5	58.7/33.6	-/2041	-/2033
5	Carling TS	95/124.3	67.7/64.9	2028/2028	2028/2028
6	Centrepoint MTS	13.3/13.3	14.6/11.9	2032/2027	2027/2025

7	Cumberland DS	6.8/8.6	5.5/5.0	2037/-	2036/-
8	Cyrville MTS	47.5/47.5	33.6/24.4	2028/2030	2028/2028
9	Ellwood MTS	47.0/47.0	44.8/46.5	2027/2027	2027/2025
10	Fallowfield MTS	27.2/27.2	35.6/14.4	2026/2030	2026/2028
11	Greely DS	20.7/25.2	19.5/16.3	2025/2025	2025/2025
12	Hawkesbury MTS	18/18	13.3/14.9	-/2037	-/2036
13	Hawthorne TS	144.8/	106.1/97.1	2038/2031	2038/2028
14	Hinchey TS	85.6/95.0	45.4/40.8	-/2031	-/2029
15	Kanata MTS	51.5/51.5	53.2/55.8	2025/2025	2025/2025
16	King Edward TS	86.9/90.3	80.0/77.7	2033/2026	2030/2025
17	Limebank MTS	75.0/75.0	48.1/38.2	2031/2028	2031/2026
18	Lincoln Heights TS	99.4/113.1	40.3/40.9	-/2039	-/2035
19	Lisgar TS	83.4/105.1	42.7/58.9	2028/2028	2028/2027
20	Manordale MTS	9.6/9.6	11.0/8.4	2026/2026	2025/2025
21	Manotick DS	7.7/10.4	9.5/8.1	2025/2025	2025/2025
22	Marchwood MTS	32.3/32.3	46.3/42.5	2025/2025	2025/2025
23	Marionville DS	13.5/13.5	14.4/12.1	2025/2025	2025/2025
24	Moulton MTS	32/32.0	21.6/16.6	2028/2028	2028/2028
25	Nepean Epworth MTS	12.9/12.9	11.4/11.4	2035/2028	2029/2026
26	Nepean TS	144.1/160.7	113.2/108.6	-/2030	-/2027
28	Richmond South MTS	49.0/49.0	19.4/6.9	2034/2028	2034/2028
29	Riverdale TS	110.8/117.0	92.4/71.5	2030/2028	2029/2026
30	Rockland DS	7.8/10.5	7.8/4.1	2025/2031	2025/2030
31	Rockland East DS	15.5/20.9	14.3/12.4	2026/2040	2026/2040
32	South March TS	99.2/113.7	95.9/72.2	2026/2028	2026/2027
33	Terry Fox MTS	91.7/105.8	53.9/41.7	-/2038	-/2032
34	Woodroffe TS	97.4/102.4	33.4/28.9	-/2039	-/2034

*The options and preferred solutions to address these needs are discussed further in Section 8 of the report.*

### 7.3. Transmission Line Capacity Needs

Over the study period **2025-2044** RIP reviewed the capacity of all the 230kV and 115kV Transmission lines within the **Greater Ottawa region**. The NA and IRRP studies had previously indicated that the following Transmission lines require capacity relief within the study period. This RIP has further confirmed those needs and based on the load forecast and following contingencies, the Transmission lines which require capacity relief during the study period are shown in Table 7-3 below. The need timeframe defines the time when the peak load forecast exceeds the most limiting seasonal (summer or winter) Limited Time ratings.

**Table 7-3: Greater Ottawa region Transmission Line Capacity Needs in the study period**

Sr.no.	Name of Circuit	Name of Section	Maximum capacity	Current loading	Need Date
1	M4G/M5G	Merivale TS x Carling TS	1279 A	503 A	2030
2	L2M	Merivale TS X Limebank JCT	467 A	339 A	2028
3	S7M	Merivale TS x STR654JCT (Fallowfield tap)	1381 A	488 A	2032
4	C7BM	Merivale TS x NQL1 JCT	777 A	455 A	2034 (winter)
5	F10MV	City View JCT x Woodroffe TS	777 A	402 A	2034 (winter)
6	A4K	Hawthorne TS x Cyrville JCT x Overbrook TS	1214 A	550 A	2032/33 (winter)
7	A4K	Overbrook TS x King Edward TS	800 A	204 A	2032/33 (winter)
8	A3RM	Ellwood JCT x Riverdale JCT	1016 A	235 A	2034
9	A5RK	Hawthorne TS x Russel TS	1595 A	538 A	2034
10	A6R	Hawthorne TS x Russel TS	1703 A	489 A	2034

The options and preferred solutions to address these needs are discussed further in Section 8 of the report.

## 7.4. System Reliability, Operation and Load Restoration Needs

Load security and load restoration needs were reviewed as part of the current study. The ORTAC Section 7 requires that no more than 600 MW of load be lost as a result of a double circuit contingency.

Further, loads are to be restored in the restoration times<sup>1</sup> specified as follows:

- All loads must be restored within 8 hours.
- Load interrupted in excess of 150 MW must be restored within 4 hours.
- Load interrupted in excess of 250 MW must be restored within 30 minutes.

The following load security needs were reviewed as a part of RIP:

### **M32S**

Nepean TS is supplied solely by the 230 kV M32S circuit, and a contingency on M32S would result in the complete loss of load at Nepean TS due to its configuration. Under current load security criteria, no more than 150 MW should be lost for a single element contingency. While this limit is not exceeded in the summer forecast, it is projected to be reached in the winter forecast by 2029. A working group recommendation is discussed in section 8.4.

### **M1R+L2M**

Circuits M1R and L2M share a breaker position at Merivale TS, so the loss of either circuit results in both being tripped. This configuration affects stations including Limebank MTS, Marionville DS, South Gloucester DS, Greely DS, and Russell DS. For this group, the 150 MW load security threshold is expected to be reached in the summer forecast by 2040 and in the winter forecast by 2031. A working group recommendation is discussed in section 8.4.

### **Load Restoration for C3S/M32S**

M32S is a 230kV circuit connecting Merivale TS to South March TS, and 230kV circuit C3S connecting Chats Falls SS to South March TS. The two circuits are connected through an in-line breaker A1A2 at South March TS. Stations South March TS and Kanata MTS are supplied by both C3S and M32S. Nepean TS is only fed from circuit M32S. Load restoration was assessed for A1A2 breaker fail. The breaker fail condition can lead to no supply to all three stations. The loss of the two circuits results in approximately 330MW of load loss during summer. As per ORTAC, 80MW have to be restored in 30 minutes, 150MW restored in 4 hours and the entire load in 8 hours. Nepean TS can be restored by opening circuit switcher M32S-1 within 30 minutes. The breaker A1A2 disconnect switches at South March TS can be opened within 30 minutes to restore load stations from either C3S or M32S. All load can be restored within 4 hours. In addition, as discussed in section 8.4 a new switching station is planned at South March TS, which will eliminate this problem.

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<sup>1</sup> These approximate restoration times are intended for locations that are near staffed centers. In more remote locations, restoration times should be commensurate with travel times and accessibility

### **Load Restoration for S7M**

Circuit S7M and W6CS are tie via an in-line breaker L6L7 at South March SS. A L6L7 breaker failure results in no supply to Fallowfield MTS, Richmond MTS, Manotick DS, Bridlewood MTS, and Marchwood MTS. The amount of load loss is about 199 MW by the end of the study period in summer. As per ORTAC, all load above 150MW must be restored in 4 hours and all load restored in 8 hours. All load can be restored by opening breaker L6L7 disconnect switches at South March SS within 4 hours. The Study Team recommends that no further action is required at this time.

During winter time under contingency of S7M 150 MW can be interrupted by configuration by 2036. TWG recommends monitoring the winter load and addressing the need in the next regional planning cycle.

### **Load Restoration for D5A/B5D**

Circuits D5A and B5D supply Longueuil TS, St Isidore TS, and Ivaco CTS. The worst contingency for the area can result in approximately 212MW of load loss. Hydro One prepared a Local Planning report which considered the loss of up to 174MW of load for the same contingency. Hydro One has reviewed the report and determined that the conclusions of the report are still applicable to the new load forecast. The report shows that all load can be restored in at least 4 hours, meeting ORTAC restoration criteria. The Study Team recommends that no further action is required at this time.

### **Load Restoration for M4G/M5G**

Load restoration was assessed for the 115 kV double-circuit M4G/M5G supply serving Nepean–Epworth MTS, Carling TS, and Lisgar TS in downtown Ottawa. Although Slater TS is also supplied from M4G, it was excluded from this assessment because it has alternate supply from two other circuits and therefore does not drive the same restoration need. Based on the load forecast, the combined demand on M4G/M5G is expected to exceed 250 MW in the mid-term; under ORTAC, loads greater than 250 MW must be restored within 30 minutes following a contingency. To ensure compliance with this requirement as loading increases, Hydro Ottawa and Hydro One will review restoration options, which may include LV load transfers and/or additional switching and operational restoration actions. The TWG recommends that this review be reviewed as part of the M4G/M5G upgrade and/or the Bronson connection project scopes, where practical restoration enhancements can be implemented and validated against the 30-minute restoration criterion.

## 8. REGIONAL PLANS

This section discusses the regional electric supply needs and presents all the wires alternatives considered to address these needs and identifies the best and preferred wires solutions for the Greater Ottawa region. These needs include those previously identified in the NA and IRRP for the Greater Ottawa region as well as any new needs identified during the RIP phase. All estimated costs included in the alternative analysis are considered as planning budgetary estimates and are used for comparative purposes only and may vary. The Needs in the region are summarized below in Table 8-1 below:

Table 8-1: Near/Mid-term Needs Identified in the region

Station/Circuit Name	Description of Need	Need Date	RIP Report Section
<b>Asset Renewal Needs</b>			
South March TS	Replacement of T1/T2 transformers with upgraded units based on asset conditions and capacity needs.	2031	8.1.1
Albion TS	Replacement of T1/T2 transformers with upgraded units based on asset condition and capacity needs.	2031	8.1.2
Nepean TS	Replacement of T3/T4 transformers based on asset condition	2034	8.1.3
S7M	Refurbishment of line section between Manotick JCT x Richmond South MTS and S7M 673N x Manordale JCT	2030	8.1.4
<b>Station Capacity Needs</b>			
Kanata North MTS	Build a new Transformer Station by connecting 230 kV C3S and a new transmission line from Merivale TS.	2028	8.2.1
Bronson MTS	Build a new 115kV Transformer Station east of Carling TS by converting existing Bronson distribution station	2031	8.2.2
Greenbank MTS	Build new Transformer Station to meet demand growth and need for 28kV supply west of Merivale TS.	2028	8.2.3

South March TS	Replacement of T1/T2 transformers and associated equipment's with upgraded units based on capacity needs.	2026	8.2.4
Albion TS	Replacement of T1/T2 transformers and associated equipment's with upgraded units based on capacity needs.	2031	8.2.5
Carling TS	Station capacity will be exceeded due to limiting components at LV side. Replacing limiting LV cables will add capacity to station.	2028	8.2.6
Lisgar TS	Station capacity will be exceeded due to limiting LV cables and 75 MVA transformer unit (T2).	2028	8.2.7
King Edward TS	Station capacity will be exceeded due to limiting components at LV side. Replacing LV components will add capacity to station.	2026	8.2.8
Nepean TS	Station capacity will be exceeded during winter season.	2030	8.2.9
Riverdale TS	Station capacity will be exceeded due to limiting LV components and 75 MVA transformer units.	2028	8.2.10
Cyrville MTS	Station voltage conversion from 115kV to 230kV to increase station rating.	2028	8.2.11
Moulton MTS	Relocate 50 MVA ,115kV transformers from Cyrville MTS after voltage conversion to increase station rating at Moulton TS.	2028	8.2.12
Marionville DS	Install a second transformer to increase station rating.	2025	8.2.13
Greely DS	Install SCADA transformer fan monitoring	2025	8.2.14
Manotick DS	Load transfer from T1 to T2 at Manotick DS	2025	8.2.15
Hinchey TS	Load to be monitored and necessary actions to be taken as load picks up.	2031	8.2.16
Rockland DS	Install SCADA transformer fan monitoring	2025	8.2.17
Rockland East DS	Install SCADA transformer fan monitoring	2026	8.2.18
Manordale MTS	Load transfers to existing stations	2026	8.2.19

Nepean Epworth MTS	Load transfers to existing stations	2028	8.2.19
Kanata MTS	Load transfers to existing stations	2025	8.2.19
Ellwood MTS	Load transfers to existing stations	2027	8.2.19
Limebank MTS	Load transfers to existing stations	2028	8.2.19
Bridlewood MTS	Load transfers to existing stations	2030	8.2.19
Marchwood MTS	Load transfers to existing stations	2025	8.2.19
Centrepoint MTS	Load transfers to existing stations	2027	8.2.19
Fallowfield MTS	Load transfers to existing stations	2026	8.2.19
<b>Transmission Line Capacity Needs</b>			
M4G/M5G	Upgrade Line section between Merivale TS x Carling TS	2030	8.3.1
L2M	Upgrade line section between Merivale TS x Limebank JCT	2028	8.3.2
A4K	Continue to monitor the winter load.	2032/33	8.3.3
<b>System Reliability, Operation and Load restoration Needs</b>			
Load Security issue due to contingency of M32S	Provide a second supply to Nepean TS via a new transmission circuit from Merivale TS.	2029	8.4.1
Kanata Area	New Switching Station to improve reliability and flexibility in Kanata Area		8.4.2
Load Security issue due to contingency of M1R+L2M	Install a new breaker at Merivale TS and separate L2M and M1R breaker positions.	2031	8.4.3
Loading and voltage issues on S7M	Continue monitoring load growth and system performance	2032	8.4.4
East Ottawa Area	Supply in East Ottawa Area	2029-2030	8.4.5

## 8.1 Asset Renewal Needs for Major HV Transmission Equipment

The Asset renewal assessment considers the following options for “right sizing” the equipment:

- Maintaining the status quo.
- Replacing equipment with similar equipment with *lower* ratings and built to current standards.
- Replacing equipment with similar equipment with *lower* ratings and built to current standards by transferring some load to other existing facilities
- Eliminating equipment by transferring all the load to other existing facilities
- Replacing equipment with similar equipment and built to current standards (i.e., “like-for-like” replacement)
- Replacing equipment with higher ratings and built to current standards.

From Hydro One’s perspective as a facility owner and operator of its transmission equipment, doing nothing is generally not an option for major HV equipment due to safety and reliability risk of equipment failure. This also results in increased maintenance cost and longer duration of customer outages.

### 8.1.1 South March TS T1/T2

The existing transformers 50/83 MVA 230/44 kV T1 and T2 at South March TS were originally commissioned in 1971 and based on asset condition assessment, they are identified for replacement in 2031.

A like-for-like replacement of these units would not be adequate in meeting the load during the study period. However, as discussed in Section 8.2, there are station capacity needs in the near term which require upsizing the transformers.

As outlined in the Ottawa area sub-region IRRP and endorsed by the TWG, the recommended solution is to replace the existing transformers with new 75/125 MVA units. This upgrade will ensure adequate capacity and reliability for the growing load in the South March area. Hydro One is working to accelerate the replacement schedule to 2029–2030 to address reliability risks and align with regional planning objectives.

### 8.1.2 Albion TS T1/T2

Albion TS has two power transformers rated at 45/60/75 MVA, 230 kV / 14 kV / 14 kV, built in 1970. Based on asset condition assessment, these transformers are identified for replacement in 2031.

The 13.8 kV metalclad switchgear installed since 1971 contains six air circuit breakers and two SF6 capacitor bank breakers. The station also has four 13.8 kV conventional SF6 breakers. All circuit breakers require replacement in the near to medium term planning horizon.

The existing transformers at Albion TS will be replaced with new standard 60/80/100 MVA units. These are closest standard size units to the existing transformers. All existing Hydro One owned circuit breakers will be replaced with breakers of similar rating. This alternative would address the asset renewal needs and would maintain reliable supply to customers.

However, as discussed in Section 8.2, additional station capacity will be required in the mid-term, necessitating upgrades at Albion TS.

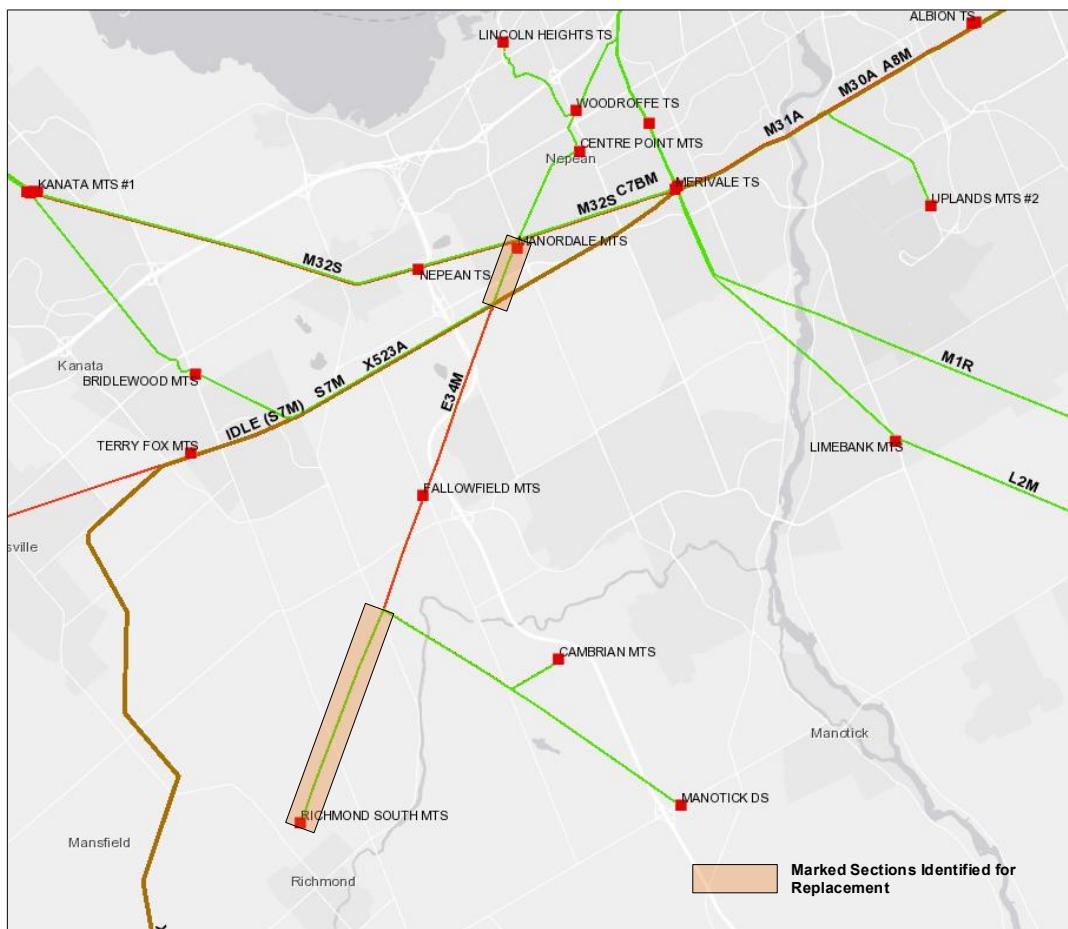
### 8.1.3 Nepean TS T3/T4

Nepean TS has two power transformers rated at 75/125 MVA, 230 kV / 14 kV / 14 kV, built in 1970's. Based on asset condition assessment, these transformers are identified for replacement in with like-for-like units as this is the highest rating available, with a planned in-service date of 2034.

### 8.1.4 S7M Line Refurbishment

Two sections of circuit S7M between Manotick JCT x Richmond MTS (5 km) and S7M STR 673N JCT x Manordale JCT (1.4 km) are identified for replacement as shown in Figure 8-1. These sections are 115 kV predominantly wood pole transmission line that was originally placed in service in 1928. Asset renewal is required on these line sections.

Figure 8- 1: S7M section requiring sustainment highlighted



Two possible options are considered for this line section rebuild:

Alternative 1 - Rebuild H frame wood structures: This alternative would be a like for like rebuild of the existing 5km of 115kV transmission line. This would be adequate to supply the forecasted load at Richmond South MTS. The planned in-service date for this refurbishment is 2030.

Alternative 2 - Upgrade to 230 kV ready operation by rebuilding the 115kV single circuit line as a double circuit 230kV line. This would be similar to upgrade done to S7M for the Cambrian MTS Connection as described in Section 5. This alternative considers possible area conversion to 230kV by making the rebuild ready for the upgrade. This would be in accordance with the long-term plan for the area as described in IRRP.

Recommendation:

The recommended near-term plan is to refurbish these line sections to maintain reliability. However, this line section may also be considered for a configuration change refer to Section 8.4.3. Further discussion will occur as part of bulk system planning.

## 8.2 Station Capacity Needs

A Station Capacity assessment was performed over the study period **2025-2044** for the 230kV and 115kV Transformer stations in the **Greater Ottawa region** using both the summer and winter peak load forecasts that were provided by the study team. This section describes the following capacity needs that have been identified during the study period

To address the station capacity needs, the recommendation of this planning cycle is a combination of new transformer stations and upgrades at existing stations. The new stations are described first, followed by the upgrades considered at the existing stations. The RIP focuses on wire alternatives, however where possible non-wire alternatives are also considered as per the IRRP.

As can be seen in Section 6 Figure 6-1, the area winter load is expected to increase significantly over the study period. The greater Ottawa region has historically been a summer peaking region; however, the region is forecasted to become winter peaking in the near term due to the impact of measures such as electrification and decarbonization. The winter load forecast shows many stations reaching their capacity in the near midterm. Plans have been identified to address these needs and are discussed in this section.

The working group will monitor closely the winter load to track its growth and determine if the forecasted trends materialize in the short term. Many stations are forecasted to go over their transformation capacity and in the long term are expected to far exceed the station LTR. Significant investments will be required at the bulk and regional level to meet this load. Thus, the TWG will monitor the demand in the coming winters and may decide to trigger the next regional planning cycle earlier to address these emerging needs.

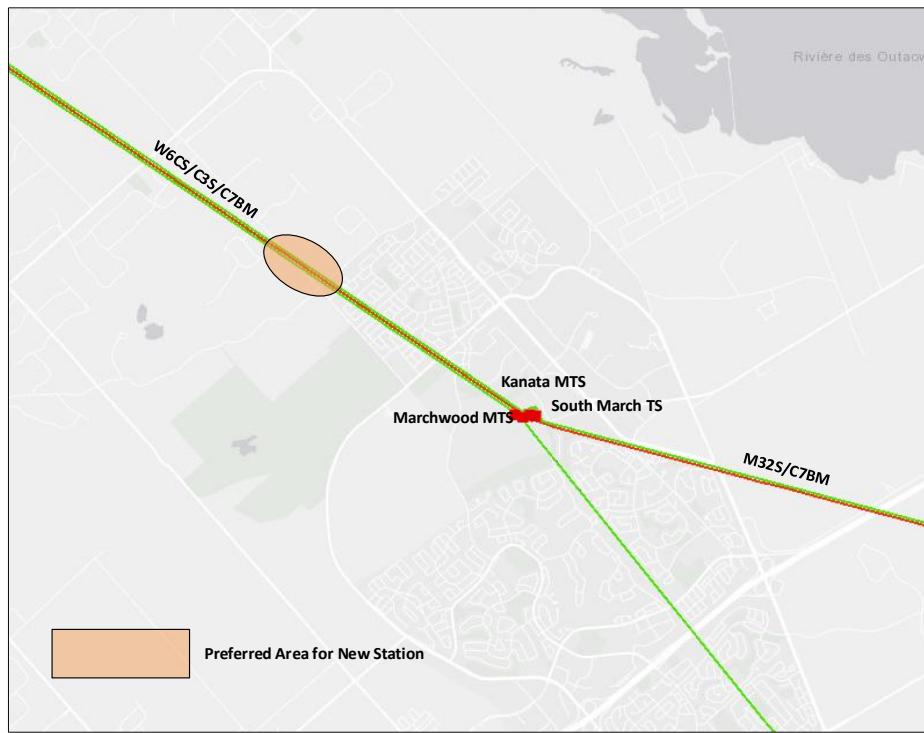
Also, please note there are several downtown stations that are recommended for upgrades in similar timeframes. The ISD highlighted in this section is based on preliminary information. Hydro Ottawa and

Hydro One will work together to review the work required and timing for each upgrade to better coordinate the plans. The dates are subject to change based on the review and determination of the preferred path to achieve all the upgrades listed.

### 8.2.1 Kanata North – Stittsville Area

Significant growth and capacity needs have been identified in Kanata North and Stittsville area. The area is supplied mainly through three transformer stations: Marchwood MTS, Kanata MTS, and South March TS. Based on the load forecast, all 3 stations will reach their LTR in the short term. Hydro One is proceeding with capacity upgrade at South March TS as described in section 8.2.4. However, additional transformation capacity is required and TWG, as part of the IRRP, has recommended building a new station to address this need. Hydro Ottawa has identified preferred location for the station as shown in Figure 8-2 below.

**Figure 8-2: Preferred Location of New Station in Kanata North – Stittsville Area**



The following alternatives were considered to meet the growth of the area.

Alternative 1: New station supplied from existing single circuit 230kV line.

Build a new station and connect to 230kV circuit C3S as shown in Figure 8-3. The station would have sufficient capacity to address the growth of the area over the study period. However, a single circuit supply would not provide the same level of reliability as the stations in the area currently have. Also, depending on the dispatch of resources and system configuration of the area, the existing system capacity to meet the demand is limited.

Alternative 2: New station supplied from two 230kV circuits.

Build the station as described in Alternative 1 and bring an additional 230kV supply. Please refer to Figure 8-4 below. The new circuit would be extended from M32S at South March TS and would help meet load growth over a wider range of system conditions. The new circuit would make use of the existing right of way by rebuilding one of the 3 circuits as a double circuit line.

Preliminary review of possible transfers to the new station has been considered and a revised forecast for the stations in the area is shown in Table 8-2.

Table 8-2. Updated summer forecast (MW) with transfers to Kanata North Considered.

	LTR (MW)	2027	2028	2029	2030	2031	2032	2033	2034	2035
Marchwood MTS	32.2	52.9	33.1	34.3	35.3	36.4	37.4	38.7	39.4	39.2
Kanata MTS	51.5	53.8	36.8	36.4	36.2	36.0	35.7	35.6	35.6	35.4
Kanata North MTS	108 <sup>1</sup>	0	38	38.4	38.7	39.1	39.4	39.8	40	40.4

<sup>1</sup>Capacity for the new station will be confirmed as the project progresses.

Figure 8-3: Connection of New Kanata North MTS to C3S (initial connection)

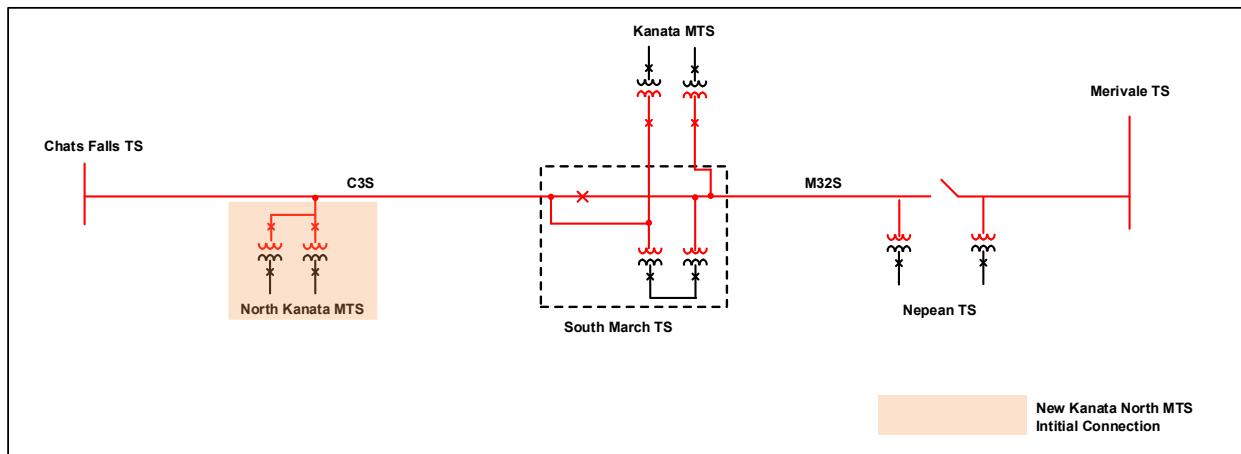
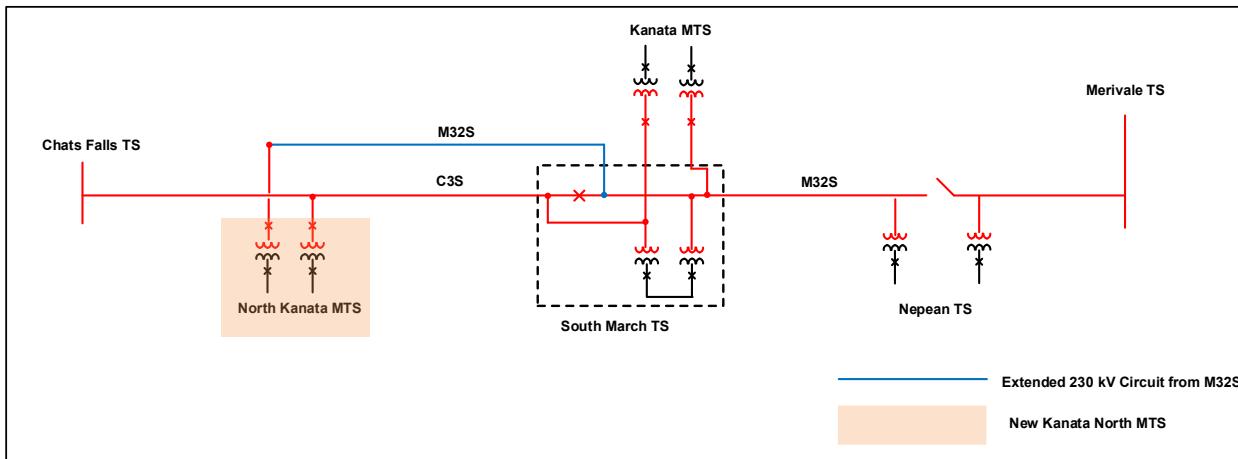


Figure 8-4: Connection of New Kanata North MTS to C3S and New Circuit (recommended alternative)

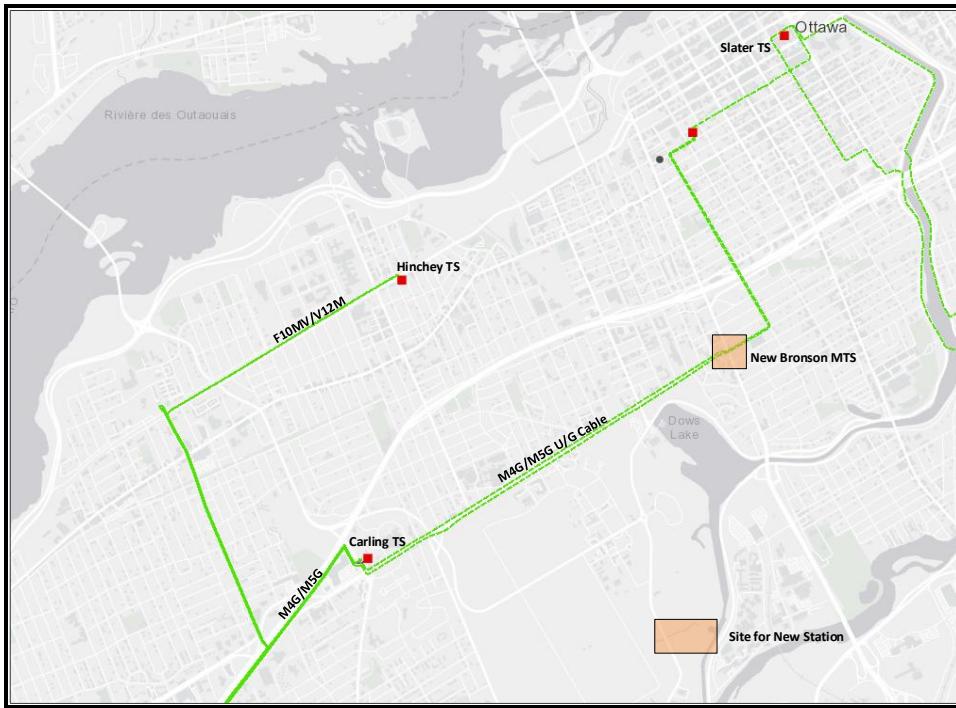


The TWG recommends Hydro Ottawa and Hydro One proceed with Alternative 2. This option will provide the necessary transformation capacity for the area and will provide higher level of reliability by having two circuits supplying the station. Based on the immediate need for transformation capacity, Hydro Ottawa is planning to build the station by 2028. In order to meet this in-service date, the station will be connected initially to existing 230kV circuit C3S only as described in Alternative 1. The second circuit is expected to be completed by 2031.

### 8.2.2 Bronson MTS

Several stations supplied from the 115kV network in the downtown core have been identified as reaching their capacity in the short term. Upgrading some of these stations is feasible to increase their transformation capacity. However, given the magnitude of the growth expected, additional transformation capacity in the form of a new station is required. Hydro Ottawa has identified a site for a new station: the alternative considered is to convert an existing Hydro Ottawa owned distribution station into a 115 kV DESN. The site of this station is adjacent to an underground cable section of M4G/M5G between Carling TS and Lisgar TS as shown in Figure 8-5.

Figure 8-5: Ottawa Downtown Area Map with new Bronson MTS



This conversion to a 115 kV DESN would increase the transformation capacity of the station. It would also enable load transfers from nearby stations and allow for new developments in Ottawa's Core East area, which is experiencing significant growth driven by urban densification, electrification of heating and transportation, and federal decarbonization initiatives. To note, this option would necessitate uprating circuits M4G and M5G to address thermal limitations, as discussed in Section 8.3 of this report.

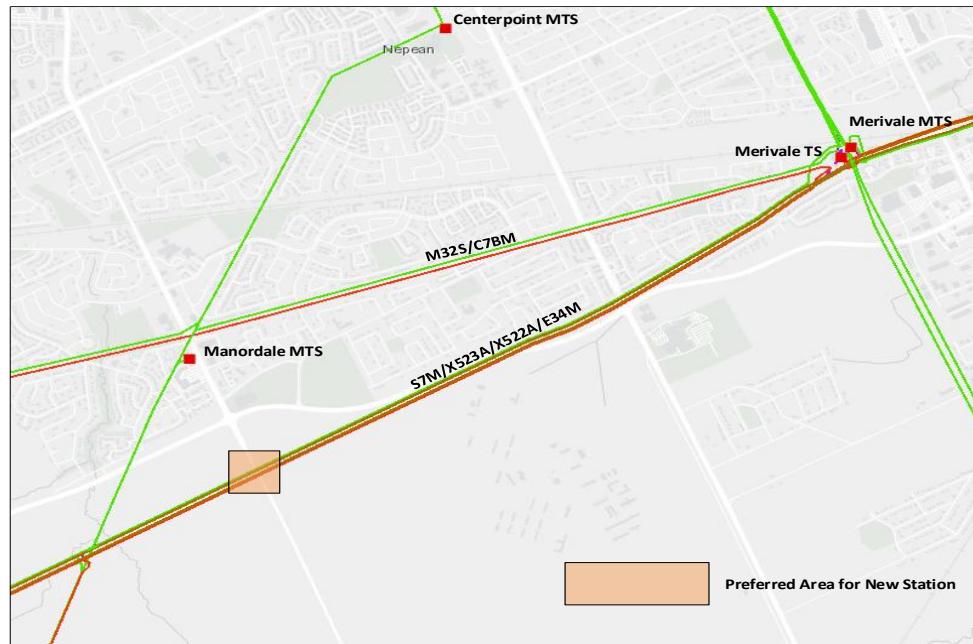
This plan was initially proposed as part of the IRRP. TWG has reviewed the need and proposed solution and reaffirmed the plan as the preferred alternative.

Hydro Ottawa and Hydro One are proceeding into studies to determine how the station will be connected to the existing 115kV underground cables. The proposed in-service date for the station is 2031.

### 8.2.3 Greenbank MTS

Another area expected to experience high growth is in the west of the city. The existing stations have limited capacity and TWG is recommending a new station to be built to address this need. Hydro Ottawa has identified preferred location for the station as shown in Figure 8-6 below.

Figure 8-6: Preferred Location of New Station in West Ottawa

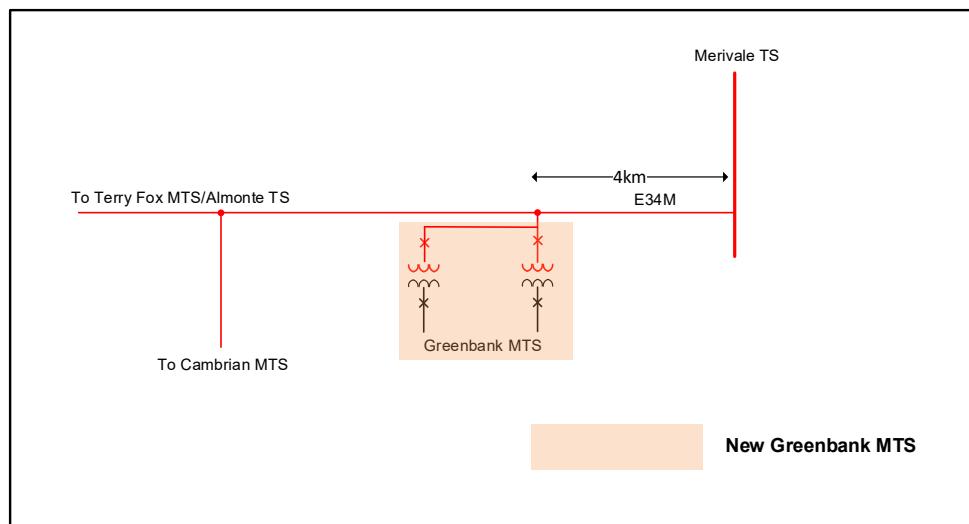


The following alternatives were considered to meet the growth of the area.

Alternative 1: New station supplied from existing single circuit 230kV line.

Build a new station and connect to 230kV circuit E34M as shown in Figure 8-7. The station would have sufficient capacity to address the growth of the area over the study period. However, connection to E34M alone would limit the growth that can be supplied from the station. In addition, the circuit needs to be connected at Merivale TS for the voltage to be acceptable.

Figure 8-7: Connection of New Greenbank MTS to E34M



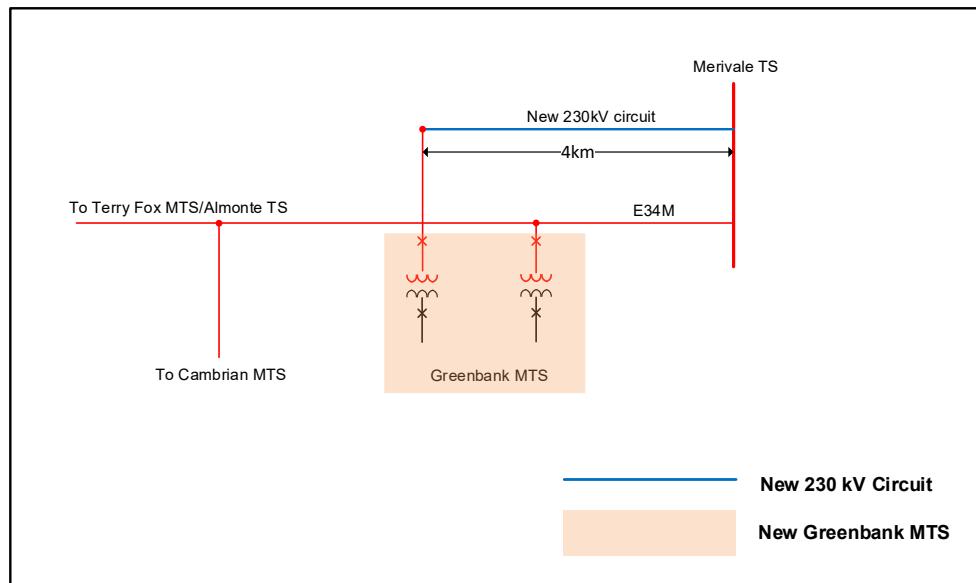
### Alternative 2: New station supplied from two 230kV circuits.

Build the station as described in Alternative 1 and bring an additional 230kV supply. Please refer to Figure 8-8 below. The new circuit would be extended from Merivale along the E34M corridor. The new circuit would alleviate the concerns identified for Alternative 1 and would help meet load growth over a wider range of system conditions.

Alternative 2 was initially proposed as part of the IRRP. TWG has reviewed the need and proposed solution and reaffirms the plan as the preferred alternative.

Hydro Ottawa and Hydro One are proceeding with a project to connect the new station to the 230kV system. Hydro Ottawa's new station is planned for in-service in 2028. The new circuit must be coordinated with the Merivale TS upgrade described in Section 6 and is currently expected for in-service in 2031. Both transformers at the new station will be supplied by circuit E34M as per Alternative 1 until the new circuit is available. Operating measures may be required to help supply the load should there be issues with E34M until the second circuit is available.

**Figure 8-8: Connection of New Greenbank MTS to E34M and new circuit**



#### **8.2.4 South March TS – T1/T2**

South March TS, located in the Kanata–Stittsville area currently served by 230 kV circuits M32S and C3S. The station is equipped with two aging 50/83MVA 230kV/44kV transformers (T1/T2) which, based on their condition, were identified for replacement in 2030–2032 as outlined in Section 8.1.1.

Based on the updated load forecast, South March TS is projected to exceed its summer LTR by approximately 3 MW in 2026 and its winter LTR by about 6 MW in 2028, with the high-growth scenario the need date is 2026 for summer and 2027 for winter. TWG has recommended upgrading the existing

transformers to new 75/125 MVA units. The tentative planned ISD for this upgrade project is scheduled in 2031- 2032. Hydro One is working to expedite the replacement work to 2029-2030 to meet the rising load growth.

In the interim, coordination with LDCs will be required to explore load transfer opportunities to adjacent stations or other operating measures to manage short-term capacity constraints until the transformer replacement is completed should there be any issues at the station.

#### **8.2.5 Albion TS T1/T2**

Albion TS is a 230 kV / 14-14 kV DESN station supplied from circuits M30A and M31A. The station's two 75 MVA, 230 kV / 14-14 kV transformers were identified for replacement based on condition assessments. Planned in-service date for this work is 2031(refer to Section 8.1.2).

Based on the load forecast, Albion TS is projected to exceed its winter LTR by approximately 3 MW in 2034, while the summer LTR remains within limits over the study period. Under the high-growth scenario, the need date is 2030 for winter and 2043 for summer.

To address the loading issue, TWG has recommended upgrading the two transformers to standard 100 MVA units, along with the metalclad switchgear upgrade. The tentative in-service date for this upgrade is 2031. A feasibility study will be conducted to determine the preferred option to upgrade the metalclad as the existing installation has space limitations which may restrict the possible upgrade.

#### **8.2.6 Carling TS – T1/T2**

Carling TS is a transformer station that steps down voltage from 115 kV to 13.2 kV that is supplied from circuits M4G and M5G. Each transformer is rated at 115/14.2/14.2 kV, 60/80/100 MVA.

Based on the forecasts, Carling TS will exceed its summer LTR by approximately 11 MW and its winter LTR by about 1 MW by 2028. The current capacity limitation is primarily due to the existing series-connected low-voltage (LV) cables which limit the station capacity.

To address this constraint, TWG recommends upgrading the LV cables associated with both transformers as the preferred solution, as it will increase station capacity and eliminate low-voltage limitations. This upgrade project is tentatively planned for an in-service date in summer 2030.

#### **8.2.7 Lisgar TS T1/T2**

Lisgar TS is an indoor facility that steps down voltage from 115 kV to 13.2 kV that is supplied from circuits M4G and M5G. Replacement of 75 MVA transformer T1 with a 100 MVA unit was recently completed in December 2025. Following this replacement, the forecasts indicate that the station will exceed its summer LTR by approximately 13 MW and its winter LTR by about 8 MW by 2028. Under the high-growth scenario, the winter need date is advanced to 2027.

The current capacity limitation is primarily due to the existing LV cables and metalclad breakers, which limit the station capacity. To address this constraint and meet future demand, TWG recommends replacing 75MVA transformer T2 with a 100 MVA unit that will match T1 and upgrading the LV cables and metalclad breakers. Based on preliminary review by Hydro One, two options are identified for the station upgrade.

#### Alternative 1: In-Situ replacement of transformer T2

Under this option, transformer T2 will be replaced at its existing location within Lisgar TS. During the replacement process, the entire station load will temporarily be supplied by transformer T1, which will require careful operational planning to avoid overloading. To facilitate this, Hydro Ottawa will need to implement targeted load transfers to adjacent stations to reduce stress on T1 during the outage. This approach minimizes the need for major civil works and leverages existing infrastructure. The target in-service date for this In-Situ replacement is 2031.

#### Alternative 2: Greenfield Replacement of transformer T2

If operational constraints or stranded load conditions make it impractical to transfer Lisgar TS load to other stations during the replacement, a greenfield approach will be considered. This involves installing the new transformer at a new location within the station property, which will require extension of the existing building and additional civil works. The target in-service date for this approach is 2034.

A conceptual layout for this greenfield approach is shown in Figure 8-9.

Figure 8-9: Lisgar TS extension under alternative 2



#### Recommendation:

A feasibility study will be conducted to evaluate both alternatives in detail, considering technical, and operational implications. Hydro Ottawa and Hydro One will review the options following the feasibility

study and decide on the preferred alternative. In the interim, coordination with LDCs will be required to explore load transfer opportunities to adjacent stations to manage short-term capacity constraints until the transformer and component replacements are completed should there be any issues at the station.

### 8.2.8 King Edward TS

King Edward TS, located in the downtown core of Ottawa, supplies Hydro Ottawa customers. The station is fed by two underground 115 kV cables from A4K and A5RK. The station capacity is limited due to the existing metalclad breakers and LV cables. The forecasts indicate that King Edward TS will exceed its winter LTR by approximately 9 MW as early as 2026 and its summer LTR by about 1 MW in 2033. Under the high-growth scenario, the need dates advance significantly to 2025 for winter and 2030 for summer.

The proposed solution involves upgrading the metalclad breakers and LV cables to increase station capacity and support future downtown demand. This upgrade project is tentatively planned for an in-service date of 2033. In the interim, coordination with LDCs will be required to explore load transfer options to manage short-term capacity limitations until the upgrades are completed should there be any issues at the station.

### 8.2.9 Nepean TS T3/T4

Nepean TS is supplied from 230 kV circuit M32S and steps down voltage to 44 kV for local Hydro Ottawa customers. Regional load forecasts indicate that Nepean TS is expected to exceed its winter LTR by approximately 9 MW in 2030, while summer LTR is projected to remain within limits throughout the study period. Since this need is primarily in the winter timeframe, the TWG recommends monitoring winter load growth and revisiting this capacity need in the next regional planning cycle which can be triggered in advance if load growth is significant.

### 8.2.10 Riverdale TS T2/T3

Riverdale TS T2/T3 is a 45/75 MVA 115 kV/13.2 kV facility located in downtown Ottawa, supplied by three 115 kV circuits: A5K, A3RM, and A6R. The forecasts indicate that Riverdale TS will exceed its summer LTR by approximately 2 MW in 2030 and its winter LTR by about 9 MW in 2028. Under the high-growth scenario, the summer need date advances to 2029 and the winter need date to 2026.

The station's transformation capacity is limited due to LV cables. Replacing the LV cables will provide additional capacity, enabling Riverdale TS to support projected load growth and relieve constraints in the Core East area. However, Hydro Ottawa has confirmed that some load transfers to nearby stations are available, which can help manage growth in the foreseeable future. Therefore, TWG recommends monitoring load growth at Riverdale TS and proceed with distribution load transfers as necessary until further upgrades are deemed required.

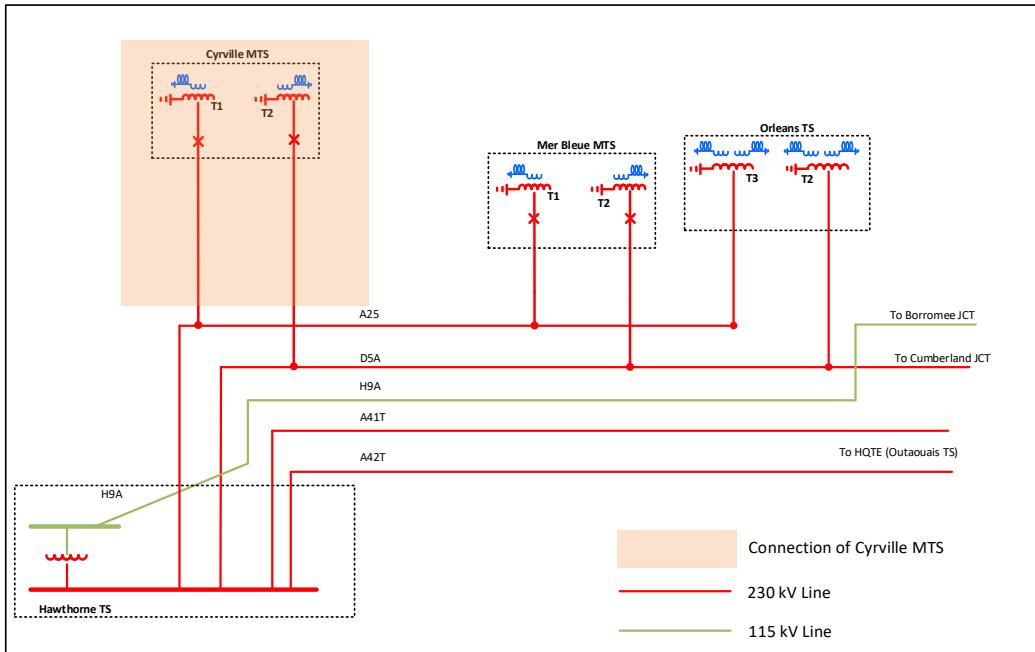
### 8.2.11 Cyrville MTS

Cyrville MTS is currently supplied by 115 kV circuits A4K and A2. The forecasts indicate that Cyrville MTS will exceed its summer LTR by approximately 1 MW in 2028 and its winter LTR by about 1 MW in 2030. Under the high-growth scenario, the winter need date advances to 2028.

The current plan as recommended in IRRP is to convert Cyrville MTS from a 115 kV station to a 230 kV station with two 100 MVA transformers by connecting to existing circuit D5A and a new 230 kV circuit A25

from Hawthorne TS, with a tentative in-service date of 2029. The planned conversion of Cyrville MTS will not only address near-term capacity needs but also position the station to accommodate future electrification and resilience requirements for Ottawa's east end. Please refer to Figure 8-10 for the planned connection. Hydro One is working on feasibility study to determine the preferred corridor for the connection of the station to the 230kV in collaboration with Hydro Ottawa.

**Figure 8-10: New Cyrville MTS connected to D5A and new A25 circuit**



### 8.2.12 Moulton MTS

Moulton MTS has a LTR of 32 MW in both summer and winter seasons. The forecasts indicate that the station will exceed its summer LTR by approximately 5 MW and its winter LTR by about 6 MW by 2028. To address this need, TWG has recommended to repurpose two 50 MVA, 115 kV transformers from Cyrville MTS following its planned conversion to 230 kV. Relocating these transformers to Moulton MTS will provide additional transformation capacity to meet projected demand growth. This approach leverages existing assets efficiently while supporting reliability in the growing east-end area.

### 8.2.13 Marionville DS

Marionville DS is forecasted to exceed its summer and winter Planned Loading Limit (PLL) as early as 2025. To address this need, the recommended action is to install a second transformer rated at 20 MVA and construct approximately 4.2 km of new distribution feeder to integrate the additional capacity. The tentative in-service date for this upgrade is December 2029. In the interim, Hydro One Distribution will manage load growth through transfers to nearby stations to maintain reliability until the new transformer and feeder build are completed.

### 8.2.14 Greely DS

Greely DS is projected to reach its summer and winter PLL in 2025. To address this the recommended action is to install SCADA fan monitoring for transformers T1 and T2 (115 kV to 28 kV). This upgrade will enable fan monitoring and allow higher ratings for both transformers, increasing their capacity from 23 MVA to 38 MVA in summer time and 28 MVA to 43 MVA in winter. The planned in-service date for SCADA fan monitoring is scheduled for 2026.

### 8.2.15 Manotick DS

Manotick DS has a summer PLL of 8.6 MVA and a winter PLL of 11.6 MVA. This PLL considers the loss of one transformer. Load forecasts indicate that the station will exceed these limits in both summer and winter starting in 2025.

Hydro One Distribution has operating measures to deal with station load in the near and medium term should one of the transformers fail such as use of Mobile Unit Substation (MUS)

Other measures such as Scada fan monitoring can be considered and will be reviewed as a part of next regional planning cycle.

### 8.2.16 Hinckey TS

Load forecasts indicate that Hinckey TS is expected to exceed its winter LTR by approximately 2 MW in 2031, while summer LTR is projected to remain within limits throughout the study period. Since this need is primarily in the winter timeframe. TWG is recommending monitoring winter load growth and revisiting this capacity need in the next regional planning cycle which can be triggered in advance if load growth is significant.

### 8.2.17 Rockland DS

Rockland DS is forecasted to reach its summer PLL in 2025, TWG recommends the implementation of SCADA monitoring of transformer fan. This will increase the summer PLL to 14.4 MVA and alleviate the overload at station. The planned in-service date for the fan monitoring installation is 2026.

In the interim, LDCs will implement operational measures, to manage loading and maintain system reliability until the permanent solution is in place.

### 8.2.18 Rockland East DS

Rockland East DS is forecasted to reach its summer PLL in 2026. TWG recommends the implementation of SCADA monitoring for transformer fans. The planned ISD for the fan monitoring installation is 2027.

In the interim, LDCs will implement operational measures to manage loading and maintain system reliability until the permanent solution is in place.

### 8.2.19 Additional Transformation Capacity needs

Several stations in the Greater Ottawa area are forecasted to exceed their LTR within the study period. The following summarizes the anticipated capacity needs:

- Nepean Epworth MTS – Expected to exceed its LTR in 2028 (winter) and 2035 (summer).
- Kanata MTS – Projected to exceed its summer and winter LTR in 2025.

- Ellwood MTS – Forecasted to exceed its summer and winter LTR in 2027.
- Limebank MTS – Expected to exceed its LTR in 2028 (winter) and 2031 (summer).
- Bridlewood MTS – Projected to exceed its LTR in 2030 (winter) and 2035 (summer).
- Marchwood MTS – Anticipated to exceed its summer and winter LTR in 2025.
- Centrepoint MTS – Expected to exceed its LTR in 2027 (winter) and 2032 (summer).
- Manordale MTS – Forecasted to exceed its LTR in 2026 (winter and summer).
- Fallowfield MTS – Projected to exceed its LTR in 2030 (winter) and 2026 (summer).

Hydro Ottawa has confirmed that loading at these stations can be managed through operational load transfers to nearby stations in the near term. Additionally, the commissioning of new stations—Kanata North MTS, Mer Bleue MTS, Greenbank MTS, Bronson MTS and Piperville MTS—will allow permanent load shifts, providing long-term relief to these stations and addressing regional capacity needs.

## 8.3 Transmission Lines Capacity Needs

All line and equipment loads shall be within their continuous ratings with all elements in service and within their long-term emergency ratings with any one element out of service. Immediately following contingencies, lines may be loaded up to their short-term emergency ratings where control actions such as re-dispatch, switching, etc. are available to reduce the loading to the long-term emergency ratings. A Transmission Lines Capacity Assessment was performed over the study period **2025-2044** for the 230kV and 115kV Transmission line circuits in the **Greater Ottawa region** by assessing thermal limits of the circuit and the voltage range as per ORTAC to cater to this need. Based on the results, the following line capacity needs have been identified during the study period:

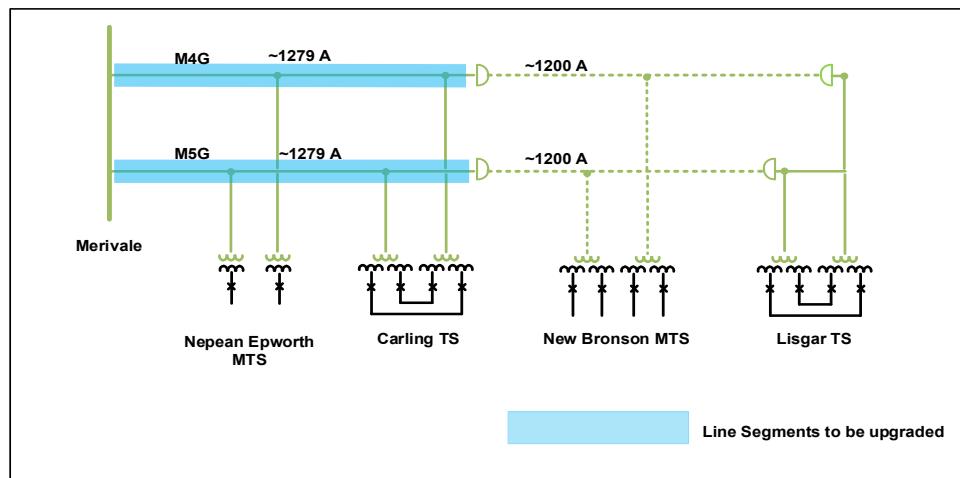
### 8.3.1 M4G/M5G – 115 kV – Section Upgrade

The M4G and M5G circuits, which supply Nepean Epworth MTS, Carling TS and Lisgar TS, are forecasted to experience thermal constraints under contingency conditions as downtown Ottawa load continues to grow. When one circuit is out of service, the remaining circuit would be required to fully supply all stations, resulting in thermal overload conditions. Based on the regional load forecast, this limit is expected to be reached in the summer of 2030 and in the winter of 2032.

To address this issue, the recommended action is to upgrade sections of M4G and M5G between Merivale TS and Carling TS to remove thermal constraints and support higher downtown load.

Based on studies, this load pocket can supply about 360 MW before voltage issues arise. Hydro One will consider different conductor options to meet this load. The feasibility of using ACSS (Aluminum Conductor Steel Supported) conductor options will be explored to provide sufficient capacity while maintaining reliability.

Figure 8-11: Upate Section from Merivale TS to Carling TS

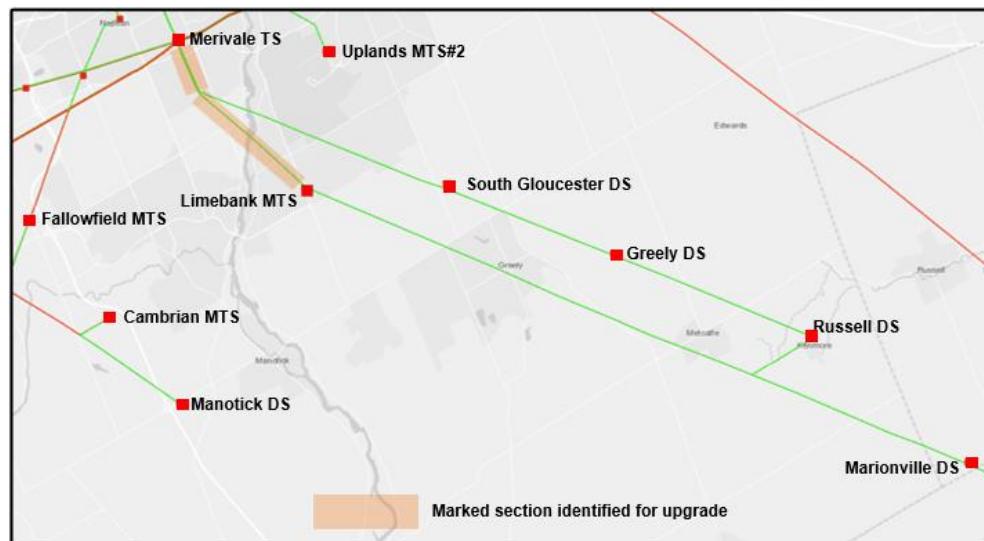


Regional planning emphasizes that downtown Ottawa is a critical load pocket with limited space for new infrastructure, making reinforcement of existing transmission corridors essential. Since Bronson MTS is also planned as a new station to relieve downtown capacity constraints, uprating the M4G/M5G corridor is a key enabler for this project and for supporting long-term growth in the Core East area.

### 8.3.2 L2M – 115 kV – Uprating Merivale TS x Limebank MTS

Thermal constraints have been identified on the L2M transmission line section between Merivale TS and Limebank MTS, which supplies Limebank MTS and Marionville DS as shown in Figure 8-12. These constraints are primarily driven by the increasing load forecast at Limebank MTS, as identified in the regional planning load forecast. The section of L2M has a summer rating of 93 MVA (477 A) and based on the study results, the 7.8km line section between Merivale TS and Limebank MTS is expected to reach its thermal capacity limit in the near term by 2028.

Figure 8-12: Upate Section from Merivale TS to Limebank MTS



### Alternative 1 - Remove sag limitation

The rating of circuit L2M between Merivale TS and Limebank MTS is currently limited due to clearance concerns. This option looks to increase the thermal capacity of L2M by addressing the conductor's sag issue. Hydro One has previously reviewed the work necessary to remove the limitation and has determined that approximately 3.2km of the line section would have to be rebuilt in addition to modification to some existing towers and insulators where no rebuilding is required. This work would remove the clearance limitation and would allow the circuit capacity to be increased to approximately 106MW in summer and 131 MW in winter. This allows us to meet the demand up to the mid-term.

### Alternative 2: Rebuild the circuit

This alternative would look at rebuilding the 7.8km circuit L2M between Merivale TS and Limebank MTS to increase the circuit's thermal rating. Two options were considered.

**Alt 2a:** This option would rebuild the existing 7.8km as a single circuit 115kV line. It would address the thermal rating constraint currently on the circuit and would be adequate to supply the forecasted load of Marionville DS and Limebank MTS. However, with this option, Limebank MTS and Marionville DS would remain on a single circuit supply.

**Alt 2b:** This option would rebuild the existing 7.8km as a double circuit 115kV line. Similar to Alternative 2a, this option would address the thermal rating issue. This option would also help improve the reliability of supply to Limebank MTS by providing a second supply to the station.

### Recommendation

TWG recommends uprating L2M to support the south-end growth and align with recommendations for proactive reinforcement of critical transmission corridors. A feasibility study will be done after which Hydro One and LDCs will review the different options. The selected alternative will follow the recommendation to uprate the section of L2M from Merivale TS to Limebank MTS, with a tentative in-service date of 2032.

#### **8.3.3 A4K – 115 kV**

##### **Hawthorne TS x Overbrook TS section**

Under the winter peak forecast for 2032, thermal overload has been identified on a critical section of the A4K corridor, specifically between Hawthorne TS x Overbrook TS, under the contingency of either circuit A5RK or A6R. When either of the circuits are out of service, the resulting increased loading on A4K is beyond its thermal capability.

##### **Overbrook TS x King Edward TS section**

This section is an underground cable section, and it exceeds its capacity due to King Edward TS being overloaded beyond the capacity described in section 8.2. If the station load is to increase as per the winter forecast, the upgrades to the station (beyond what is described in section 8.2) would have to be done in coordination with upgrades to cables.

TWG has reviewed the overload scenarios, and the recommended approach is to monitor load growth of the stations on A4K over the coming years. As demand continues to increase, TWG will reassess the situation and develop an appropriate action plan, which may include options such as reconductoring, circuit upgrades, or alternative reinforcement strategies to ensure compliance with thermal limits and maintain system reliability.

## 8.4 System Reliability, Operation and Restoration Needs

The transmission system must be planned to satisfy demand levels up to the extreme weather, and to provide a median-economic forecast for an extended period with any one transmission element out of service. A study has been performed, considering the net load forecast and the loss of one element over the study period 2025-2044 to cater for this need. Based on the results, the following system reliability, operating and restoring issues have been identified for this Region.

### 8.4.1 Load Security issue due to contingency of M32S

Nepean TS currently relies on a single 230 kV transmission supply circuit (M32S) from Merivale TS to South March TS. Under an M32S contingency, the entire load at Nepean TS would be lost due to configuration. According to ORTAC criteria, load security requires that no more than 150 MW of load can be lost for a single element contingency. While this limit is not exceeded in the summer forecast, it is projected to be reached in the winter forecast by 2029, when Nepean TS's peak demand is expected to surpass 150 MW. This creates a load security concern, as an outage of M32S would result in a full load loss, violating ORTAC requirements.

To address this issue, the recommended plan includes providing Nepean TS with a second transmission supply circuit originating from Merivale TS. This will ensure compliance with ORTAC and enhance the station reliability. The timing of this plan will be determined based on ongoing load monitoring and coordination with the Merivale TS upgrade project.

### 8.4.2 New Switching Station to improve reliability and flexibility in Kanata Area

As discussed in Section 8.2, one of the recommended plans includes the development of a new 230 kV Kanata North MTS, which will initially connect to the existing 230 kV circuit C3S. To enhance reliability, a second supply will be brought from M32S. This second supply will be enabled by rebuilding one of the existing transmission lines in the C7BM/C3S/W6CS corridor to double circuit 230kV line, thus connecting M32S to the new Kanata North MTS.

With the addition of Kanata North MTS and potential load transfers from Marchwood MTS and Kanata MTS, the summer and winter load forecasts were preliminary revised for the stations in the Kanata area as shown in Tables 8-3 below.

**Table 8-3: Updated summer and winter load forecast (in MW) with preliminary transfers to Kanata North Considered**

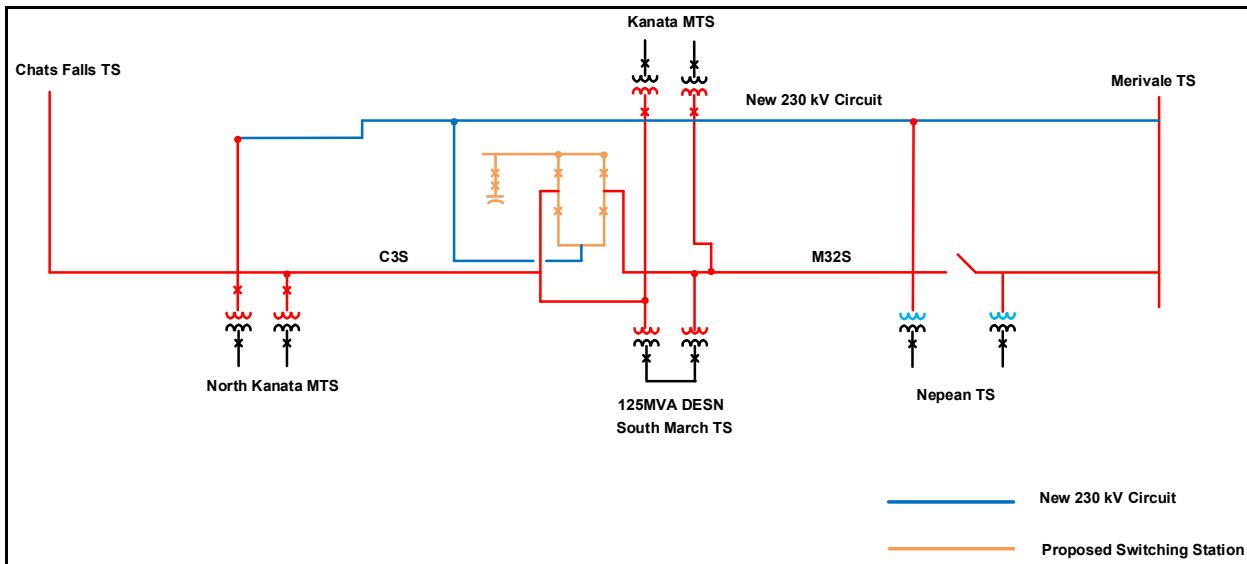
<b>SUMMER</b>											
Station	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
KANATA MTS	37	36	36	36	36	36	36	35	36	36	36
NEPEAN TS	127	128	128	128	128	128	128	129	129	130	131
SOUTH MARCH TS	112	112	114	122	121	122	126	127	128	129	130
Kanata North MTS	38	38	39	39	39	40	40	40	41	41	41
Load in 230 kV area	314	314	317	325	324	325	330	331	333	336	338
<b>WINTER</b>											
	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
KANATA MTS Revised	49	50	52	54	57	59	61	63	65	67	69
NEPEAN TS	148	159	169	176	184	191	198	205	214	223	231
SOUTH MARCH TS	119	124	132	143	147	151	158	162	168	173	179
Kanata North MTS	38	38	39	39	39	40	40	40	41	41	41
Load in 230 kV area	354	371	392	412	427	440	457	471	488	504	520

Analysis of contingencies on the 230 kV system indicates that stations supplied by these circuits can reliably support up to 340 MW of load while maintaining system performance. This threshold is expected to be reached under the summer forecast by 2038 and under the winter forecast as early as 2028.

To address this emerging constraint, the current strategy is to monitor winter load growth closely while advancing plans for a new switching station in the Kanata area. This switching station will facilitate flexible interconnections among Chats Falls TS, Merivale TS, South March TS, Nepean TS, and the new Kanata North MTS, thereby providing support for additional capacity, operational flexibility, and improved resiliency for the regional network. The conceptual layout of this switching station and its integration into the transmission system is illustrated in Figure 8-13.

The line that is planned from Merivale to Nepean as described in section 8.4.1 can be extended to the new switching station.

Figure 8-13: Proposed new 230 kV Line along with Switching Station



#### 8.4.3 Load Security issue due to contingency of M1R+L2M

Merivale TS currently supplies two 115 kV circuits, M1R and L2M, which share a common breaker position. This configuration creates a common-mode outage risk: the loss of either circuit results in both circuits being tripped. Under ORTAC criteria, load security requires that no more than 150 MW of load can be lost for a single element contingency. While this limit is not exceeded in the summer forecast until 2040, it is projected to be reached in the winter forecast by 2031. This creates a load security concern, as an outage of either circuit would result in a full loss of supply to connected stations, violating ORTAC requirements.

To address these issues and improve reliability, the plan includes installing a new breaker at Merivale TS to separate circuits M1R and L2M into two independent 115 kV paths. This will eliminate the common-mode outage risk and ensure compliance with ORTAC load security criteria. The timing of this plan is driven by the emerging winter load security need, with a targeted in-service date of 2032. This solution also supports long-term thermal performance and operational flexibility. Figure 8-14 shows the 115 kV yard at Merivale TS following completion of Merivale TS upgrade project and Figure 8-15 shows the split M1R/L2M configuration that will be providing a separate breaker position for each line.

Figure 8-14: 115 kV Merivale TS after Merivale TS upgrade project

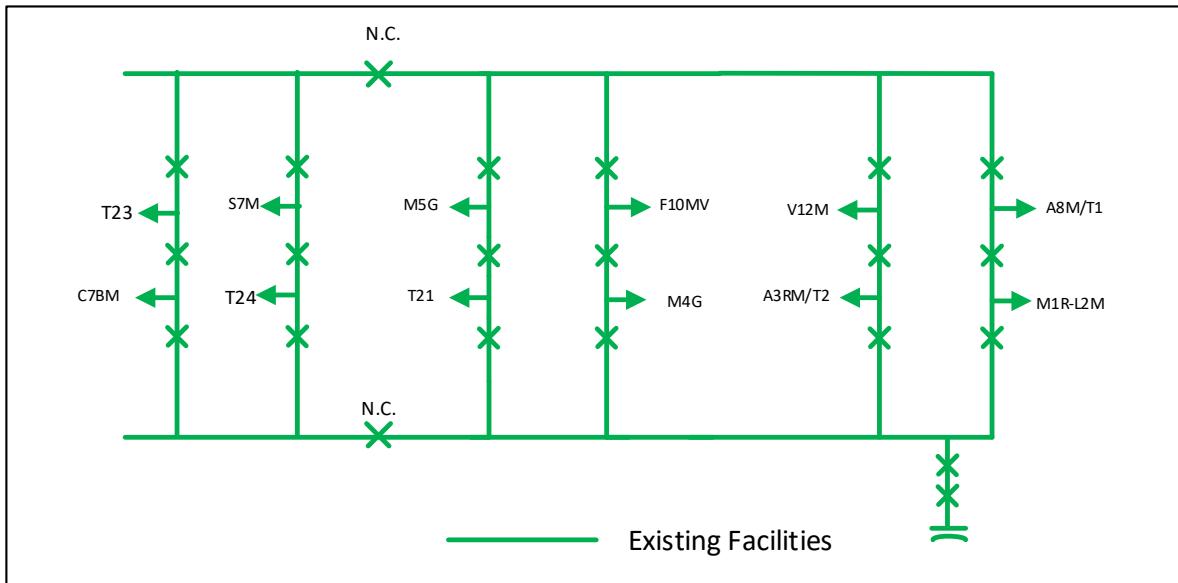
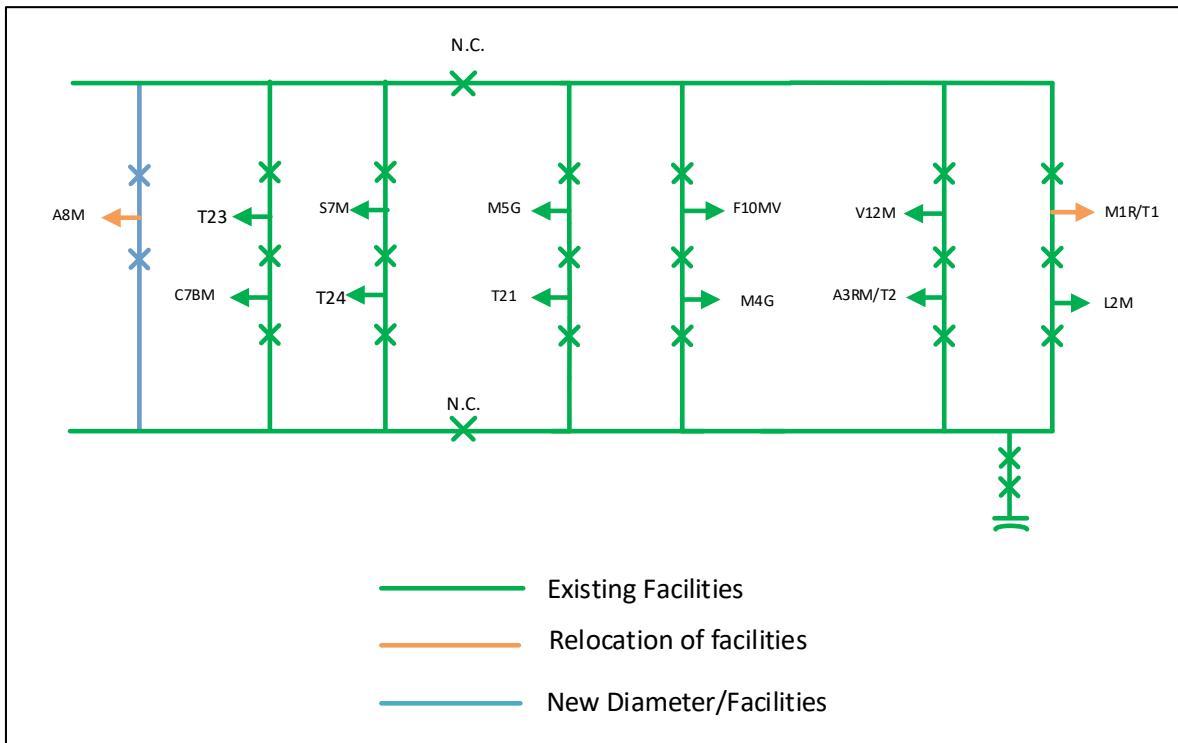


Figure 8-15 Different breaker positions of M1R and L2M



#### 8.4.4 Loading and Voltage issues on S7M

Under the medium-term planning horizon, there is a limitation on the amount of load that can be transferred from Cambrian MTS to S7M under the contingency of E34M. This constraint arises due to both loading and voltage performance issues observed on S7M when additional load from Cambrian MTS is transferred to it during contingency conditions.

To address these challenges, several options are being considered. One potential solution is the planned conversion of S7M to 230 kV, which would significantly improve its capacity and voltage performance under contingency scenarios. Another option is to explore reactive power (VAR) support as load continues to grow, which could help maintain acceptable voltage levels and system stability. At this stage, the recommendation is to continue monitoring load growth and system performance, and to review the needs as part of the next cycle of regional planning. Ongoing bulk study may make recommendations that could impact the area, such as 230kV conversion.

#### 8.4.5 Supply to East Ottawa

In the previous regional planning cycle, the recommended plan for the East Ottawa area included refurbishment of Bilberry Creek TS and the addition of two new feeder breakers. While the Greater Ottawa regional planning process was inactive, new information related to load growth and system conditions prompted a re-evaluation of the supply plan. In 2023, the TWG reviewed updated growth expectations for the area, the sustainment need at Bilberry Creek TS, and the capability of the 115 kV system to support future growth. Based on this review, TWG agreed to revise the recommendations for the area.

TWG's revised plan and new recommendation includes three components.

##### Retirement of Bilberry Creek TS

The TWG recommends retiring Bilberry Creek TS due to aging infrastructure and associated sustainment requirements. The revised approach shifts supply for the area away from continued reinvestment at Bilberry Creek TS resulting in removing load from 115 kV system and instead transitioning the connected load to the 230 kV system to support longer-term capacity and system reliability.

##### Upgrade at Orleans TS

As part of this approach, Orleans TS will be upgraded from dual supply 230/27.6 kV and 115/27.6 kV to 230/27.6 kV DESN. This upgrade includes a new 230 kV circuit A25 between Hawthorne TS and Orleans TS (~11km). The planned in-service date for the Orleans TS upgrade and the A25 circuit is June 2029.

##### Connection of new Mer Bleue MTS

The revised plan also includes the connection of a new Hydro Ottawa station, Mer Bleue MTS, to the 230 kV system. Mer Bleue MTS will be connected to 230 kV circuits D5A approximately 10 km east of Hawthorne TS, with a planned in-service date of July 2027. The project is also planned to connect to circuit A25 with an expected in-service date of June 2029.

This new recommendation provides the following benefits:

- i. Addresses the Limited growth available on the 115kV system. The Ottawa 115kV system is mainly supplied via 250MVA autotransformers at Hawthorne TS and Merivale TS. East Ottawa 115kV system is connected to Hawthorne TS and most of its supply is from the station's autotransformers. These autotransformers are heavily loaded and limit the growth that can be supplied from 115kV. Installing additional autotransformers at the station will be very challenging due to space constraints and short circuit level considerations. As such removing load from the 115kV system and transferring it to the 230kV wherever possible, helps preserve the current capacity on the 115kV to address the growth at existing stations that cannot be converted to 230kV at reasonable cost. This Project helps by reducing the 115kV loading and transferring the load to 230kV.
- ii. The Project avoids significant refurbishment work at the station as the load can be transferred onto the 230kV system and Bilberry Creek TS can be retired instead of refurbished. In addition, there is also limited growth available at Bilberry Creek even if the station is refurbished.
- iii. Orleans TS will no longer be subject to momentary interruptions due to its configuration.
- iv. The new 230kV circuit will allow more growth and improve supply reliability in the Orleans area. Currently connection on the 230 kV in the Orleans area will have to be limited to 100 MW. With the new circuit the area can support over 300 MW.

The RIP concludes that retiring Bilberry Creek TS, upgrading Orleans TS, and completing the associated 230 kV circuit and station connections is the most cost-effective option to address the long-term needs in East Ottawa. This combined set of projects is being pursued as an alternative to the sustainment and upgrade work at Bilberry Creek TS that was recommended in the previous regional planning cycle.

From a reliability perspective, the revised plan reduces dependence on aging station equipment, increases supply robustness by serving the area from the higher-capacity 230 kV network, and improves operational flexibility during planned outages or contingencies by enabling better load restoration options across the East Ottawa supply area.

Figure 8-16 Existing Orleans Area

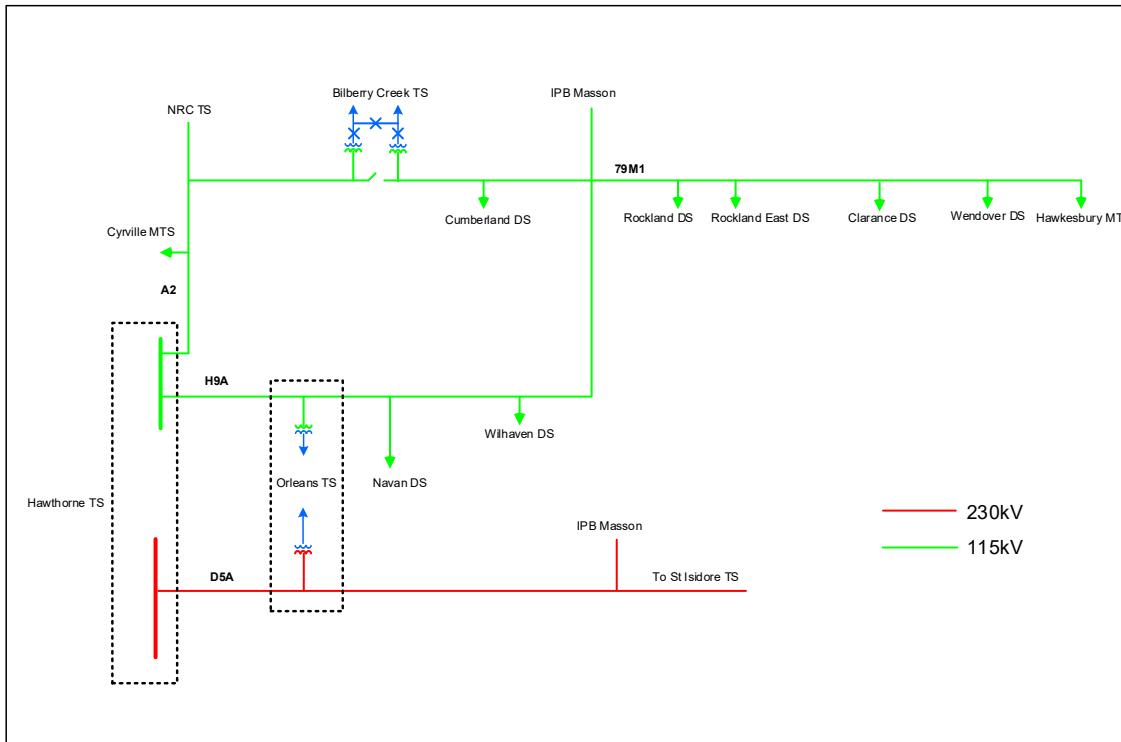
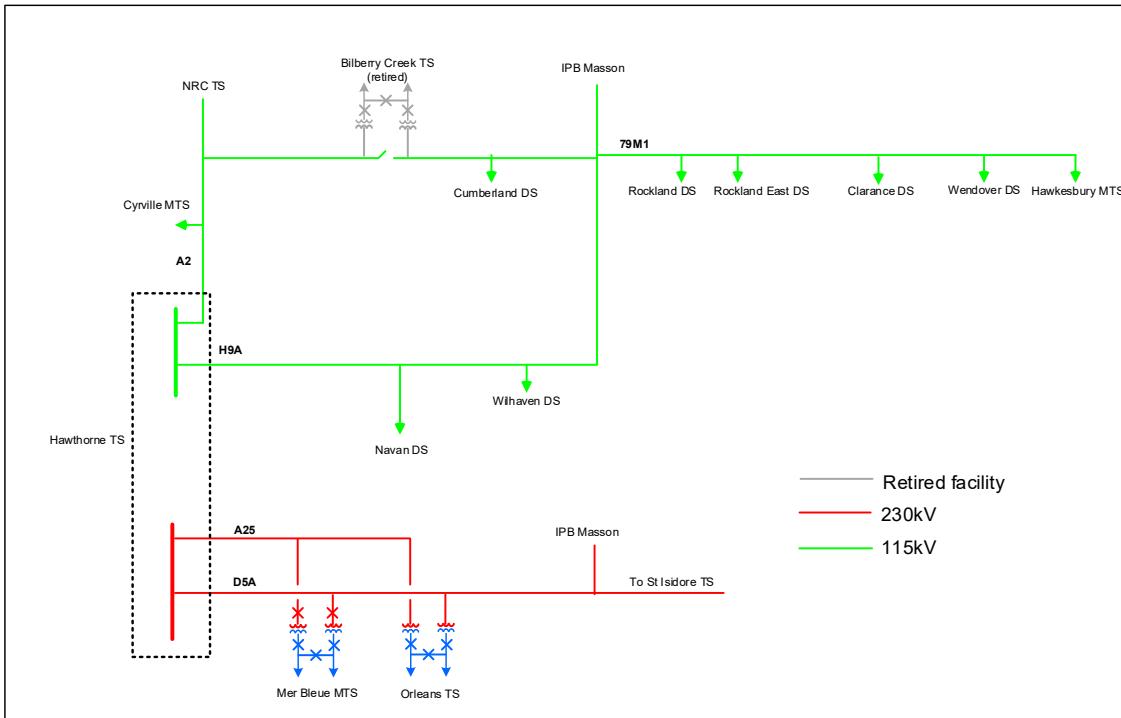


Figure 8-17 Orleans Area after Upgrade



## 9. CONCLUSION AND RECOMMENDATION

This section concludes the Regional Infrastructure plan Report for the Greater Ottawa region. The Major Infrastructure investments recommended by the TWG in the near and mid-term planning horizon 2025-2044 are provided in Table 7 below, along with their planned in-service dates (ISD) and budgetary estimates for planning purposes.

**Table 9: Recommended Plans over the next 10 Years**

Station/Circuit Name	Recommended Plan	Lead	Planned ISD	Budgetary Cost (\$M)
<b>Asset Renewal Needs</b>				
South March TS	Replacement of T1/T2 transformers with upgraded units based on asset conditions and capacity needs.	Hydro One	2029	\$40M
Albion TS	Replacement of T1/T2 transformers with upgraded units based on asset condition and capacity needs.	Hydro One	2031	\$60M
Nepean TS	Replacement of T3/T4 transformers based on asset condition	Hydro One	2034	\$30M
S7M	Refurbishment of line section between Manotick JCT x Richmond South MTS and S7M 673N x Manordale JCT	Hydro One	2030	\$5M
<b>Station Capacity Needs</b>				
South March TS	Replacement of T1/T2 transformers with upgraded units based on asset conditions and capacity needs.	Hydro One	2029	\$40M
Carling TS	Replacement of limiting LV cables.	Hydro One	2030	\$10M

Lisgar TS	Replacement of T2 transformer and LV cables/breakers - Greenfield	Hydro One	2034	\$50M
	Replacement of T2 transformer and LV cables/breakers – In Situ	Hydro One	2031	\$30M
King Edward TS	Replacement of LV cables and breakers.	Hydro One	2033	\$20M
Cyrville MTS	Station voltage conversion from 115kV to 230kV to increase station rating and upgrade station transformation capacity.	Hydro One/ Hydro Ottawa	2029	\$85M*
Moulton MTS	Relocate 50 MVA ,115kV transformers from Cyrville MTS after voltage conversion to increase station rating at Moulton TS.	Hydro Ottawa	2029	\$5M
Bronson MTS	Build a new 115kV Transformer Station east of Carling TS by converting existing Bronson distribution station	Hydro One/ Hydro Ottawa	2031	\$110M*
Greenbank MTS	Build new Transformer Station to meet demand growth and need for 28kV supply west of Merivale TS.	Hydro One/ Hydro Ottawa	2028	\$100M*
Kanata North MTS	Build a new Transformer Station by connecting 230 kV C3S and new transmission line from South March TS	Hydro One/ Hydro Ottawa	2028	\$100M*
Marionville DS	Install a second transformer to increase station rating.	Hydro One Dx	2029	\$12M*
Greely DS	Install Scada Fan monitoring to increase transformer rating.	Hydro One Dx	2026	\$2M*

Rockland DS	Install Scada Fan monitoring to increase transformer rating.	Hydro One Dx	2026	\$2M*
Rockland East DS	Install Scada Fan monitoring to increase transformer rating.	Hydro One Dx	2027	\$3M*
<b>Transmission Line Capacity Needs</b>				
M4G/M5G	Upate Line section between Merivale TS x Carling TS	Hydro One	2030	\$30M
L2M	Upate line section between Merivale TS x Limebank JCT	Hydro One	2032	\$30M
<b>System Reliability, Operation and Load restoration Needs</b>				
Kanata Area	Kanata Area Transmission Reinforcement	Hydro One	2033	\$250M
Nepean TS – Load Security Criteria	Second 230 kV Supply to station	Hydro One	2032	\$70M
M1R+L2M	Split Breaker position for M1R and L2M at Merivale TS	Hydro One	2032	\$45M
East Ottawa Area	Supply to East Ottawa	Hydro One	2029-2030	\$165M*

\* These investment costs include associated distribution system costs.

Note:

- a) The planned in-service dates are tentative and subject to change.
- b) Costs are high-level planning estimates and actual costs may vary.

## 10. REFERENCES

- [1] Hydro One, [RIP Report – Greater Ottawa \(Second cycle\)](#), published on December 18, 2020
- [2] Hydro One, [NA Report – Greater Ottawa \(Third cycle\)](#), published on December 20, 2022
- [3] Independent Electricity System Operator, [SA Report – Greater Ottawa \(Third cycle\)](#), published on March 21, 2023
- [4] Independent Electricity System Operator, [IRRP Report – Ottawa Area Sub-region \(Third cycle\)](#), published on July 31, 2025
- [5] Independent Electricity System Operator, [Ontario Resource and Transmission Assessment Criteria](#) (issue 5.0 August 22, 2007)
- [6] Ontario Energy Board, [Transmission System Code](#) (issue July 14, 2000 rev. March 31, 2025)
- [7] Ontario Energy Board, [Distribution system Code](#) (issue July 14, 2000 rev. September 16, 2025)
- [8] Ontario Energy Board, [Load Forecast Guideline for Ontario](#) (issue October 13, 2022)

## Appendix A: Extreme Summer/Winter Weather Adjusted Net Load Forecast

**Table A.1: Greater Ottawa region – Summer - Reference Load Forecast**

Name of Station	LTR (MW)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
ALBION TS	86.5	58.6	59.2	59.7	60.3	60.7	61.2	61.9	62.6	63.5	64.5	65.2	65.5	65.9	66.4	66.8	67.2	67.8	68.4	69.0	69.0
ALMONTE TS	96.7	55.4	56.1	56.7	57.4	58.0	62.4	63.8	64.9	68.4	71.8	72.8	74.1	75.4	76.8	78.1	79.6	81.0	82.5	83.9	85.5
ARNPRIOR TS	54.9	39.5	39.8	39.9	40.7	41.3	44.2	47.3	48.6	48.9	49.3	49.8	50.4	51.0	51.6	52.2	53.0	53.7	54.3	54.9	55.6
BILBERRY CREEK TS	85.3	64.0	64.2	64.4	14.3	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BRIDLEWOOD MTS	23.5	21.7	22.0	22.2	22.4	22.6	22.8	22.9	23.1	23.2	23.4	23.6	23.5	23.7	23.7	23.7	23.7	23.9	24.2	24.4	24.4
CAMBRIAN MTS	114.0	58.9	62.7	68.3	71.9	74.7	77.1	80.6	84.2	87.8	91.4	95.1	99.1	101.8	102.3	102.5	103.0	103.7	104.4	105.1	105.8
CARLING TS	95.0	89.2	90.6	91.6	105.9	106.6	113.8	126.4	139.2	139.6	140.0	141.2	140.9	140.9	141.1	141.3	141.4	142.6	143.7	144.9	144.9
CENTREPOINT MTS	13.3	12.8	12.9	13.0	13.0	13.1	13.1	13.2	13.4	13.5	13.7	13.8	13.9	14.0	14.1	14.2	14.3	14.6	14.8	15.1	15.1
CLARENCE DS	7.8	2.6	2.6	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.9	2.9	3.0	3.0	3.1	3.2	3.2	3.3	3.3	3.4	3.5
CUMBERLAND DS	6.8	6.1	6.1	6.2	6.2	6.3	6.3	6.4	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.2	7.3	7.4	7.5	7.7	7.8
CYRVILLE MTS	47.5	31.9	34.1	35.0	48.4	49.1	49.0	49.1	49.0	49.2	49.2	49.4	49.8	50.2	50.6	50.5	50.5	50.8	51.2	51.5	51.9
ELLWOOD MTS	47.0	41.7	45.0	47.3	48.4	49.4	49.4	49.3	49.2	49.3	49.2	49.3	49.6	49.9	50.2	50.4	50.7	51.1	51.4	51.8	52.2
FALLOWFIELD MTS	27.2	24.1	27.3	30.5	33.1	33.3	33.3	33.3	33.4	33.3	33.2	33.3	33.5	33.7	33.8	33.8	34.0	34.2	34.5	34.7	35.0
GREELY DS	20.7	22.4	22.6	22.9	23.2	23.4	23.9	24.2	24.5	24.9	25.2	25.9	26.6	27.6	28.4	29.3	30.1	30.6	30.9	30.9	30.9
HAWKESBURY MTS #1	18.0	12.1	12.3	12.4	12.6	12.7	12.9	13.0	13.1	13.2	13.4	13.6	13.9	14.1	14.4	14.7	15.0	15.3	15.6	15.9	16.2
HAWTHORNE TS	144.8	136.6	137.1	137.3	138.0	138.4	139.1	139.6	140.2	141.0	141.7	143.1	143.8	144.7	145.7	146.5	147.4	148.1	148.7	148.6	148.7
HINCHEY TS	85.6	21.6	22.2	28.6	36.5	40.9	44.8	47.7	49.6	50.9	51.7	52.3	52.3	52.3	52.3	52.2	52.2	52.7	53.2	70.3	70.8
HYDRO RD MTS	114.0	-	-	13.0	18.5	23.9	29.3	32.9	36.5	40.0	43.6	47.2	47.7	48.2	48.6	49.1	49.6	49.8	50.0	50.2	50.2
CTS-1	100.0	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
KANATA MTS	51.5	54.1	54.1	53.8	53.8	53.6	53.5	53.5	53.3	53.4	53.5	53.5	53.9	54.3	54.7	55.0	55.3	55.7	56.1	56.4	56.8
KING EDWARD TS	86.9	77.6	78.8	79.8	80.8	81.6	82.6	85.0	86.4	87.7	89.0	90.1	91.4	92.7	94.0	95.4	96.8	98.9	101.1	103.2	103.2
LIMEBANK MTS	75.0	50.9	57.2	63.1	68.6	71.5	73.7	75.8	77.8	79.5	80.7	82.0	83.6	85.2	86.9	88.5	90.1	90.8	91.4	91.9	92.6
LINCOLN HEIGHTS TS	99.4	46.4	46.7	46.9	47.0	47.1	47.3	47.8	48.3	48.9	49.5	50.0	50.1	50.3	50.5	50.7	50.9	51.5	52.1	52.7	52.7
LISGAR TS	83.4	78.5	80.2	81.5	96.6	97.7	98.9	109.8	109.8	109.8	109.9	110.7	109.9	109.2	108.6	108.0	107.4	107.7	108.0	108.3	108.3
LONGUEUIL TS	123.5	45.6	48.1	50.4	51.8	52.1	52.6	53.0	53.5	61.3	64.5	65.2	68.6	69.7	70.8	71.9	73.0	73.9	74.9	75.8	76.8

<b>MANORDALE MTS</b>	9.6	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.4	10.5	10.6	10.7	10.7	10.8	10.8	11.0	11.1	11.2	11.4	11.6	11.6
<b>MANOTICK DS</b>	7.7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.8	12.0	12.3	12.5	12.8	13.1	13.3	13.6	13.9	14.2	14.6	14.9
<b>MARCHWOOD MTS</b>	32.3	51.3	52.2	52.9	54.1	55.5	56.7	58.0	59.2	60.7	61.5	61.5	61.8	62.2	62.5	62.9	63.2	63.6	64.0	64.4	64.8
<b>MARIONVILLE DS</b>	13.5	15.5	15.6	15.7	15.9	16.0	16.3	16.4	16.6	16.8	17.0	17.3	17.8	18.2	18.7	19.2	19.7	20.0	20.2	20.1	20.1
<b>Mer Bleue MTS</b>	114.0	-	-	-	65.3	66.0	66.7	67.4	68.2	69.0	69.9	70.7	71.3	72.0	72.8	73.5	74.2	75.2	76.3	77.3	77.3
<b>MERIVALE MTS</b>	32.9	18.3	18.2	18.0	17.8	17.6	17.4	17.5	17.6	17.7	17.8	17.9	17.9	17.8	17.8	17.8	17.8	18.0	18.2	18.4	18.4
<b>MOULTON MTS</b>	32.0	23.7	23.5	23.2	36.7	36.2	35.9	35.9	36.0	36.1	36.2	36.3	36.2	36.1	36.1	36.0	36.2	36.3	36.5	36.5	36.5
<b>CTS-2</b>	14.0	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
<b>NRC TS</b>	77.4	5.1	5.1	5.0	17.1	16.8	16.5	16.4	16.4	16.3	16.2	16.0	15.8	15.8	15.8	15.8	15.8	15.7	15.7	15.7	15.7
<b>NAVAN DS</b>	13.5	5.0	5.1	5.1	5.1	5.1	5.1	5.2	5.2	5.3	5.3	5.4	5.5	5.6	5.7	5.8	5.8	5.9	6.0	6.1	6.1
<b>NEPEAN EPWORTH MTS</b>	12.9	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.7	12.8	12.9	13.0	13.0	13.0	13.1	13.1	13.1	13.3	13.5	13.6	13.6
<b>NEPEAN TS</b>	144.1	126.1	126.7	126.9	127.3	127.5	127.9	128.0	127.8	128.0	128.1	128.5	129.3	130.2	131.1	131.9	132.8	133.7	134.6	135.4	136.3
<b>ORLEANS TS</b>	118.2	118.5	123.0	120.3	123.8	126.6	143.9	146.9	149.8	151.6	153.5	155.7	158.3	160.2	162.1	163.9	165.8	167.7	169.5	171.3	173.2
<b>OVERBROOK TS</b>	116.8	86.1	88.3	90.2	92.2	94.0	95.9	96.8	97.9	98.9	100.0	101.1	101.7	102.4	103.2	104.0	104.8	106.5	108.2	109.8	110.8
<b>PIPERVILLE MTS</b>	108.0	-	2.3	4.6	6.8	9.0	11.2	11.4	11.7	11.9	12.2	12.4	12.7	13.1	13.4	13.8	14.1	14.4	14.6	14.8	14.8
<b>RICHMOND SOUTH MTS</b>	49.0	20.7	24.2	27.0	29.8	32.0	34.3	38.3	42.1	45.6	49.2	52.3	55.6	56.3	57.1	57.8	58.5	58.9	59.3	59.6	60.0
<b>RIVERDALE TS</b>	110.8	96.8	100.1	103.2	106.3	109.1	112.1	112.8	113.6	114.5	115.3	116.0	116.5	117.2	117.9	118.7	119.5	121.4	123.3	125.1	125.1
<b>ROCKLAND DS</b>	7.8	8.3	8.6	8.8	9.0	10.3	11.5	12.6	13.7	14.8	17.4	18.8	20.4	21.9	23.5	25.0	26.5	28.1	29.6	31.1	32.7
<b>ROCKLAND EAST DS</b>	15.5	15.3	15.9	16.4	16.9	17.4	18.0	18.5	19.0	19.6	20.1	20.7	21.3	22.0	22.7	23.3	24.0	24.7	25.1	25.4	25.8
<b>RUSSELL DS</b>	6.8	4.5	4.5	4.5	4.6	4.6	4.7	4.8	4.8	4.9	4.9	5.1	5.2	5.3	5.5	5.6	5.8	5.9	5.9	5.9	5.9
<b>RUSSELL TS</b>	72.7	72.0	76.6	78.8	78.9	79.0	79.1	79.4	79.9	80.3	81.0	81.4	81.5	81.6	81.8	81.9	92.2	92.4	92.8	93.1	93.1
<b>SLATER TS</b>	158.7	96.1	96.9	98.2	102.3	107.0	111.8	115.9	117.7	119.1	119.3	119.5	120.2	120.8	121.5	122.1	122.7	123.6	124.4	125.2	126.1
<b>SOUTH GLOUCESTER DS</b>	6.8	5.0	5.0	5.1	5.1	5.2	5.3	5.3	5.4	5.4	5.5	5.6	5.8	6.0	6.2	6.3	6.5	6.6	6.7	6.7	6.7
<b>SOUTH MARCH TS</b>	99.2	98.1	102.8	108.6	111.8	111.7	114.2	122.1	121.4	121.6	126.2	126.6	127.6	128.6	129.7	130.7	131.7	133.0	134.0	135.1	136.4
<b>ST. ISIDORE TS</b>	117.8	44.9	47.4	48.6	49.9	51.2	52.5	56.4	60.5	61.6	63.7	64.4	65.1	66.0	66.8	67.6	68.5	69.4	70.3	71.1	72.0
<b>STEWARTVILLE TS</b>	49.5	28.5	28.8	29.0	29.3	29.5	29.8	30.1	30.4	30.8	31.2	31.6	34.7	35.6	36.1	36.6	37.1	37.7	38.2	38.7	39.2
<b>TERRY FOX MTS</b>	91.7	63.3	64.2	64.9	65.7	66.4	67.2	67.0	66.9	66.9	66.9	67.0	66.7	66.5	66.3	66.0	65.9	66.3	66.8	67.3	67.8
<b>UPLANDS MTS</b>	57.6	29.4	33.3	40.7	43.2	44.8	45.6	46.3	47.0	47.7	48.4	49.2	50.2	50.9	51.7	52.4	53.1	53.4	53.8	54.1	54.5
<b>WENDOVER DS</b>	30.4	15.8	16.1	16.3	16.5	16.7	16.9	17.1	17.4	17.8	18.1	18.4	18.8	19.2	19.7	20.1	23.6	24.0	24.5	24.9	25.3
<b>WILHAVEN DS</b>	34.2	7.8	7.9	7.9	8.0	8.0	8.0	8.1	8.1	8.2	8.4	8.7	8.7	8.9	9.1	9.2	9.3	9.4	9.5	9.7	9.9
<b>WOODROFFE TS</b>	97.4	48.3	49.4	50.5	51.5	52.4	53.4	53.8	54.2	54.7	55.2	55.6	56.1	56.6	57.2	57.8	58.4	59.3	60.2	61.1	61.1

**Table A.2: Greater Ottawa region –Winter - Reference Load Forecast**

Name of Station	LTR (MW)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
ALBION TS	101.7	59.8	65.7	71.5	77.3	82.8	88.4	92.3	96.2	100.2	104.2	108.1	112.9	117.8	122.5	127.0	131.7	136.2	140.6	145.0	145.0
ALMONTE TS	125.1	52.2	53.1	54.0	54.9	55.6	60.1	61.6	62.7	63.7	64.6	65.8	67.1	68.4	69.8	71.3	72.8	74.3	75.7	77.3	78.8
ARNPRIOR TS	59.4	39.4	39.8	40.2	41.1	41.9	42.2	42.7	44.1	44.5	45.0	45.6	46.2	46.9	47.6	48.3	49.0	49.8	50.4	51.2	51.9
BILBERRY CREEK TS	95.5	54.1	46.0	38.0	14.3	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BRIDLEWOOD MTS	23.5	17.1	18.7	20.3	21.9	23.4	25.0	26.1	27.3	28.5	29.7	30.9	32.2	33.6	34.9	36.2	37.6	38.9	40.3	41.7	41.7
CAMBRIAN MTS	123.5	43.7	48.4	52.9	67.3	71.5	75.6	79.0	98.8	102.2	105.7	109.2	112.1	115.0	117.8	120.6	123.5	127.7	131.9	136.2	136.2
CARLING TS	124.3	84.7	94.0	103.1	125.3	133.9	148.9	167.9	187.0	193.7	200.3	207.6	214.2	220.9	227.2	233.1	239.6	246.3	253.0	259.6	259.6
CENTREPOINT MTS	13.3	12.0	13.2	14.4	15.6	16.7	17.8	18.9	20.0	21.0	22.1	23.2	24.4	25.5	26.7	27.8	29.0	30.1	31.2	32.4	32.4
CLARENCE DS	10.5	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.5	2.6	2.6	2.6	2.7	2.8	2.8	2.9	2.9	3.0	3.1	3.1
CUMBERLAND DS	8.6	5.2	5.3	5.4	5.4	5.5	5.6	5.6	5.7	5.8	5.8	5.9	6.0	6.1	6.2	6.4	6.5	6.6	6.7	6.8	6.9
CYRVILLE MTS	47.5	31.6	35.1	38.5	41.9	45.2	48.4	50.6	52.7	54.9	57.1	59.3	62.1	65.0	67.8	70.5	73.3	75.7	78.1	80.5	83.6
ELLWOOD MTS	47.0	39.5	43.6	47.7	51.7	55.6	59.5	63.0	66.5	70.0	73.5	76.9	80.5	84.2	87.7	91.0	94.6	97.9	101.3	104.6	104.6
FALLOWFIELD MTS	27.2	13.3	15.8	18.3	22.8	25.2	27.5	29.7	31.8	34.0	36.2	38.4	42.1	45.9	49.7	53.3	57.1	59.4	61.7	64.1	64.1
GREELY DS	25.2	27.1	27.4	27.7	28.2	28.5	29.0	29.4	29.7	30.1	30.6	31.3	32.3	33.2	34.2	35.1	36.1	36.7	37.1	37.1	37.1
HAWKESBURY MTS #1	18.0	13.0	13.5	13.9	14.4	14.9	15.3	15.7	16.1	16.6	17.1	17.5	17.9	18.4	18.8	19.3	19.8	20.3	20.8	21.3	21.8
HAWTHORNE TS	171.6	132.7	140.4	147.7	155.2	162.4	169.8	177.3	184.8	192.5	200.1	207.9	214.9	222.1	228.8	235.2	242.2	248.1	253.8	236.3	236.3
HINCHEY TS	95.0	54.4	62.2	69.7	77.3	84.5	91.8	96.9	102.0	107.2	112.4	117.5	123.4	129.4	135.1	140.6	146.5	151.7	156.8	161.9	161.9
HYDRO RD MTS	123.5	-	-	10.0	14.3	18.5	22.8	25.6	28.5	31.3	34.1	37.0	37.9	38.8	39.7	40.6	41.6	42.0	42.4	42.9	42.9
CTS-1	100.0	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
KANATA MTS	51.5	53.9	56.1	63.5	65.6	67.6	69.6	71.8	74.1	76.5	78.9	81.2	83.2	85.3	87.2	89.1	91.1	93.4	95.7	98.0	98.0
KING EDWARD TS	90.3	89.6	99.1	108.3	117.5	126.5	135.5	145.2	153.7	162.3	170.8	179.2	188.5	198.0	207.0	215.6	224.8	233.7	242.5	251.3	251.3
LIMEBANK MTS	75.0	60.9	66.8	72.6	78.4	83.9	89.4	92.9	96.5	100.1	103.9	107.6	111.4	115.3	119.1	122.9	126.7	130.6	134.5	138.4	138.4
LINCOLN HEIGHTS TS	113.1	53.8	59.0	64.0	69.1	73.9	78.7	82.5	86.2	90.0	93.9	97.7	102.3	106.9	111.4	115.8	120.3	124.2	128.2	132.1	132.1
LISGAR TS	105.1	77.0	84.6	91.8	112.8	119.8	126.8	143.3	148.8	154.4	159.9	165.3	171.3	177.3	182.9	188.2	194.1	199.5	205.0	210.4	210.4
LONGUEUIL TS	133.0	50.7	53.4	56.0	57.8	58.3	58.9	59.6	60.2	60.9	61.7	62.7	63.7	64.8	66.0	67.1	68.3	69.5	70.6	71.9	73.1
MANORDALE MTS	9.6	9.5	10.4	11.2	12.1	12.9	13.7	14.5	15.2	16.0	16.8	17.5	18.4	19.3	20.1	20.9	21.7	22.6	23.4	24.2	24.2

<b>MANOTICK DS</b>	10.4	12.0	12.1	12.2	12.4	12.5	12.8	12.9	13.1	13.3	13.5	13.8	14.2	14.6	15.0	15.4	15.8	16.1	16.3	16.3	16.3
<b>MARCHWOOD MTS</b>	32.3	32.5	35.4	38.3	41.2	43.9	46.7	48.6	50.5	52.5	54.5	56.5	58.8	61.1	63.3	65.4	67.7	69.7	71.7	73.7	73.7
<b>MARIONVILLE DS</b>	13.5	18.4	18.6	18.8	19.0	19.2	19.5	19.7	19.9	20.1	20.3	20.8	21.3	21.9	22.5	23.0	23.7	24.0	24.2	24.2	24.2
<b>Mer Bleue MTS</b>	123.5	-	-	-	75.4	81.3	87.2	91.5	95.8	100.3	104.8	109.2	114.0	118.9	123.6	128.3	133.1	138.0	142.9	147.8	147.8
<b>MERIVALE MTS</b>	37.3	15.4	17.3	19.1	20.9	22.7	24.5	25.8	27.2	28.7	30.1	31.4	33.0	34.7	36.2	37.7	39.3	40.7	42.2	43.6	43.6
<b>MOULTON MTS</b>	32.0	18.6	20.5	22.3	37.9	39.6	41.2	42.6	43.9	45.3	46.7	48.1	49.5	50.9	52.2	53.5	54.9	56.1	57.3	58.6	58.6
<b>CTS-2</b>	14.0	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6
<b>NRC TS</b>	87.7	6.1	6.0	5.9	20.3	20.0	19.7	19.6	19.6	19.5	19.4	19.2	19.0	18.9	18.9	18.9	18.9	18.9	18.8	18.8	18.8
<b>NAVAN DS</b>	13.5	4.3	4.3	4.4	4.4	4.4	4.5	4.5	4.5	4.6	4.6	4.7	4.7	4.8	4.9	5.0	5.0	5.1	5.2	5.2	5.3
<b>NEPEAN EPWORTH MTS</b>	12.9	10.1	11.1	12.0	13.0	13.9	14.8	15.6	16.5	17.3	18.2	19.0	19.9	20.8	21.6	22.5	23.3	24.2	25.0	25.8	25.8
<b>NEPEAN TS</b>	160.7	116.4	127.3	137.8	148.4	158.7	169.0	176.2	183.5	190.9	198.1	205.2	213.9	222.9	231.2	239.1	247.8	257.1	266.3	275.6	275.6
<b>ORLEANS TS</b>	134.5	78.2	78.0	77.6	70.6	73.3	90.5	93.3	96.1	97.8	99.6	101.5	103.6	104.8	106.0	107.1	108.4	109.6	110.7	111.9	113.1
<b>OVERBROOK TS</b>	135.6	87.7	96.6	105.2	113.8	122.2	130.6	138.2	145.8	153.5	161.1	168.5	176.4	184.3	191.8	199.0	206.7	214.2	221.6	228.9	228.9
<b>PIPERVILLE MTS</b>	117.0	-	3.0	5.9	8.8	11.7	14.5	15.5	16.4	17.4	18.4	19.4	20.8	22.2	23.6	25.0	26.4	27.4	28.4	29.4	29.4
<b>RICHMOND South MTS</b>	49.0	17.9	19.5	42.2	49.9	51.2	52.5	53.7	54.9	56.2	64.7	66.0	67.3	68.7	70.1	71.3	72.7	74.1	75.5	76.9	76.9
<b>RIVERDALE TS</b>	117.0	97.7	107.3	116.6	125.9	134.9	144.0	150.9	157.8	164.9	171.9	178.7	186.6	194.7	202.3	209.7	217.6	224.7	231.8	238.9	238.9
<b>ROCKLAND DS</b>	10.5	6.9	7.2	7.4	7.6	9.0	10.2	11.3	12.5	13.6	16.2	17.8	19.3	20.9	22.4	24.0	25.6	27.1	28.7	30.2	31.8
<b>ROCKLAND EAST DS</b>	20.9	12.4	13.0	13.6	14.2	14.7	15.3	15.8	16.3	16.9	17.4	18.0	18.6	19.2	19.9	20.5	21.2	21.9	22.2	22.5	22.8
<b>RUSSELL DS</b>	8.6	5.3	5.4	5.4	5.5	5.6	5.6	5.7	5.8	5.8	5.9	6.1	6.2	6.4	6.6	6.8	6.9	7.1	7.1	7.1	7.1
<b>RUSSELL TS</b>	79.9	67.7	78.5	86.8	93.1	99.1	105.2	109.8	114.5	119.2	123.9	128.5	133.5	138.6	143.3	147.8	163.0	167.6	172.1	176.6	176.6
<b>SLATER TS</b>	163.0	89.9	94.6	99.1	103.6	107.8	112.2	116.2	120.2	124.3	128.3	132.2	137.8	143.4	148.8	153.8	159.3	164.0	168.7	173.4	173.4
<b>SOUTH GLOUCESTER DS</b>	8.6	5.9	6.0	6.0	6.1	6.2	6.3	6.4	6.4	6.5	6.6	6.8	7.0	7.2	7.4	7.6	7.8	7.9	8.0	8.0	8.0
<b>SOUTH MARCH TS</b>	113.7	98.0	105.9	111.7	119.4	123.7	132.0	142.7	147.0	150.7	158.2	162.3	167.9	172.9	178.8	183.8	189.6	193.9	198.8	203.3	208.1
<b>ST. ISIDORE TS</b>	124.5	47.7	50.3	51.9	53.5	54.9	56.3	57.8	59.4	60.4	62.6	63.4	64.2	65.2	66.2	67.1	68.2	69.2	70.2	69.1	70.1
<b>STEWARTVILLE TS</b>	56.7	27.8	28.2	28.6	29.0	29.2	29.6	29.9	30.2	30.6	31.0	31.5	34.5	35.0	35.6	36.1	36.6	37.2	37.7	38.3	38.8
<b>TERRY FOX MTS</b>	105.8	50.3	55.5	60.5	65.5	70.3	75.0	79.0	83.1	87.2	91.4	95.6	100.6	105.6	110.6	115.5	120.5	124.8	129.1	133.4	133.4
<b>UPLANDS MTS</b>	65.8	25.9	28.6	31.2	33.9	36.4	38.9	41.0	43.1	45.3	47.5	49.6	51.8	54.1	56.2	58.3	60.5	62.7	64.8	66.9	66.9
<b>WENDOVER DS</b>	35.1	16.2	16.6	16.9	17.2	17.4	17.7	18.0	18.2	18.7	19.0	19.4	19.8	20.2	20.7	21.1	21.6	22.0	22.5	22.8	23.3
<b>WILHAVEN DS</b>	41.4	7.4	7.4	7.5	7.6	7.6	7.7	7.8	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.7	8.8	8.9	9.0	9.1
<b>WOODROFFE TS</b>	102.4	47.6	52.6	57.4	62.2	66.8	71.5	75.4	79.4	83.5	87.6	91.6	95.1	98.6	102.0	105.3	108.8	112.8	116.8	120.8	120.8

**Table A.3: Greater Ottawa region – Summer - High Load Forecast**

Name of Station	LTR (MW)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Albion TS	86.5	59.9	60.9	61.8	62.7	63.5	64.4	66.4	68.3	70.4	72.5	74.5	76.0	77.5	79.1	80.7	82.3	83.9	85.5	87.1	87.1
ALMONTE TS	96.7	55.6	56.5	57.0	57.8	58.3	64.8	64.6	65.5	70.3	73.6	73.4	74.7	76.1	77.5	78.8	80.3	81.7	83.2	84.7	86.3
ARNPRIOR TS	54.9	39.7	40.0	40.0	41.1	41.7	45.7	48.9	49.2	49.1	49.6	50.0	50.7	51.3	52.0	52.5	53.4	54.0	54.7	55.2	56.0
BILBERRY CREEK TS	85.3	64.4	65.0	65.5	14.3	14.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BRIDLEWOOD MTS	23.5	22.4	22.7	23.0	23.4	23.6	23.9	24.5	25.1	25.8	26.4	27.1	27.6	28.2	28.7	29.3	29.8	30.4	30.9	31.4	31.4
CAMBRIAN MTS	114.0	59.8	64.7	71.3	73.8	76.1	78.3	82.5	86.0	89.6	93.3	97.0	101.1	103.1	102.5	102.7	103.3	104.1	104.8	105.5	106.2
CARLING TS	95.0	91.7	93.4	94.8	109.4	110.5	111.5	131.9	146.0	147.6	149.4	151.8	153.2	154.8	156.6	158.4	160.3	162.5	164.6	166.8	166.8
CENTREPOINT MTS	13.3	13.0	13.2	13.4	13.6	13.8	14.0	14.5	15.1	15.6	16.1	16.6	17.1	17.6	18.1	18.6	19.1	19.5	20.0	20.5	20.5
CLARENCE DS	7.8	2.6	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.9	2.9	2.9	3.0	3.1	3.1	3.2	3.2	3.3	3.4	3.4	3.5
CUMBERLAND DS	6.8	6.1	6.2	6.2	6.2	6.3	6.3	6.4	6.5	6.5	6.7	6.7	6.9	7.0	7.1	7.2	7.3	7.5	7.6	7.7	7.8
CYRVILLE MTS	47.5	32.4	35.3	35.4	57.6	49.5	49.0	49.1	48.9	49.3	49.1	49.6	50.0	50.4	50.8	50.5	50.5	51.0	51.4	51.6	52.1
ELLWOOD MTS	47.0	41.9	46.8	48.5	48.9	50.0	49.4	49.2	49.1	49.3	49.1	49.4	49.7	50.0	50.3	50.5	50.9	51.3	51.6	51.9	52.4
FALLOWFIELD MTS	27.2	24.3	29.1	32.2	34.6	33.4	33.3	33.4	33.4	33.2	33.2	33.3	33.5	33.8	33.8	33.8	34.1	34.3	34.7	34.8	35.1
GREELY DS	20.7	22.4	22.6	22.9	23.2	23.4	23.9	24.2	24.5	24.9	25.2	25.9	26.6	27.6	28.4	29.3	30.1	30.6	30.9	30.9	30.9
HAWKESBURY MTS #1	18.0	12.2	12.4	12.5	12.7	12.8	12.9	13.0	13.2	13.3	13.5	13.7	14.0	14.3	14.6	14.8	15.1	15.4	15.7	16.0	16.4
HAWTHORNE TS	144.8	136.6	137.3	137.3	138.2	138.4	139.2	139.7	140.3	141.2	142.0	143.4	143.8	144.7	145.7	146.4	147.4	148.1	148.8	148.6	148.8
HINCHEY TS	85.6	21.9	22.5	32.8	41.4	43.4	47.0	49.2	50.6	51.5	52.2	52.6	52.2	52.3	52.3	52.1	52.2	52.9	53.4	81.7	71.1
HYDRO RD MTS	114.0	-	-	14.2	19.0	24.4	29.8	33.2	36.8	40.4	43.9	47.5	47.9	48.4	48.9	49.3	49.8	49.9	50.1	50.3	50.3
CTS-1	100.0	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
KANATA MTS	51.5	54.1	54.1	53.7	53.8	53.5	53.5	53.5	53.3	53.4	53.5	53.6	54.0	54.5	54.9	55.2	55.4	55.9	56.3	56.6	57.0
KING EDWARD TS	86.9	79.0	80.8	82.4	84.0	85.5	87.1	90.8	93.4	96.0	98.6	101.0	103.6	106.2	109.0	111.7	114.5	117.7	120.9	124.1	124.1
LIMEBANK MTS	75.0	51.7	60.8	66.3	71.7	72.9	74.8	76.9	78.8	80.4	81.3	82.7	84.5	86.0	87.8	89.3	90.9	91.2	91.7	92.1	92.9
LINCOLN HEIGHTS TS	99.4	46.4	46.8	47.6	48.5	49.2	50.1	51.3	52.6	53.9	55.2	56.4	57.6	58.8	60.0	61.3	62.6	63.9	65.3	66.7	66.7
LISGARTS	83.4	78.5	80.7	82.7	98.3	100.0	101.9	112.7	112.7	112.7	112.7	113.5	113.5	113.5	113.7	113.9	114.1	115.5	116.9	118.3	118.3
LONGUEUIL TS	123.5	46.3	49.4	51.6	52.5	52.3	52.8	53.3	53.7	65.8	66.2	65.5	70.5	70.2	71.4	72.4	73.5	74.4	75.4	76.3	77.3
MANORDALE MTS	9.6	10.3	10.5	10.6	10.7	10.9	11.0	11.4	11.8	12.2	12.6	13.0	13.3	13.7	14.1	14.6	15.0	15.3	15.7	16.1	16.1
MANOTICK DS	7.7	10.6	10.8	10.9	11.1	11.2	11.4	11.5	11.7	11.9	12.1	12.4	12.6	12.9	13.2	13.5	13.8	14.1	14.4	14.7	15.0
MARCHWOOD MTS	32.3	51.6	52.6	53.2	54.8	56.1	57.4	58.6	59.9	61.4	61.9	61.5	62.0	62.4	62.7	63.0	63.3	63.8	64.2	64.6	65.0

MARIONVILLE DS	13.5	15.5	15.6	15.7	15.9	16.0	16.3	16.4	16.6	16.8	17.0	17.3	17.8	18.2	18.7	19.2	19.7	20.0	20.2	20.1	20.1
Mer Bleue MTS	114.0	0.0	0.0	0.0	67.5	68.7	70.1	72.2	74.5	76.8	79.1	81.4	83.3	85.1	87.1	89.0	90.9	92.6	94.4	96.1	96.1
MERIVALE MTS	32.9	18.5	18.3	18.1	17.9	17.9	18.1	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.9	19.0	19.2	19.5	19.7	20.0	20.0
MOULTON MTS	32.0	24.4	23.9	23.5	36.8	36.8	36.7	37.0	37.3	37.7	38.0	38.3	38.6	38.9	39.2	39.5	39.9	40.2	40.6	40.9	40.9
CTS-2	14.0	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
NRC TS	77.4	5.1	5.1	5.0	17.1	16.8	16.5	16.4	16.4	16.3	16.2	16.0	15.8	15.8	15.8	15.8	15.7	15.7	15.7	15.7	15.7
NAVAN DS	13.5	5.1	5.1	5.1	5.1	5.1	5.1	5.2	5.2	5.4	5.4	5.4	5.5	5.7	5.7	5.8	5.9	6.0	6.0	6.1	6.2
NEPEAN EPWORTH MTS	12.9	12.6	12.7	12.8	12.9	13.0	13.1	13.3	13.5	13.7	14.0	14.2	14.4	14.6	14.9	15.1	15.4	15.6	15.9	16.1	16.1
NEPEAN TS	144.1	126.1	127.0	127.0	127.5	127.7	128.1	128.0	127.7	128.1	128.2	128.7	129.8	130.7	131.6	132.3	133.2	134.1	135.0	135.8	136.8
ORLEANS TS	118.2	119.6	125.4	119.9	125.6	128.1	153.8	148.5	151.2	152.6	154.4	156.7	159.7	161.1	163.0	164.8	166.7	168.7	170.4	172.2	174.2
OVERBROOK TS	116.8	89.4	91.9	94.1	96.3	98.4	100.6	103.1	105.7	108.3	110.9	113.6	115.9	118.4	120.9	123.5	126.0	128.8	131.6	134.4	134.4
PIPERVILLE MTS	108.0	0.0	2.4	4.8	7.2	9.5	11.8	12.1	12.5	12.9	13.3	13.7	14.2	14.7	15.2	15.7	16.2	16.6	16.9	17.3	17.3
RICHMOND SOUTH MTS	49.0	21.4	26.3	28.6	31.2	33.3	35.4	40.5	44.2	47.6	51.0	54.0	57.3	56.6	57.5	58.2	58.8	59.1	59.5	59.8	60.2
RIVERDALE TS	110.8	98.6	102.4	105.9	109.4	112.6	116.0	117.8	119.7	121.6	123.5	125.3	127.2	129.3	131.5	133.7	135.9	138.7	141.4	144.2	144.2
ROCKLAND DS	7.8	8.4	8.7	8.9	9.1	11.1	12.1	13.2	14.3	15.4	18.9	19.6	21.2	22.7	24.3	25.8	27.3	28.9	30.4	31.9	33.5
ROCKLAND EAST DS	15.5	15.5	16.2	16.6	17.2	17.7	18.3	18.8	19.3	19.8	20.4	20.9	21.6	22.3	23.0	23.6	24.3	25.0	25.2	25.6	26.0
RUSSELL DS	6.8	4.5	4.5	4.5	4.6	4.6	4.7	4.8	4.8	4.9	4.9	5.1	5.2	5.3	5.5	5.6	5.8	5.9	5.9	5.9	5.9
RUSSELL TS	72.7	74.2	78.9	79.0	79.8	80.4	81.2	81.6	82.2	82.8	83.6	84.2	84.7	85.1	85.6	86.1	96.7	97.5	98.4	99.3	99.3
SLATER TS	158.7	96.6	97.3	98.8	104.4	109.4	114.4	118.0	118.7	119.8	119.4	119.6	120.5	121.1	121.8	122.5	123.0	124.1	124.8	125.6	126.5
SOUTH GLOUCESTER DS	6.8	5.0	5.0	5.1	5.1	5.2	5.3	5.3	5.4	5.4	5.5	5.6	5.8	6.0	6.2	6.3	6.5	6.6	6.7	6.7	6.7
SOUTH MARCH TS	99.2	98.5	104.1	111.0	112.3	111.6	113.8	123.4	121.0	121.6	126.9	126.7	127.9	128.9	130.0	131.0	132.0	133.3	134.3	135.4	136.6
ST. ISIDORE TS	117.8	45.6	48.7	49.2	50.6	51.8	53.1	58.5	62.8	62.2	64.8	64.7	65.5	66.5	67.3	68.0	69.0	69.8	70.7	71.6	72.5
STEWARTVILLE TS	49.5	28.6	29.0	29.1	29.5	29.7	30.0	30.2	30.5	31.0	31.4	31.8	36.4	36.0	36.4	36.9	37.4	37.9	38.4	38.9	39.5
TERRY FOX MTS	91.7	63.6	64.7	65.2	66.1	66.7	67.6	66.9	66.9	66.9	66.9	67.0	66.6	66.4	66.2	65.9	65.9	66.5	67.1	67.5	68.0
UPLANDS MTS	57.6	29.8	35.6	45.2	44.5	45.7	46.0	46.7	47.3	48.0	48.7	49.7	50.7	51.2	52.1	52.8	53.5	53.6	54.0	54.3	54.7
WENDOVER DS	30.4	16.0	16.2	16.4	16.6	16.8	17.0	17.3	17.5	18.1	18.3	18.6	19.0	19.4	20.0	20.3	25.7	24.3	24.7	25.1	25.6
WILHAVEN DS	34.2	7.9	7.9	7.9	8.0	8.0	8.1	8.1	8.2	8.3	8.4	8.4	8.9	9.2	9.3	9.4	9.5	9.6	9.7	9.9	10.0
WOODROFFE TS	97.4	50.2	51.5	52.6	53.7	54.8	55.9	57.1	58.5	59.8	61.2	62.5	63.8	65.2	66.6	68.1	69.6	70.9	72.3	73.7	73.7

Table A.4: Greater Ottawa region – Winter - High Load Forecast

Name of Station	LTR (MW)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
ALBION TS	101.7	71.2	78.6	85.7	92.9	99.8	106.8	111.3	115.8	120.5	125.1	129.7	135.1	140.6	145.8	151.0	156.3	161.2	166.0	170.9	170.9
ALMONTE TS	0.0	52.7	53.6	54.4	55.4	56.0	62.6	62.4	63.2	64.2	65.0	66.4	67.7	69.1	70.6	72.0	73.5	75.0	76.5	78.1	79.6
ARNPRIOR TS	59.4	39.6	40.0	40.4	41.6	42.3	42.4	43.0	44.8	44.8	45.3	45.9	46.6	47.3	48.0	48.7	49.4	50.1	50.8	51.6	52.2
BILBERRY CREEK TS	95.5	62.2	67.2	72.1	14.3	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BRIDLEWOOD MTS	23.5	20.5	22.6	24.6	26.7	28.6	30.6	32.0	33.4	34.8	36.3	37.7	39.3	40.9	42.5	44.0	45.6	47.1	48.6	50.1	50.1
CAMBRIAN MTS	123.5	56.0	62.5	68.9	85.2	91.2	97.2	101.3	121.8	126.0	130.3	134.6	138.3	142.0	145.6	149.3	153.0	157.7	162.5	167.3	167.3
CARLING TS	124.3	101.9	112.7	123.1	146.7	156.8	186.1	192.2	211.4	218.2	224.9	232.3	239.9	247.8	255.1	262.1	269.8	276.8	283.8	290.8	290.8
CENTREPOINT MTS	13.3	15.0	16.6	18.2	19.8	21.3	22.8	24.1	25.4	26.7	28.0	29.3	30.7	32.0	33.3	34.6	36.0	37.2	38.5	39.7	39.7
CLARENCE DS	10.5	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	3.0	3.0	3.1	3.1
CUMBERLAND DS	8.6	5.3	5.3	5.4	5.5	5.5	5.6	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.8	6.9	7.0
CYRVILLE MTS	47.5	38.1	42.5	46.9	51.3	55.5	59.8	62.4	65.1	67.9	70.7	73.4	76.4	79.4	82.3	85.2	88.2	90.8	93.5	96.1	96.1
ELLWOOD MTS	47.0	48.3	53.3	58.3	63.2	68.0	72.8	76.7	80.7	84.7	88.6	92.5	96.5	100.4	104.2	107.9	111.8	115.4	119.1	122.7	122.7
FALLOWFIELD MTS	27.2	19.0	22.4	25.7	31.0	34.2	37.4	40.3	43.3	46.2	49.2	52.1	55.9	59.6	63.4	67.0	70.7	73.3	75.8	78.4	78.4
GREELY DS	25.2	27.4	27.6	27.9	28.4	28.6	29.3	29.5	29.9	30.3	30.8	31.7	32.7	33.7	34.7	35.6	36.6	37.0	37.3	37.1	37.1
HAWKESBURY MTS #1	18.0	13.2	13.7	14.2	14.7	15.1	15.5	15.9	16.4	16.9	17.4	17.7	18.1	18.6	19.1	19.5	20.0	20.5	21.0	21.5	22.1
HAWTHORNE TS	171.6	150.0	158.2	166.2	174.2	182.0	190.0	197.2	204.5	211.9	219.3	226.8	234.9	243.1	250.9	258.3	266.4	272.6	278.5	285.9	285.9
HINCHEY TS	95.0	67.8	76.7	85.3	93.9	102.3	110.7	116.2	121.9	127.6	133.3	138.9	145.0	151.1	157.0	162.7	168.7	174.0	179.2	184.5	184.5
HYDRO RD MTS	123.5	-	-	10.0	14.3	18.5	22.8	25.7	28.6	31.4	34.3	37.2	38.0	38.9	39.8	40.7	41.6	41.6	41.6	41.6	41.6
CTS-1	100.0	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
KANATA MTS	51.5	60.3	63.1	71.2	73.9	76.5	79.1	81.1	83.1	85.2	87.2	89.2	92.0	94.9	97.6	100.2	103.0	105.4	107.9	110.3	110.3
KING EDWARD TS	90.3	108.4	119.5	130.2	141.0	151.4	162.0	172.2	181.3	190.4	199.4	208.3	218.6	228.9	238.8	248.4	258.6	267.8	277.0	286.2	286.2
LIMEBANK MTS	75.0	71.7	79.3	86.7	94.2	101.3	108.4	112.5	116.7	121.0	125.3	129.6	134.1	138.6	142.9	147.2	151.7	156.0	160.3	164.6	164.6
LINCOLN HEIGHTS TS	113.1	64.5	70.9	77.3	83.6	89.7	95.8	99.9	104.0	108.2	112.4	116.5	121.7	127.0	132.1	137.1	142.3	146.6	150.9	155.2	155.2
LISGART TS	105.1	90.7	98.9	106.8	128.4	136.0	143.8	160.2	165.8	171.4	177.0	183.5	189.8	196.3	202.4	208.2	214.5	219.8	225.1	230.4	230.4
LONGUEUIL TS	133.0	51.2	54.8	57.4	58.6	58.5	59.2	59.9	60.6	61.3	62.2	63.2	64.2	65.4	66.5	67.7	68.9	70.1	71.2	72.5	73.7
MANORDALE MTS	9.6	11.6	12.8	13.9	15.1	16.2	17.3	18.3	19.2	20.1	21.1	22.0	23.0	24.1	25.1	26.0	27.0	28.0	29.0	29.9	29.9
MANOTICK DS	10.4	12.0	12.3	12.5	12.8	13.0	13.4	13.7	14.1	14.5	14.9	15.7	16.5	17.4	18.4	19.4	20.5	21.2	21.7	21.6	21.6
MARCHWOOD MTS	32.3	37.5	41.0	44.5	47.9	51.2	54.6	56.9	59.2	61.6	64.0	66.3	68.8	71.3	73.8	76.1	78.6	80.8	83.1	85.3	85.3

<b>MARIONVILLE DS</b>	13.5	18.4	18.6	18.9	19.2	19.7	19.9	20.5	20.8	21.2	21.7	22.2	23.2	24.4	25.7	27.0	28.4	30.1	30.9	31.4	31.4
<b>Mer Bleue MTS</b>	123.5	0.0	0.0	0.0	92.5	100.1	107.7	112.6	117.5	122.6	127.7	132.7	138.2	143.8	149.3	154.8	160.3	165.5	170.7	175.9	175.9
<b>MERIVALE MTS</b>	37.3	19.5	21.6	23.7	25.8	27.8	29.9	31.3	32.7	34.1	35.5	36.9	38.5	40.2	41.8	43.3	44.9	46.3	47.7	49.2	49.2
<b>MOULTON MTS</b>	32.0	22.0	24.1	26.2	42.0	43.9	45.9	47.3	48.7	50.2	51.7	53.1	54.7	56.2	57.7	59.2	60.8	62.1	63.4	64.8	64.8
<b>CTS-2</b>	14.0	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6
<b>NRC TS</b>	87.7	6.1	6.0	5.9	20.3	20.0	19.7	19.6	19.6	19.5	19.4	19.2	19.0	18.9	18.9	18.9	18.9	18.8	18.8	18.8	18.8
<b>NAVAN DS</b>	13.5	4.3	4.4	4.4	4.4	4.5	4.5	4.5	4.6	4.6	4.6	4.7	4.8	4.8	4.9	5.0	5.1	5.1	5.2	5.3	5.3
<b>NEPEAN EPWORTH MTS</b>	12.9	12.3	13.5	14.6	15.8	16.9	18.0	18.9	19.8	20.8	21.7	22.6	23.6	24.5	25.5	26.4	27.3	28.2	29.1	29.9	29.9
<b>NEPEAN TS</b>	160.7	138.9	152.2	165.2	178.1	190.8	203.6	212.1	220.6	229.3	237.8	246.1	255.9	265.8	275.1	284.0	293.7	303.5	313.4	323.2	323.2
<b>ORLEANS TS</b>	134.5	82.9	90.3	96.7	72.2	74.7	101.0	94.7	97.6	98.6	100.4	102.5	104.6	105.4	106.6	107.7	109.0	110.2	111.3	112.6	113.6
<b>OVERBROOK TS</b>	135.6	105.5	116.3	126.8	137.3	147.6	157.9	166.2	174.6	183.0	191.4	199.6	208.4	217.4	225.9	234.1	242.9	250.7	258.6	266.4	266.4
<b>PIPERVILLE MTS</b>	117.0	0.0	3.7	7.3	10.9	14.4	17.9	19.0	20.1	21.2	22.3	23.5	25.1	26.6	28.2	29.8	31.4	32.5	33.7	34.8	34.8
<b>RICHMOND South MTS</b>	49.0	21.6	23.7	47.0	55.3	57.0	58.9	60.4	61.9	63.4	72.2	73.8	75.4	77.1	78.7	80.3	81.9	83.5	85.1	86.7	86.7
<b>RIVERDALE TS</b>	117.0	112.3	123.7	134.9	146.0	156.8	167.7	175.5	183.4	191.4	199.2	207.0	215.3	223.8	231.9	239.7	248.0	255.7	263.2	270.8	270.8
<b>ROCKLAND DS</b>	10.5	7.0	7.3	7.5	7.8	9.8	10.8	12.0	13.1	14.2	17.8	18.6	20.1	21.7	23.3	24.8	26.4	28.0	29.5	31.1	32.6
<b>ROCKLAND EAST DS</b>	20.9	12.6	13.3	13.9	14.5	15.0	15.6	16.1	16.6	17.1	17.7	18.3	18.9	19.6	20.2	20.9	21.5	22.2	22.3	22.7	23.0
<b>RUSSELL DS</b>	8.6	5.3	5.4	5.5	5.6	5.7	5.8	6.0	6.1	6.2	6.4	6.5	6.8	7.2	7.6	8.1	8.5	9.0	9.2	9.4	9.4
<b>RUSSELL TS</b>	79.9	79.2	90.5	99.5	106.3	112.9	119.6	124.2	128.8	133.5	138.1	142.6	147.7	152.9	157.8	162.4	166.9	171.4	175.8	180.3	180.3
<b>SLATER TS</b>	163.0	100.4	105.7	110.9	116.0	121.0	126.0	130.5	134.9	139.5	143.9	148.3	153.8	159.4	164.6	169.6	175.1	179.4	183.7	187.9	187.9
<b>SOUTH GLOUCESTER DS</b>	8.6	5.9	6.0	6.1	6.2	6.4	6.5	6.7	6.8	6.9	7.1	7.3	7.6	8.1	8.6	9.1	9.6	10.1	10.4	10.6	12.5
<b>SOUTH MARCH TS</b>		100.1	110.2	114.8	123.5	125.9	136.5	148.7	149.3	152.6	162.2	164.4	170.9	175.5	181.8	186.4	192.7	196.1	201.2	205.6	210.6
<b>ST. ISIDORE TS</b>	124.5	48.2	51.7	52.7	54.3	55.6	57.1	58.5	60.2	61.0	63.7	63.8	64.7	65.7	66.7	67.6	68.8	69.8	70.7	68.6	70.6
<b>STEWARTVILLE TS</b>	56.7	28.0	28.4	28.7	29.2	29.4	29.7	30.1	30.4	30.8	31.2	31.7	36.1	35.3	35.8	36.4	36.9	37.5	38.0	38.5	39.0
<b>TERRY FOX MTS</b>	105.8	62.5	69.4	76.0	82.7	89.1	95.5	100.8	106.2	111.7	117.1	122.6	127.7	132.9	137.9	142.9	148.0	152.8	157.6	162.4	162.4
<b>UPLANDS MTS</b>	65.8	31.7	35.0	38.3	41.5	44.7	47.8	50.1	52.5	54.8	57.2	59.5	62.0	64.6	67.1	69.5	72.0	74.3	76.6	78.9	78.9
<b>WENDOVER DS</b>	35.1	16.4	16.7	17.0	17.3	17.5	17.8	18.1	18.4	19.0	19.2	19.6	20.0	20.5	20.9	21.3	21.8	22.3	22.7	23.0	23.5
<b>WILHAVEN DS</b>	41.4	7.4	7.5	7.6	7.6	7.7	7.7	7.8	7.9	7.9	8.0	8.1	8.2	8.4	8.5	8.6	8.7	8.9	9.0	9.1	9.2
<b>WOODROFFE TS</b>	102.4	57.9	64.1	70.2	76.2	82.0	87.9	92.2	96.5	100.9	105.3	109.6	113.7	117.8	121.7	125.5	129.6	133.8	138.1	142.3	142.3

## Appendix B: Lists of Step-Down Transformer Stations

Sr. No.	Transformer Station	Voltage (kV)	Supply Circuits
1	Albion TS	230	M30A, M31A
2	Almonte TS	230	E34M, T33E
3	Arnprior TS	115	W6CS, C7BM
4	Bilberry Creek TS**	115	A2, H9A
5	Bridlewood MTS	115	S7M
6	Cambrian MTS	230/115	S7M, E34M
7	Carling TS	115	M4G, M5G
8	Centrepoint MTS	115	C7BM
9	Clarence DS	115	79M1
10	CTS -1	230	B5D, D5A
11	CTS-2	115	A8M
12	Cumberland DS	115	H9A
13	Cyrville MTS	115	A2, A4K
14	Ellwood MTS	230	M30A, M31A
15	Fallowfield MTS	115	S7M
16	Greely DS	115	M1R
17	Hawkesbury MTS #1	115	79M1
18	Hawthorne TS*	230/115	A6R M30A A8M H9A D5A A42T M31A A3RM A4K A2 A41T A5RK L24A
19	Hinchey TS	115	F10MV, V12M
20	Kanata MTS	230	C3S, M32S
21	King Edward TS	115	A4K, A5RK
22	Limebank MTS	115	S7M
23	Lincoln Heights TS	115	C7BM, F10MV
24	Lisgar TS	115	M4G, M5G
25	Longueuil TS	230	B5D, D5A
26	Manotick DS	115	S7M
27	Marchwood MTS	115	S7M, W6CS
28	Marionville DS	115	L2M

29	Merivale MTS	115	-
30	Merivale TS*	230	M30A S7M E34M A8M M5G M32S M1R M31A F10MV C7BM A3RM M4G V12M L2M
31	Moulton MTS	115	A4K
32	National Research Council TS	115	A2
33	Navan DS	115	H9A
34	Nepean Epworth MTS	115	M5G M4G
35	Nepean TS	230	M32S
36	Orleans TS	230/115	D5A, H9A
37	Overbrook TS	115	A5RK, A6R
38	Richmond South MTS	115	S7M
39	Riverdale TS	115	A3RM, A5RK, A6R
40	Rockland DS	115	79M1
41	Rockland East DS	115	79M1
42	Russell DS	115	L2M, M1R
43	Russell TS	115	A5RK, A6R
44	Slater TS	115	A3RM, A5RK, M4G
45	South Gloucester DS	115	M1R
46	South March TS	230	C3S, M32S
47	St. Isidore TS	230	B5D, D5A
48	Stewartville TS	115	W3B, W6CS
49	Terry Fox MTS	230	E34M
50	Uplands MTS	115	A8M
51	Wendover DS	115	79M1
52	Wilhaven DS	115	H9A
53	Woodroffe TS	115	C7BM, F10MV

## Appendix C: Lists of Transmission Circuits

Sr. No.	Connecting Stations	Circuit ID	Voltage (kV)
1	Hawthorne TS – Merivale TS	M30A, M31A	230
2	Hawthorne TS – St Isidore TS	D5A	230
3	Merivale TS – Almonte TS	E34M	230
4	Merivale TS – South March TS	M32S	230
5	South March SS – Chats Falls SS	C3S	230
6	Hawthorne TS – Bilberry Creek TS	A2	115
7	Hawthorne TS - Merivale TS	A3RM, A8M	115
8	Hawthorne TS – Overbrook TS	A4K, A5RK	115
9	Hawthorne TS – Riverdale TS	A6R	115
10	Hawthorne TS – Hawkesbury MTS	H9A/79M1	115
11	Merivale TS – Chats Falls TS	C7BM	115
12	Merivale TS – Hinchey TS	F10MV, V12M	115
13	Merivale TS – Lisgar TS	M4G, M5G	115
14	Merivale TS – South March SS	S7M	115
15	Stewartville TS – South March SS	W6CS	115
16	Stewartville TS – Barrett Chute TS	W3B	115
17	Hawthorne TS – Merivale TS	M30A, M31A	230
18	Hawthorne TS – St Isidore TS	D5A	230
19	Merivale TS – Almonte TS	E34M	230
20	Merivale TS – South March TS	M32S	230
21	South March SS – Chats Falls SS	C3S	230
22	Hawthorne TS – Bilberry Creek TS	A2	115
23	Hawthorne TS - Merivale TS	A3RM, A8M	115
24	Hawthorne TS – Overbrook TS	A4K, A5RK	115
25	Hawthorne TS – Riverdale TS	A6R	115
26	Hawthorne TS – Hawkesbury MTS	H9A/79M1	115

27	Merivale TS – Chats Falls TS	C7BM	115
28	Merivale TS – Hinchey TS	F10MV, V12M	115
29	Merivale TS – Lisgar TS	M4G, M5G	115
30	Merivale TS – South March SS	S7M	115
31	Stewartville TS – South March SS	W6CS	115
32	Stewartville TS – Barrett Chute TS	W3B	115

## Appendix D: List of LDC's

Sr. no.	Name of LDC
1	Hydro One
2	Hydro Ottawa Ltd.
3	Hydro 2000 Inc.
4	Hydro Hawkesbury
5	Ottawa River Power Corporation
6	Renfrew Hydro Inc.

## Appendix E: List of Municipalities in the region

Sr. no.	Name of Municipality
1	City of Ottawa
2	City of Clarence-Rockland
3	Town of Arnprior
4	Town of Carleton Place
5	Municipality of Mississippi Mills
6	Municipality of The Nation
7	Township of East Hawkesbury
8	Township of Champlain
9	Township of Alfred and Plantagenet
10	Township of Russell
11	Township of Beckwith
12	Township of Drummond/North Elmsley
13	Township of Tay Valley
14	Township of North Frontenac
15	Township of Lanark Highlands
16	Township of McNab/Braeside
17	Township of Greater Madawaska

## Appendix E: Acronyms

Acronym	Description
A	Ampere
BES	Bulk Electric System
BESS	Battery Energy Storage System
BPS	Bulk Power System
CEP	Community Energy Plan
CIA	Customer Impact Assessment
CGS	Customer Generating Station
CSS	Customer Switching Station
CTS	Customer Transformer Station
DESN	Dual Element Spot Network
DG	Distributed Generation
DS	Distribution Station
eDSM	Electricity Demand Side Management
GS	Generating Station
HV	High Voltage
IESO	Independent Electricity System Operator
IRRP	Integrated Regional Resource Plan
kV	KiloVolt
LDC	Local Distribution Company
LP	Local Plan
LTE	Long Term Emergency
LTR	Limited Time Rating
LV	Low Voltage
MEP	Municipal Energy Plan
MTS	Municipal Transformer Station
MW	Megawatt
MVA	Mega Volt-Ampere
MVAR	Mega Volt-Ampere Reactive
NA	Needs Assessment
NERC	North American Electric Reliability Corporation
NGS	Nuclear Generating Station
NPCC	Northeast Power Coordinating Council Inc.

NUG	Non-Utility Generator
OEB	Ontario Energy Board
ORTAC	Ontario Resource and Transmission Assessment Criteria
PF	Power Factor
PPWG	Planning Process Working Group
RIP	Regional Infrastructure Plan
SA	Scoping Assessment
SIA	System Impact Assessment
RAS	Remedial Action Scheme
SS	Switching Station
TS	Transformer Station
TAO	Transmission Asset Owner
TWG	Technical Working Group