

DEC 8, 2020

Northwest Scoping Assessment

Regional Planning Engagement Webinar

Objectives of Today's Engagement Webinar

- To introduce the second cycle of regional electricity planning for the northwest region
- To discuss and seek input on the proposed Scoping Assessment Outcome Report that sets out the planning approach for the needs identified
- To outline next steps

Agenda

This presentation has been designed to prepare interested parties to provide input into the draft Scoping Assessment Outcome Report for the Northwest region. It includes:

- Overview of the regional planning process
- History and context from last cycle of regional planning
- Overview of draft Scoping Assessment
- Engagement and next steps

Questions to Consider

Please provide details about specific projects or future initiatives that your business or community is developing within the northwest region to inform the electricity forecast.

What other factors should be considered when structuring the study? For example: timing, information needed, interested parties, etc.

Please identify any additional issues/opportunities for consideration in this scoping assessment process.

Please submit your written comments to engagement@ieso.ca by December 24 – Feedback Form available

Overview of the Regional Planning Process

Different Levels of Planning in Ontario



Provincial/Bulk
System Planning



Regional
Planning



Distribution
Planning

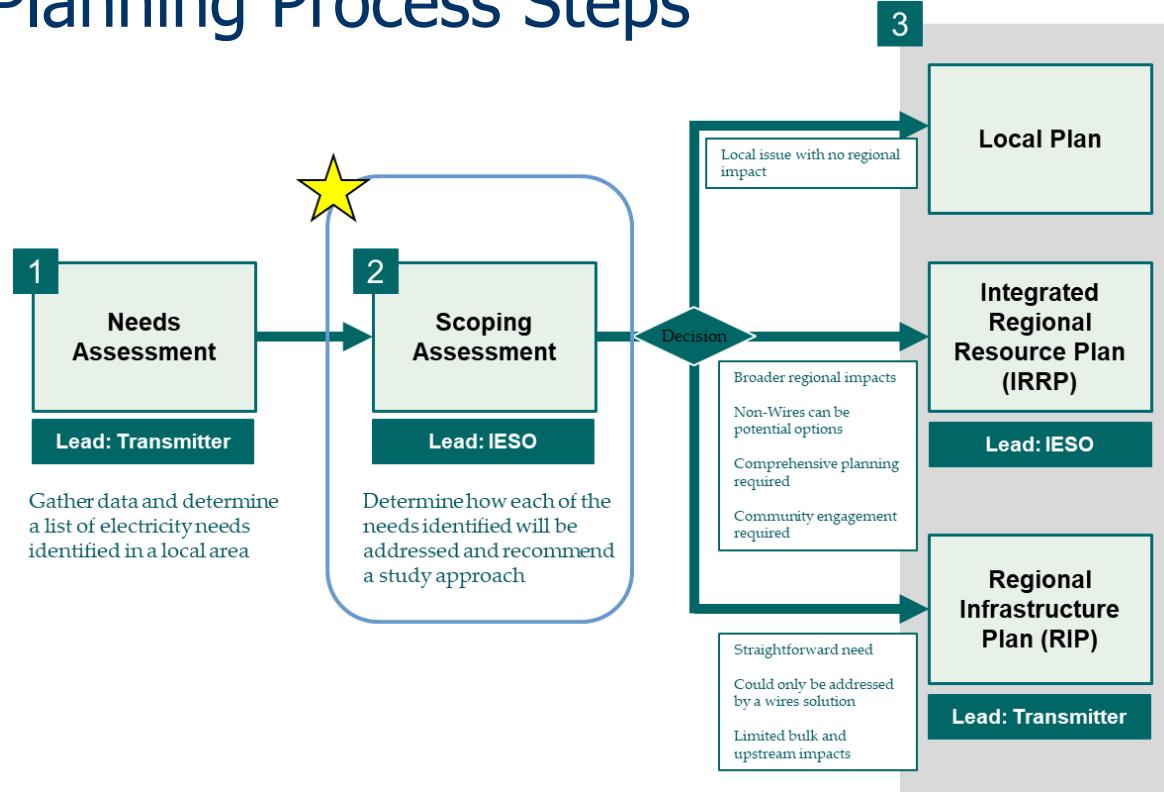


21 Electricity Regional Planning Regions

- Based on electricity infrastructure boundaries
- Planning based on each region's unique needs and characteristics



Regional Planning Process Steps



What is a Scoping Assessment?

- The Scoping Assessment is triggered following the completion of a Needs Assessment
- It is led by the IESO and includes the transmitter and LDCs in the region

Key Elements

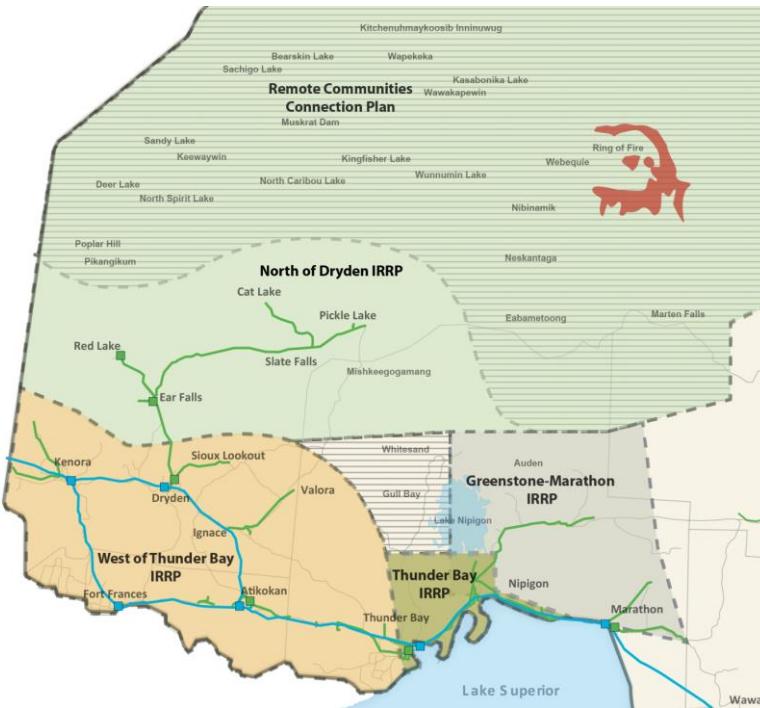
- Review needs that require comprehensive planning
- Determine the geographic grouping (sub-regions) of needs
- Determine the appropriate regional planning approach and scope
- Establish the draft terms of reference for an IRRP (if one is required) and composition of the Technical Working Group

Identifying the Planning Approach

Approach	Typical Considerations	Parties Involved
Integrated Regional Resource Plan (IRRP)	Where a greater range of options, including non-wires, are to be considered, and/or closer coordination with communities and stakeholders is required	IESO (lead) Transmitter LDCs
Regional Infrastructure Plan (RIP)	Considers more straight-forward wires-only options with limited engagement	Transmitter (lead) LDCs IESO
Local Planning	No further regional coordination is needed	Transmitter LDCs

History & Context

2015 Regional Planning Cycle Sub-Regions



Previous Regional Planning Cycle

- Previous Northwest Scoping Assessment was published in Jan 2015 and recommended four sub-regions each with their own IRRP:
 - Greenstone-Marathon (published June 2016)
 - Thunder Bay (published Dec 2016)
 - West of Thunder Bay (published July 2016)
 - North of Dryden (already underway at the time of the Scoping Assessment, published Jan 2015)
- Summary of past IRRPs can be found in the Appendix

Previous Regional Planning Cycle (continued)

- Since these were the first IRRPs conducted for the Northwest, they were scoped to cover the entire region and to consider the uncertainty in the timing, size, and location of the demand forecast which was driven primarily by resource-based industrial developments
- This necessitated development of comprehensive plans across the region for highly divergent growth scenarios which increased the complexity of the technical studies
- In many cases, the high industrial forecast scenarios have not yet come to fruition but will continue to be monitored

Current Regional Planning Cycle

- The Regional Planning process is triggered at least every five years
- The first phase of the current regional planning cycle, the Hydro One-led Needs Assessment, was completed in July 2020
- The Scoping Assessment will evaluate the needs identified and stakeholder feedback including comments received following today's webinar
- The Scoping Assessment Outcome Report will recommend a planning approach and is expected to be published on Jan 13th, 2021

2021 Northwest Scoping Assessment

Scoping Assessment Study Team

Team Lead,
System Operator

Lead Transmitter

Local
Distribution
Companies

- Independent Electricity System Operator

- Hydro One Networks Inc. (Transmission)

- Hydro One Networks Inc. (Distribution)
- Atikokan Hydro Inc.
- Fort Frances Power Corporation
- Sioux Lookout Hydro Inc.
- Synergy North

Your Feedback for the Scoping Assessment

- The northwest is a large region with diverse needs
- This Scoping Assessment seeks to efficiently scope the planning approach for this cycle while remaining flexible to include issues raised by stakeholders
- The following slides show the working group's current thinking for a planning approach and potential work streams

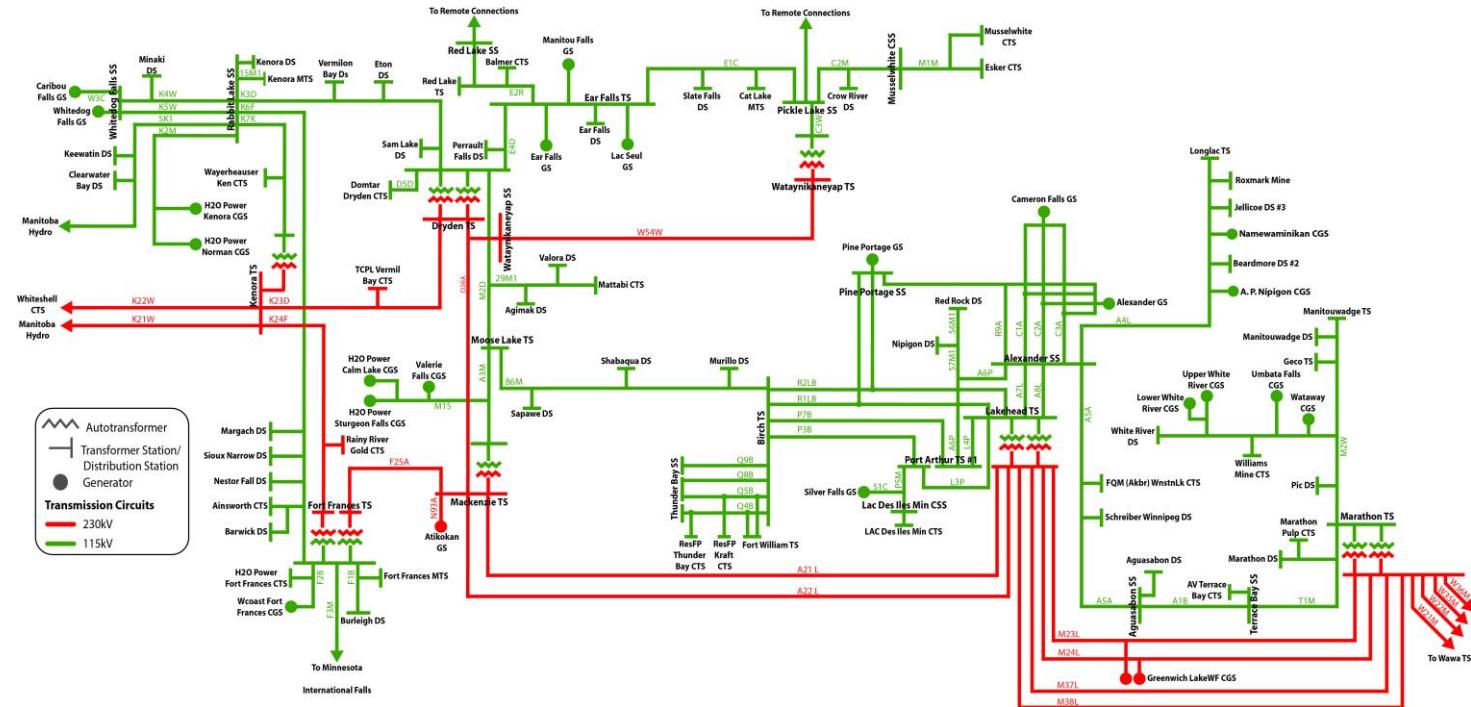
Your input is important:

- Please provide details about specific projects or future initiatives that your business or community is developing within the northwest region to inform the electricity forecast.
- What other factors should be considered when structuring the study? For example: timing, information needed, interested parties, etc.

Recommendation for an IRRP

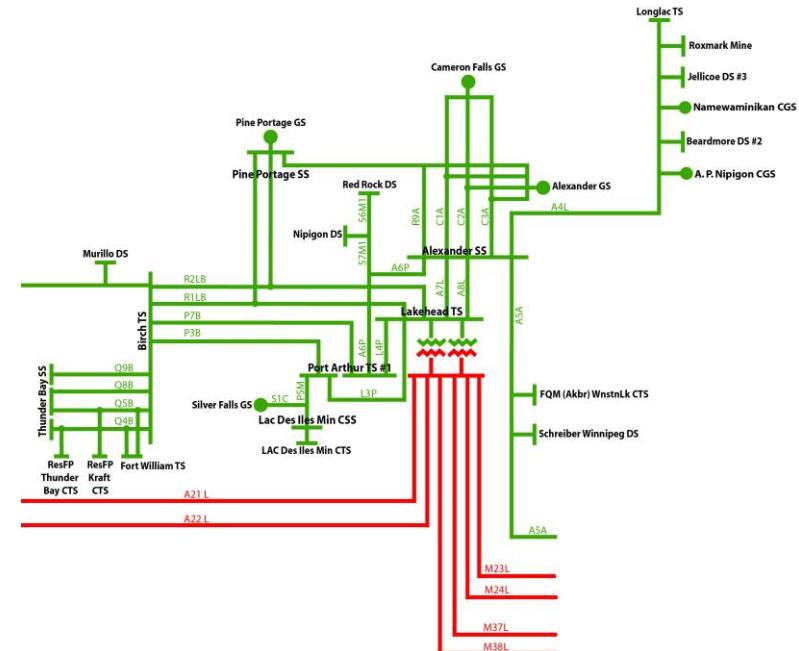
- Given that there are needs requiring further regional coordination and the high degree of stakeholder and community interest, an IRRP will most likely be recommended
- The working group is contemplating a single IRRP that geographically covers the entire Northwest region but focuses on the issues highlighted in the next few slides
- The IRRP would also update industrial forecasts from previous cycles and confirm whether the plans developed are still valid if and when demand materializes

Overview of Northwest Electricity System



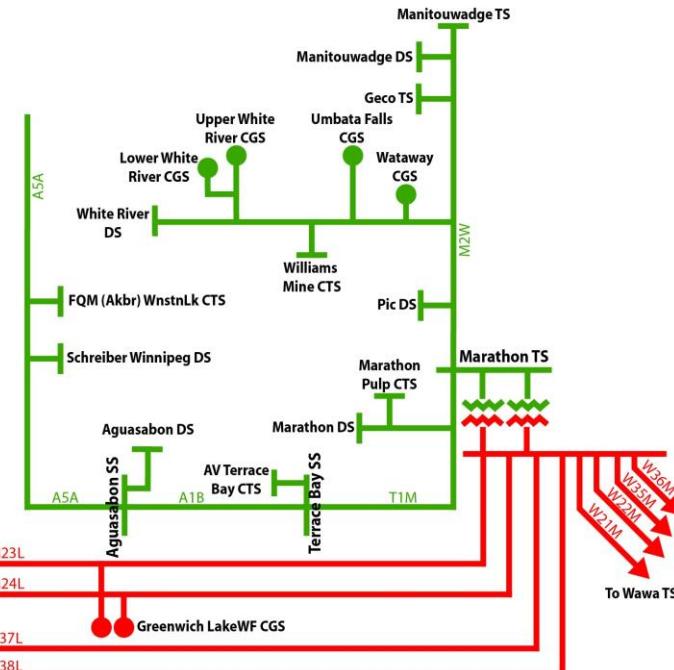
Thunder Bay Area Capacity Need

- Needs Assessment identified a potential capacity need at Lakehead TS and downstream 115kV system
- Lakehead TS is the primary supply point for the City of Thunder Bay and surrounding area
- The IRRP will further study drivers of load growth (such urban development, mining, and forestry), the timing of the need, and potential solutions



Marathon Area Capacity Need

- Need Assessment identified a potential capacity need at Marathon TS and downstream 115kV system
- Marathon TS supplies the Town of Marathon, Manitouwadge in the north, White River in the east, and communities on the north shore of Lake Superior
- The IRRP will further study drivers of load growth (such urban development, mining, and forestry), the timing of the need, and potential solutions



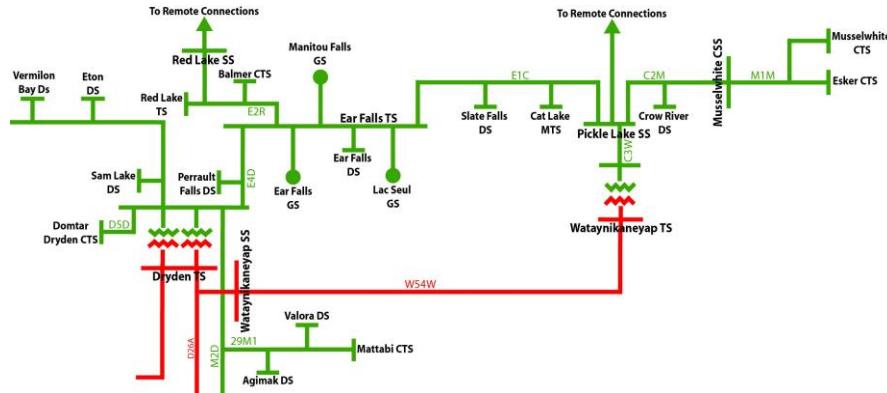
Ring of Fire Connection Scenario

- The Ontario provincial government's agreement to support the Northern Road Link ([news release](#)) puts renewed focus on Ring of Fire developments
- The IRRP will assess the capability of the local electricity system to accommodate new load at the Ring of Fire



Refresh Dryden Area System Capability

- Although no needs were flagged for this area in the Needs Assessment, there has been significant system topology changes (Wataynikaneyap Project) since the last regional planning cycle
- Additionally, this area has a high concentration of mining developments
- The IRRP will refresh previous studies to assess the capability of the existing system and potential options if future needs materialize



Non-Wires Alternatives for Kenora MTS Capacity Need

- Kenora MTS serves the City of Kenora and is expected to reach capacity around 2027
- The IRRP will perform a preliminary assessment to determine if non-wires options are feasible
- If feasible and cost effective, the IRRP will recommend non-wires solutions
- If not, local planning between Synergy North and Hydro One will continue to develop a station expansion/modification solution

Load Restoration

- Northwest region has many radial single circuit supplied load stations
- In most cases, these stations are not in violation of load restoration criteria since the standards allow for leeway given their remote location
- Nevertheless, outages have high socio-economic costs for impacted communities and traditional wires solutions are often cost prohibitive
- Given the high degree of stakeholder interest, the IRRP will investigate opportunities for incremental improvements (including non-wires solutions) where there is the potential for integration with other system needs and where cost effective

Items Out of Scope

- The primary purpose of an IRRP is to study needs that require coordination between transmitters, distribution companies, and the IESO
- The IRRP will not study bulk system needs such as transfer capability on the 230kV system, need/timing of the Waasigan Project, and intertie capability with Manitoba/Minnesota
- The IRRP will not specifically address new customer transmission connection requests unless there is an opportunity to align with broader regional needs
- While the IRRP welcomes information from project proponents to inform load forecasting and to ensure plans for regional infrastructure are adequate, individual customers connection requests may be better suited for a proponent driven Technical Feasibility Study



Questions?



Engagement and Next Steps

Regional Planning Engagement

- **Scoping Assessment:** To seek input from communities and interested parties on key electricity issues facing a region to ensure all considerations have been taken into account when scoping the appropriate planning approach
- **Integrated Regional Resource Plan:** To keep communities and interested parties informed and provide meaningful opportunities for input into the development of a long-term electricity plan



Input to inform Scoping Assessment

Please provide details about specific projects or future initiatives that your business or community is developing within the northwest region to inform the electricity forecast.

What other factors should be considered when structuring the study? For example: timing, information needed, interested parties, etc.

Please identify any additional issues/opportunities for consideration in this scoping assessment process.

Please submit your written comments to engagement@ieso.ca by December 24 – Feedback Form available

Timeline

Timing	Activity
November – December 2020	Targeted outreach with municipalities, Indigenous communities, consumers to further inform engagement. Input shared.
Dec 8, 2020	Public webinar to provide an overview of the draft Scoping Assessment and invite input/feedback for consideration
Dec 24, 2020	Last day to provide feedback on draft Scoping Assessment Outcome Report
Jan 13, 2021	IESO to post a response to the feedback and how it was considered to shape the final Scoping Assessment Scoping Assessment Outcome Report published
Q2 2021	Next steps for engagement on IRRP

How You Can Stay Involved

- Join the Northwest Regional Electricity Network at www.ieso.ca/subscribe
- Visit IESO Connects at www.iesoconnects.ca - Our online community engagement platform to continue dialogue on important and emerging electricity matters for your region.
- Visit www.ieso.ca/subscribe to receive:
 - IESO Weekly Bulletin
 - Updates on Northwest regional planning

How did we do today?

- Tell us about this webinar through the "chat"
- Was the material clear? Did it cover what you expected?
- Was there enough opportunity to ask questions?
- Is there any way to improve these gatherings? i.e. technology, presentations, etc.

Thank You

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Appendix – IRRP Activities, Timelines, and Accountabilities

IRRP Activities, Timelines, & Accountabilities

Activity or Deliverable	Lead Responsibility	IRRP Timeframe
1. Develop long-term planning forecast	IESO/LDCs	Feb 2021 – Apr 2021
2. Provide information on load transfer capabilities under normal and emergency conditions	LDCs	Feb 2020 – Apr 2021
3. Provide and review relevant community plans, if applicable	All	Feb 2020 – Apr 2021
4. Complete system studies to identify needs over a 20-year time horizon	IESO	Q2-Q3 2021
5. Develop options and alternatives to address needs	All	Q3-Q4 2021

IRRP Activities, Timelines, & Accountabilities (cont'd)

Activity or Deliverable	Lead Responsibility	IRRP Timeframe
6. Plan and undertake community & stakeholder engagement	All	Ongoing, as required
7. Develop long-term recommendations and implementation plan based on community and stakeholder input	IESO	Q1-Q2 2022
8. Prepare the IRRP report detailing recommended near-, medium, and long-term plan for approval by all parties	IESO	July 2022

More detailed timelines can be found in the Terms of Reference.



Appendix – Summary of First Cycle of Regional Plans

Greenstone-Marathon IRRP

- The Greenstone-Marathon sub-region is located northeast of Thunder Bay and is electrically supplied from Marathon TS and Alexander SS
- Recommendations were heavily dependent on two industrial customers – Geraldton area mine and the Energy East Pipeline neither of which has materialized
- No system enhancements were identified if neither project materialized but 2020 NA identified higher than previously forecasted LDC load growth

Recommendations

- Plan identified two stages of reinforcement to be triggered if needed:
 - Stage 1: Reactive compensation and gas-fired generation at the Geraldton area mine
 - Stage 2: 230kV single-circuit from EWT to Longlac TS plus 115kV single-circuit from Longlac TS to Manitouwadge TS
- A4L circuit upgrade also considered for mining loads in the mid/long term

Thunder Bay IRRP

- Thunder Bay sub-region consists of the 115kV network supplied from Lakehead TS (except A4L which is included in the Greenstone-Marathon IRRP)
- No enhancement necessary under the low and medium demand forecast scenarios
- Under the high scenario, 115kV reinforcement and additional investment at Port Author TS may be necessary
- 2020 NA identified higher than previously forecast LDC growth

Recommendations

- Monitor demand to determine if and when 115kV system reinforcements are needed
 - Plan identified potential options including new autotransformers at Lakehead TS or Birch TS, local generation
- Monitor demand to determine if and when further investment is needed at Port Author TS

West of Thunder Bay

- Comprised of the diamond-shaped 230kV system from Mackenzie TS to Kenora TS
- Focus of the IRRP was on the surrounding 115kV sub-systems (Kenora 115kV, Dryden 115kV, Moose Lake 115kV, Fort Frances 115kV)
- No enhancements necessary under the low and reference demand forecast scenarios
- Under the high scenario, Dryden 115kV sub-system reinforcements may be necessary

Recommendations

- Monitor demand growth to determine if and when Dryden 115kV sub-system reinforcements are needed
- Plan identified large local generation or additional autotransformers as potential options
- Explore opportunities to improve service reliability
- Coordinate planning activities with community energy activities

North of Dryden IRRP

- Comprised of the 115kV system north of Dryden TS supplied by E4D
- IRRP identified that the sub-region was at capacity and new infrastructure was needed to supply forecast growth and remote connections

Recommendations

- IRRP findings support the 230kV single circuit to Pickle Lake option (previously identified as a priority project in the 2010 and 2013 LTEP)
- Subsequent 2016 letter from the IESO to the OEB outlined the recommended scope of the new line to Pickle Lake and Remote Connections Project