

# GO Rail Network Electrification Transit Project Assessment Process

## *Study Summary: Utilities Assessment (Appendix I)*

### Scope of the Study

The scope of the GO Rail Network Electrification Transit Project Assessment Process (TPAP) involves electrification of the following GO Transit rail corridors:

1. Union Station Rail Corridor – From UP Express Union Station to Don Yard Layover
2. Lakeshore West Corridor – From just west of Bathurst St (Mile 1.20) to Burlington
3. Kitchener Corridor – From UP Express Spur (at Highway 427) to Bramalea
4. Barrie Corridor – From Parkdale Junction (off Kitchener Corridor) to Allandale GO Station
5. Stouffville Corridor – From Scarborough Junction (off Lakeshore East Corridor) to Lincolnville GO Station
6. Lakeshore East Corridor – From Don Yard Layover to Oshawa GO Station

The Study Area encompasses the GO Transit rail corridors outlined above including the defined vegetation removal zone (i.e., an area extending 7m from the outermost electrified tracks on each side of the corridor), proposed locations for the Tap and Traction Power Facilities, and electrical feeder routes.

The Utilities Assessment Report for the GO Rail Network Electrification is composed of two parts: i) Utilities Baseline Conditions Report and ii) Utilities Impact Assessment Report. Potential effects/conflicts with known utilities due to electrification of the GO Rail Network Electrification were assessed, and mitigation measures and/or commitments to future work were identified as appropriate. There are a significant number of utilities and utility owners in the study area. These utilities were contacted by the project team regarding the potential effects due to electrification, however the final assessment of utility conflicts due to the proposed GO Rail Network Electrification infrastructure will need to be reviewed during the detailed design phase. Implementation and construction obligations will be undertaken pursuant to the crossing agreements with each of the utility companies as required.

### Approach/Methodology

As a component of this assessment, baseline information was collected by requesting background information from Ontario One Call (On1Call) (established in 1996, Ontario One Call notifies infrastructure owners (members) of excavation requests. These members then deliver locates, minimizing the risk of infrastructure damage, loss of utilities, injury, and monetary consequences). as well as sending a data request to each listed utility owner for available data regarding known or planned utility expansion projects. Subsequently, a second gap analysis was undertaken to ensure that utility information is continuous and complete for each corridor. Where gaps existed, third party surveyors were tasked with completing a non-intrusive survey of visible surface features for utilities.

A Utilities Impact Assessment Report was then prepared to build on data collected as part of the Utility Baseline Conditions Report by applying engineering standards to determine potential conflicts between utilities and the planned electrification infrastructure.

Potential utility conflicts were categorized into three types; spatial conflicts (either vertical or horizontal conflicts), electrical clearance conflicts and electrical zone of influence conflicts.

### Summary of Impact Assessment Results

Based on the utilities assessment work completed as part of the TPAP phase: in total, 45 third party utility owners have utilities that are determined to be potential conflicts with the proposed electrification infrastructure. There were 1047 potential conflicts identified; 381 potentially conflicted overhead crossings, 55 potentially conflicted overhead utilities parallel to the rail corridor, 67 potentially conflicted utilities attached to bridges, 248 buried potentially conflicted

crossings, 179 potentially conflicted buried utilities parallel to the corridor, and 117 potential conflicted stand-alone utilities such as cellular towers and sewer appurtenances. There are also 77 potential conflicts of unknown ownership.

**For additional more detailed information, please refer to the Utilities Impact Assessment Report (which is organized by rail corridor for easy reference) contained in Appendix I.**

## **Mitigation Recommendations**

One or more of the following mitigation solutions may be considered/implemented to resolve utility conflicts. It should be noted that further study and consultation with utility owners will be required during detailed design to establish the preferred solutions, as described further below.

- Spatial and electrical clearance conflicts may be mitigated through: removal, relocation, reconfiguration or burial of overhead utilities;
- For utilities attached to bridges, further study of the potential conflict during the design phase will be required to determine the extent of actual conflict and to determine appropriate mitigation strategies in consultation with bridge owners; and
- Electrical zone of influence effects may be mitigated through grounding and bonding or isolation.

## **Next Steps/Future Work**

During the detailed design phase, the exact locations and depths of utilities will be determined and the staging and relocations approach will be established in discussion with affected utility companies. In addition, the final solutions to resolving utility conflicts will be established in consultation with relevant utility owners and implemented as part of design/construction as appropriate. The general steps that will need to be carried out as part of the design/construction phases of the project are:

- Develop and implement detailed mitigation plan for resolving utility conflicts;
- Continue to meet with the utility companies to determine risks, timing and the appropriate mitigation strategy to address potential conflicts;
- Confirm utility relocations/protection required and undertake negotiations with relevant utility companies, as required;
- Based on the requirements of each utility company, utilities will be relocated or protected to allow for the electrification construction works and allow trains to pass without damage;
- With input from legal counsel for both contracting parties, amend existing crossing agreements or develop new crossing agreements that set out the additional cost burdens associated with de-energizing and limited operational windows as well as fines related to cable fall;
- Develop a mitigation plan with each utility that includes the appropriate contractual option to implement the appropriate mitigation strategy; and
- Implement the mitigation plan through the applicable contractual parties from design through to construction.