JULY 16, 2025

GTA East Regional Electricity Planning

Engagement Webinar: Electricity Demand Forecast

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GTA East Land Acknowledgement

The IESO acknowledges that the GTA East is the traditional territory of many nations including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat peoples, including those covered by the Williams Treaties.

The IESO would also like to acknowledge all First Nations, Inuit and Métis peoples and their valuable past and present contributions to this land.

Agenda

- GTA East Land Acknowledgement
- Ontario's Electricity Sector and IESO's Role
- Regional Electricity Planning Process
- Draft Electricity Demand Forecast
- Engagement and Next Steps
- Discussion

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Connecting Today.
Powering Tomorrow.

We work with:

Generators >>> **Transmitters** >>> **Local Distribution Companies** >>> **Energy Consumers**

<<< **Communities** >>>

Summary

- Regional electricity planning has advanced in the GTA East electrical area.
- In GTA East, electricity demand could grow by 98% in summer and 126% in winter by 2044.
- Increased demand is primarily being driven by electrification and growth across several sectors including residential, commercial and industrial.
- The electricity demand forecast includes decarbonization plans, municipal growth plans, community energy plans, economic development and accounts for climate action initiatives.
- Meeting the pace of growth in GTA East will require investments in new electricity infrastructure, including large-scale wires and non-wires solutions.
- Understanding feedback and community perspectives is important throughout the process. The regional plan will examine the region's distinct electricity needs and consider a range of options to meet the growing electricity demand.

Seeking Input

Local considerations and feedback are a critical component to the planning process. The IESO wants to hear from you:

- What additional information, if any, should be incorporated in the demand forecast scenarios?
- What concerns or interests about electricity should be considered as part of the regional planning process?
- Are there specific triggers or signals that guide your organization's low and high demand planning?
- What information is important to provide throughout the engagement and draft Engagement Plan?

Please submit your written comments by email to engagement@ieso.ca by August 6, 2025

Regional Electricity Planning Process

Electricity Planning in Ontario

Provincial/Bulk System Planning

Addresses provincial electricity system needs and policy directions.

Underway: Central and South Bulk Study

Regional Planning

Addresses local electricity system needs at the transmission system level.

Underway: GTA East IRRP

Distribution Planning

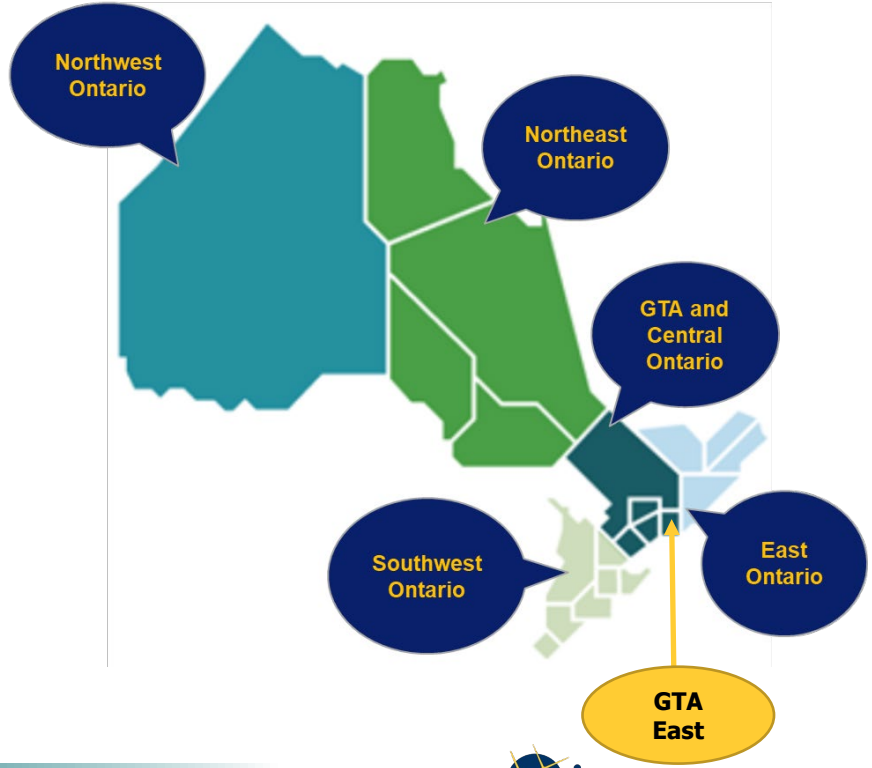
Addresses local electricity system needs and priorities at the distribution system level.

Led by local distribution companies.

Regional Electricity Planning Process

The regional system planning process ensures an affordable and reliable supply of electricity across Ontario. The process looks at the unique needs of each region and considers a range of options and resources to keep the lights on.

As part of the regional planning process, an Integrated Regional Resource Plan (IRRP) is being developed for GTA East by a Technical Working Group.



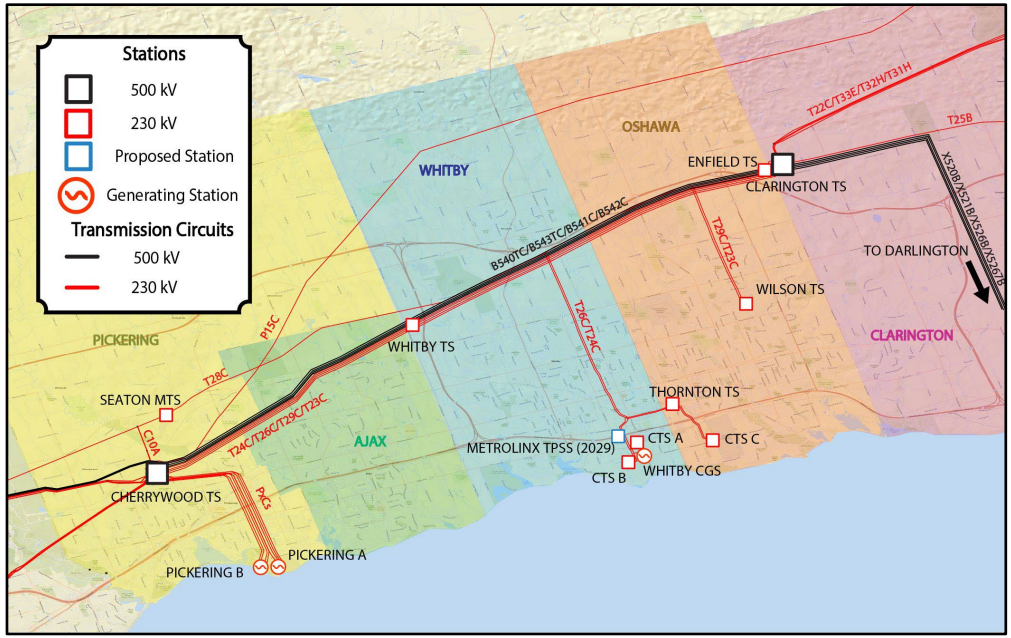
Technical Working Group

The regional planning process is conducted by a Technical Working Group, consisting of:

Team Lead, System Operator	• Independent Electricity System Operator (IESO)
Lead Transmitter	• Hydro One Networks Inc. (HONI)
Local Distribution Companies	• Elexicon Energy Inc. • Hydro One Networks Inc. (HONI) • Oshawa Power Utilities Corp.

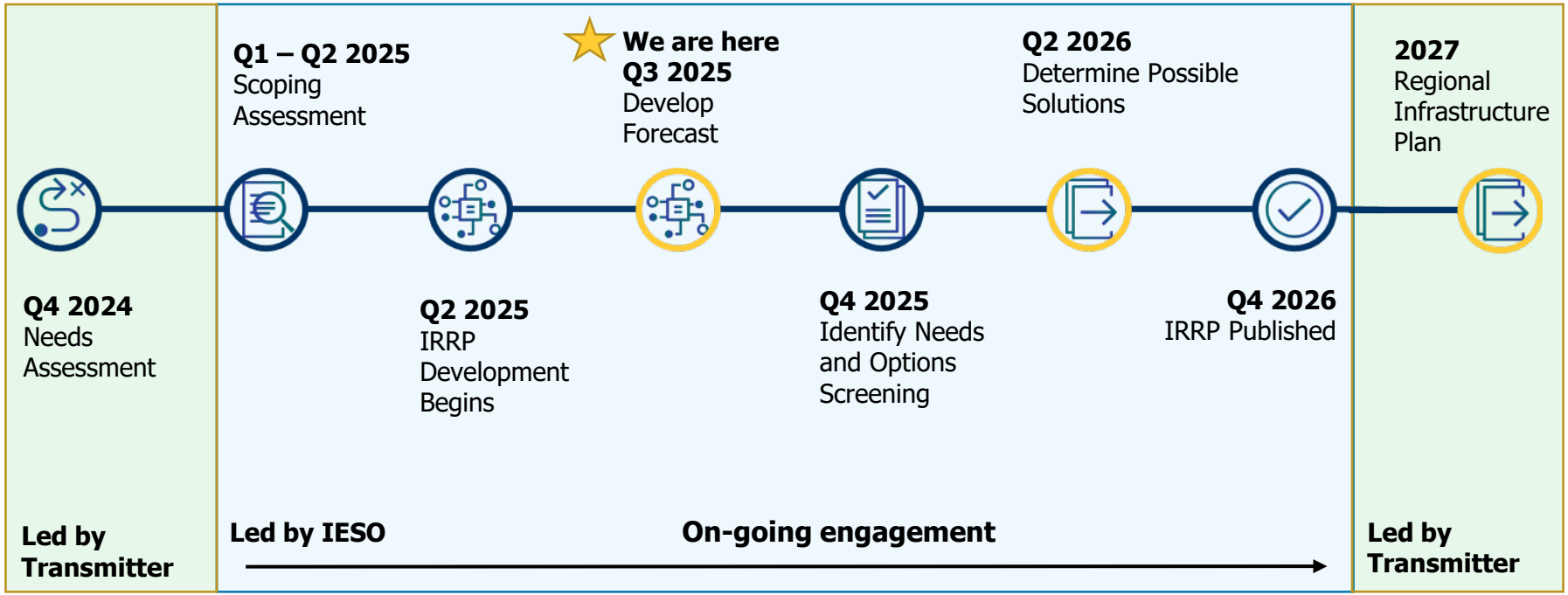
Communities in the GTA East Region

- The GTA East region extends from Lake Ontario northward to the southern parts of Scugog and Uxbridge, and includes the municipalities of Pickering, Ajax, Whitby, Oshawa and parts of Clarington within Durham Region.
- The area is serviced by 500 and 230 kilovolt (kV) lines and transformer stations (TS).
- The 230kV circuits in the region provides bulk electric power to the region and facilitates power flow across the province.
- The region is home to Pickering Nuclear Generating Station and Darlington Nuclear Generating Station, which provide electricity to the region and province.



Note: Regional Planning focuses on the electricity system within a defined electrical boundary, which may not align with municipal boundaries. Therefore, some cities may appear partially within the map's coverage areas.

Regional Planning Timeline



Components of an IRRP

There are four key components within an Integrated Regional Resource Plan (IRRP).

Demand Forecast	Needs	Screening Solutions	Recommendations
How much power is needed over the planning timeframe?	What needs are emerging in the region that need to be addressed?	What kinds of solutions can meet the future needs for the region?	Based on an assessment of potential options, what recommended actions will ensure a reliable and adequate electricity supply for the region over the long-term?

Draft Electricity Demand Forecast Scenarios

Developing the Demand Forecast

Local distribution companies (LDCs) are the main source for the demand forecast, and they:

- Provided summer and winter demand forecasts for each station their areas are supplied from,
- Incorporated municipal and community plans into their forecasts, and
- Established forecasting assumptions based on customer growth plans.

In addition to LDC forecast, the IESO and the Technical Working Group:

- Accounts for impacts of existing demand side management programs, planned distributed generation, and extreme weather conditions in the electricity demand forecasts.
- Works directly with customers and industry stakeholders to create demand forecasts for large electricity consumers that may seek connection on the transmission system.
- Works with the LDC to ensure that additional insights from municipalities, customers, and other interested parties have been incorporated in the demand forecasts for the regional planning process.

Local Planning Drivers

The following drivers have been incorporated into the electricity demand forecast by your local distribution companies:


Municipal/regional growth plans


Climate change action plans


Community energy plans


Business plans of major electricity consumers or large projects


Distributed energy resources/energy projects

Forecast Scenarios

Sensitivity scenarios are also considered in the IRRP to inform the flexibility of the plan and to identify any potential needs under different scenarios that should be monitored after plan completion.

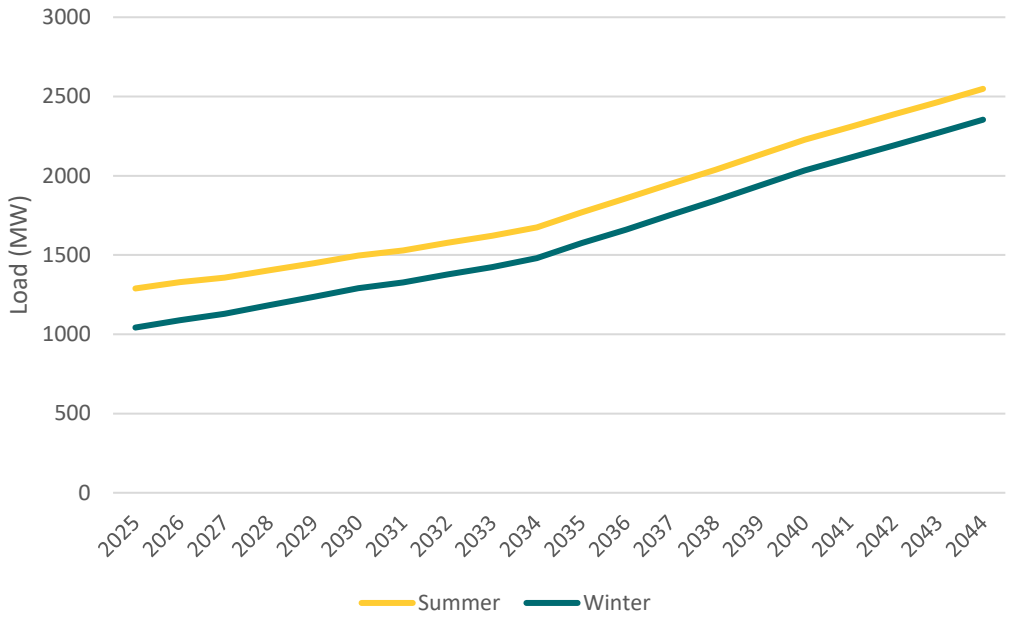
Three scenarios will be developed for GTA East:

- The reference scenario will reflect data and assumptions that reflect today's trends and policies in electrification of transportation, space heating, industry and other areas that impact electricity and natural gas demand; and
- A high and low demand scenario will reflect a reasonable increase and decrease from the reference case. The Technical Working Group will decide on a percent-based factor (+/-10%-20%) to capture the sensitivity scenarios.

While plan recommendations will primarily be driven by the reference demand forecast, the low and high forecast scenario will be considered to test the robustness of the plan, identify signposts to monitor forecast changes, and contemplate additional actions required if lower or higher demand growth materializes.

Draft Reference Demand Forecast

- In GTA East, demand could grow by 98% in summer and 126% in winter by 2044 – for context and scale, Ontario's electricity demand could grow by 75% by 2050.
- The primary drivers of growth are electrification and growth across several sectors including residential, commercial and industrial.
- Local distribution companies (LDCs) have provided additional details on their load forecast methodologies, which has been published on the IESO's engagement webpage.



Engagement and Next Steps

Energy Efficiency Opportunities

- To help meet the province's rapidly growing demand for electricity, the IESO's energy efficiency programs, through Save on Energy, has been expanded from $1 billion over four years, to $10.9 billion over 12 years.
- Key programs of interest to your municipality, residents and small businesses include:
  - Peak Perks – Residential and small business electricity customers with an eligible smart thermostat can be rewarded for reducing their energy use when demand for electricity is high in the summer.
  - Home Renovation Savings – Homeowners can get rebates up to 30% for home energy efficiency renovations and improvements.
  - Retrofit – Facility/building owners and lessees can get up to 50% of eligible project costs covered for targeted energy efficiency retrofits. Learn how Lear Corporation in Ajax used the retrofit program to save on annual costs.
  - Energy Affordability Program – Support for income-eligible electricity customers to better manage monthly electricity costs and increase their home comfort.
- Some programs will expand later in 2025 – to stay informed, sign up for the quarterly newsletter.

Next Steps

The IESO will continue to engage throughout the IRRP's development. Upcoming milestones include:

August 6: Feedback from Public Engagement Webinar due

Q4 2025: Share Needs and Screened-In Options, and seek feedback

Q2 2026: Share Options Analysis and Draft Recommendations, and seek feedback

Q4 2026: IRRP completed and published on engagement webpage

After IRRP: Depending on the recommendations of the IRRP, the following next steps can be expected:

- For wired solutions, the transmitter will lead the development of a Regional Infrastructure Plan, which assesses and develops a detailed plan on how wire options can be implemented.
- For non-wire solutions, implementation mechanisms for new resources and energy efficiency programs will be determined following plan publication.

Ongoing Engagement

Your input plays an important role in developing the electricity plan.

Subscribe to receive updates → select GTA East

Participate in upcoming public engagement webinars

Follow the GTA East regional planning activities online

Seeking Input

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Thank You

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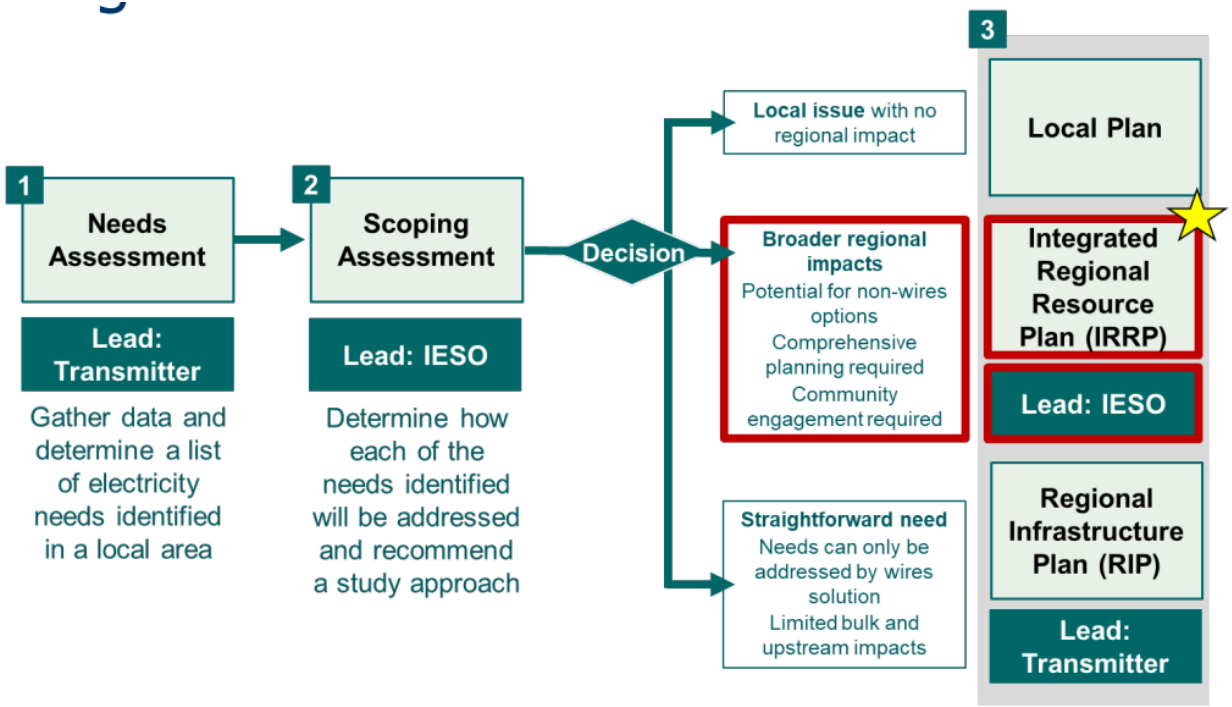
Appendix

Determining the Need for an IRRP



Background: Electricity Needs

Once the demand forecast is finalized, the Technical Working Group will assess if the existing infrastructure can meet the forecasted growth within safe operating standards. If it cannot, the shortfall is categorized into one of five needs:

- **Station capacity:** Ability of a station to deliver power from the grid down to the distribution systems.
- **Supply capacity:** Ability of the system to supply power through the transmission lines to a local area.
- **Asset replacement:** Station or transmission equipment has reached end of life.
- **Load restoration:** Ability of the system to restore power after select contingencies.
- **Load supply security:** Maximum amount of power that can be lost during select contingencies.

Preliminary Electricity Needs Identified (1)

Need Type	#	Impacted Equipment	Timing	Considerations
Station Capacity Ability of a station to deliver power from the grid down to the distribution system.	1	Whitby TS T1/T2	2032	Station overload, but there are plans for a new TS in North Whitby area tapping to P15C and T28C
	2	Wilson TS T3/T4	2024	Station overload, with planned transformer replacement this need timing shifts to 2025
	3	Wilson TS T7/T8	2032	Station overload
	4	Thorton TS T3/T4	2031	Station overload
Supply Capacity Ability of the system to supply power through the transmission lines to a local area.	5	230 kV T23C/T29C/T24C/T26C Circuit	TBD	Multiple proponents requested to connect large-scale loads in Oshawa-Clarington area. Transmission reinforcement is needed to accommodate these loads

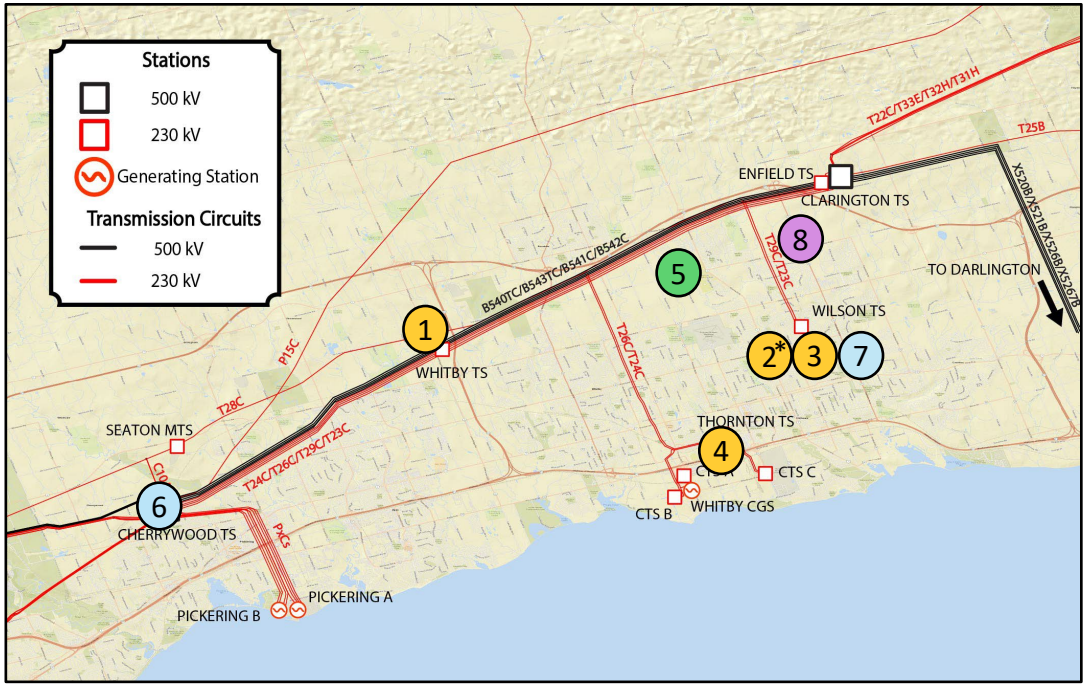
Preliminary Electricity Needs Identified (2)

Need Type	#	Impacted Equipment	Timing	Considerations
Asset Replacement Station or transmission equipment has reached end of life.	6	Cherrywood TS	2033-2037	Breaker replacements, two phases currently underway with planned in-service dates of 2033 and 2037
	7	Wilson TS T3/T4	2031	Replacement of T3/T4 transformers with planned in-service date of 2031
Load Security Maximum amount of power that can be lost during select contingencies.	8	T23C/T29C	2032	Will exceed load security limit of 600 MW in 2032

Location of Identified Needs

Legend

- Station Capacity Needs
- Supply Capacity Needs
- Asset Replacement
- Load Security Needs
- * Pressing Needs



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Background: Determining Options

When the demand forecast and electricity needs are determined, the Technical Working Group will:

Evaluate various wire and non-wire options, to address the region's near, medium and long-term electricity needs including:

Traditional wire options to supply local area

Non-wire alternatives (NWA), such as conservation & demand management, demand response or transmission- and/or distribution-connected generation and/or storage*

Seek community feedback to enhance development and evaluation of options before making a final recommendation.

*More information regarding screening NWAs can be found in the IESO's Guide to Assessing NWAs.