

GO Rail Network Electrification Transit Project Assessment Process

Study Summary: Visual/Aesthetics Assessment (Appendix H)

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 Visual Assessment Report for the GO Rail Network Electrification is composed of two parts: i) Visual Baseline Conditions Report and ii) Visual Impact Assessment Report. The purpose of the baseline conditions phase was to collect information on existing viewsheds throughout the study area and to describe the general visual character along the rail corridors. Viewsheds are defined as the area of visual influence of the project.

The next step in the process involved an impact assessment study to evaluate potential visual impacts of the proposed electrification infrastructure including: Overhead Contact System (OCS) along the corridors, bridge modifications, addition of OCS at GO stations, installation of Traction Power Facilities (TPFs), installation of parallel barriers and installation of proposed noise barriers (refer to Appendix H for detail regarding noise mitigation). The results of this assessment entailed recommendations for mitigation measures to minimize visual/aesthetic effects as much as possible.

Approach/Methodology

It was recognized that potential visual impacts may vary considerably across the various GO rail corridors to be electrified. Therefore, in order to systematically characterize visual effects, potential impacts on viewsheds were classified into four categories as follows: *negligible, low, moderate and high*. These have been further detailed below.

Areas of Negligible Potential Impacts include:

- Industrial and commercial areas
- Rural farmland
- Rail overpasses in industrial areas or over minor waterways

Areas of Low Potential Impacts include:

- Residential areas where homes are more than 20 metres from the railroad right-of-way (ROW)
- Most GO stations
- Bridges without significant views

Areas of Moderate Potential Impacts include:

- Residential areas where homes are between 8 and 20 meters from the railroad ROW
- Areas where high-rise buildings in a natural setting are closer than 30 metres to the railroad
- ROW
- Scenic areas
- Scenic overpasses
- GO stations with visual integrity

- Bridges with interesting or scenic views
- Pedestrian bridges

Areas of High Potential Impacts

- Residential areas where homes are within 8 metres of the railroad ROW

Summary of Impact Assessment Results

The following table provides a summary of specific areas throughout the GO Rail Network Electrification study area that were identified as *moderate* or *high* visual impact:

Project Component	High Visual Impact	Moderate Visual Impact
Union Station Rail Corridor (USRC) Maps A-1 to A-2 (See EPR Appendix H)	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • GO Stations with visual integrity <ul style="list-style-type: none"> ○ Union Station (A-1)
Lakeshore West Corridor (LSW) Maps B-1 to B-31 (See EPR Appendix H)	<ul style="list-style-type: none"> • Residential areas where homes are less than 8 metres from the railroad ROW (see Maps B-12 to B-14) 	<ul style="list-style-type: none"> • Residential areas where homes are between 8 and 20 metres from the railroad ROW (B-7, B-8, B-9, B-10, B-14 and B-15) • Scenic Areas <ul style="list-style-type: none"> ○ Memorial Park (B-11) • Scenic overpasses <ul style="list-style-type: none"> ○ Etobicoke Creek (B-7) ○ Credit River (B-11) ○ Sixteen Mile Creek (B-21) • Bridges with interesting or scenic views: <ul style="list-style-type: none"> ○ Strachan Avenue (B-1) ○ Dufferin Street (B-1) ○ Islington Avenue (B-5) • Pedestrian bridges <ul style="list-style-type: none"> ○ Sunnyside (B-2) ○ Drury Lane (B-31)
Kitchener Corridor (KT) Maps C-1 to C-4 (See EPR Appendix H)	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Residential areas where homes are between 8 and 20 metres from the railroad ROW (C-2)
Barrie Corridor (BR) Maps D-1 to D-71 (See EPR Appendix H)	<ul style="list-style-type: none"> • Residential areas where homes are less than 8 metres from the railroad ROW (see Map D-2 to D-4) • Maple PS • Gilford PS 	<ul style="list-style-type: none"> • Residential areas where homes are between 8 and 20 metres from the railroad ROW (D-2, D-3, D-4, D-38 and D-39) • Scenic areas <ul style="list-style-type: none"> ○ Allandale Waterfront (D-70 to D-71) • Scenic overpasses <ul style="list-style-type: none"> ○ West Holland River (D-45) • GO Stations with visual integrity <ul style="list-style-type: none"> ○ Allandale (D-70) • Bridges with interesting or scenic views <ul style="list-style-type: none"> ○ King Road (D-27) and Keele Street (D-27) • Pedestrian bridges <ul style="list-style-type: none"> ○ Innes Avenue (D-4)

Stouffville Corridor (ST) Maps E-1 to E-27 (See EPR Appendix H)	<ul style="list-style-type: none"> • Residential areas where homes are less than 8 metres from the railroad ROW (see Maps E-1 and E-7) • Scarborough TPS 	<ul style="list-style-type: none"> • Residential areas where homes are between 8 and 20 metres from the railroad ROW (E-8) • Scenic areas <ul style="list-style-type: none"> ○ Main Street Unionville (E-14) • GO Stations with visual integrity <ul style="list-style-type: none"> ○ Stouffville (E-24) • Pedestrian bridges <ul style="list-style-type: none"> ○ Mooregate Avenue (E-3)
Lakeshore East Corridor (LSE) Maps F-1 to F-27 (See EPR Appendix H)	<ul style="list-style-type: none"> • Areas where homes are within 8 metres of the railroad (see Map F-3) • Scarborough SWS • Don Yard PS 	<ul style="list-style-type: none"> • Residential areas where homes are between 8 and 20 metres from the railroad ROW (F-6, F-7 and F-8) • Scenic areas <ul style="list-style-type: none"> ○ Lakeshore (F-13 to F-16) • Scenic overpasses <ul style="list-style-type: none"> ○ Rouge Hill (F-16) • GO Stations with visual integrity <ul style="list-style-type: none"> ○ Rouge Hill (F-14) • Pedestrian bridges <ul style="list-style-type: none"> ○ Pape Avenue (F-2) and Woodrow Avenue (F-6)

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

Mitigation Recommendations

OCS Infrastructure

The installation of OCS infrastructure will affect the viewshed along the rail corridors, particularly in areas of vegetation/tree clearing. Best design practices will be followed for designing OCS in order to minimize visual impacts as much as possible.

Bridge Barriers

All overhead and pedestrian bridges will require bridge barriers for safety, which may affect views across the bridge. Therefore, during detailed design Metrolinx will determine the preferred bridge barrier designs; as part of this, barrier designs that maintain existing views will be considered and implemented where possible. In addition, a design excellence process will review options for design treatments/options for enhancing the aesthetics of bridge barriers in consultation with interested/affected municipalities as appropriate.

Mitigation measures (during detailed design) should consider locating OCS structures away from existing bridge/rail overpass structures, where possible, to limit visibility to public viewing areas traversing the corridor and placing OCS support structures symmetrically on or on either side of bridges and viaducts.

TPFs

The installation of TPFs has potential to affect views within the surrounding area, particularly where vegetation/tree clearing is required or where there are no existing obstructions. Many TPFs are expected to have minimal to negligible effects on visual landscapes since they are located in industrial areas. However in cases where a TPF is proposed within the vicinity of residential/sensitive areas, landscaping and/or screening will be considered around the facility where feasible. These specific locations may include but are not limited to:

- Scarborough TPS;
- Scarborough SWS;
- Maple PS;
- Gilford PS; and
- Don Yard PS.

GO Stations

At GO stations, the electrification system will be designed to be as unobtrusive as possible, and where appropriate to fit, in terms of aesthetics and color, with other Metrolinx infrastructure. A design excellence process will be followed to integrate the OCS design into GO Stations to reduce the extent of visual impacts.

Next Steps/Future Work

- As part of detailed design, best design practices will be followed for designing OCS in order to minimize visual impacts as much as possible.
- As part of detailed design, in cases where a TPF is proposed within the vicinity of residential/sensitive areas, landscaping and/or screening will be considered around the facility where feasible.
- A design excellence process will be undertaken in association with municipalities to review options for design treatments/options for enhancing the aesthetics of project components, as appropriate.
- At GO stations, the electrification system will be designed to be as unobtrusive as possible, and where appropriate to fit, in terms of aesthetics and color, with other Metrolinx infrastructure. A design excellence process will be followed to integrate the OCS design into GO stations to reduce the extent of visual impacts.