



**Central Toronto Area
Integrated Regional
Resource Plan
Addendum
2017 Update**

February 10, 2017

Central Toronto Area

Integrated Regional Resource Plan Addendum

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1. Introduction

This addendum to the Central Toronto Area Integrated Regional Resource Plan (“IRRP”) was prepared by the IESO on behalf of the Central Toronto Area Regional Planning Working Group, which included the following members:

- Independent Electricity System Operator (“IESO”)
- Toronto Hydro-Electric System Limited (“THESL”)
- Hydro One Networks Inc. (“Hydro One”)

The Central Toronto Area IRRP published in April 2015, assessed the adequacy of electricity supply to customers in the Central Toronto Area over a 25-year planning horizon; developed a flexible, comprehensive, integrated plan that considers opportunities for coordination in anticipation of potential demand growth scenarios and varying supply conditions in the Central Toronto Area, and developed an implementation plan for the recommended near-term options. The plan was developed with a view to maintaining flexibility in order to accommodate changes in key assumptions over time.

This addendum to the IRRP updates its key recommendations as a result of assessing more recently available information on growth and electrical service needs of the area. Since the IRRP was published, new information about the timing and magnitude of transit electrification projects has materially changed the timing around transmission reinforcement needs identified in the plan. These changes are described further in the following section.

2. Changes to the Integrated Regional Resource Plan

2.1 Need for Capacity Relief for Richview - Manby 230 kV Transmission Corridor

The 2015 IRRP concluded that by approximately 2020, there would be a need for additional capacity on the 230 kV transmission lines that supply Manby transformer station (“TS”) from Richview TS, and made two specific recommendations to address the need as follows:

- Implement area-specific conservation options in order to defer 230 kV transmission line capacity needs; and
- Proceed with a detailed investigation of the infrastructure options to provide capacity relief for the Richview – Manby 230 kV corridor.¹

The first recommendation concerning area-specific conservation had the objective of managing the peak loading on the Richview – Manby 230 kV transmission lines, while the second recognized the uncertainty inherent in both the demand forecast and in achieving conservation results within such a short timeframe (near-term 2015-2020), given the fast pace of growth and planned development in the City of Toronto. In essence, conservation and demand management (“CDM”) initiatives would be pursued to defer transmission needs, while engineering and development work on wires options would ensure that lead times were kept as short as possible should reinforcement be deemed necessary within the near-term period.

By way of background, the Richview – Manby transmission corridor is one of two main transmission supply paths for the Central Toronto Area. The four 230 kV circuits from Richview TS to Manby TS (coupled with a single circuit from Richview TS to Cooksville TS in Mississauga) are capable of supplying much of downtown Toronto, southern Etobicoke, Mississauga and the Town of Oakville. These transmission circuits have been operating at near capacity during peak demand periods in recent years. Ongoing CDM initiatives, changes in the economy and transmission reconfiguration work to rebalance the electrical load among the Richview – Manby lines have all helped to economically manage the total peak demand on the lines to remain within their operating capabilities.

¹ Central Toronto Area, Integrated Regional Resource Plan, pp. 77-78.

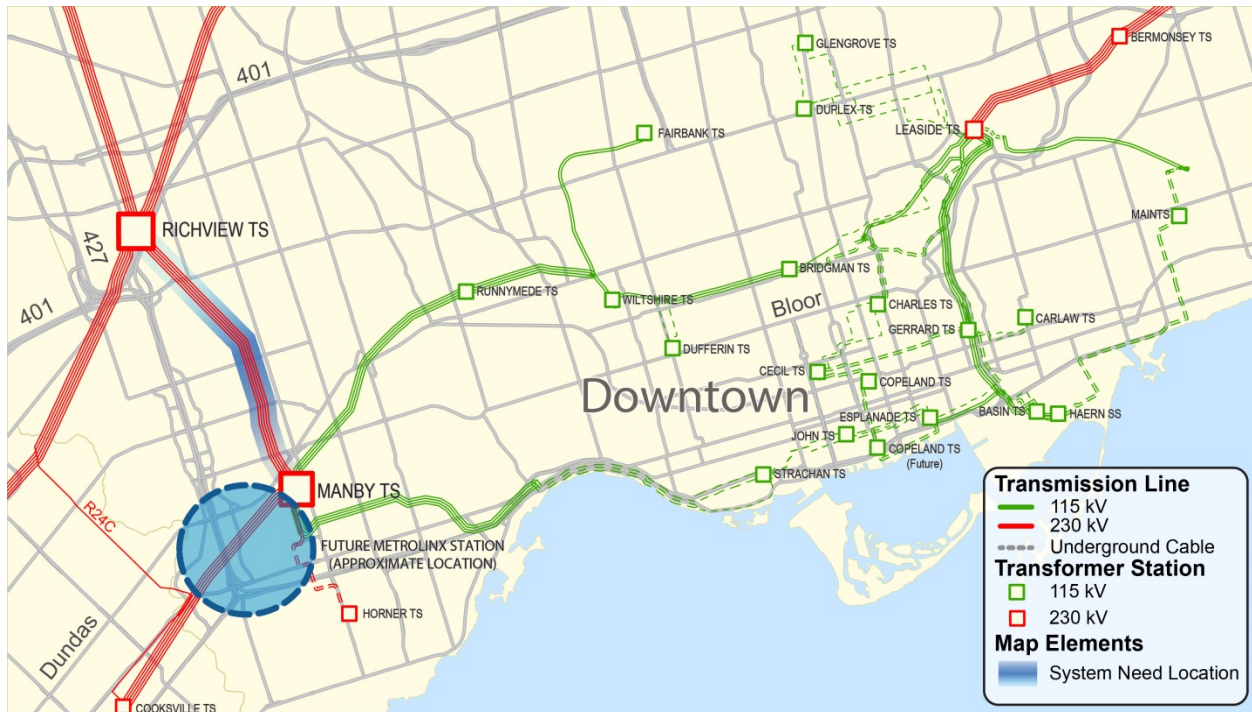
http://www.ieso.ca/Documents/Regional-Planning/Metro_Toronto/2015-Central-Toronto-IRRP-Report.pdf

Since the Central Toronto Area IRRP was published in April 2015, new information about plans to convert the Go Transit Lakeshore West line from diesel to electric power has materially changed the specific recommendations stated above. To explain, Metrolinx, the regional transit agency, has proposed a new Traction Power Station (“TPS”) near Manby TS and south of Horner TS that would provide enough electric power to drive the electric GO trains along the Lakeshore West line. The proposed Metrolinx TPS has a planned in-service date of 2020, and its power requirement will directly impact the peak power flows on the Richview – Manby (and Richview – Cooksville) transmission corridor.

The 2015 IRRP assumed that up to 40 MW of peak demand reduction, in addition to the achievements already planned through conservation programs, would be required in the transmission service area supplied out of Manby TS by 2020. Conservation potential studies completed at the time determined that 40 MW of peak demand reduction potential was achievable within this area. With the Metrolinx TPS added, an additional 45 MW to 90 MW of peak demand reduction would be required. This substantially exceeds the level of achievable conservation potential that has been identified in the area.

As shown in Figure 2-1 below, the current proposed connection arrangement for the Metrolinx TPS will tap the 230 kV circuits in the vicinity of Manby TS. The resulting new load placed on the Richview – Manby transmission circuits will exceed the capability of the existing transmission infrastructure.

Figure 2-1: Richview – Manby 230 kV Transmission Capacity Needs



Note: The area supplied by Richview – Manby 230 kV transmission includes the western section of the study area and the southern portion of both Enersource and Oakville Hydro LDC franchise territories.

Given the lead time for transmission reinforcement, this need is considered urgent and project development must proceed immediately in order to meet the projected in-service timeframe of new transit loads. A Regional Infrastructure Plan (“RIP”) published by Hydro One in January, 2016, reinforces the need to proceed with transmission system reinforcement for the Richview – Manby transmission corridor.² The transmission system reinforcement alternatives are described in the RIP report. A final decision on the preferred approach is still to be determined.

² Metro Toronto, Regional Infrastructure Plan, January 12, 2016, <http://www.hydroone.com/RegionalPlanning/Toronto/Documents/RIP%20Report%20Metro%20Toronto.pdf>

3. Conclusion

This update to the April 2015 IRRP for the Central Toronto Area summarizes the material changes that have occurred affecting the recommendations made in the plan. As CDM is no longer technically feasible, options to mitigate the impact of new large customer loads on the the Richview – Manby 230 kV transmission lines, Hydro One is developing the infrastructure options to ensure that peak demand can continue to be supplied in the area once the transit electrification project is in-service by 2020.

The IESO and THESL have initiated engagement with the community through the establishment of a Local Advisory Committee (“LAC”) in anticipation of the next planning cycle in the area. The discussions with the LAC will cover emerging needs and options, including for example, new growth areas, Municipal Energy Plans, transit build-out strategies, and localized conservation potential studies, to be carried forward as inputs to the next planning cycle.