Caledonia GO Station

Transit Project Assessment Process




METROLINX
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BURNSIDE

Environmental Project Report

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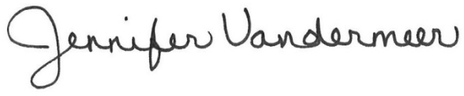

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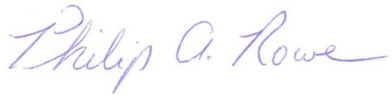

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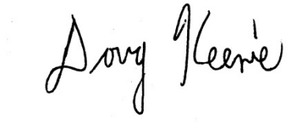

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Executive Summary

E1.0 Introduction and Study Process

Metrolinx, an agency of the Province of Ontario, has proposed the development of a new GO Station on the Barrie rail corridor within the City of Toronto. The Caledonia GO Station (herein referred to as the "Project" or "new GO Station") will be integrated with the future Eglinton Crosstown Light Rail Transit (ECLRT) Station at Eglinton Avenue West and Croham Road (west of Caledonia Road). The environmental impacts of this transit project have been assessed according to the Transit Project Assessment Process (TPAP), as prescribed in Ontario Regulation 231/08 (O.Reg. 231/08), Transit Projects and Metrolinx Undertakings. Figure E.1.1 illustrates the intersection between the Barrie rail corridor and the ECLRT.

Figure E.1.1: Barrie Rail Corridor and the ECLRT Integration*

*Note: Not all ECLRT station locations are illustrated and station names may be subject to change.

Background and Project Rationale

Metrolinx is transforming the way the region moves by building a fast, convenient and integrated transit network across the Greater Toronto and Hamilton Area (GTHA). A new phase of transit improvement has begun to increase rapid transit services across the region by delivering Regional Express Rail (RER), which will provide new travel choices across the region, including:

- Electrification of the entire Barrie corridor;
- All-day, two-way 15-minute service between Aurora GO Station and Union Station;
- Peak period, peak direction 30-minute or better service between Allandale Waterfront GO Station and Union Station; and
- Off-peak, two-way 60-minute or better service between Allandale Waterfront GO Station and Union Station.

Metrolinx is also building the ECLRT line in the City of Toronto, which is a 19 km light rail route planned to run along Eglinton Avenue from Weston Road (west) to Kennedy Station (east). The ECLRT line includes a 10 km underground portion from Keele Street to Laird Drive. Within this segment, the line will tunnel under the Barrie rail corridor and include the Caledonia LRT Station north of Eglinton Avenue West, on the west side of the rail corridor. The ECLRT is anticipated to be in operation by 2021.

Since the Caledonia LRT Station was proposed to include a direct link to the rail corridor, a new GO Station at this location was prioritized. The Project will provide a seamless connection via a pedestrian bridge spanning the rail corridor, giving transit users access to both GO Transit (GO) and ECLRT services. The Caledonia GO Station will provide important infrastructure to support Metrolinx plans for RER in the form of all-day, two-way service on the Barrie rail corridor.

The Toronto Transit Commission (TTC) and the City of Toronto completed an Environmental Project Report (EPR) for the ECLRT in March 2010. The ECLRT EPR identified the potential for a future connection with GO rail at the Caledonia LRT; however, a TPAP was not completed for the GO Station at that time.

Planning Context

There are a number of key planning policies and documents that support the rationale for the Project including:

- Provincial Policy Statement (PPS) (MMAH, 2014);
- Growth Plan for the Greater Golden Horseshoe, 2006 - Office Consolidation, June 2013;
- City of Toronto Policy Documents:
  - City of Toronto Official Plan (2010); and
  - Eglinton Connect Planning Study (2014).
- Metrolinx Policies and Programs:
  - Metrolinx Regional Transportation Plan – The Big Move (2008);
  - Mobility Hub Guidelines for the Greater Toronto and Hamilton Area (2011);
  - Metrolinx Investment Strategy (2013); and
  - RER.

Corridor Overview

The Barrie rail corridor is owned by Metrolinx who operates passenger rail service (using the Newmarket Subdivision) between Union Station (Mile 0.00) and Allandale Waterfront GO Station (Mile 63.00). Oriented in a north/south direction, the rail corridor is approximately 63 miles in length and has 10 stations (excluding Union Station). The corridor runs through nine municipalities including City of Toronto, City of Vaughan, Township of King, Town of Aurora, Town of Newmarket, Town of East Gwillimbury, Town of Bradford West Gwillimbury, Town of Innisfil and the City of Barrie. The existing map for the Barrie rail corridor showing the location of the stations is illustrated in Figure E.1.2. The new GO Station is proposed to be located at Mile 6.50, just north of Eglinton Avenue West.

Supporting Studies

There are three studies that were completed prior to the commencement of this Transit Project Assessment (herein referred to as “the Assessment”), which supported the Project. These studies include:

- Transit City: Eglinton Crosstown LRT Environmental Project Report (March 2010);
- Barrie Corridor Planning Study (March 2012); and
- Caledonia GO Station Reference Concept Design Report (September 2013).

Ridership Demand Forecast

The ridership forecasts for Caledonia GO Station are based on a Barrie rail corridor service concept that was in use in 2014. In April 2015, the Government of Ontario committed funding for a new RER program to expand service across the GO Rail network, including the Barrie rail corridor. This new RER service concept for the Barrie rail corridor does not significantly change the predicted level of ridership activity at Caledonia GO Station during the peak period. The RER concept does have more substantial impacts elsewhere on the Barrie rail corridor, and will improve Caledonia GO Station usage during off-peak times.

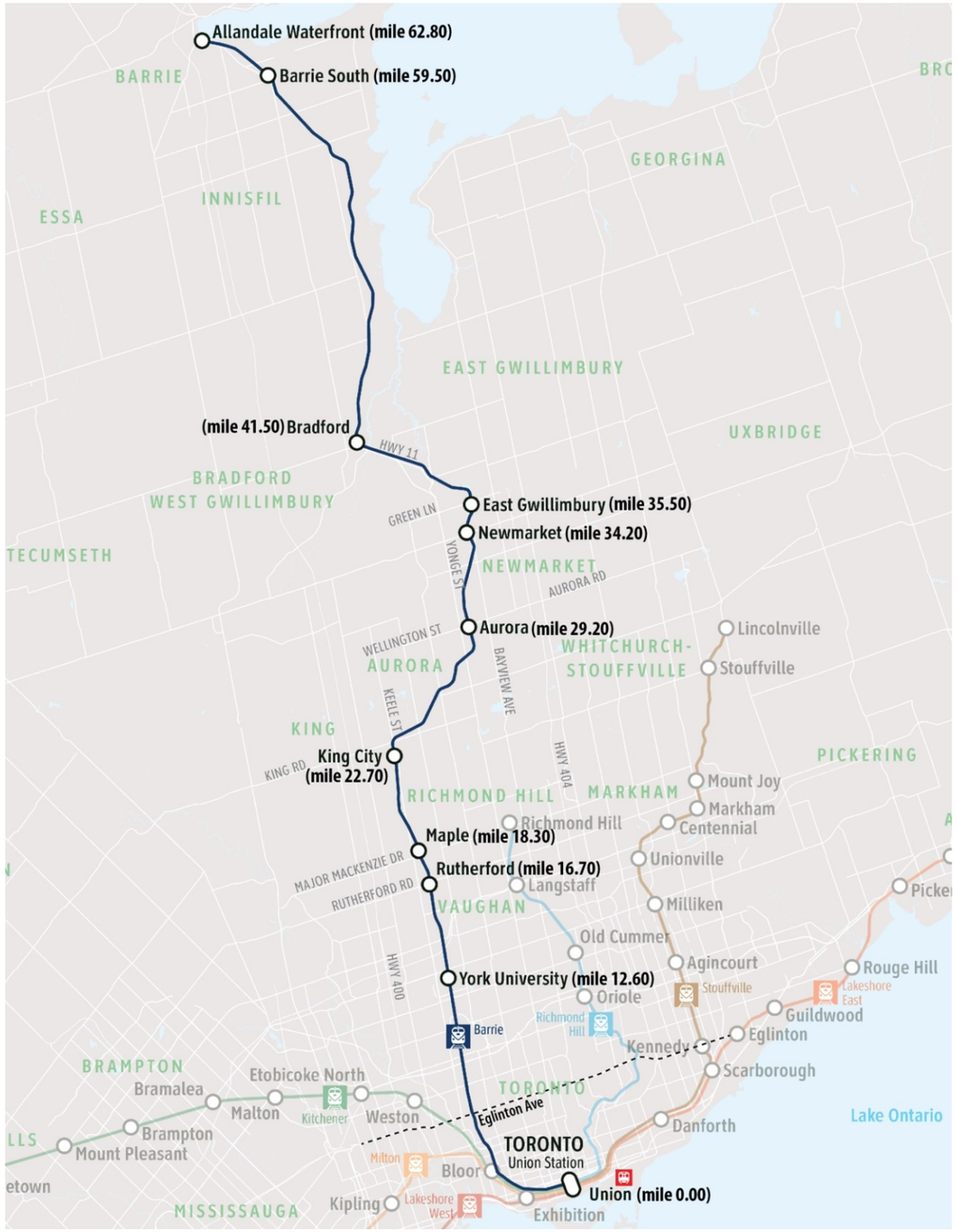
Current and Future GO Train Service Levels

To accommodate future ridership demand, train service levels will need to be increased. Metrolinx plans to increase service levels along the Barrie rail corridor over the next 10 to 15 years. By 2022, Metrolinx is planning to increase the daily train trips within the corridor to 36 (weekdays). With the future planned electrification of the Barrie rail corridor, the daily train trips will increase up to 180. Refer to Section 1.1.6 for more information on current GO service levels.

For the purposes of the Assessment, existing and future train service levels are defined as follows:

- Existing: current operating conditions with current 2015 traffic volumes;
- Future Phase 1: addition of a new GO Station (Caledonia) operating with current 2015 traffic volumes;
- Future Phase 2: provision of all-day, two-way service along the existing route operating with predicted opening day (2021) traffic volumes of 36 diesel train trips per day; and

Figure E.1.2: Existing Barrie Rail Corridor Map



Project Purpose and Scope

The purpose of the Project is to expand transit infrastructure to support the planned service improvements on the Barrie rail corridor, and to improve connectivity between the ECLRT and GO services.

The primary goals of the Project include:

- Expand regional transit connectivity;
- Provide an interchange between local and regional transit systems;
- Provide an additional new station within the City of Toronto between the future Downsview Park GO Station and Union Station;
- Complement the planned service improvements and future electrification of the Barrie rail corridor; and
- Improve service to customers.

The purpose of the Assessment is to:

- Review the rationale for the Project;
- Investigate existing conditions and constraints of the proposed location of the new GO Station;
- Provide updated station concepts and preliminary design plans;
- Detail the predictable environmental impacts or effects; and
- Provide recommendations for addressing these impacts through further study or mitigation.

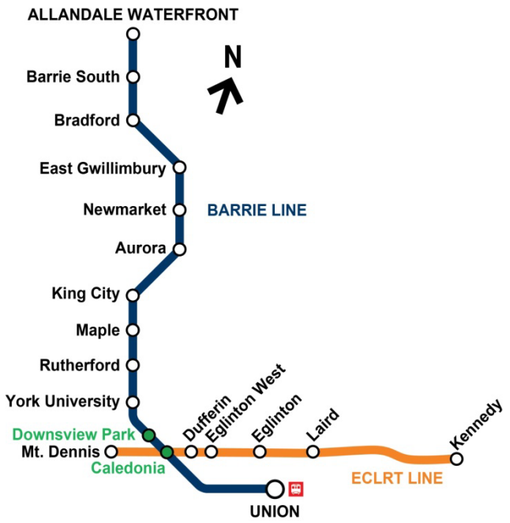
The Project will follow the TPAP including completion of all environmental studies required to fulfill the requirements of Ontario Regulation 231/08.

A map for the Barrie rail corridor showing the approximate location of the future Caledonia and Downsview Park GO Stations is illustrated in Figure E.1.3. The opening of the Toronto-York Spadina Subway Extension (TYSSE), forecasted for 2017, is expected to prompt significant changes to the flow of transit users in a wide area surrounding the line. A view of present day conditions of the Project Area (shaded) and surrounding lands including the Barrie rail corridor at the location of the new GO Station is provided in Figure E.1.4.

It is expected that the Barrie rail corridor will be electrified in the future with full RER service. The RER service will be assessed under separate studies completed for the Barrie Rail Corridor Expansion and for the System Wide Electrification projects and has not been considered as part of this Environmental Project Report (EPR). The new GO Station will be designed with provisions for future electrification. This is discussed further in Section 3.6.1.

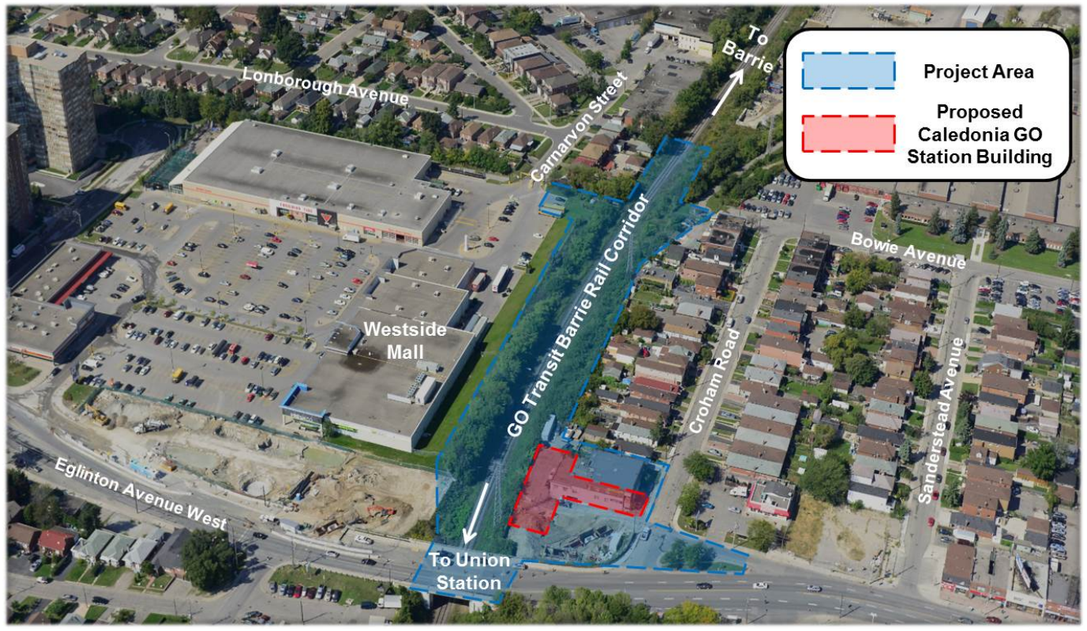
The overall Study Area for the Assessment is bound by Castlefield Avenue to the north, Croham Road/Gilbert Avenue to the east, Keith Avenue/Cameron Avenue to the south and Blackthorn Avenue/Carnarvon Street/Strathnairn Avenue to the west. The boundaries of this overall Study Area are illustrated on Figure 1.8. This includes lands adjacent to the development area (Project Area) of the new GO Station.

Figure E.1.3: Future Barrie Rail Corridor Map



* Note: Not all ECLRT station locations are illustrated and station names may be subject to change.

Figure E.1.4: Present Day Conditions of Project Area and Surrounding Lands



Aerial Northview of rail corridor from Eglinton Avenue West

Transit Project Assessment Process

In March 2010, the TPAP was completed for the ECLRT, which identified the potential for a future connection with GO at the Caledonia ECLRT Station with the provision that connectivity would be subject to GO rail alignment and platform configurations. As such, full approval for the new GO Station was not considered under the 2010 TPAP.

In July 2014, Metrolinx initiated pre-TPAP planning activities for the Project. This Assessment has been undertaken in accordance with the TPAP as outlined in Ontario Regulation 231/08, Transit Projects and Metrolinx Undertakings.

The TPAP is a focused process, under Ontario Regulation 231/08, that recognizes and addresses the predictable environmental impacts and effects of transit projects. The TPAP creates an efficient plan that allows for project commencement, review and approval of the EPR to occur within six months. The Ontario Ministry of the Environment and Climate Change guide entitled “Ontario’s Transit Project Assessment Process, January 2014” was also closely referenced for the Assessment.

E2.0 Existing Conditions

In order to assess the potential environmental effects of the Project, a detailed survey and review of the existing environmental conditions within the Study Area was conducted. Individual environmental studies were completed for the natural environment, cultural environment and social and built environments.

Natural Environment

Throughout the Study Area, the rail corridor is below grade in a “cut” relative to the adjacent lands. North of the Eglinton Avenue West Bridge, the lands adjacent to the tracks slope upward to meet the neighbouring properties. These slopes leading upward from the tracks south of the Eglinton Avenue West Bridge are not as steep as those immediately north of the bridge. The soil within the Study Area was characterized as Clayey Silt Till (Halton) (Ministry of Natural Resources (MNR), 1980). Significant disturbance has occurred within the Study Area over time, including the import of fill materials.

A Toronto and Region Conservation Authority (TRCA) regulated ravine feature was identified on the City of Toronto online mapping tool (City of Toronto, 2015) beginning approximately 40 m west of the railway corridor (north of Eglinton Avenue West) extending westward away from the Study Area. Field inspection found no evidence of surface water conveyance or a discharge that would indicate subsurface conveyance. This ravine feature was no longer visible.

There are no watercourses within or crossing the Study Area; therefore, no detailed aquatic assessments were completed.

Review of publically available Geographic Information System (GIS) based mapping from the Ministry of Natural Resources and Forestry (MNRF) Natural Areas Mapping tool (MNRF, 2015) and the City of Toronto online mapping tool (City of Toronto, 2015) indicated that there are no provincially or locally designated natural heritage areas found within the vicinity of the Study Area and adjacent lands.

A tree inventory was completed within the Study Area, a total of 27 trees / tree groups were inventoried. The majority of these trees are immature and multiple-stemmed within continuous hedgerows. No natural heritage features (i.e., woodlands, wetlands) were identified on these properties based on City of Toronto Official Plan mapping, field investigation and air photo interpretation.

The Study Area is located within a heavily urbanized environment. The only avian Species at Risk (SAR) that has the potential to be present within the Study Area is the Chimney Swift (*Chaetura pelagica).* A species-specific survey to determine the presence of Chimney Swift within the Study Area should be undertaken during the next required timing window for this species.

A Stage 1 Archaeological Assessment concluded that the Study Area does not retain archaeological potential.

A Cultural Heritage Screening Report (CHSR) for the Study Area identified two conditional heritage properties (Eglinton Avenue West Bridge and the York Beltline Trail). Thereafter, a resource-specific Cultural Heritage Evaluation Report (CHER) was completed, which evaluated each of these two properties using the criteria set out in Ontario Heritage Act Regulation 9/06 and Regulation 10/06 to determine level of cultural heritage significance within the City of Toronto and Ontario. Based on Regulation 9/06, Archeological Services Inc. (ASI) determined that the York Beltline Trail retains municipal/local cultural heritage value or interest, while the Eglinton Avenue West Bridge does not. Neither property met the criteria contained within Regulation 10/06, which considers the provincial significance of the subject property within Ontario. As such, the York Beltline Trail and Eglinton Avenue West Bridge are not Provincial Heritage Properties of Provincial Significance (PHPPS) under Regulation 10/06. If Metrolinx acquires property associated with the York Beltline Trail for the purposes of the new GO Station, the lands will be classified as a Provincial Heritage Property (PHP) under Regulation 9/06.

The Ministry of Tourism, Culture and Sport (MTCS) reviewed the cultural heritage reports (CHSRm CHER, CHER Recommendations) and identified that a Heritage Impact Assessment (HIA) is required for the York Beltline Trail. The HIA addresses the proposed alteration of the York Beltline Trail based on the GO Station Project plans. In particular, some minor impacts to the west trailhead are anticipated immediately west of the Croham Road and Bowie Avenue intersection. The recommendations of the HIA, based on the heritage value of the York Beltline Trail included conservation of the existing landscape features on the west trailhead through the adoption of a minimal intervention approach and like-for-like replacement or enhanced provision of landscape features directly impacted by the Project. The HIA, included in Appendix F, will be revisited and refined as necessary during the detailed design phase of the Project once the construction impacts are further defined. A Strategic Conservation Plan will also be prepared to provide guidance on how the York Beltline Trail will be conserved in accordance with the MTCS *Standards and Guidelines for the Conservation of Provincial Heritage Properties*. The HIA will be resubmitted to the MTCS for further comment during the detailed design phase of the Project.

Social and Built Environments

Socio-Economic Environment and Land Use

According to the City of Toronto Official Plan, land use designations within the Study Area include employment lands, mixed use areas (including residential, low, mid and high rise units and a mix of commercial and industrial businesses), neighbourhoods and parks. The *Eglinton Connects Planning Study* (March 2014, City of Toronto) identifies the potential for redevelopment / intensification along Eglinton Avenue West and at the Westside Mall, allowing development heights of up to eight storeys in these areas. The intensification of development in the area of the Caledonia GO and ECLRT Stations will promote access to these stations via walking and cycling modes. Information about community demographics is provided in Section 2.3.1. Information about community impacts and benefits is provided in Section 6.0.

Air Quality Impacts

An Air Quality Impact Assessment was completed to characterize existing conditions and determine the impact of the Project on the air quality. Contaminants modelled were selected to represent pollutants commonly associated with diesel locomotives, namely acrolein, benzene, benzo(a)pyrene, nitrogen dioxide and particulate matter < 2.5 µm. Predicted air quality concentrations were compared to the applicable ambient air quality criteria associated with diesel locomotive emissions, which were taken from Ontario's Ambient Air Quality Criteria (AAQC) developed by the Ministry of Environment and Climate Change (MOECC). According to MOECC, "an AAQC is a desirable concentration of a contaminant in air, based on protection against adverse effects on health or the environment". Canadian Ambient Air Quality Standards coming into effect in 2020 were used for PM2.5. In addition, the Jurisdictional Screening Level (JSL) List was used for the contaminants without available AAQC criteria. The JSL list was developed by the MOECC to provide an additional screening tool for Ontario Regulation 419: Air Pollution – Local Air Quality. JSL values are considered to be conservative criteria. The air quality impact assessment took into consideration the introduction of Tier 4 technology for the GO MP40 diesel locomotive fleet, which leads to improved air emissions meeting the Tier 4 emission standard. Once the Barrie rail corridor is electrified, there will be no air emission impact from trains.

The existing and future air quality conditions of the Study Area are discussed in Section 2.3.2 and Section 5.3.1 respectively. The local air quality impacts of the project were assessed by applying credible worst-case and cumulative effects analyses, as recommended in the Ministry of Transportation "Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas (GHG) Emissions of Provincial Transportation Projects". The results of these analyses are consistent and indicate that the proposed project will have a very small local air quality impact, even on the most affected sensitive receptors. This conclusion is reached by comparing the predicted ambient pollutant concentrations for the "no-build" and "build" scenarios. The results also indicate that the project shall not cause exceedance of any of the air quality criteria and standards, even at the most affected sensitive receptors. Therefore air mitigation is not required and hence this report does not recommend any local air quality impact mitigation.

The regional air quality and GHG emission implications of the project were also assessed by quantifying the air contaminant and GHG emissions associated with the project for the "build" and "no build"

scenarios. Comparison of its results with provincial emission inventories suggests that the project's contribution to these inventories will be very small.

Noise Impacts

The MOECC and GO developed a "Draft Protocol for Noise and Vibration Assessment" (MOEE/GO Draft Protocol). This document is used as the primary guideline document for assessment of the rail noise and vibration. In addition, other MOECC noise guidelines such as the NPC-series of documents were applied, where applicable. The MOEE/GO Draft Protocol refers to 'dBA' as the typical unit of measurement used in environmental noise assessments. To account for the non-linear impression of sound pressure level to the human auditory system, a weighting scale is used to correct for the subjective perception of sound. This weighting scale is called the "A-weighting" correction, and when used, the reported sound pressure level is reported as A-weighted decibels (dBA).

According to the MOEE/GO Draft Protocol, the noise impacts shall be rated with respect to the objectives outlined in Table E.2.1.

Table E.2.1: MOEE/GO Draft Protocol - Adjusted Noise Impact Ratings

Adjusted Noise Impact	Rating
0 - 2.99 dB	Insignificant
3 - 4.99 dB	Noticeable
5 - 9.99 dB	Significant
10 + dB	Very Significant

In cases where the Adjusted Noise Impact is considered "Significant" or greater (i.e., 5 dB or greater), the potential to mitigate will be evaluated based on administrative, operational, economic and technical feasibility.

The Noise Impact Assessment has been divided chronologically into components for evaluation to correspond with three train service levels:

- Existing: impacts within the Study Area based on current operating conditions with current 2015 traffic volumes;
- Future Phase 1: impacts within the Study Area with the addition of a new GO Station (Caledonia) operating with current 2015 traffic volumes; and
- Future Phase 2: impacts within the Study Area based on provision of all-day, two-way service along the existing route operating with predicted opening day traffic volumes of 36 diesel trains per day.

Using the STAMSON model, existing noise levels at three points of reception (POR) within the Study Area have been predicted. PORs are chosen to be representative of the receptors of interest with the highest impacts from the Project. The PORs that are representative of worst-case potential noise impacts have been identified and used in the analysis. Figure E.2.1 shows the locations of the PORs utilized for the assessment. Daytime point of reception is 3 m from the residential unit toward the corridor at a height of 1.5 m as well as 4.5 m. The 1.5 m height is used to represent an outdoor living area receptor, which is required when evaluating transportation sources, such as train activity. The 4.5 m height is used to assess the impact at a window for a two-storey dwelling. Nighttime receptors are placed in the plane of a bedroom window where sound originating from the Project is received, assumed to be at a height of 4.5 m unless otherwise stated. Table E.2.2 shows existing noise modelling results.

Figure E.2.1: Location of Noise Receptors for Noise Modelling

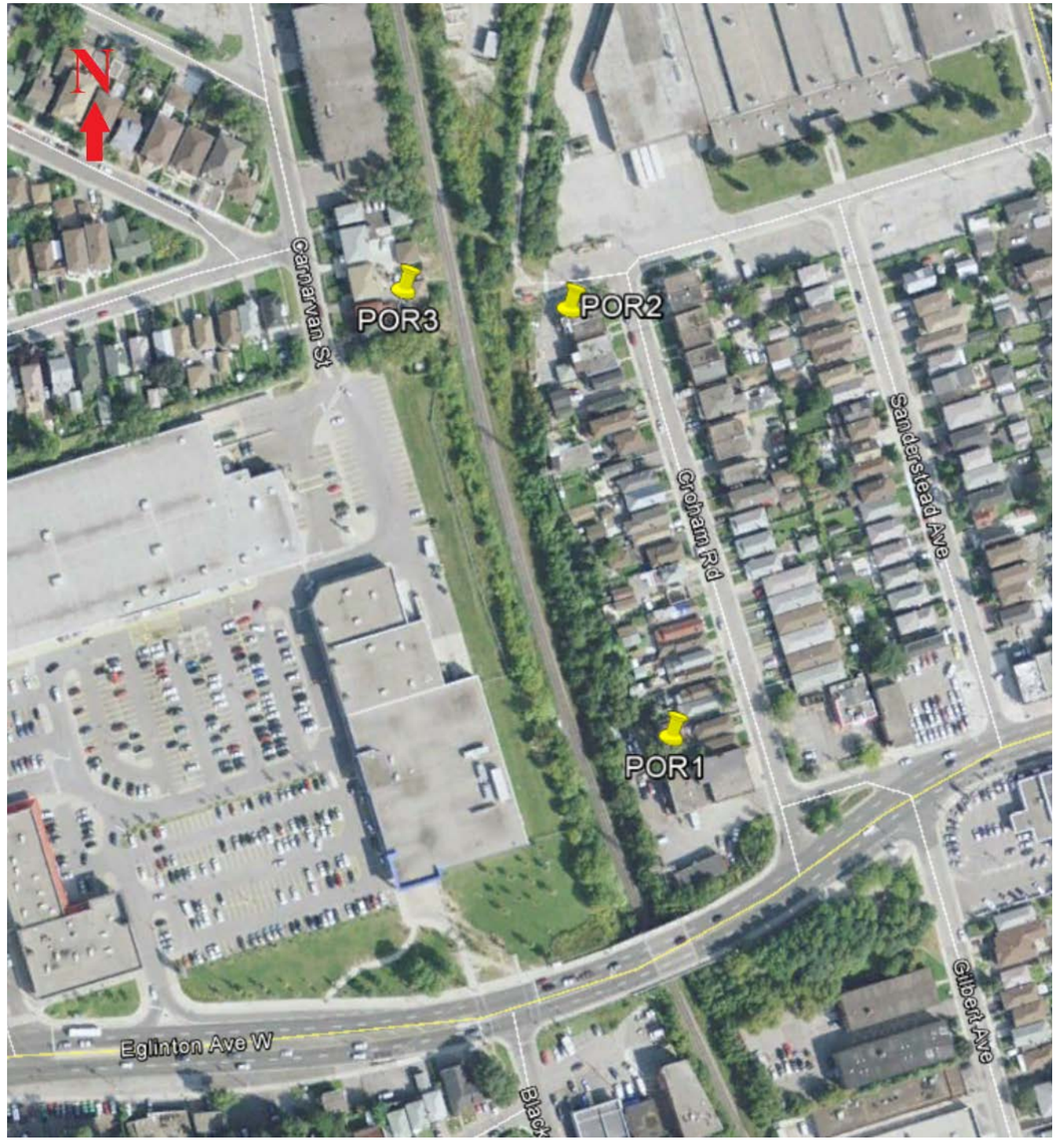


Table E.2.2: Existing Noise Modelling Results (STAMSON)

Receptor ID	Period and Receptor Height (m)	Predicted Existing Noise Levels (dBA)
POR1	Daytime – 1.5 m	59
	Daytime – 4.5 m	60
	Nighttime – 4.5 m	55
POR2	Daytime – 1.5 m	58
	Daytime – 4.5 m	59
	Nighttime – 4.5 m	52
POR3	Daytime – 1.5 m	62
	Daytime – 4.5 m	62
	Nighttime – 4.5 m	54

Vibration Impacts

Vibration is presented in terms of root-mean-square (RMS) velocity (mm/s) in the vertical direction, which is the dominant axis for vibration generated from mobile sources such as trains and most closely correlated with human annoyance and perceptibility.

A linear average of the running average RMS vibration velocity was measured at the new GO Station site (existing conditions) and the existing Rutherford GO Station (to predict future vibration conditions at the new GO Station once operational). The results are given in Table E.2.3.

Table E.2.3: Vibration Assessment Results for GO Trains

Train #	Running Average RMS Vibration Velocity (mm/s) – Measured at a Distance of 16.5 m from the Centre of the Track		# of Locomotives	# Cars
	Caledonia GO Station (Pass-by)	Rutherford GO Station Rail (Arriving/Departing Station)		
1	0.477	0.226	2	10
2	0.413	0.210	1	10
3	0.427	0.141	1	6
4	0.336	0.220	1	12
5	0.399	0.178	1	6
6	0.474	0.212	1	12
7	0.457	0.238	1	10

Table E.2.3 illustrates that the existing vibration impacts based on a moving train through the corridor for the Study Area (at new GO Station site) exceed the 0.14 mm/s RMS limit. As a result, the existing levels measured within the Study Area are taken as the objective limit in accordance to the MOEE/GO Draft Protocol. Table E.2.3 also illustrates that the measured vibration impacts based on the arrival and departure of a train at the Rutherford GO Station are much lower than the objective limit, but still exceed the 0.14 mm/s limit. This reduced impact is due to the lower speed of the trains at the station. Based on the measured vibration levels, the vibration impacts within the Study Area once the new GO Station is operating are not expected to exceed the objective level. As such, mitigation measures for vibration are not required.

Buildings and Structures

The proposed site for the new GO Station lies in an existing railway Right-of-Way (ROW) approximately 300 m west of the Eglinton Avenue West and Caledonia Road intersection within an undeveloped area of land, which is occupied by an existing single mainline track with no station platforms. The railway alignment is curved at the new GO Station location and the grade difference between the Eglinton Avenue West Bridge and the rail track is approximately 8 m. The grade difference between the rail track and the adjacent lands decreases gradually moving north from the Eglinton Avenue West Bridge. At Bowie Avenue/Lonborough Avenue there is essentially no grade difference between the track elevation and adjacent lands.

Within the vicinity of the new GO Station there are the following existing infrastructure/ buildings that may be impacted by the proposed works:

- Westside Mall – shopping centre located to the west of the Barrie rail corridor;
- Residential properties along Croham Road to the east, and Carnarvon Street to the northwest; and
- Eglinton Avenue West Bridge to the south end.

Transportation and Utilities

The two major planned Metrolinx projects that will interface with the new GO Station are the Barrie Rail Corridor Expansion and the ECLRT projects. These projects have not been completed as of the issuance of this Report and were not assessed as part of the existing conditions for the social and built environmental assessment of the Study Area. However, it is expected that these projects will be implemented in advance of the Project and are separate from the proposed work associated with the Caledonia GO Station development. The Barrie Rail Corridor Expansion and ECLRT projects have therefore been treated as near term infrastructure improvements for the discussions in this EPR relating to transit interchange.

Transit Network

There are currently no direct connections between local municipal transit and the Barrie rail corridor service from the new GO Station site. The TTC currently operates Bus Routes 32, 47B/C and 332 within the Study Area.

The Caledonia GO Station will serve as one of the planned Interchange Stations for passengers coming from the ECLRT to TTC buses. With the implementation of the ECLRT there is potential to reconfigure the surface design of Eglinton Avenue and reallocate some of the spaces occupied by reserved bus lanes and high occupancy vehicle lanes to other uses.

Cycling, Pedestrian and Trail Network

To the west of the Study Area, an existing multi-use trail runs between Etobicoke Centennial Park and Jane Street. This cycling route is anticipated to be further extended through the Study Area, as part of the redevelopment of Eglinton Avenue West. In addition, the 9 km multi-use York Beltline Trail connects into the existing rail line at the northern end of the new GO Station site, adjacent to Bowie Avenue, ultimately terminating in the Moore Park Ravine.

Existing pedestrian facilities along Eglinton Avenue West currently include sidewalks and pedestrian crossings with traffic signals at major intersections, as well as sidewalks on intersecting local and collector roads. The Eglinton Connects Planning Study (March 2014) proposes a cross section for Eglinton Avenue West that includes a 3.2 m pedestrian clearway on each side of the road, which will provide pedestrian access to the Caledonia ECLRT Station. The existing Westside Mall lands also provide for pedestrian linkages to the broader area.

Road Network

A summary of the existing conditions traffic assessment undertaken as a part of this TPAP is provided below. Further details of this analysis are included in the Traffic Impact Study (TIS) Report, which is provided in Appendix I.

Within the Study Area, the existing road network includes the following City of Toronto roads:

- Eglinton Avenue West – major arterial road running east-west, with four basic lanes (two in each direction), two lanes of which are restricted to bus/taxi use during peak periods and which are used for parking or for through traffic during off-peak periods;
- Caledonia Road – minor arterial road running north-south, with two basic lanes;
- Blackthorn Avenue – collector road running north-south, with two basic lanes;
- Croham Road – a local road running north-south, with two travel lanes along its south section and one travel lane (plus a parking lane) along its north section. Currently, traffic is restricted to operate one-way northbound between Bowie and about 25 m north of Eglinton Avenue West. Sanderstead Avenue to the east provides one-way northbound operations (one travel lane plus one parking lane);
- Gabian Way – local road running north-south; also providing access to the Westside Mall; and
- All other roads in the Study Area are classified as local roads (two basic lanes).

Traffic

The existing maximum peak hour, peak direction road traffic (along Eglinton Avenue West) is in the order of 1,000 vehicles per day (vpd). Traffic operations along Eglinton Avenue West are generally dictated by intersection capacity, rather than link capacity. Under existing traffic volumes and lane configurations, the intersection of Eglinton Avenue West/Caledonia Road is over-capacity in the P.M. peak hour, with a storage deficiency for eastbound queuing. Under existing conditions, queuing deficiencies were also identified at the intersections of Eglinton Avenue West/Blackthorn Avenue and Eglinton Avenue West/Gabian Way, during both the A.M. and P.M. peak hours. Existing traffic conditions represent those prior to implementation of the ECLRT and the planned conversion of some restricted-use lanes into full-use lanes. The Eglinton Connects Planning Study (March 2014, City of Toronto) forecasts that future traffic operations on Eglinton Avenue West will continue to be acceptable, by maintaining the current two travel lanes in each direction. The implementation of the ECLRT allows for the conversion of the existing peak-period bus / taxi lanes into full-use lanes, which effectively mitigates the existing congestion issues in this area and accommodates the new GO Station development, with minor signal modifications. Segments of Eglinton Avenue West within the vicinity of the Study Area are under construction for the ECLRT, which may also impact current traffic conditions.

Rail Infrastructure

The existing Barrie Corridor consists of a single track through the Study Area. The horizontal alignment of the rail corridor within the Study Area runs adjacent to urbanized areas, including residential and commercial buildings. The existing track alignment curves below the Eglinton Avenue West Bridge, and rises by approximately 2% from south to north with the existing railway in cut formed by Eglinton Avenue West being raised by approximately 8 m to pass over the Barrie rail corridor.

Rail Services

GO currently operates 14 train trips per weekday, seven in the A.M. peak period (southbound direction only) and seven in the P.M. peak period (northbound direction only) on the Barrie rail corridor. Table E.2.4 provides peak ridership data for the current service on the Barrie rail corridor as reported in the Fall 2014 cordon counts completed by Metrolinx.

Canadian National (CN) freight trips on the Barrie rail corridor are light with only 1 daily at present travelling along the Newmarket Subdivision and on to the main east-west freight corridor (the York and Halton Subdivisions, which cross at a rail/rail grade separation at Snider, approximately Mile 13.0 of the Newmarket Subdivision).

VIA Rail currently operates three transcontinental trains (known as “The Canadian”) per week on Tuesday, Friday and Sunday during the peak season and two trains per week on Tuesday and Friday during the off peak season along the Barrie rail corridor from Toronto to Vancouver.

Table E.2.4: Barrie Rail Corridor Peak Ridership (Fall 2014)

Direction	Train Number	Number of Peak Point Riders	Percentage of Seated Capacity in Use
Southbound	800	1,559	101%
	802	1,921	125%
	804	672	73%
	806	2,375	129%
	808	619	67%
	810	1,876	102%

	812	1,557	101%
Northbound	801	976	106%
	803	1,733	94%
	805	2,090	136%
	807	2,050	111%
	809	1,757	114%
	811	1,509	98%
	813	890	96%

E3.0 Project Description

Development of ECLRT and Caledonia GO Preferred Concept Design

In preparation for the Caledonia LRT Station (underground station with aboveground access west of the rail corridor), a Reference Concept Design Report (RCDR) was prepared for the new GO Station by ARUP and NORR Limited Architects (September, 2013). A number of design options were reviewed during the conceptual design process by ARUP and NORR for the development of a future three track aboveground Caledonia GO Station and two platforms. The new GO Station is planned to serve as a transfer point for passengers using the ECLRT and TTC services.

Preferred Design Development

The new GO Station will provide a north/south to east/west transit connection option in the City of Toronto and will improve service to customers by providing connectivity between the GO service and the ECLRT at Eglinton Avenue West. Building a new Toronto station between Union Station and the future Downsview Park GO Station will complement the planned service improvements and future electrification on the Barrie rail corridor.

The new GO Station concept design includes the following facilities on the Barrie rail corridor, sufficient to accommodate all-day, two-way service:

- Station platforms and station building;
- Kiss and Ride area, including taxi and barrier free drop-off (a bus loop is proposed in the Caledonia ECLRT Station development, to jointly serve the ECLRT and GO Station);
- Staff/taxi parking area;
- Bicycle parking facilities;
- Pedestrian bridge to span the rail line, linking the Caledonia GO and LRT Stations;
- Provisions for a future pedestrian tunnel under the rail line, linking Carnarvon Street/Westside Mall and Bowie Avenue/York Beltline Trail; and
- No automobile parking will be provided.

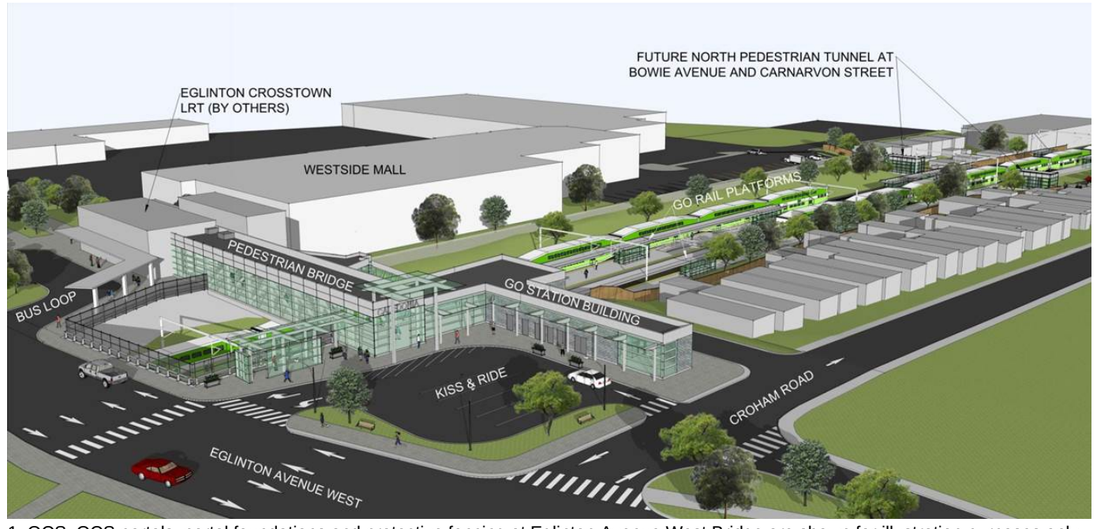
Figures E.3.1 through E.3.5 provide renderings of the Caledonia GO Station from different viewpoints.

During the TPAP consultation phase, the City of Toronto provided additional feedback to Metrolinx on the proposed site plan and configuration of the new GO Station. The City of Toronto asked Metrolinx to consider a more “urbanized design” locating the proposed GO Station building closer to Eglinton Avenue West and moving the Kiss and Ride to the rear (north side) of the station building. A preliminary alternative site plan and rendering have been prepared for further review, consideration and discussion with City of Toronto and other stakeholders during the next phases of the Project. Drawings SK-110 and SK-111 in Appendix A illustrate the alternative site plan and perspective rendering.

The new GO Station infrastructure will be further developed in consultation with the City of Toronto during the detailed design phase of the Project. As a minimum the following features and facilities will also be included:

- Site servicing connections for gas, hydro, telephone, communications, storm and sanitary;
- Fencing and security requirements;
- Ticket sales booth with staff washrooms;
- Staff rooms (as required);
- Full service multi-use washrooms;
- Waiting areas;
- Communication, electrical, mechanical and maintenance rooms and emergency generator enclosure;
- Island platform with accessible mini-ramp, canopies, integrated heated shelters and snow-melt system;
- Communications systems – fire, alarm, security, Closed Circuit Television (CCTV), Public Announcement (PA), data and telephone;
- Fare systems; and
- Station facility identification signage, parking and internal way-finding signage.

Figure E.3.1: Caledonia GO Station Overview Rendering



1. OCS, OCS portals, portal foundations and protective fencing at Eglinton Avenue West Bridge are shown for illustration purposes only. Actual system layout to be determined by Others during detailed electrification design.
2. Cycling infrastructure along Eglinton Avenue West to be implemented by Others in coordination with the City, Refer to SK-104 in Appendix A for Eglinton Connects cross-section.
3. Cycling infrastructure along Croham Road to be further coordinated with the City during the detailed design phase of the Project.

Figure E.3.2: Caledonia GO Station Platform Level Rendering

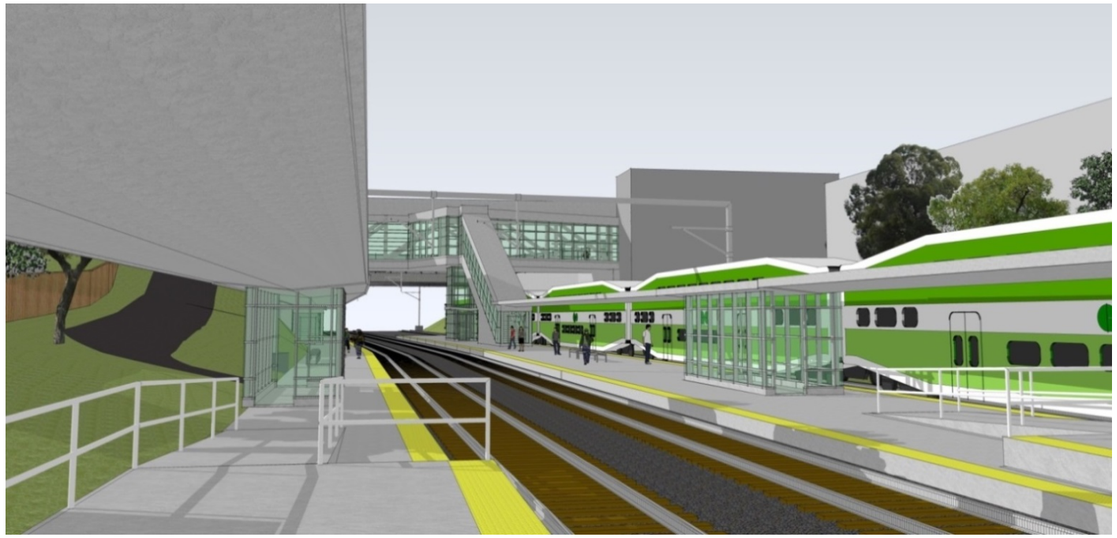


Figure E.3.3: Caledonia GO Station Secondary Entrance Rendering from York Beltline Trail

Figure E.3.4: Caledonia GO Station Connection to the Beltline Trail Rendering

Figure E.3.5: Caledonia GO Station Secondary Entrance Rendering from Westside Mall

Site Conditions and Consideration

Structures and Buildings

The existing track will need to be lowered by approximately 0.6 m below both the proposed ECLRT pedestrian bridge and the existing Eglinton Avenue West Bridge to achieve the clearance required for future electrification of the Barrie rail corridor. The existing Eglinton Avenue West Bridge will not accommodate the potential future three tracks Barrie rail corridor. If the expansion of the Barrie rail corridor is to accommodate three tracks, the reconstruction of the Eglinton Avenue West Bridge may be required. This work is recommended to be completed in advance of the new GO Station works commencing through consultation and coordination with the City of Toronto. If the reconstructed Eglinton Avenue West Bridge is not in place at the time of track lowering, the existing bridge will require underpinning of the foundation to allow the track to be lowered.

Based on the findings of the Electrification Study Report (Metrolinx, December 2010), to protect for future electrification in the corridor, a minimum of 7.4 m of vertical clearance between top of rail and bottom of structure is required as part of the future detailed design phase for any new structures.

Property Acquisition

The planned Barrie Rail Corridor Expansion, which is being undertaken as a separate project, is examining the provision for three tracks and two platforms at the new GO Station site. This provision may require the existing ROW to be widened. The extent of this widening is to be confirmed when the Barrie Rail Corridor Expansion design progresses. These requirements are discussed further in Section 3.3.1. Further property may be required for construction access in the form of temporary construction easements.

Construction access and haul routes are recommended to be restricted to ingress/egress directly from Eglinton Avenue West and Bowie Avenue.

Retaining Walls

Due to the significant grade difference, temporary construction easements may be required in order to construct retaining walls. Primary construction access will be via the rail corridor however, some temporary encroachment onto adjacent private properties may be required during construction. If the need arises, permission to enter will be obtained in advance of the encroaching construction works.

Utility and Underground

As part of the concept design the following connections are proposed, this will be further refined during the detailed design phase of the Project:

- Natural gas service connection from Croham Road;
- Storm and sanitary connection within the vicinity of Eglinton Avenue West and Croham Road intersection and also on Bowie Avenue, west of the intersection with Croham Road; and
- Watermain connection from Croham Road and Bowie Avenue.

A number of utilities will require relocation prior to the construction of the new GO Station and associated works. It is expected that utility relocations can be accommodated within the proposed rail ROW. This rail ROW utility work should also consider the future electrification of the Barrie rail corridor.

The existing Hydro One overhead power line that runs along the eastern side of the railway tracks will need to be diverted below ground and away from the new GO Station prior to the construction works commencing.

Stormwater Management

Most of the grading/drainage for the track structure is contained within the rail ROW. The rail corridor is vegetated with trees and shrubs on either side of the existing tracks.

Alterations and Improvements to Transportation Infrastructure

Traffic Generation

Traffic forecasts on the area road network have been based on the Eglinton Connects Planning Study (March 2014, City of Toronto), augmented by a recent traffic count and by trip generation forecasts for the local area, using standard trip rates. The Future Phase 2 train service level has been assessed for trip generation as follows: All-day, Two-way (opening day service) with approximately 36 diesel trains/day.

The Caledonia GO and ECLRT Stations will largely rely on customer access via walking, cycling and transit, while also providing their function as Interchange Stations. A small Kiss and Ride area will be provided and a small parking area will be considered as part of the detailed design phase of the Project to accommodate staff and provision for taxis only.

The new GO Station is expected to generate very little external traffic. Following implementation of the Caledonia GO and ECLRT Stations the intersections in the Study Area are forecasted to continue to operate acceptably, assuming minor modifications to the signal timing.

Traffic Network and Distribution

Access to the new GO Station is proposed from Croham Road with egress from the Kiss and Ride to an un-signalized intersection. A new two-way section of Croham Road is recommended to be introduced from Eglinton Avenue West to the planned new access driveways to the new GO Station (approximately 45 m north of Eglinton Avenue West). One way northbound traffic operations would remain on Croham Road north of the new driveways and is recommended to be signed for “no through traffic” with increased enforcement.

Given the low-impact access modes proposed for the new GO Station, and the low external traffic generation forecasted, it is concluded that Transportation Demand Management measures will more than offset the direct traffic impacts on the broader transportation network. Signage should be implemented in the areas of the new GO Station and the Caledonia ECLRT Station to restrict the potential for illegal parking.

All of the track work is assumed to be completed as part of the Barrie Rail Corridor Expansion Project. As part of this work, 740 m of track needs to be realigned to accommodate the provision for future electrification and the required clearance beneath the existing Eglinton Avenue West Bridge. It is not expected that the Project will have any impact on the existing CN or VIA Rail service.

Transit Infrastructure

Construction of the new GO Station will provide an interchange to the TTC services that continue to serve the area, transfers to the ECLRT or the GO Rail lines at these stations, and provide improved opportunities for inter-regional travel. A bus loop is proposed at the Caledonia ECLRT Station, will also service the new GO Station. The ECLRT Environmental Project Addendum (October 2013) report indicates that TTC Bus Routes on Eglinton Avenue will continue to run after implementation of the ECLRT with Routes 47B/47C diverted to the Caledonia ECLRT Station bus loop.

Pedestrian Access and Cycling Opportunities

It is expected that the construction of the new GO Station will improve the existing pedestrian infrastructure and connectivity between public transit. Primary pedestrian access to the new GO Station will be from the sidewalks on Eglinton Avenue West. The existing traffic signals at Blackthorn Avenue will remain, providing a controlled crossing of Eglinton Avenue West adjacent to the new GO Station. Pedestrian travel to/from the new GO Station and the Caledonia ECLRT Station is forecasted to be approximately 400 pedestrians per hour during peak periods.

The proposed cross-section for Caledonia ECLRT Station will provide pedestrian access to the Caledonia ECLRT Station and also to the main entrance of the new GO Station. Pedestrians may also use the sidewalks on Croham Road, which are located on both sides of the road to access the station. Pedestrians will access the eastern and central island GO platform via elevators and stairways.

To connect the Caledonia GO and ECLRT Stations with the new Kiss and Ride, a pedestrian bridge is proposed to span over the GO rail corridor. This bridge is designed to connect these two stations over the tracks, with entrances and exits to the west and east of the rail corridor.

Provision for a secondary pedestrian tunnel entrance/exit in the future is proposed at the northern end of the station to provide access to the rail platforms and a connection between Carnarvon Street/Westside Mall and Bowie Avenue/York Beltline Trail. This will require an existing transformer for Westside Mall, currently located at the north-west corner of the site, adjacent to Carnarvon Street, to be relocated.

The construction of the new GO Station is expected to improve the existing cycling infrastructure and connectivity between the public and public transit. Cyclist travel to/from the new GO Station and the Caledonia ECLRT Station is anticipated to be approximately 25 cyclists per hour during peak periods.

The cross-section for Eglinton Avenue West, as proposed in the *Eglinton Connects Planning Study* (March 2014, City of Toronto), is recommended to be implemented prior to the opening of the Caledonia ECLRT Station and GO Station to improve bicycle access to the two stations. The concept plan for the Caledonia ECLRT Station and GO Station provides access to bicycle parking facilities at both stations (52 spaces at the LRT Station and 16 spaces at the GO Station).

In addition to the on-road cycling facilities proposed on Eglinton Avenue West, improvements are proposed on Croham Road to provide a cyclist linkage between the GO Station and the York Beltline Trail including: addition of contra-flow cycling infrastructure for southbound bicycle travel on Croham Road, relocation of on-street parking on Croham Road and possible addition of '*sharrow*' markings.

It is proposed that bicycle parking be provided for the new GO Station in the area of the north tunnel at both the east and west access points. There is also potential for a future multi-use trail on the west side of the GO rail corridor to be developed by Others as part of redevelopment of the Westside Mall area connecting to this tunnel. However this additional linkage is not required as part of the currently proposed works.

The pedestrian/ cyclist facilities on Eglinton Avenue West will be completed as part of the ECLRT Project. It is recommended that the City of Toronto continue to implement other improvements to cyclist infrastructure in the Study Area, as identified in their *2016 Cycling Network Plan*.

Project Implementation

This study is the first step in a larger process to establish feasibility of the proposed station building, pedestrian bridge and associated works. Decisions as to the Project's potential implementation, including funding, will be determined, in part, by this study findings and cost estimate. Other factors to be considered as part of the Project implementation include:

- Metrolinx/Agency Approvals;
- Detailed Design;
- Design Approvals;
- Construction and Construction Staging; and
- Operations and Maintenance.

Preliminary Cost Estimate

The preliminary capital cost estimates associated with the new GO Station construction works have been prepared based on the assumption that the Eglinton Avenue West Bridge modifications and the Hydro One tower and overhead hydro line relocation will be completed in advance of the new GO Station works. The preliminary construction cost estimate is based on preliminary design, reflecting the level of detail achieved as part of the Assessment. The total estimated cost to construct the new GO Station (including cash allowances and a 30% contingency) is $58 Million. A breakdown of the preliminary estimated costs by the three phases of construction is provided in Section 3.8 and Appendix M.

E4.0 Stakeholder Consultation Process

The process of consulting and engaging with stakeholders is an important component of the TPAP. TPAP consultation began in July 2014; however, an initial introduction to the new GO Station was provided at a Public Open House hosted on May 14, 2012 by TTC and Metrolinx for the unveiling of the preliminary design for the Caledonia ECLRT Station. In addition, online consultation ran from May 24 to 28, 2012 and invited visitors to thecrosstown.ca to access the same slide show displayed at the Public Open House. A copy of the Caledonia Station Public Consultation Report - Open House and Online

Consultation #1, July 3, 2012 is found in the Stakeholder Consultation Report (Appendix J). The following sections provide a summary of all consultation activities undertaken as part of the Assessment.

Comments were received from agencies throughout both the Pre-TPAP and TPAP consultation programs. Review agencies that submitted comments include the MOECC, Ministry of Tourism, Culture and Sport (MTCS), TRCA and the MNRF. Other stakeholders that submitted comments include the TTC and the City of Toronto. Please refer to Table 4.4 for a summary of the comments and responses received from these stakeholders. The Stakeholder Consultation Report (Appendix J) contains a complete list of the comments and the associated responses.

Overview of Stakeholder Consultation Process

All consultation activities were carried out in accordance with O.Reg. 231/08, Transit Projects and Metrolinx Undertakings. The consultation program included:

- Notifications;
- Public Meetings;
- Meetings with agencies;
- Identification of, and correspondence with, potentially affected Aboriginal communities; and
- Public review opportunities.

The Project is organized into activities carried out prior to TPAP commencement (pre-TPAP) and those carried out during the formal TPAP period.

Pre-TPAP Consultation Program

Pre-TPAP consultation included:

- Consultation with the Director of the MOECC to obtain a list of agencies to contact in order to identify interested Aboriginal communities;
- Development of a Master Stakeholder Contact List to include interested agencies, Aboriginal communities and residents;
- Meetings/ correspondence with Stakeholders:
  - TTC;
  - TRCA;
  - City of Toronto: Transportation Planning;
  - City of Toronto: Strategic Planning Initiatives;
  - City of Toronto: Transportation Services;
  - City of Toronto: Engineering and Construction Services;
  - City of Toronto :Heritage Preservation Services;
  - City of Toronto: Parks, Forestry and Recreation;
  - City Councilors within the Study Area;
  - Hydro One;
  - Infrastructure Ontario; and
  - Members of Provincial Parliaments within the Study Area.
- Public Meeting (PIC) #1.

Public Meeting #1 was held on May 26, 2015 at York Memorial Collegiate as part of the pre-TPAP consultation. The purpose of the meeting was to present information regarding the TPAP, Metrolinx's transportation goals, project background and purpose, existing conditions, and updated design concepts, while providing the public with an opportunity to comment on the Project prior to issuing the Notice of Commencement.

TPAP Consultation Program

Following the pre-TPAP consultation program, the TPAP commenced upon the issuance of the Notice of Commencement on October 29, 2015. In order to inform the public, regulatory agencies, Aboriginal communities and other interested persons of the initiation of the TPAP, a Notice of Commencement and Public Meeting #2 was posted in the York Guardian and Bloor West Villager newspapers on October 29 and November 5, 2015, on Metrolinx's website, and mailed to all stakeholders identified in the Master Stakeholder Contact list and property owners within a 100 m radius of the Project Area. A copy of the Master Stakeholder List can be found in the Stakeholder Consultation Report (Appendix J).

Public Meeting #2 was held on November 17, 2015 at York Civic Centre. The purpose of the meeting was to present information regarding the TPAP, results of environmental studies, preliminary design concepts while providing the public with an opportunity to comment on the Project.

The meeting included an Open House format with display boards, a presentation and a Q/A session. Most questions raised during the Q/A session included issues related to construction, electrification and noise/vibration. Four comments sheets were received from general stakeholders, agencies, and property owners. Attendees and other stakeholders had an opportunity to submit further comments by December 8, 2015. All comments have been addressed and/or incorporated into the Project design and mitigation plan.

Notice of Completion and EPR Review

Within 120 days of issuing the Notice of Commencement, a Notice of Completion of Environmental Project Report was published in the York Guardian and Bloor West Villager newspapers on February 25, 2016 and March 3, 2016. If a stakeholder is concerned with the undertakings of the Project, they are welcome to submit objections to the MOECC Environmental Approvals Branch for the Minister to consider by March 28, 2016.

E5.0 Project Environmental Effects, Impact Assessment, Mitigation and Monitoring Plan

The Project Area for the new GO Station is generally located on previously disturbed lands. Based on an assessment of potential impacts to the existing environmental conditions, there are no significant adverse environmental effects anticipated from the development of the station. Therefore, with appropriate mitigation measures, the potential environmental impacts from the development of the station are expected to be minimized.

Construction activities at the station will include: site preparation, construction of retaining walls, grading, drainage, dewatering of excavations (as required), stormwater management, new platforms, new

pedestrian bridge/tunnel and elevators, utility protection/relocation, station building construction and related site civil works and landscaping.

An Impact Assessment, Mitigation and Monitoring Report (Appendix K) has been prepared to document the potential environmental impacts that may occur (during construction, operation or maintenance of the new GO Station) and the proposed mitigation (general and construction) and monitoring plan. Table E.5.2 provides a summary of some of the potential impacts and key mitigation measures proposed. A detailed summary of all potential impacts and a full list of proposed mitigation measures and monitoring activities are provided in Table 5.1.

Climate Change

Climate change is usually associated with any significant change in long-term weather patterns. These changes can ultimately lead to increased occurrence of extreme weather events such as floods, droughts, ice storms and heat waves. In an effort to mitigate climate change, Metrolinx is committed to ensuring that the transit network, including new facilities, will have a low-carbon footprint and contribute to a clean and healthy environment for future generations (Metrolinx, 2014).

The effect of the Project on climate change has been considered. To help mitigate the effect, the new GO Station building design will aim to achieve Leadership in Energy and Environmental Design (LEED) certification. This process would further increase the sustainability of the new GO Station by improving air and water quality, enhancing urban ecology, reducing GHG emissions and reducing solid waste. In addition, measures for the compensation of existing tree loss and replacement will be taken to allow for an overall increase in tree contribution towards any carbon sequestration by the Project.

Consideration has also been given on how the changing climate has the potential to impact the Project. The stormwater management design for the new GO Station may incorporate Low Impact Development (LIDs) measures. LIDs would serve the purpose of controlling stormwater quantity and quality and would aid in promoting a more naturalized control of stormwater. LIDs would allow for increased infiltration of the stormwater, which would be beneficial should storms increase in intensity. Erosion and sediment control (ESC) measures will also be implemented during the construction phase of the Project to ensure stormwater runoff entering area sewers and then watercourses is not laden with sediment.

Future Noise Modelling Results

Using the STAMSON model, future noise levels at three points of reception (POR) within the Study Area have been predicted. Table E.5.1 shows existing noise modelling results.

From the modelled results, the adjusted Noise Impact value for all receptors is less than 5 dB for both the Phase 1 and Phase 2. As such, mitigation for the control of noise is not required for Phase 1 and Phase 2.

Table E.5.1: Future Noise Modelling Results (STAMSON)

Receptor ID	Period and Receptor Height (m)	Predicted Project Noise Levels (dBA)			Objective (dBA)	Adjusted Noise Impact (dB)	5 dB or Greater Increase?	Recommended Mitigation?
		Existing	Phase 1	Phase 2				
POR1	Daytime – 1.5 m	59	57	60	59	0	No	No
	Daytime – 4.5 m	60	58	60	60	0	No	
	Nighttime – 4.5 m	55	54	54	55	0	No	
POR2	Daytime – 1.5 m	58	55	57	58	0	No	No
	Daytime – 4.5 m	59	56	58	59	0	No	
	Nighttime – 4.5 m	52	49	51	52	0	No	
POR3	Daytime – 1.5 m	62	58	59	62	0	No	No
	Daytime – 4.5 m	62	58	59	62	0	No	
	Nighttime – 4.5 m	54	51	54	54	0	No	

Table E.5.2: Summary of Impacts and Mitigation Measures

Factor	Impacts	Mitigation Measures
Natural Environment		
Vegetation, Terrestrial Wildlife and Species at Risk	• Permanent removal or disturbance of vegetation that comprises the City of Toronto's Natural Heritage System. • Loss of trees. • Trees to be preserved adjacent to construction zones impacted by construction. • Potential for disturbance to breeding bird or migratory bird. • Potential for removal of Chimney Swift (Chaetura pelagica) habitat in the chimney on the structure at 2-4 Croham Road. • Temporary disturbance of wildlife and wildlife habitat. • Potential to impact operations if tree numbers 1 and 2, as identified in the Tree Inventory Plan (Appendix C) to be in poor condition fall on the track.	• Ensure that timing constraints are applied to construction schedule to avoid vegetation clearing (including grubbing) and/or structure works (construction, maintenance) during the core breeding bird period. • Active nests (nests with eggs or young birds) of protected migratory birds, including SAR protected under the ESA, 2007, cannot be destroyed. • Confirmation is required to determine if the chimney structure is being used by Chimney Swift. • Limit vegetation disturbance within the Project Area. • Install silt fencing and/or tree protection fencing. • Implement tree replacement and install tree protection around trees to be preserved. • If SAR are found within the study limits, an MNRF SAR Biologist will be contacted for advice. • Consult with project arborist during the detailed design phase of the Project to determine if tree numbers 1 and 2 should be removed and establish a tree removal plan.
Soils, Drainage and Hydrogeology	• Potential for the erosion of soils and impacts to surface water. • Potential for the movement of contaminated soils. • Potential contamination of soils resulting from a spill. • Potential impacts to groundwater. • Potential for dewatering activities required.	• Erosion and Sediment Control (ESC) Plan will be developed in consultation with TRCA. • Investigate potential for localized groundwater impacts and retain services for a detailed study. • Determine dewatering requirements and prepare a dewatering plan, if required. • Soil Management Plan (SMP) shall be prepared by a Qualified Professional during the detailed design phase and form part of the Construction Contract. • Refueling of equipment and fuel storage shall be conducted in designated areas with spill protection.
Cultural Environments		
Archaeology	• Potential to impact archaeological resources in the event of finding an isolated or deeply buried archaeological deposit.	• Should an isolated or deeply buried archaeological deposit be discovered, cease alteration of the site immediately; the Contractor would engage a licensed consultant archaeologist to carry out archaeological fieldwork.
Cultural Heritage	• Potential direct impacts to the York Beltline Trail. • Potential indirect impacts to the York Beltline Trail.	• Staging/construction activities and landscaping/rehabilitation.
Social and Built Environments		
Socio-Economic Environment and Land Use	• Potential for temporary nuisance impacts during the construction phase that could disrupt access to existing businesses, residents and parkland. • Potential for aesthetic impacts during the construction phase. • Loss and/or disruption of businesses at 2-4 Croham Road as a result of the removal of the building.	• Discussions and consultation to be held with affected businesses. • Although a small number of jobs could be lost or relocated outside of the neighbourhood, it is anticipated that the new GO Station and spin-off redevelopment of the area will result in overall job growth. • Traffic management plan for the construction phase will be developed by the contractor. • Stockpiled materials will be fenced and the construction area will be minimized. • Staging/construction activities and landscaping/rehabilitation.
Air Quality	• Potential effects to air quality are localized, short term and controlled. Emissions which are associated with construction activities include dust and particulate emissions and emissions from construction equipment.	• Complaint response protocol for nuisance will be implemented. • Construction Mitigation: – Vehicles/machinery and equipment shall be in good repair, equipped with emission controls. – The contractor shall also implement dust suppression.

Noise	• Adjusted noise levels associated with the operation of the new Caledonia GO Station are insignificant. • Potential for temporary noise impacts that could affect the local area during the construction stage.	• Complaint response protocol for nuisance will be implemented. • Noise control measures shall be implemented where required during the construction phase. • During operation of the GO Station, no mitigation measures are required since the noise levels related to operation are considered minor.
Vibration	• Potential for some temporary vibration impacts.	• Complaint response protocol for nuisance will be implemented. • During operation of the GO Station, no mitigation measures are required, as vibrations should be less than existing conditions.
Transportation and Utilities		
Traffic	• Potential for traffic and construction impacts which may be felt by the local area.	• Ongoing monitoring of construction access operations. • Detailed traffic management plan for construction staging and hauling routes to be developed by contractor.
	During Operation: • Potential parking issues on Croham Road and Westside Shopping Centre lands. • Additional pedestrian demands and impact on traffic mobility. • Potential to aggravate traffic issues on Croham Road.	Operation Mitigation: • Increased signage and parking enforcement • Monitoring of pedestrian activity after commencement of new GO Station operations. • Signal coordination plan for Eglinton Avenue West. • Ongoing monitoring of traffic operations in general vicinity of the new GO Station.
Utilities and Municipal Services	• Potential utility interactions. • Potential for works to impact adjacent properties.	• Efforts will be made to relocate the utilities and municipal services within the proposed rail ROW.

E6.0 Community Benefits and Impacts

Community Benefits

The benefits of public transportation to communities were identified through studies conducted and commissioned by various organizations (Canadian Urban Transit Association, Centre for Transit Oriented Development, American Public Transit Association, and Metrolinx). Provincial and municipal policies have been developed to support long-term objectives for improving public transportation, because of the recognized benefits towards increasing connectivity, reducing vehicle congestion, and opportunities for neighbourhood enhancement and renewal. A Socio-Economic and Land Use Characteristics Report prepared as part of the Assessment documents the potential community benefits and impacts by using past studies, qualitative analysis and professional judgement.

Public Transportation

A variety of provincial, regional and municipal policies are in place to promote public transportation and "transit supportive" neighbourhoods. These policies recognize that public transportation is a beneficial service that can:

- Improve the quality of life for local citizens by providing them with personal mobility and freedom;
- Open access to new job opportunities for those who could previously not travel beyond their local neighbourhood;
- Reduce traffic congestion and reduce the need for new and expensive road infrastructure;
- Reduce carbon emissions and air quality concerns associated with automobile use; and
- Allow citizens to save money on gas, vehicles, vehicle maintenance, insurance and other automobile related costs.

In addition to the benefit of transit service itself, public transportation hubs can result in a variety of spin off and indirect benefits. Transit stations can promote economic development and drive community growth.

New Caledonia GO Station

For the surrounding communities, the new GO Station has the potential to:

- Become an Interchange Station providing a direct link to the GO service, connecting passengers with other major transportation hubs within the rail corridor. This interchange will be made even more efficient by virtue of the new GO Station connecting with the new Caledonia LRT Station being constructed north of Eglinton Avenue West, immediately west of the Barrie rail corridor.
- Revitalize the neighbourhoods adjacent to this transportation point by linking its residents to new economic and employment opportunities and bringing goods and services to the area along the rail corridor, thereby bringing employment and business to the area.
- Provide "placemaking" for the neighbourhood and draw attention to the area as a place to visit, shop and own a business.
- Positively affect housing values by creating demand to live near transit with easy transfer points to reach areas of employment that require transit.

Community Impacts and Safety

Passenger rail has an important role in delivering a transit network across the regions. Although people living near a railway should expect to see and hear a certain amount of activity from rail operations, unlike highways, roads, and air traffic, the railway is a relatively less disruptive activity.

Residents with questions or concerns were given the opportunity to engage Metrolinx during the pre-engagement and TPAP process. Metrolinx will continue to engage with its neighbours during the Project. The station will be located in close proximity to residential areas. Some of the common concerns voiced by the public and agencies include air quality, noise and safety concerns associated with rail corridor crossings and security at, and around, the station. These concerns have been outlined and addressed in the design and mitigations plans.

Regulatory Framework

Requirements for maintaining railway safety and environmental standards at GO fall under both the federal and provincial jurisdiction and include associated legislation, regulations, rules and standards. As a part of the community, GO must also consider municipal by-laws and agreements in its operations and at its facilities. While GO is not currently a federally regulated railway, the requirements of several federal statutes must be met, including the *Railway Safety Act* (RSA), the *Transportation of Dangerous Goods Act and Regulations*, the *Canadian Transportation Accident Investigation and Safety Board Act*, the *Canada Labour Code* and the *Canada Transportation Act*. The RSA came into force in 1989 and assigned oversight of railway safety to Transport Canada. Transport Canada's mandate is to protect people, property and the environment by ensuring that the railways operate safely within a national framework.

GO is responsible and accountable for the safe operation and environmental care of their operations. GO is also responsible to ensure compliance with provincial regulations, including the *Occupational Health and Safety Act*, *Ontarians with Disabilities Act*, *Environmental Protection Act*, *Environmental Assessment Act* and all associated Regulations. Programs and procedures associated with GO's Safety Management System and Environmental Management System are implemented throughout the organization to identify and meet regulatory requirements, and to ensure that care is taken to protect health and safety and the environment.

E7.0 Permits and Approvals

As part of this TPAP, it is anticipated that the following permits, approvals and agreements are required:

- Compliance to *Migratory Birds Convention Act* for site clearance;
- Environmental Compliance Approval from the MOECC for noise and air pollutants and for stormwater management works;

- Temporary Environmental Compliance Approval from the MOECC for groundwater and surface water discharge during construction;
- Compliance under the Ontario Water Resources Act (1990) for well abandonment;
- Registration with the MOECC and compliance under the Environment Protection Act (1990) for hazardous waste activities and off-site disposal;
- Consultation with Ontario Energy Board regulated companies to ensure issues are addressed in accordance with utility crossing agreements;
- Connection Applications to Ontario Energy Board regulated companies for hydro and natural gas connection to the new GO Station site and Transmission Connection Agreement for ongoing operations with the providers;
- Municipal Service Application to Toronto Water for the connection of water and sewer service. Subsequent to the connection being installed a Water Turn On request must be submitted to Toronto Water; and
- Other utility service connection applications for telephone and communications.

Metrolinx as a Provincial Agency is not subject to municipal permits and approvals and is exempt from the TRCA's Acts and Regulations. In the spirit of cooperation and coordination, information will be provided to the TRCA or Municipal authority for their review and comment however formal permit approval will not be sought.

In addition to the required permits and approvals identified for the new GO Station, the potential effects on utilities within the station site will be investigated as part of the detailed design phase of the Project and mitigation measures identified as appropriate.

Various safety, training and protocols will be established in accordance with the relevant authorities.

Permits, approvals and agreements that are required for all phases of the Project have been identified in order for the Project to proceed. Metrolinx will continue to monitor conditions associated with the TPAP that may "trigger" requirements for permits or approvals and potential interest in the Project. In particular, existing utilities and dewatering requirements will be investigated further during the detailed design phase of the Project as well as coordination with the ECLRT Project for tunneling and advanced utility relocations.

E8.0 Future Design Commitments

A preliminary set of commitments have been identified to be undertaken during the detailed design phase of the Project. A comprehensive list of commitments is identified in Section 8.0 of this EPR under the following categories:

- Natural Environment;
- Soils, Stormwater and Groundwater;
- Cultural Heritage;
- Socio-Economic;
- Air Quality, Noise and Vibration;
- Traffic and Safety;
- Property Acquisition;
- Rail Corridor Improvements and Station Construction; and
- Utilities/Agency/Municipalities Consultation.

The potential impacts, mitigation measures and the associated net impacts in these areas have been identified, evaluated and assessed in the later sections of this EPR. As part of the normal evolution of a project, the detailed design phase of the Project may lead to refinement or modification of the proposed preliminary design as described in this EPR. It is anticipated that any changes to the design will not affect the original intent and commitments; however, these commitments should be reviewed during the detailed design phase of the Project to ensure completeness.

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Glossary

AANDC	Aboriginal Affairs and Northern Development Canada
AAQC	Ambient Air Quality Criteria
ADMGO	Air Dispersion Modelling Guideline for Ontario
ASI	Archaeological Services Incorporated
ATRIS	Aboriginal and Treaty Rights Information System
CCTV	Closed Circuit Television
CHER	Cultural Heritage Evaluation Report
CHSR	Cultural Heritage Screening Report
CN	Canadian National
CUTA	Canadian Urban Transit Association
DBH	Diameter at Breast Height
EA	Environmental Assessment
EAB	Environmental Approvals Branch
ECLRT	Eglinton Crosstown Light Rail Transit
ELC	Ecological Land Classification
EPR	Environmental Project Report
ESA	Endangered Species Act
ESC	Erosion and Sediment Control
GGHACA	Greater Golden Horseshoe Area Conservation Authorities
GHG	Greenhouse Gas
GIS	Geographic Information System
GO	GO Transit
GTA	Greater Toronto Area
GTHA	Greater Toronto and Hamilton Area
HIA	Heritage Impact Assessment
IO	Infrastructure Ontario
JSL	Jurisdictional Screening Level
LRT	Light Rail Transit
MAA	Ministry of Aboriginal Affairs
MNRF	Ministry of Natural Resources and Forestry
MPPs	Members of Provincial Parliament
MOECC	Ministry of the Environment and Climate Change
MTCS	Ministry of Tourism, Culture and Sport
NAPS	National Air Pollution Surveillance
NHIC	Natural Heritage Information Centre
NO_2	Nitrogen Dioxide
OBBA	Ontario Breeding Bird Atlas
OCS	Overhead Catenary System
OP	Official Plan
OPSS	Ontario Provincial Standards and Specifications
PA	Public Address
PHP	Provincial Heritage Property

PHPPS	Provincial Heritage Property of Provincial Significance
PIC	Public Information Centre
PIN	Property Identification Number
PM	Particulate Matter
POR	Points of reception
PPS	Provincial Policy Statement
RCDR	Reference Concept Design Report
RER	Regional Express Rail
RMS	Root-mean-square
ROW	Right-of-Way
RSA	Railway Safety Act
RTP	Regional Transportation Plan
SAR	Species at Risk
SARA	Species at Risk Act
SMP	Soil Management Plan
SWH	Significant Wildlife Habitat
TDM	Transportation Demand Management
TIS	Traffic Impact Study
TPAP	Transit Project Assessment Process
TPZ	Tree Protection Zone
TRCA	Toronto and Region Conservation Authority
TSP	Total Suspended Particulates
TTC	Toronto Transit Commission
TYSSE	Toronto-York Spadina Subway Extension

Definitions

Detailed Design: The detailed design phase of a project is defined as the last design stage before project implementation, which includes tendering and construction.

Growth Plan for the Greater Golden Horseshoe: Plan created under the Places to Grow Act (2005). It is an overarching strategy that provides clarity and certainty about urban structure, where and how future growth should be accommodated, and what must be protected for current and future generations.

Mitigation Measure: Actions that remove or alleviate, to some degree, the negative effects associated with the implementation of an alternative.

Notice of Commencement: The Proponent is required to prepare and distribute a Notice of commencement, which "starts the clock ticking" for the 120-day portion of the TPAP. Proponents must prepare and distribute a Notice of Commencement to indicate that the assessment of a transit project is proceeding under the TPAP. Proponents must complete their documentation (the EPR) of the TPAP within 120 days of distributing the Notice of Commencement.

Notice of Completion: The Notice of Completion must be given within 120 days of the distribution of the Notice of Commencement (not including any "time outs" that might have been taken). The Notice of Completion signals that the EPR has been prepared in accordance with Section 9 of Ontario Regulation 231/08 and indicates that the EPR is available for final review and comment (for 30 calendar days). Following the 30-day public review period, there is a 35-day Minister's decision period.

Preliminary Design: The design of a proposed project (including a preliminary cost estimate) to a level that demonstrates that the project is buildable within the given parameters of the design scope. This level of design is completed prior to the detailed design phase of the project.

The Big Move: A long range transportation plan created by Metrolinx for the Greater Toronto and Hamilton Area.

Transit Project: A transit project is defined an undertaking consisting of:

a) An enterprise or activity that is the planning, designing, establishing, constructing, operating, changing or retiring of a facility or service that, aside from any incidental use for walking, bicycling or other means of transporting people by human power, is used exclusively for the transportation of passengers by bus or rail, or anything that is ancillary to a facility or service that is used to support or facilitate the transportation of passengers by bus or rail; or,

b) A proposal, plan or program in respect of an enterprise or activity described in clause (a) above.

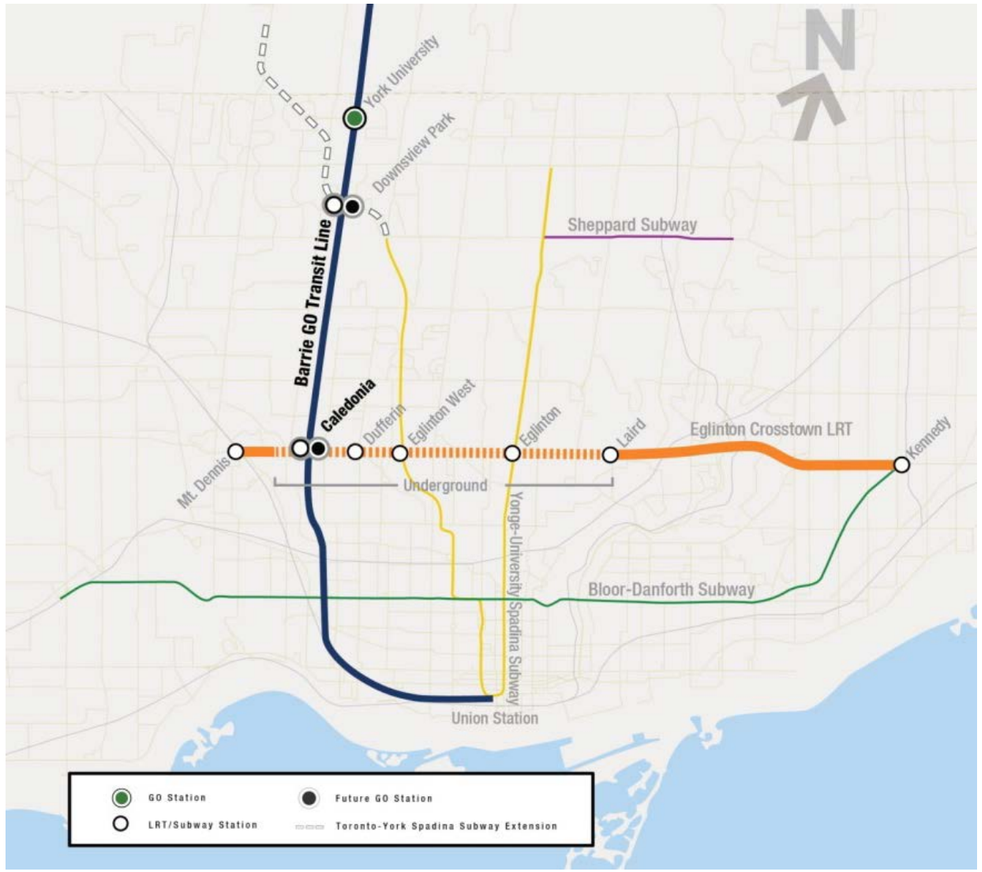
Transit Project Assessment Process (TPAP): The TPAP is defined in Section 6 through 17 of Ontario Regulation 231/08, Transit Projects and Metrolinx Undertakings. It consists of various steps and requirements. It is a focused impact assessment process that includes consultation, and assessment of potential positive and negative impacts, and assessment of measures to mitigate negative impacts, and documentation.

1.0 Introduction and Study Process

1.1 Introduction

Metrolinx, an agency of the Province of Ontario, has proposed the development of a new GO Station on the Barrie rail corridor within the City of Toronto. The Caledonia GO Station (herein referred to as the "Project" or "new GO Station") will be integrated with the future Eglinton Crosstown Light Rail Transit (ECLRT) Station at Eglinton Avenue West and Croham Road (west of Caledonia Road). Figure 1.1 illustrates the interconnection between the Barrie rail corridor and the ECLRT.

Figure 1.1: Barrie Rail Corridor and the ECLRT Integration*



*Note: Not all ECLRT station locations are illustrated and station names may be subject to change

This Transit Project Assessment (herein referred to as "the Assessment") reviews the need and justification for the Project, investigates the existing conditions and constraints on the proposed location of the Caledonia GO Station, station concepts and preliminary design, details the predictable environmental impacts or effects and provides recommendations for addressing these impacts through further study or mitigation. A separate Transit Project Assessment Process (TPAP) will be completed by Metrolinx for the Barrie Rail Corridor Expansion Project, which will include the provision for all-day, two-way service between Union Station and Allandale GO Station.

1.1.1 Background and Project Rationale

Metrolinx is transforming the way the region moves by building a fast, convenient and integrated transit network across the Greater Toronto and Hamilton Area (GTHA). Metrolinx has begun a new phase of transit improvement to increase rapid transit services across the region by delivering Regional Express Rail (RER), which will provide new travel choices across the region, including:

- Electrification of the entire Barrie rail corridor;
- All-day, two-way 15 minute service between Aurora GO Station and Union Station;
- Peak period, peak direction 30-minute or better service between Allandale Waterfront GO Station and Union Station; and
- Off-peak, two-way 60-minute service or better between Allandale Waterfront GO Station in Barrie and Union Station.

Metrolinx is also building the ECLRT line in the City of Toronto, which is a 19 km light rail route planned to run along Eglinton Avenue from Weston Road (west) to Kennedy Station (east). The ECLRT line includes a 10 km underground portion from Keele Street to Laird Drive. Within this segment, the line will tunnel under the Barrie rail corridor and include the Caledonia LRT Station north of Eglinton Avenue West, on the west side of the rail corridor. The ECLRT is anticipated to be in operation by 2021.

Since the Caledonia LRT Station was proposed to include a direct link to the rail corridor, a new GO Station at this location was prioritized. The Project will provide a seamless connection via a pedestrian bridge spanning the rail corridor, giving transit users access to both GO Transit (GO) and ECLRT services. The Caledonia GO Station will provide important infrastructure to support Metrolinx plans for RER in the form of all-day, two-way service on the Barrie rail corridor.

The Toronto Transit Commission (TTC) and the City of Toronto completed an Environmental Project Report (EPR) for the ECLRT in March 2010. The ECLRT EPR identified the potential for a future connection with GO rail at the Caledonia LRT; however, a TPAP was not completed for the GO Station at that time. A summary of the ECLRT EPR is provided in Section 1.1.4.1.

1.1.2 Planning Context

There are a number of key planning policies and documents that support the rationale for the Project, as detailed in the following sections.

1.1.2.1 Provincial Planning Policies

Since 2001, the Province of Ontario has approved a series of initiatives, statutes and plans that have profoundly changed the way planning and development is to occur within Ontario. A number of these specifically address transportation and public transportation. Public transit related developments shall be consistent with these policies.

Provincial Policy Statement (PPS) (MMAH, 2014)

The Provincial Policy Statement (PPS) provides general policies on land use patterns, transportation priorities, resources, and public health and safety that guide development across Ontario. It focuses on the need for community-based planning that increases the opportunity for use of public transit, including GO, by building compact and walkable communities.

The development of the Caledonia GO Station is one of the improvements proposed to optimize use of the existing Barrie rail corridor. The station will support a multi-modal system as it will provide a link between the regional GO train service, ECLRT and local TTC service.

Growth Plan for the Greater Golden Horseshoe, 2006 - Office Consolidation, June 2013

The Growth Plan for the Greater Golden Horseshoe Area provides a framework for the building of stronger, prosperous communities by better managing growth in the Greater Golden Horseshoe region. The plan guides decisions on a wide range of issues including transportation, infrastructure planning, land-use planning, and natural heritage. Metrolinx's planning initiatives are part of a coordinated effort with the goals of the Growth Plan to help reduce congestion and create an integrated and efficient transit system in the GTHA.

Specifically, Section 3.2.3 of the Growth Plan indicates the following:

1. Public transit will be the first priority for transportation infrastructure planning and major transportation investments.

2. All decisions on transit planning and investment will be made according to the following criteria:

   a) Using transit infrastructure to shape growth, and planning for high residential and employment densities that ensure the efficiency and viability of existing and planned transit service levels;

   b) Placing priority on increasing the capacity of existing transit systems to support intensification areas;

   c) Expanding transit service to areas that have achieved, or will be planned so as to achieve, transit-supportive residential and employment densities, together with a mix of residential, office, institutional and commercial development wherever possible;

   d) Facilitating improved linkages from nearby neighbourhoods to urban growth centres, major transit station areas, and other intensification areas;

   e) Consistency with the strategic framework for future transit investments outlined on Schedule 5; and

   f) Increasing the modal share of transit.

Development of the new GO Station supports the above noted goals of the Growth Plan.

1.1.2.2 City of Toronto Policy Document

City of Toronto Official Plan (2010)

The City of Toronto's Official Plan (2010) is supportive of inter-regional public transit, which is made evident by several policies within the Official Plan (OP).

Chapter 2, Section 2.1, Policy 1 states:

> *Toronto will work with neighbouring municipalities and the Province of Ontario to address mutual challenges and to develop a framework for dealing with growth across the GTA which: a) focuses urban growth into a pattern of compact centres and corridor connected by an integrated regional transportation system, featuring frequent, direct, transfer-free, inter-regional transit services…d) reduces auto dependency and improves air quality…*

Chapter 2, Section 2.2 states:

> *The growth areas are knitted together by the City's transportation network, the viability of which is crucial to supporting the growing travel needs of residents and workers over the next 30 years. The key elements of the City's transportation network are:*
>
> - *subway, LRT, streetcar and bus lines;*
> - *the GO Transit rail network;…*
> - *railway corridors and railway yards;…*

Most of Eglinton Avenue, including the section within the Study Area, is identified as an Avenue in the Official Plan. The Avenues are areas where re-urbanization resulting in new housing and employment is anticipated and encouraged.

Map 4 of the Official Plan, Higher Order Transit Corridors (2006) identifies a new GO Station at the Caledonia and Eglinton intersection as an "Expansion Element" and also identifies the area as a recommended new GO and TTC Interchange.

The new GO Station accomplishes the "Expansion Element" to the City's transit system as identified in the Official Plan. The station will help service the Eglinton Avenue intensification area with expanded public transit.

Eglinton Connects Planning Study

Eglinton Connects is a study designed to guide planning and development decisions in order to build upon the benefits of the ECLRT. Eglinton Connects is being implemented as part of the ECLRT Project. As a "Focus Area" the Caledonia GO Station has been identified as an important link with the ECLRT line. The station is also the focal point for redevelopment of the surrounding neighbourhood.

1.1.2.3 Metrolinx Policies and Programs

Metrolinx Regional Transportation Plan – The Big Move (2008)

In 2008, Metrolinx developed ***The Big Move***, a Regional Transportation Plan (RTP) to address the mobility needs of Canada's largest urban region while reducing traffic congestion and providing an alternative to increasing automobile dependence. Significant improvements through investment in new and existing transit infrastructure are being carried out under the RTP. The RTP envisions a significant increase in the demand for rail service on the Barrie rail corridor over the next 15 to 25 years. The Caledonia GO Station is one of the prioritized projects coming out of the RTP.

The Big Move outlined thirteen goals and thirty-seven objectives for regional public transportation. Relevant to the Barrie Rail Corridor Expansion Project are the following goals:

- Goal A, which is to provide transportation choices to give people a greater number of options for travel to a wide range of destinations. This includes providing options for seniors, children, those with special needs and others whose use of the automobile is limited.
- Goal I, which is to increase prosperity and competiveness by allowing residents to get to a greater number of jobs and by generally creating opportunities for greater prosperity and economic development.
- Goal J, which is to provide multi-modal integration by providing connections between various types of public transit services. The Caledonia GO Station will provide a connection between the GO rail line to Barrie and the ECLRT.
- Goal K, which is to provide interconnectedness, including the provision of new access points and new service to wider ranging destinations.

Mobility Hub Guidelines for the Greater Toronto and Hamilton Area (2011)

A Mobility Hub is a place of connectivity that intertwines a transit centre with the surrounding area. Metrolinx has developed a guideline (Mobility Hub Guidelines For the Greater Toronto and Hamilton Area, 2011) that outlines how to effectively plan, design and implement a Mobility Hub.

The Guidelines are separated into three categories: Seamless Mobility, Placemaking and Successful Implementation. Within the categories, there are nine objectives to make a Mobility Hub effective:

- Seamless Mobility:
  - Seamless integration of modes at the rapid transit station;
  - Safe and efficient movement of people with high levels of pedestrian priority;
  - A well-designed transit station for high quality user experience; and
  - Strategic parking management.
- Placemaking:
  - A vibrant, mixed-use environment with higher land use intensity;
  - An attractive public realm; and
  - A minimized ecological footprint.
- Successful Implementation:
  - Flexible planning to accommodate growth and change; and
  - Effective partnerships and incentives for increased public and private investment.

Following the aforementioned nine objectives will result in a Mobility Hub that allows for efficient travel to various destinations while maintaining a positive overall transit experience.

Metrolinx Investment Strategy (2013)

In May 2013, Metrolinx adopted the Investment Strategy "Investing in Our Region, Investing in Our Future". The Metrolinx investment Strategy proposes a series of 24 recommendations to the Ontario Government as part of a four-part plan to integrate transportation, growth and land use planning in the GTHA to maximize the value of public infrastructure investment, optimize system and network efficiencies and dedicate new revenue sources for transit and transportation.

In support of The Big Move, the Investment Strategy proposed a "Next Wave" which is a slate of $34 billion infrastructure projects and new programs that will continue Metrolinx's transformation of the GTHA's transportation system by expanding the regional transit network and providing resources for local transit, roads, walking, cycling and more. The Investment Strategy recommends that the Next Wave be fully funded by a Transportation Trust Fund that collects and administers new revenues generated by dedicated investment tools. The investment in GO infrastructure to introduce comprehensive all-day, two-way service along the Barrie rail corridor is included in the Next Wave projects.

Regional Express Rail

RER is one of the largest infrastructure projects in North America. Metrolinx is transforming the GO rail network - the backbone of regional rapid transit - to relieve gridlock and provide a more convenient way to get around the GTHA. The following infrastructure will be implemented as a part of RER.

By increasing options and connecting transit networks, Metrolinx will change the way the entire GTHA moves.

RER will benefit everyone in the GTHA by:

- Saving time for transit users with faster and more frequent transit service;
- Allowing customers to switch from car to train as a primary mode of transportation, resulting in costs savings, avoiding the stress of traffic congestion and allowing for greater productivity by using the time spent on trains to carry out other tasks;
- Generating greater freedom to move through improved access to employment, education and important community activities; and
- Lowering the costs of lost productivity due to traffic congestion which has been estimated at up to $11 billion per year.

To support these goals, RER will fast-track future service expansion with over 200 projects worth over $16 billion already underway. This includes significant work to update GO infrastructure that is the foundation of RER service. The Caledonia GO Station is one of the key infrastructure updates identified as part of the RER Project.

Meeting the growing transportation needs of the region requires a pipeline of projects ready to be delivered and operated as funding becomes available. These are referred to as Next Wave Projects. Figure 1.2 illustrates a number of Next Wave and RER Projects within and across the GO system network including RER service for the Barrie rail corridor and identifies the new Caledonia GO Station.

Figure 1.2: Next Wave and RER Projects

1.1.3 Corridor Overview

The Barrie rail corridor is owned by Metrolinx who operates passenger rail service (using the Newmarket Subdivision) between Union Station (Mile 0.00) and Allandale Waterfront GO Station (Mile 63.00). Oriented in a north/south direction, the rail corridor is approximately 63 miles in length and has 10 stations (excluding Union Station). The corridor runs through nine municipalities including City of Toronto, City of Vaughan, Township of King, Town of Aurora, Town of Newmarket, Town of East Gwillimbury, Town of Bradford West Gwillimbury, Town of Innisfil and the City of Barrie. The existing map for the Barrie rail corridor showing the location of the stations is illustrated in Figure 1.3. The new GO Station is to be located at Mile 6.50, just north of Eglinton Avenue West.

Trains are stored overnight at the Barrie Layover Facility located between Mile 62.17 and Mile 62.84. Bus service is available for off-peak hours at all station along the Barrie rail corridor except York University GO Station in the City of Toronto. There are also infrequent Canadian National (CN) freight and VIA rail services operating within the Barrie rail corridor.

Figure 1.3: Existing Barrie Rail Corridor Map

1.1.4 Supporting Studies

There are three studies that were completed prior to the commencement of the Assessment, which support the Project. These studies include:

- Transit City: Eglinton Crosstown LRT EPR (March 2010);
- Barrie Corridor Planning Study (March 2012); and
- Caledonia GO Station Reference Concept Design Report (September 2013).

A summary of each document is provided below.

1.1.4.1 Transit City: Eglinton Crosstown LRT EPR

The ECLRT is one of several high priority rapid transit projects currently under construction in Toronto. Construction of the ECLRT is currently underway and the Province of Ontario is planning for the implementation of the entire ECLRT by 2021. This will be owned by Metrolinx and operated by TTC.

In 2010, the TTC and the City of Toronto completed the Transit City: Eglinton Crosstown LRT EPR for the 33 km ECLRT line, which included the Caledonia LRT Station and protected for a potential future connection to a GO Station on the Barrie rail corridor. The project was initiated as part of the TTC plan for development of a network of light-rail lines throughout the City of Toronto with connections to existing and future transit services. The recommended alternatives for the ECLRT Project would have the line mainly underground.

The ECLRT line route will follow Eglinton Avenue from the future Mount Dennis Station (Weston Road) in the west to the existing Kennedy TTC and GO Station in the east. The ECLRT line will run underground for a short distance from Mount Dennis to just east of Black Creek Drive. The ECLRT will be elevated into a portal over Black Creek Drive and Black Creek and then run underground to Brentcliffe Road and then at grade again from east of Brentcliffe Road to Kennedy Road with the exception of a short underground segment at Don Mills Road. The ECLRT line will be tunneled along Eglinton Avenue West under the Barrie rail corridor and include a Caledonia LRT Station located on the north side of Eglinton Avenue West, on the west side of the Barrie rail corridor.

The ECLRT Project involved the planning of 10 surface stops and 15 underground stations, several traffic direction mechanisms, bridge improvements and replacements, installation of new LRT infrastructure (including traction power stations, maintenance and storage facilities, emergency exit buildings, and new Interchange Station) and associated landscaping and streetscaping.

The ECLRT line will connect with the Spadina Subway, Yonge Subway, Bloor-Danforth Subway, Scarborough Rapid Transit, Barrie rail corridor, surface bus routes and a grid of major arterial roadways, all within the City of Toronto. The ECLRT will remove the majority of surface bus service along Eglinton Avenue. A future link with the Union Pearson Express will be established at the future Mount Dennis Station.

1.1.4.2 Barrie Corridor Planning Study

In March 2012, Metrolinx completed the Barrie Corridor Planning Study (Halcrow, The Planning Partnership and Hatch Mott MacDonald, 2012). The study noted that “The Barrie line is expected to see continued demand increases over the (10 year) planning period, as long as transit services in the corridor continue to improve.” The ridership increases are resultant of employment and population growth in the Region of York and the County of Simcoe. Forecasting completed for this study showed that ridership on the Barrie rail corridor has continued to increase. As noted, the 2010 ridership is at 6,750 A.M. peak boardings (as of 2014 this has increased to over 10,500 boardings) and is projected to further increase by 2021 to reach 13,900 A.M. peak period boardings. By 2031, ridership on the corridor is projected to reach 16,000 for A.M. peak period boardings. These forecasts helped establish the need for all-day, two-way service on the existing Barrie rail corridor with a provision for counter peak direction service during the A.M. and P.M. peak periods, bi-directional service during the midday/evening off peak periods, and bi-directional service during the weekend off peak period.

The Barrie Corridor Planning Study was initiated as a background study with the understanding that it would lead to an environmental assessment for the corridor. The goals of the study were to:

- Determine the needs and justification for the expansion of services along the existing corridor;
- Present service plans associated with existing infrastructure and future expansion opportunities;
- Identify potential stakeholders and stakeholder issues;
- Prepare an accounting of operating costs and revenue associated with the expanded service;
- Develop phasing and implementation strategies related to:
  - Land use intensification;
  - Transportation access; and
  - Station planning.

The study concluded that the provision of all-day, two-way GO service along the Barrie rail corridor is required to connect new residential growth areas to major employment and destinations as well as major transit systems. In order for Metrolinx to implement all-day, two-way service along the Barrie rail corridor by 2021, additional tracks, layover facilities, expanded station infrastructure, new train consists and new GO Stations are required. The Caledonia GO Station will act as a major Interchange Station, and will provide infrastructure to meet increase access to GO service within the City of Toronto. This station will also support the planned corridor expansion improvements that will be undertaken on the Barrie rail corridor.

1.1.4.3 Caledonia GO Station Reference Concept Design

In September 2013, Metrolinx completed the Caledonia GO Station Reference Concept Design Report (RCDR) (ARUP Canada Inc. and NORR Limited Architects). A copy of the RCDR is provided in Appendix O. The RCDR presented the 30% design drawings package and summarized the background for the rail corridor including the connection to the future Caledonia ECLRT Station and the existing site conditions and land use. This report identified that a number of options were reviewed for implementing a three track station with two platforms within the existing rail corridor. The design considerations included the assessment of straight versus curved platforms and platforms located centrally to the Caledonia ECLRT Station or north of the Eglinton Avenue West Bridge.

The report recommended that the platforms be located north of the Eglinton Avenue West Bridge to minimize land acquisition. The RCDR identified existing infrastructure that would be effected by the implementation of the preferred layout including the required lowering of the track below the Eglinton Avenue West Bridge, the required reconstruction of the Eglinton Avenue West Bridge to widen the corridor ROW and the relocation of the existing Westside Mall transformer to accommodate the secondary tunnel entrance proposed at the north end of the platform.

1.1.5 Ridership Demand Forecast

The Barrie Corridor Planning Study predicted that ridership would increase significantly along with increases to population, employment, and service levels. The methods reviewed the A.M. peak period peak direction ridership (using 2010 ridership level) at 6,750 boardings (as of 2014 this has increased to over 10,500 boardings) and projected ridership in 2021 and 2031 based on population and employment growth. With service levels increased to include more peak period service and hourly off-peak service, ridership is estimated at 13,900 and 16,000 in 2021 and 2031, respectively. These projections support the need for improvements to the existing corridor to accommodate the projected increase ridership. Ridership increases related to RER are expected to be even higher based on higher frequency of service.

Metrolinx has also estimated that the number of A.M. peak boardings and alightings at the new GO Station will be 200 and 750 in 2021 and 2031, respectively. These figures include transfers to/from the ECLRT and TTC buses.

The ridership demand forecasts for Caledonia GO Station are based on a Barrie rail corridor service concept that was in use in 2014. In April 2015, the Government of Ontario committed funding for a new RER program to expand service across the GO Rail network, including the Barrie rail corridor. This new RER service concept for the Barrie rail corridor does not significantly change the level of ridership activity predicted at Caledonia GO Station during the peak period. The RER concept does have more substantial impacts elsewhere on the Barrie rail corridor, and will improve Caledonia GO Station usage during off-peak times.

1.1.6 Current and Future GO Train Service Levels

Currently, the corridor operates 14 trains on weekdays during peak hours within the Barrie rail corridor, with no off-peak service. This current service level is comprised of seven trains in the A.M. peak period between 5:15 A.M. and 9:00 A.M. (southbound direction only), of which five depart from the Allandale Waterfront GO Station in the City of Barrie and two depart from the Maple GO Station in the City of Vaughan, and seven trains in the P.M. peak period between 3:40 P.M. and 8:30 P.M. (northbound direction only) departing from Union Station. Seasonal weekend service is only provided during the summer and includes four trains for each direction.

To accommodate future ridership demand, train service levels will need to be increased. Metrolinx plans to increase service levels along the Barrie rail corridor over the next 10 to 15 years. By opening day, Metrolinx is planning to increase the daily train trips within the corridor to 36 (weekdays). With the future planned electrification of the corridor for the RER service, the daily train trips will increase up to 180. Figure 1.4 illustrates the frequency of RER train service during peak period (rush hour weekdays). Figure 1.5 illustrates the frequency of RER train service during off-peak period (midday, evenings and weekends). Under the RER service, the Barrie rail corridor will have 15 minute peak period headways between Aurora GO Station and Union Station and 30 minute peak period, peak direction headways between Allandale Waterfront GO Station and Union Station. During the off-peak period, train will run every 15 minutes between Aurora GO Station and Union Station and every 60 minutes between Allandale Waterfront GO Station and Union Station.

Figure 1.4: Peak Period RER Train Service

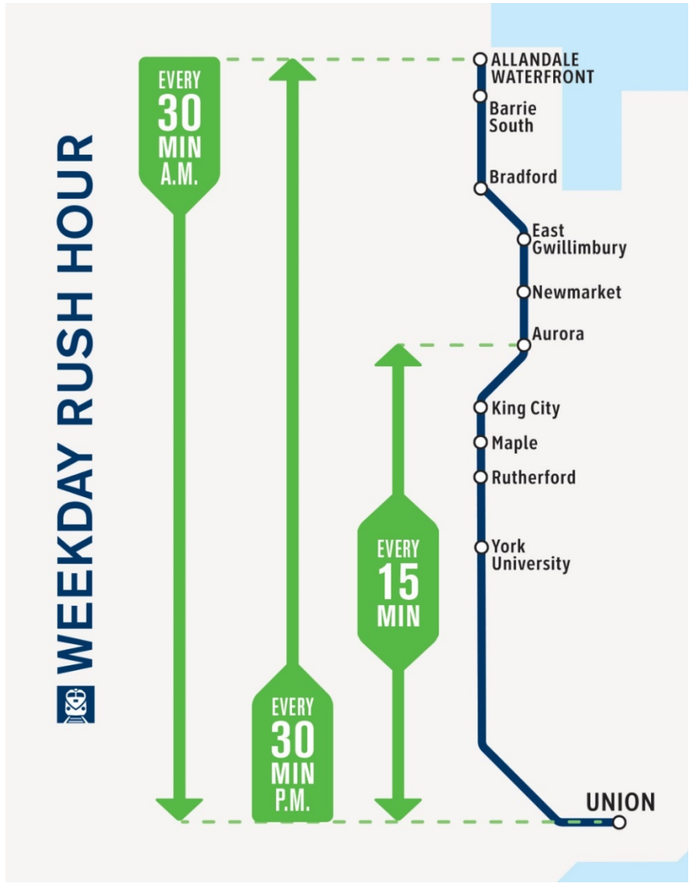


Figure 1.5: Off-Peak Period RER Train Service

For the purposes of the Assessment, existing and future train service levels are defined as follows:

- Existing: current operating conditions with current 2015 traffic volumes;
- Future Phase 1: addition of a new GO Station (Caledonia) operating with current 2015 traffic volumes; and
- Future Phase 2: provision of all-day, two-way service (an expansion with increased trains over the entire day as well as an additional second track allowing trains to travel both north and southbound) along the existing route operating with predicted opening day (2021) traffic volumes of 36 diesel trains per day.

1.2 Project Purpose and Scope

1.2.1 Project Purpose

The purpose of the Project is to provide much needed infrastructure to support the planned service improvements on the Barrie rail corridor, and to improve connectivity between the ECLRT and Barrie rail corridor.

The primary goals of the Project include:

- Expand regional transit connectivity;
- Provide an interchange between local and regional transit systems;

- Provide an additional station within the City of Toronto between the future Downsview Park GO Station and Union Station;
- Complement the planned service improvements and future electrification of the Barrie rail corridor; and
- Improve service to customers.

The purpose of the Assessment is to review the need and justification for the Project, investigate existing conditions and constraints on the proposed location of the new GO Station, provide updated station concepts and preliminary design plans, detail the predictable environmental impacts or effects and provide recommendations for addressing these impacts through further study or mitigation.

1.2.2 Project Scope

The new GO Station will be built on the existing Barrie rail corridor at Mile 6.50 providing a new stop between the future Downsview Park GO Station (Mile 10.87) and Union Station. A map for the Barrie rail corridor showing the location of the future Caledonia and Downsview Park GO Stations is illustrated in Figure 1.6. The opening of the Toronto-York Spadina Subway Extension (TYSSE), forecasted for 2017, is expected to prompt significant changes to the flow of transit users in a wide area surrounding the line. Metrolinx is currently working with other transit agencies to review what potential changes will occur with the opening of TYSSE, including an examination of bus routes, stops, and fare integration measures. The Caledonia GO Station will provide a seamless connection via a pedestrian bridge with the Caledonia LRT Station being constructed north of Eglinton Avenue West, on the west side of the Barrie rail corridor.

It is expected that the Barrie rail corridor will be electrified in the future with full RER service. The RER service will be assessed in studies completed for the Barrie Rail Corridor Expansion and for the system-wide electrification project and has not been considered as part of this Environmental Project Report (EPR). The new GO Station will be designed with provisions for future electrification. This is discussed further in Section 3.6.1.

The design of the new GO Station will include the following elements:

- New station building;
- New full service platforms;
- Kiss and Ride area, including taxi and barrier free drop-off;
- Pedestrian and bicycle access; and
- Connection to the ECLRT and TTC.

The preferred design includes a new station building with a main entrance at the northwest corner of the intersection of Croham Road and Eglinton Avenue West and a pedestrian bridge over the rail corridor linking the ECLRT and GO Station. At track level, the new GO Station will have a side platform on the east side of the corridor and an island platform on the west side of the corridor with additional pedestrian accesses at the north end of the station from Bowie Avenue and Carnarvon Street. A detailed description of the Project on the basis of the preliminary design is provided in Section 3.0.

Figure 1.6: Future Barrie Rail Corridor Map

Drawing SK-101 provided in Appendix A illustrates the boundary of the Project Area showing the extent of works to develop the new GO Station. Renderings of the new GO Station from the perspective of the pedestrian bridge and the Kiss and Ride area and the provisional (north) pedestrian tunnel are provided on Drawing SK-105 and Drawing SK-106 (see Appendix A).

A view of present day conditions of the rail corridor at the location of the new GO Station is provided in Figure 1.7.

Figure 1.7: Present Day Conditions of Project Area

Northview from the Eglinton Avenue West Bridge

1.2.2.1 Study Area

The overall Study Area for the Assessment is bound by Castlefield Avenue to the north, Croham Road/Gilbert Avenue to the east, Keith Avenue/Cameron Avenue to the south and Blackthorn Avenue/Carnarvon Street/Strathnairn Avenue to the west. The boundaries of this overall general Study Area are illustrated on Figure 1.8. This includes lands adjacent to the development area (Project Area) of the new GO Station.

For each individual environmental study completed in support of the Assessment, the area of influence that the Project has on the environment varies based on the subject matter being studied. Hence, the Study Area documented in the individual study reports varies slightly from what is illustrated in Figure 1.8. For example, the area of influence that the Project will have on trees is limited to the development area for the new GO Station, whereas the area of influence of the Project on natural heritage depends on the development footprint of the new GO Station. The Study Area illustrated in the Tree Inventory Plan Report is smaller than the Study Area illustrated in the Natural Heritage Assessment Report. The area of study is clearly defined within the specific study reports, which are included in the appendices of this EPR.

1.3 Transit Project Assessment Process

The TPAP is a focused process, approved by the Ontario Ministry of the Environment and Climate Change (MOECC) that recognizes and addresses the predictable environmental impacts and effects of transit projects. The TPAP creates an efficient plan that allows for project commencement, review and approval of the EPR to occur within six months. The Ontario Ministry of the Environment guide entitled "Ontario's Transit Project Assessment Process, January 2014" was also closely referenced for the Assessment. An outline of the TPAP framework and timelines is provided in Figure 1.9.

1.3.1 Pre-TPAP Phase

The TPAP Guide, entitled "Ontario's Transit Project Assessment Process, January 2014", recommends a variety of consultation, baseline studies and assessments as part of planning or pre-TPAP phase. Components of the pre-TPAP phase include:

- Identification and early consultation with potentially affected Aboriginal communities and other potentially interested stakeholders, adjacent property owners, regulatory agencies and municipalities;
- Initial identification of issues of provincial importance and constitutionally protected Aboriginal or treaty rights;
- Pre-notification, pre-consultation and response to any concerns raised;
- Completion of baseline studies, identification of potential environmental impacts and proposed measures to mitigate impacts; and
- Preparation of a draft Environmental Project Report.

These activities lay the groundwork and foundation for the TPAP. In July 2014, Metrolinx initiated pre-TPAP planning activities for the Project. This Assessment has been undertaken in accordance with the TPAP as outlined in Ontario Regulation 231/08, Transit Projects and Metrolinx Undertakings.

1.3.2 TPAP Phase

The TPAP is a focused process that centres on a specific transit project, in this case the proposed Caledonia GO Station. The TPAP phase generally includes:

- Additional notification;
- Ongoing consultation and record keeping to document concerns and responses;
- Incorporation of comments into the project concept and design;
- Identification of the significance of impacts, both positive and negative, including confirmation of any issues of provincial importance or constitutionally protected Aboriginal or treaty rights; and
- Updating and allowing for review of the Environmental Project Report.

An objection process is available for those who feel their concerns have not been adequately addressed. Any objections must be submitted to the Minister of the MOECC, as outlined in Figure 1.9.

Figure 1.8: General Study Area

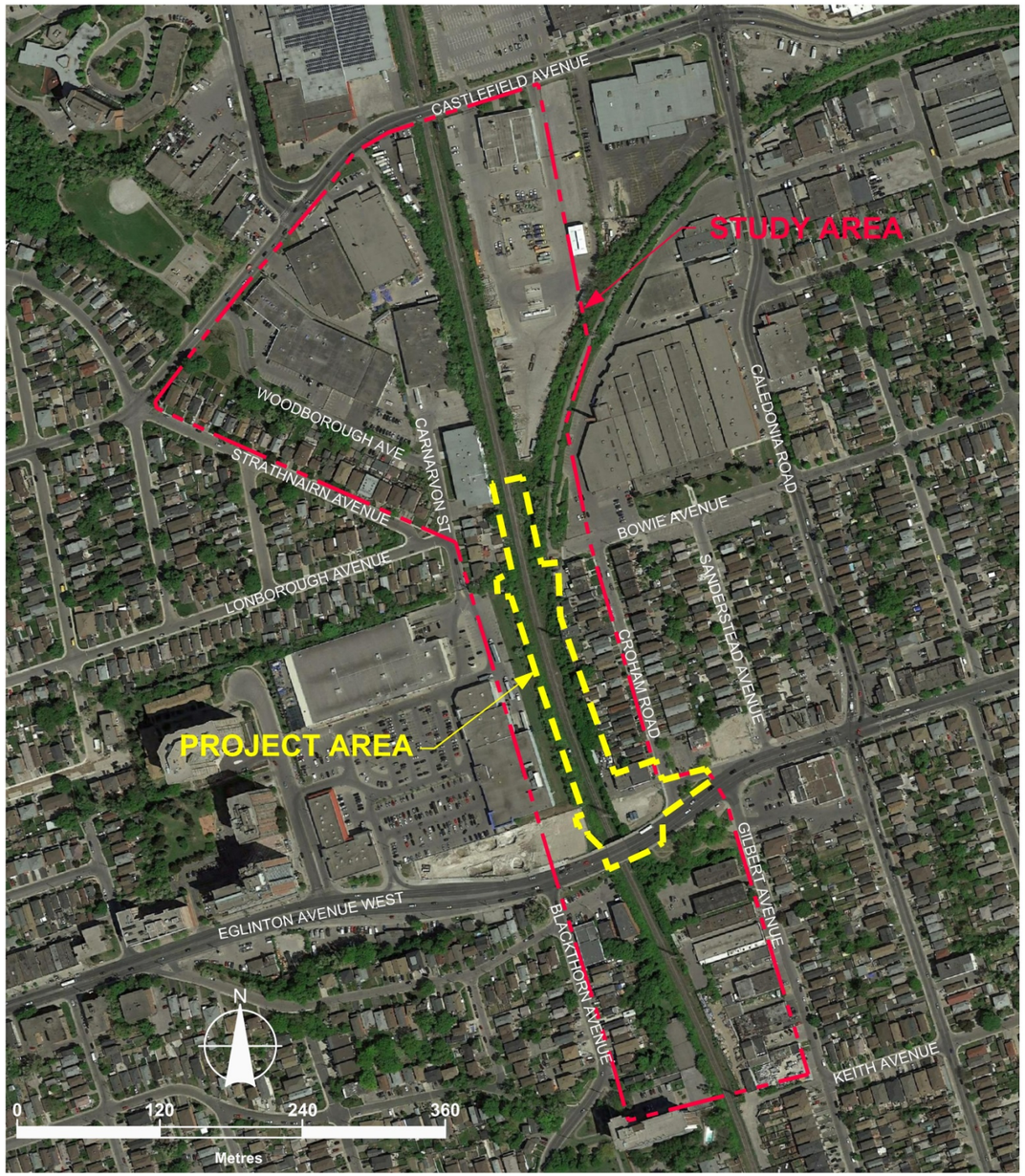
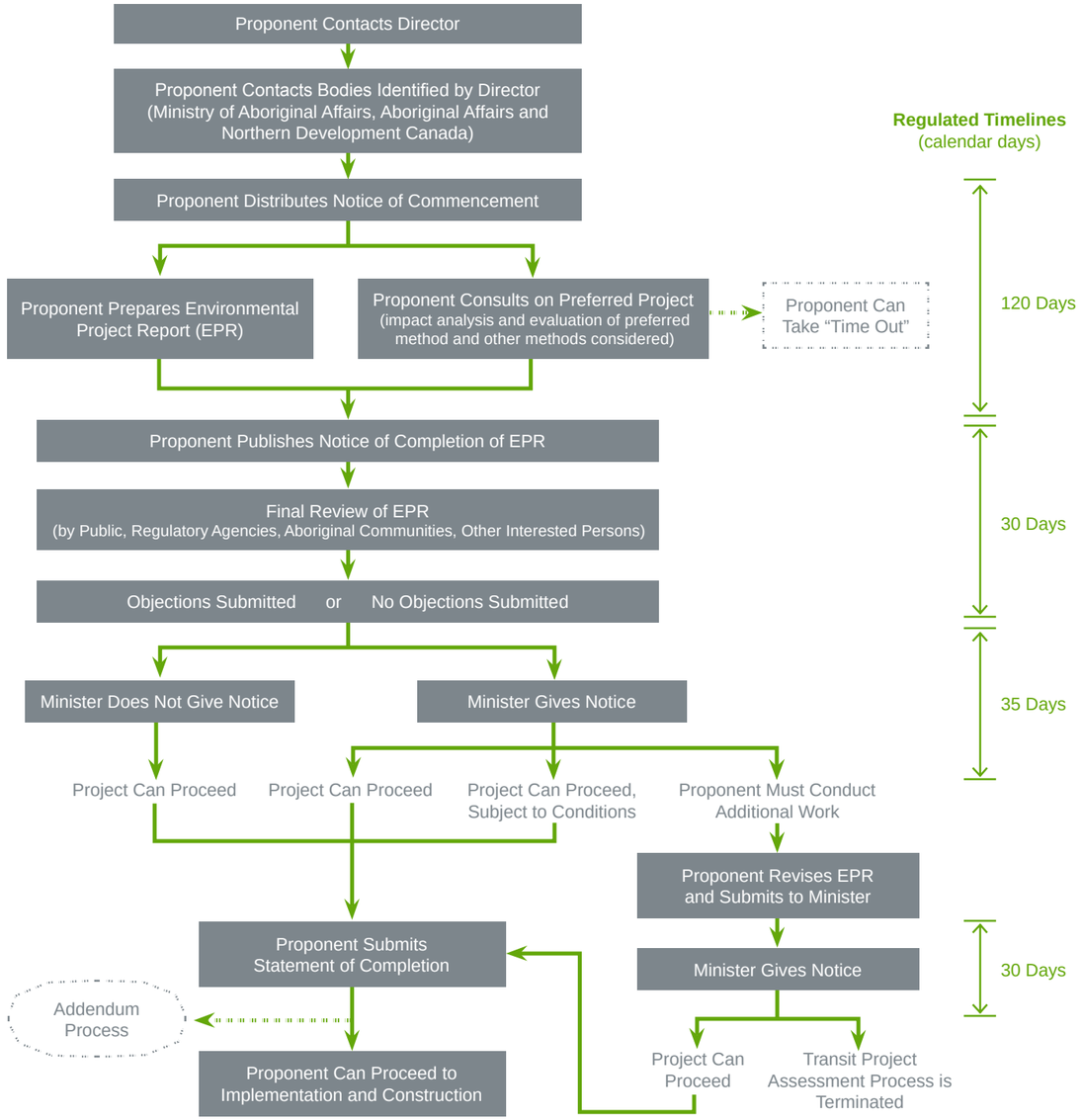


Figure 1.9: Transit Project Assessment Process Framework and Timelines



1.3.3 TPAP Documentation

As part of documenting the TPAP, this EPR has been organized into nine sections and includes supporting environmental and technical study reports (included as appendices), to address the requirements set out in O. Reg. 231/08 – Transit Projects and Metrolinx Undertakings. The EPR document supports the planning and decision making process followed during the course of the Assessment. The EPR summarizes the existing conditions within the Study Area and the potential environmental effects that could occur as a result of implementing the Project on the basis of the preliminary design of the station and associated elements. The EPR also provides mitigation measures and monitoring activities to minimize these potential environmental effects. As well, the EPR documents all stakeholder consultation efforts made by the Project Team to engage and obtain input to the Project from the public, review agencies, Aboriginal communities, and adjacent property owners.

In order to facilitate the review of this EPR in the context of the TPAP requirements a concordance table (Table 1.1) has been prepared. Table 1.1 directs the reader to the various sections of this EPR where they will find the components of the EPR that are established in The Guide to Ontario's Transit Project Assessment Process (MOECC, January 2014).

Table 1.1: TPAP Concordance

EPR Requirement	Section of EPR Where Requirement is Addressed
A statement of the purpose of the transit project and a summary of background information relating to the transit project.	Section 1
The final description of the transit project including a description of the preferred method.	Section 3
A description of any other design methods that were considered once the project commenced the transit project assessment process.	Section 3
A map showing the site of the transit project.	Section 1
A description of the local environmental conditions at the site of the transit project.	Section 2
A description of all studies undertaken in relation to the transit project, including a summary of all data collected or reviewed and a summary of all results and conclusions.	Section 2, Section 5, all supporting environmental studies (Appendix A - K)
The assessments, evaluation and criteria for any impacts of the preferred method and any other design method (described above) that were considered once the project's transit project assessment process commenced (does not include pre-TPAP work).	Section 5, Impact Assessment, Mitigation and Monitoring Report (Appendix L)
A description of any proposed measures for mitigating any negative impacts that the transit project might have on the environment.	Section 5, Impact Assessment, Mitigation and Monitoring Report (Appendix L)
If mitigation measures are proposed, a description of the proposal for monitoring or verifying the effectiveness of the mitigation measures.	Section 5, Impact Assessment, Mitigation and Monitoring Report (Appendix L)
A description of any municipal, provincial, federal, or other approvals or permits that may be required for the transit project.	Section 7, Permit and Approval Requirements Report (Appendix M)
A consultation record, including: • A description of the consultations and follow up efforts carried out with interested persons, including Aboriginal communities, • A list of the interested persons, including Aboriginal communities who participated in the consultations, • Summaries of the comments submitted by interested persons including Aboriginal communities, • A summary of discussions with Aboriginal communities including discussions of any potential impacts of the transit project on constitutionally protected Aboriginal or treaty rights, and copies of all written comments submitted by Aboriginal communities, and • A description of what the proponent did to respond to concerns expressed by interested persons including Aboriginal communities.	Section 4, Stakeholder Consultation Report (Appendix K)
If a "time out" was taken during the transit project assessment process, a summary of each issue including: • A description of the issue, • A description of what the proponent did to respond to the issue and the results of those efforts • The dates that notices for the "time out" were given to the Director and the Regional Director.	No time out required.

2.0 Existing Conditions

In order to assess the potential environmental effects of the Project, a detailed survey and review of the existing conditions within the Study Area was conducted. This was accomplished through the completion of a number of individual environmental studies. The existing conditions described in the following subsections are organized by natural environment, cultural environment, social and built environments and transportation and utilities. While Section 2.0 describes the existing conditions only, an assessment of environmental impacts to these existing conditions and the identification of mitigation measures and monitoring activities was undertaken is documented in Section 5.0 and in the Impact Assessment, Mitigation and Monitoring Report, which is provided in Appendix L.

2.1 Natural Environment

The following subsections summarize the existing natural environment conditions within the Study Area based on desktop reviews and field investigation. Further details regarding these findings and sources consulted are available in the Natural Heritage Assessment Report in Appendix B and the Tree Inventory Plan in Appendix C.

2.1.1 Landforms, Soils and Geology

Throughout the Study Area, the rail corridor is below grade relative to the adjacent lands. North of Eglinton Avenue West Bridge, from track centerline westward, the land gently slopes down for 7 m to a shallow ditch and then slopes upwards for 4 m at 47% to meet the existing property line. From this property line the slope continues upward for 9m at 22% to meet the neighbouring Westside Mall property. From track centerline eastward, the land is fairly flat for approximately 15 m and then slopes up for 10 m at 56% to meet the property line and retaining wall. The grade difference on the east between the neighbouring property and the track is approximately 6 m. The slopes leading upward from the tracks south of the Eglinton Avenue West Bridge have been observed to be shallower than those immediately north of the bridge, as illustrated on Figure 2.1. Based on available historical soil mapping, the soil within the Study Area was characterized as Clayey Silt Till (Halton) (Ministry of Natural Resources (MNR), 1980). This soil type is the most common within Toronto and the surrounding area. Significant disturbance has occurred within the Study Area over time, including the import of fill materials that likely resulted from development of the rail corridor and adjacent lands.

Phase I and II Environmental Site Assessments were completed for the 2-4 Croham Road property that will be used for the development of the new GO Station. Based on the findings of the Phase II ESA Report (Coffey Geotechnics Inc., February 2014), there were a number of compounds found within the soils sampled from this property that exceed the applicable standards. Additional soil investigation is recommended to delineate the horizontal and vertical extent of soil impacts.

Figure 2.1: Present Day Eglinton Avenue West Bridge

Southview from the railway corridor

2.1.2 Drainage and Hydrogeology

Background resources including Toronto and Region Conservation Authority (TRCA) and City of Toronto mapping were reviewed prior to field visits to determine if there were any surface water features in the Study Area. One TRCA regulated ravine feature was identified on City of Toronto online mapping tool (City of Toronto, 2015) beginning approximately 40 m west of the railway corridor (north of Eglinton Avenue West) and extending westward away from the Study Area. Field inspection of this ravine feature found no evidence of surface water conveyance or a discharge that would indicate subsurface conveyance. This ravine feature was no longer visible. The component of this feature which was reviewed was within 250 m of the Study Area, but is suspected to have been removed, paved over, or relocated.

A visual search for culverts and other surface or buried discharges within the Study Area was also conducted during field investigations on October 1, 2014. The most up-to-date GO culvert inventory list available was also cross-referenced. No culverts were noted within the Study Area. No discharges and no markers indicating the presence of discharges were found during the field investigations.

2.1.3 Aquatic Environment

2.1.3.1 Watercourses

There are no watercourses within or crossing the Barrie rail corridor within the Study Area.

2.1.3.2 Fish and Fish Habitat

No detailed aquatic assessments were completed as there were no waterbodies or tributaries located within the Study Area.

2.1.4 Terrestrial Environment

2.1.4.1 Natural Heritage Areas

Review of publically available Geographic Information System (GIS) based mapping from the Ministry of Natural Resources and Forestry (MNRF) Natural Areas Mapping tool (MNRF, 2015) and the City of Toronto online mapping tool (City of Toronto, 2015) concluded that there are no provincially or locally designated natural heritage areas found within the vicinity of the Study Area or adjacent lands.

Lands identified on the City of Toronto OP as components of the 'Natural Heritage System' are located on either side of the Barrie rail corridor and the York Beltline Trail. The Natural Heritage System is illustrated on Figure 1 within the Natural Heritage Assessment Report (Appendix B). Additionally, lands within the TRCA regulated ravine feature mentioned in Section 2.1.2, are subject to the City of Toronto's 'Ravine and Natural Feature Protection By-law; however, this area is outside the development area for the new GO Station.

2.1.4.2 Vegetation

Vegetation Communities

Using Ecological Land Classification (ELC) for Southern Ontario (Lee et. al, 1998), vegetation communities within the Study Area have been classified based on vegetation observed during field investigation on October 1, 2014. Based on vegetation composition, the entire Study Area was characterized as a Dry-Moist Old Field Meadow (CUM 1-1) and Cultural Thicket (CUT 1) Complex. The Natural Heritage Assessment Report (in Appendix B) provides further detail of composition of this ELC vegetation complex.

Tree Inventory

In addition to a field reconnaissance for vegetation data collection, a detailed tree inventory was conducted along the rail corridor within the Study Area in order to document existing trees onsite and on adjacent lands. A copy of the Tree Inventory Plan is provided in Appendix C.

Of the 27 trees / tree groups inventoried, six were located within the rail corridor. The majority of these trees are immature and multiple-stemmed with trunks 5 to 15 cm in Diameter at Breast Height (DBH) within continuous hedgerows. Manitoba Maple (*Acer negundo*) is the dominant species within the hedgerows observed with lesser associates of White Mulberry (*Morus alba*), Black Walnut (*Juglans cinerea*), Apple (*Malus pumila*), Siberian Elm (*Ulmus pumila*) and Norway Maple (*Acer platanoides*).

Adjacent Lands

Lands within the Eglinton-Gilbert Parkette located at the northwest corner of Eglinton Avenue West and Gilbert Avenue, the York Beltline Trail which extends easterly beyond the Study Area, and other residential and commercial properties adjacent to the Study Area, were also visited and assessed as part of the tree inventory. Based on these observations, the adjacent residential and commercial properties contain ornamental trees that range from mature to immature and are comprised of a variety of species. No natural heritage features (i.e., woodlands, wetlands) were identified on these properties based on City of Toronto Official Plan mapping, field investigation and air photo interpretation.

2.1.4.3 Wildlife

General Wildlife Habitat

The Study Area is located within a heavily urbanized environment comprised of residential, commercial and industrial properties. The Barrie rail corridor further fragments the landscape but also provides a potential linear corridor for wildlife movement for small and medium-sized animals that are tolerant of urbanized environments (e.g., Raccoon, Gray Squirrel and Coyote). Contribution to high quality wildlife habitat is limited within the Study Area due to these constraints.

Avifauna

The Ontario Breeding Bird Atlas (OBBA) online database was consulted for avifauna species records within the vicinity of the Study Area. The results of this search indicated that 161 species of breeding birds have been recorded in the vicinity of the Study Area between 2001 to 2005 (Cadman et. al, 2007). Of the birds listed, the only avian Species at Risk (SAR) that has the potential to be present within the Study Area limits is the Chimney Swift (*Chaetura pelagica).* On this basis, a general breeding bird survey was not recommended; rather a species-specific survey to determine the presence of Chimney Swift within the Study Area should be undertaken during the next appropriate timing window for this species0F[1]. A detailed discussion regarding this recommendation is provided in Section 6.2 of the Natural Heritage Assessment Report (Appendix B).

[1] SwiftWatch Protocol defines the following three monitoring periods to determine the presence of Chimney Swift. If Chimney Swift is observed using a chimney structure during any or all of these periods, the chimney will be considered habitat for a provincially Threatened species.

1. Spring (Migratory) Roosting Period: approximately end of May – June 2;
2. Nesting Period (when adults are feeding young): approximately July 7 - July 23; and
3. Fall (Migratory) Roosting Period: approximately 2nd to 3rd week in August to first week of September.

Burnside observed three species of birds within the Study Area during the field investigation on October 1, 2014. Details regarding these birds (two resident American Crow and American Robin and species likely to occur within the Study Area due to geographical location are available in the Natural Heritage Assessment Report (Appendix B). None of these species are identified as SAR.

Mammals

Burnside recorded incidental observations or evidence of Gray Squirrel (*Sciurus carolinensis*) and vole species (*Microtus sp.*) during the field investigation on October 1, 2014. According to the Atlas of the Mammals of Ontario (Dobbyn, 1994), additional mammals that are common in Ontario and expected based on habitat present within the Study Area and common species within this EcoRegion are Striped Skunk (*Mephitis mephitis*), Raccoon (*Procyon lotor*), Eastern Chipmunk (*Tamias minimus*), Eastern Cottontail (*Sylvilagus floridanus*), and Coyote (*Canis latrans*). Some of these animals are nocturnal, and others tend to be secretive and are therefore difficult to observe. None of these species are identified as SAR.

Amphibians and Reptiles

No incidental observations of amphibians or reptiles were observed during the October 1, 2014field investigation, potentially due to the absence of woodlands, wetlands or watercourses within the Study Area and general vicinity. Certain common species of herpetofauna often found in disturbed urban environments may be present within the Study Area based on a review of the Ontario Reptile and Amphibian Atlas (accessed online on August 28, 2014), habitat present within the Study Area, and common species within this EcoRegion. These potential species include American Toad (*Anaxyrus americanus*), Eastern Gartersnake (*Thamnophis sirtalis*), and Northern Brownsnake (*Storeria dekayi*). None of these species are identified as SAR.

2.1.5 Species at Risk

SAR refers to a federally designated species under the *Species at Risk Act* (SARA Schedule 1) and a species designated as provincially Threatened or Endangered that afford protection under the *Ontario Endangered Species Act, 2007* (ESA, 2007). A search in the Natural Heritage Information Centre (NHIC) was conducted prior to October 1, 2014 field investigations to compile a list of records of SAR and species of conservation concern that have been documented in the general vicinity of the Study Area or adjacent lands. During field investigations, priority was placed on identifying and locating any SAR or species of conservation concern that were known to either occur, or have the potential to occur in the Study Area. No SAR were identified during the October 1, 2014 field investigations.

2.1.5.1 Vegetation SAR

A total of 17 vascular plant records listed as species of conservation concern (ranked by MNRF as S1-S3[2]) were listed within the vicinity of the Study Area. These species and their habitat requirements are listed in Table 6.1 within the Natural Heritage Assessment Report (Appendix B). Of the 17 species, Biennial Gaura (*Oenothera gaura)* and Erect Knotweed (*Polygonum erectum*) have a high potential to be present within the Study Area; however, these species are not protected under the ESA, 2007. None of the 17 species were observed during field investigation on October 1, 2014.

In addition to the species listed above, 2 provincially designated SAR were recorded by NHIC within the vicinity of the study area including White Wood Aster (*Eurybia divaricate)* and Red Mulberry (*Morus rubra*). These species require specific habitat conditions, mainly in undisturbed forests. The heavily disturbed, urban environment within the Study Area is not supportive of these habitat requirements. The records for these 2 species (i.e., White Wood Aster and Red Mulberry) date back to 1927 and 1941, respectively. They are classified as historic, further decreasing the likelihood of finding these species within the Study Area.

2.1.5.2 Terrestrial Wildlife and Aquatic SAR

A review of background information (OBBA 2001-2005 and NHIC records) resulted in a total of 16 fauna SAR or species of conservation concern that have been recorded within the general vicinity of the Study Area. In addition, 8 NHIC ‘restricted’ species records indicated information that is not available to the public. These species and their habitat requirements are listed in Table 6.2 within the Natural Heritage Assessment Report (Appendix B). None of the species listed in NHIC or OBBA records were observed during the field investigation on October 1, 2014. Habitat potential for the majority of these species is not present in the Study Area or adjacent lands, with the exception of Chimney Swift (*Chaetura pelagica)* and Common Nighthawk (*Chordeiles minor*); both of these species are known to breed in urban environments. The majority of species listed in NHIC records either inhabit waterbodies or terrestrial habitats close to waterbodies, or require habitat not present in the Study Area or adjacent lands such as forest environments with either moderate to dense canopy cover, or expansive tracts of undisturbed land. Vegetation composition within the Study Area is indicative of high levels of anthropogenic disturbance, and lacks a dense canopy cover thus not supporting these habitat requirements.

Review of the MNRF NHIC records indicate two historical records for Redside Dace (*Clinostomus elongatus*), an aquatic SAR, within the vicinity of the Study Area (recorded dates: 1926 and 1936). Habitat for this species may have been present in the past; however, no onsite fish habitat is presently supported due to lack of waterbodies, wetlands or watercourses within the Study Area. Therefore, these

2 S1 Critically Imperiled - Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
S2 Imperiled - Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
S3 Vulnerable - Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

historical records are anticipated to be associated with the Black Creek, located west of the site, beyond the Study Area limits.

2.1.5.3 Significant Wildlife Habitat

No Significant Wildlife Habitat (SWH) areas have been identified in the Study Area, based on a query of the NHIC database, City of Toronto Official Plan, and TRCA mapping. The various habitats identified during the field investigations were assessed in relation to the general criteria outlined in MNR's (2000) *Significant Wildlife Habitat Technical Guide* to provide an indication of potential significance. Significant wildlife habitat is broadly categorized as:

- Seasonal concentration areas (e.g., conifer forests for deer wintering);
- Rare vegetation communities or specialized habitats for wildlife;
- Habitats of species of conservation concern, excluding the habitats of endangered and threatened species; and
- Animal movement corridors.

Given the highly urbanized environment, none of these significant features are anticipated to be present within the Study Area or adjacent lands.

2.2 Cultural Environments

The following subsections summarize the existing archaeological and cultural heritage conditions within the Study Area based on desktop reviews and field investigation. Further details regarding these findings and sources consulted are available in the Stage 1 Archaeological Assessment Report in Appendix D, Cultural Heritage Screening Report in Appendix E1, Cultural Heritage Evaluation Reports in Appendix E2 and E3, and Heritage Impact Assessment in Appendix F.

2.2.1 Archaeology

Archaeological Services Inc. (ASI) was retained to complete a Stage 1 Archaeological Assessment for the Study Area (August 2015). No previously registered archaeological sites are located within 1 km of the Study Area. The Stage 1 property inspection determined that the entire Caledonia GO Station Study Area has been disturbed by previous construction of the rail ROW, Eglinton Avenue West ROW and adjacent development. As a result of this disturbance, the Study Area does not retain archaeological potential and does not require further archaeological assessment. Detailed documentation of the methodology used for the assessment, historical and archaeological records for the area, and findings of the assessment is found in the Stage 1 Archaeological Assessment Report in Appendix D.

2.2.2 Cultural Heritage

ASI was also retained to complete a Cultural Heritage Screening Report (CHSR) for the study area (May 2015). Properties and resources within the Study Area were subject to screening and preparation of Data Sheets. From background review, properties within the Study Area that were older than 40 years old were subject to screening questions to determine whether they held cultural heritage value and to assess the presence of potential cultural heritage resources. ASI identified two conditional heritage properties (Eglinton Avenue West Bridge and the York Beltline Trail within the Study Area. Based on the presence of these properties, the CHSR recommended that a resource-specific Cultural Heritage Evaluation Report (CHER), and if required, a Heritage Impact Assessment (HIA) be completed in advance of the detailed design phase of the Project. These additional investigations would identify the heritage value and develop techniques to mitigate potential impacts from the Project. Further explanation of the context and resources used for review of the built heritage and cultural heritage landscape features, and findings from the assessment are available in the CHSR in Appendix E1.

CHER and CHER Recommendations Reports were prepared for the Eglinton Avenue West Bridge and the York Beltline Trail. Copies of these two reports are provided in Appendix E2 and Appendix E3 respectively. The two conditional heritage properties were evaluated using the criteria set out in Ontario Heritage Act Regulation 9/06 and Regulation 10/06 to determine in consideration of data regarding the level of heritage significance within the City of Toronto and Ontario.

ASI determined that the Eglinton Avenue West Bridge does not meet the criteria contained within Regulation 9/06, which considers the subject bridge within the local community context. Further, ASI found that the Eglinton Avenue West Bridge does not meet the criteria contained within Regulation 10/06, which considers the subject bridge within the provincial context. As such, the Eglinton Avenue West Bridge is not a Provincial Heritage Property of Provincial Significance (PHPPS).

ASI determined that the York Beltline Trail meets at least one criterion under Regulation 9/06 and is considered to retain municipal/local cultural heritage value or interest. If Metrolinx acquires a portion of the trail property for the purposes of the new GO Station, those lands will be classified as a Metrolinx Provincial Heritage Property (PHP) under Regulation 9/06. Further, ASI found that the York Beltline Trail does not meet the criteria contained within Regulation 10/06, which considers the subject resource within the provincial context. As such, the York Beltline Trail, and any future provincial land holdings within its boundaries, do not hold provincial significance and is not considered a PHPPS.

Each of the cultural heritage reports (CHSR, CHER, CHER Recommendation Reports) have been provided to the Ministry of Tourism, Culture and Sport (MTCS) for review. MTCS identified that an HIA is required for the York Beltline Trail. This HIA has been completed and reviewed by MTCS to address the proposed alteration of the York Beltline Trail based on the GO Station Project plans. In particular, some minor impacts to the west trailhead are anticipated immediately west of the Croham Road and Bowie Avenue intersection. The recommendations of the HIA, based on the heritage value of the York Beltline Trail included conservation of the existing landscape features on the west trailhead through the adoption of a minimal intervention approach and like-for-like replacement or enhanced provision of landscape features directly impacted by the Project. The HIA, included in Appendix F, will be revisited and refined as necessary during the detailed design phase of the Project once the construction impacts are further defined. A Strategic Conservation Plan will also be prepared to provide guidance on how the York Beltline Trail will be conserved in accordance with the MTCS *Standards and Guidelines for the Conservation of Provincial Heritage Properties*. The HIA will be resubmitted to the MTCS for further comment during the detailed design phase of the Project.

2.3 Social and Built Environments

The following subsections summarize the existing social and built environmental conditions within the Study Area based on desktop reviews and field investigation. Further details regarding these findings and the sources consulted are available in the Socio-Economic and Land Use Characteristics Report (Appendix G), the Air Quality Impact Assessment Report (Appendix H), the Noise and Vibration Impact Assessment Report (Appendix I) and the Traffic Impact Analysis Report (Appendix J).

2.3.1 Socio-Economic Environment and Land Use

As a component of the Assessment, a Socio-Economic and Land Use Characteristics Report was compiled to assess the socio-economic and land use conditions existing within the Study Area and on adjacent lands, as prescribed by the TPAP, as outlined in Ontario Regulation 231/08. This Socio-economic and Land Use Characteristics Study focused on evaluating the potential impacts of the Caledonia GO Station on the community's social, environmental and economic well-being. The Socio-Economic and Land Use Characteristics Report, which is provided in Appendix G, includes information regarding the provincial, municipal and Metrolinx planning policies governing the Study Area, land use and demographics within the community and how the project may impact the surrounding socio-economic environment. The following sections provide a summary of the report.

2.3.1.1 Planning Policies and their Applicability to the Project

There are a number of Provincial and City of Toronto policies and plans that have relevance to this TPAP, as described in Section 1.1.2. Their specific applicability to the project is summarized in Table 2.1. Metrolinx Plans and Planning Studies are described in Section 1.1.2.3.

Table 2.1: Policies and Plans Applicable to the Project

Policy/Plan	Policy/Plan Intent	Applicability to the Project
Provincial Plans		
Provincial Policy Statement (2014)	• To support the efficient use of existing infrastructure. • To support land use planning that increases the opportunity for use of public transit, including GO.	• The Caledonia GO Station is an improvement proposed to optimize use of this existing rail corridor. • The station will support a multi-modal system as it will provide a link between the regional GO train service, ECLRT and local TTC service.
Growth Plan for the Greater Golden Horseshoe (2006)	• To ensure that priority is placed on increasing the capacity of existing transit systems to support intensification areas and facilitation improved linkages from nearby neighbourhoods to urban growth centres, major transit station areas, and other intensification areas.	• The station will support the intensification proposed along Eglinton Avenue and will increase the capacity of the existing GO rail corridor.
City of Toronto Plans and Policies		
City of Toronto Official Plan (2010)	• To support a new GO Station and GO/TTC interchange at the Caledonia and Eglinton intersection, as shown on Map 4 of the Official Plan, Higher Order Transit Corridors (2006).	• The Caledonia GO Station accomplishes this goal.
Eglinton Connects Planning Study	• To guide planning and development decisions in order to build upon the benefits of the ECLRT. • To support development of a GO Station and supportive development at the Eglinton-Caledonia "Focus Area"	• As a "Focus Area" the Caledonia GO Station has been identified as an important link with the ECLRT line.
Castlefield-Caledonia Design and Décor District Class Environmental Assessment Study Environmental Study Report (2011)	• To evaluate options to upgrade roads and improve connections between the east and west sides of the Barrie rail corridor in the vicinity of the proposed Caledonia GO Station.	• Future road extensions and upgrades recommended in the study will need to be considered with respect to traffic flow and access to the station.
Castlefield-Caledonia Design and Décor District Urban Design Guidelines (2007)	• To outline specifications for building locations and orientation, public spaces, pedestrian and cyclist movement, parking, signage, sustainability and landscaping among other design criteria.	• There will be a need to ensure that the detailed design of the station is compatible with the general feel of the neighbourhood while encouraging active transportation access by encouraging walking and cycling.

2.3.1.2 Neighbourhood Demographics

For administrative purposes the City of Toronto is divided into a number of neighbourhoods The Study Area falls within four neighbourhoods, as follows:

- Beechborough-Greenbrook in the northwest quadrant;
- Briar Hill-Belgravia in the northeast quadrant;
- Keelesdale-Eglinton West in the southwest quadrant; and
- Caledonia-Fairbank in the southeast quadrant.

The population and labour force activity of all four neighbourhoods were compared to the City of Toronto and Ontario for the 2006 to 2011 period, as outlined in the City of Toronto Neighbourhood Profiles (2011) and based on Statistics Canada, Census 2011. According to the City of Toronto's Neighbourhood Profiles, these 4 neighbourhoods are comprised of mainly English-speaking residents that fall within the working cohort (ages 25 to 64). However, in general, over half of the residents from these communities speak a non-official mother tongue other than English. These communities are made up of 3 main countries of origin: Portugal, Italy and the Philippines.

Within the City of Toronto Neighbourhood Profiles (2011), three of the four neighbourhoods bounding the Study Area have been assessed and are found to have average or slightly higher than average unemployment rates compared to the City of Toronto and provincial average. Within the neighbourhood of Briar Hill-Belgravia, unemployment is lower than the City of Toronto average, although above the provincial average.

Neighbourhood Improvement Areas

In March 2014, the City of Toronto, through the Toronto Strong Neighbourhoods Strategy 2020, identified 31 neighbourhoods as falling below the Neighbourhood Equity Score and requiring special attention. These neighbourhoods have been scored by the City of Toronto based on criteria such as health, economics, political participation and education. Neighbourhood Improvement Areas will be targeted by the City of Toronto for additional economic funding and resources. Two of the four communities in the Study Area fall within the Neighbourhood Improvement Area designation: Beechborough-Greenbrook and Keelesdale-Eglinton West.

2.3.1.3 Land Use

According to the City of Toronto OP, land use designations within the Study Area include employment lands, mixed use areas (including residential, low, mid and high rise units and a mix of commercial and industrial businesses), neighbourhoods and parks. A detailed discussion of land uses within the vicinity of the Study Area is provided in the Socio-Economic and Land Use Characteristics Report, which is provided in Appendix G.

2.3.2 Air Quality

This section describes the existing air quality conditions within the Study Area. Impacts of the Project on the Study Area and associated mitigation measures are detailed within Sections 5.1 and 5.2.1. Together these sections summarize the key findings of the Air Quality Impact Assessment. Further details on the assessment can be found in the full Air Quality Impact Assessment Report, provided in Appendix H.

For the purposes of the assessment, the existing or "No Build" air quality conditions were determined by combining the following components:

- Background conditions measured at MOECC and National Air Pollution Surveillance (NAPS) stations in close proximity to the Caledonia GO Station;
- Modelled emissions from future traffic; and
- Modelled emissions from existing trains.

MOECC and NAPS stations in close proximity to the Caledonia GO Station were reviewed to ensure the most representative background concentration would be selected for the Study Area. Not all contaminant concentrations are available at every station; therefore a total of four stations were selected to characterize background concentrations. Two MOECC stations were selected to represent Nitrogen Dioxide (NO_2) and Particulate Matter (PM). Toronto West station is the closest station to the Study Area; however it is also located very close to Highway 401 and as such, both NO_2 and PM concentrations would be above the background expected near the Caledonia GO Station. Toronto Downtown Station was selected as a second station for the background NO_2 and PM concentrations. Two NAPS stations were selected to represent background concentrations for other representative contaminants.

Dispersion modelling was completed in accordance with the MOECC's "Air Dispersion Modelling Guideline for Ontario" PIBS 5165e (The ADMGO). The modelled impact of contaminant emissions are assessed as 1-hour, 24-hour, and annual concentrations at various sensitive receptors. The appropriate model to assess the maximum sensitive receptor impact is the USEPA AERMOD model. The following dispersion model and pre-processors were used in the assessment:

- AERMOD dispersion model (v. AERMOD_MPI_Lakes_14134);
- AERMAP surface pre-processor (v. AERMAP_EPA_14134); and
- BPIP building downwash pre-processor (v. 0474).

The contaminants modelled were selected to represent pollutants commonly associated with diesel locomotives, namely acrolein, benzene, benzo(a)pyrene, nitrogen dioxide and particulate matter < 2.5 µm.

Predicted contaminant concentrations were compared to the applicable ambient air criteria for contaminants associated with diesel locomotive emissions, which were taken from Ontario's Ambient Air Quality Criteria (AAQC) developed by MOECC. According to MOECC, "an AAQC is a desirable concentration of a contaminant in air, based on protection against adverse effects on health or the environment". Canadian Ambient Air Quality Standards coming into effect in 2020 were used for PM2.5. In addition, The Jurisdictional Screening Level (JSL) List was used for the contaminants without available

AAQC criteria. The JSL list was developed by the MOECC to provide an additional screening tool for Ontario Regulation 419: Air Pollution – Local Air Quality. JSL values are considered to be conservative criteria.

The assessment took into consideration the introduction of Tier 4 technology for the GO MP40 diesel locomotive fleet, which leads to improved air emissions meeting the Tier 4 emission standard. Emissions were based on GO Tier 3 notch settings assuming the same horsepower for Tier 4 notch settings.

The overall existing air quality conditions modelled for the Study Area for each contaminant are shown on Table 2.2 to Table 2.6 below. The air quality impacts associated with the new GO Station are discussed separately in Section 5.2.1. The development of the new GO Station will not cause any of the assessed air pollutants to exceed the AAQC criteria.

Benzene and benzo(a)pyrene exceed their respective criteria as the overall levels in the province (ambient background levels) already exceed those criteria. The measured values used for the background provide the majority of the amounts shown. These same values would be found almost everywhere in the province.

Table 2.2: Existing Air Quality Conditions – Acrolein

Averaging Period	Criterion ($\mu g/m^3$)	NAPS Background 90th Percentile ($\mu g/m^3$)	Range of medians for selected SRs ($\mu g/m^3$)	Range of Values for Selected SRs ($\mu g/m^3$)	Median of Selected SRs ($\mu g/m^3$)	% of Criterion
1-HR	4.5	N/A*	0.1182 - 0.1187	0.01419 - 1.176	0.1185	2.6%
24-HR	0.4	0.1872	0.1179 - 0.1181	0.01398 - 1.175	0.11805	29.5%

*The published data for Acrolein only shows daily values so a 1-hour 90th percentile value of that data is not possible.

Table 2.3: Existing Air Quality Conditions – Benzene

Averaging Period	Criterion ($\mu g/m^3$)	NAPS Background 90th Percentile ($\mu g/m^3$)	Range of medians for selected SRs ($\mu g/m^3$)	Range of Values for Selected SRs ($\mu g/m^3$)	Median of Selected SRs ($\mu g/m^3$)	% of Criterion
24-HR	2.3	0.7705	0.7686 - 0.7687	0.1919 - 1.571	0.7686	33.42%
Annual	0.45	N/A*	0.7686 - 0.7687	0.5916 - 0.7706	0.7686	170.80%

* Simulation of 5 years of data only provides 5 values so a 90th percentile value cannot be produced.

Table 2.4: Existing Air Quality Conditions - Benzo(a)pyrene

Averaging Period	Criterion (µg/m^3)	NAPS Background 90th Percentile (µg/m^3)	Range of medians for selected SRs (µg/m^3)	Range of Values for Selected SRs (µg/m^3)	Median of Selected SRs (µg/m^3)	% of Criterion
24-HR	0.00005	0.0001406	0.00008135 - 0.00008144	0.000001442 - 0.001082	0.000081395	162.8%
Annual	0.00001	N/A*	0.00008136 - 0.00008145	0.00005795 - 0.0001392	0.00008141	814.1%

* Simulation of 5 years of data only provides 5 values so a 90th percentile value cannot be produced.

Table 2.5: Existing Air Quality Conditions - Nitrogen Dioxide

Averaging Period	Criterion (µg/m^3)	Toronto West MOECC Background 90th Percentile (µg/m^3)	Range of medians for selected SRs (µg/m^3)	Range of Values for Selected SRs (µg/m^3)	Median of Selected SRs (µg/m^3)	% of Criterion	Toronto Downtown MOECC Background 90th Percentile (µg/m^3)	Range of medians for selected SRs (µg/m^3)	Range of Values for Selected SRs (µg/m^3)	Median of Selected SRs (µg/m^3)	% of Criterion
1-HR	400	65.76	32.31 - 33.09	0.02765 - 152.7	32.755	8.2%	53.81	26.13 - 26.63	2.092 - 141.5	26.38	6.6%
24-Hr	200	54.06	34.87 - 34.97	0.08511 - 87.72	34.955	17.5%	46.00	27.81 - 27.95	6.628 - 82.95	27.91	14.0%
Annual	60	N/A*	37.85 - 37.95	32.19 - 40.17	37.92	63.2%	N/A*	29.86 - 30.01	26.82 - 33.13	29.955	49.9%

* Simulation of 5 years of data only provides 5 values so a 90th percentile value cannot be produced.

Table 2.6: Existing Air Quality Conditions - Particulate Matter < 2.5 micrograms

Averaging Period	Criterion (µg/m^3)	Toronto West MOECC Background 90th Percentile (µg/m^3)	Range of medians for selected SRs (µg/m^3)	Range of Values for Selected SRs (µg/m^3)	Median of Selected SRs (µg/m^3)	% of Criterion	Toronto Downtown MOECC Background 90th Percentile (µg/m^3)	Range of medians for selected SRs (µg/m^3)	Range of Values for Selected SRs (µg/m^3)	Median of Selected SRs (µg/m^3)	% of Criterion
24-HR	27	13.04	5.911 - 5.919	5.913 - 5.925	0.001451 - 33.83	5.92	21.9%	12.63	5.38 - 5.392	0.0683 - 35.04	5.387
Annual	8.8	N/A*	6.895 - 6.906	6.899 - 6.918	6.067 - 8.467	6.9095	78.5%	N/A*	6.231 - 6.25	5.554 - 8.289	6.2415

* Simulation of 5 years of data only provides 5 values so a 90th percentile value cannot be produced.

2.3.3 Noise and Vibration

2.3.3.1 Noise Assessment

Akoustik Engineering Limited was retained to complete a noise and vibration assessment for the Study Area. The Noise and Vibration Impact Assessment Report documenting the methodology and findings of the assessment is provided in Appendix I.

The MOECC and GO developed a "Draft Protocol for Noise and Vibration Assessment" (MOEE/GO Draft Protocol). This document is used as the primary guideline document for assessment of the rail noise and vibration. In addition, other MOECC noise guidelines such as the NPC-series of documents were applied, where applicable.

According to the MOEE/GO Draft Protocol, ambient noise is the sound existing at a point of reception in the absence of all noise from the GO rail project. The ambient levels do not include existing rail activity, and are primarily the noise from road traffic and industry.

Based on a site visit completed on March 11, 2015, publically available aerial photography, and street-level imagery, no existing noise barriers have been identified along the rail corridor within the Study Area.

The MOEE/GO Draft Protocol stipulates the use of the ORNAMENT/STEAM noise analysis method for predicting roadway and rail traffic noise levels as L_{EQ} (16-hr) Day and L_{EQ} (8-hr) Night values as implemented in the STAMSON computer model. ORNAMENT and STEAM were developed by the MOECC (MOECC, 1990). The methodology detailed within the MOECC NPC-300 Guideline was followed for the roadway and rail traffic modeling.

The methodology within STAMSON does have limitations with respect to particular features of the Project in that it does not accommodate deceleration or acceleration of the trains, idling at the station and it does not explicitly account for bells that are required by Transport Canada for safety reasons.

A supplementary study was performed to determine the impact of noise from train bells and the acceleration and deceleration of trains entering and exiting a GO Station. To identify the contribution of the bell, several noise level measurements were taken of GO trains going by Long Branch GO Station (on Lakeshore West rail corridor) with the bell sounding. Other measurements were taken of GO trains going by Clarkson Park (on Lakeshore West rail corridor) without the bell sounding. When the average noise levels measured at these two locations were compared, there was no difference in noise levels. This result illustrates that the noise level from the bell is not distinguishable from the noise level of the train engine.

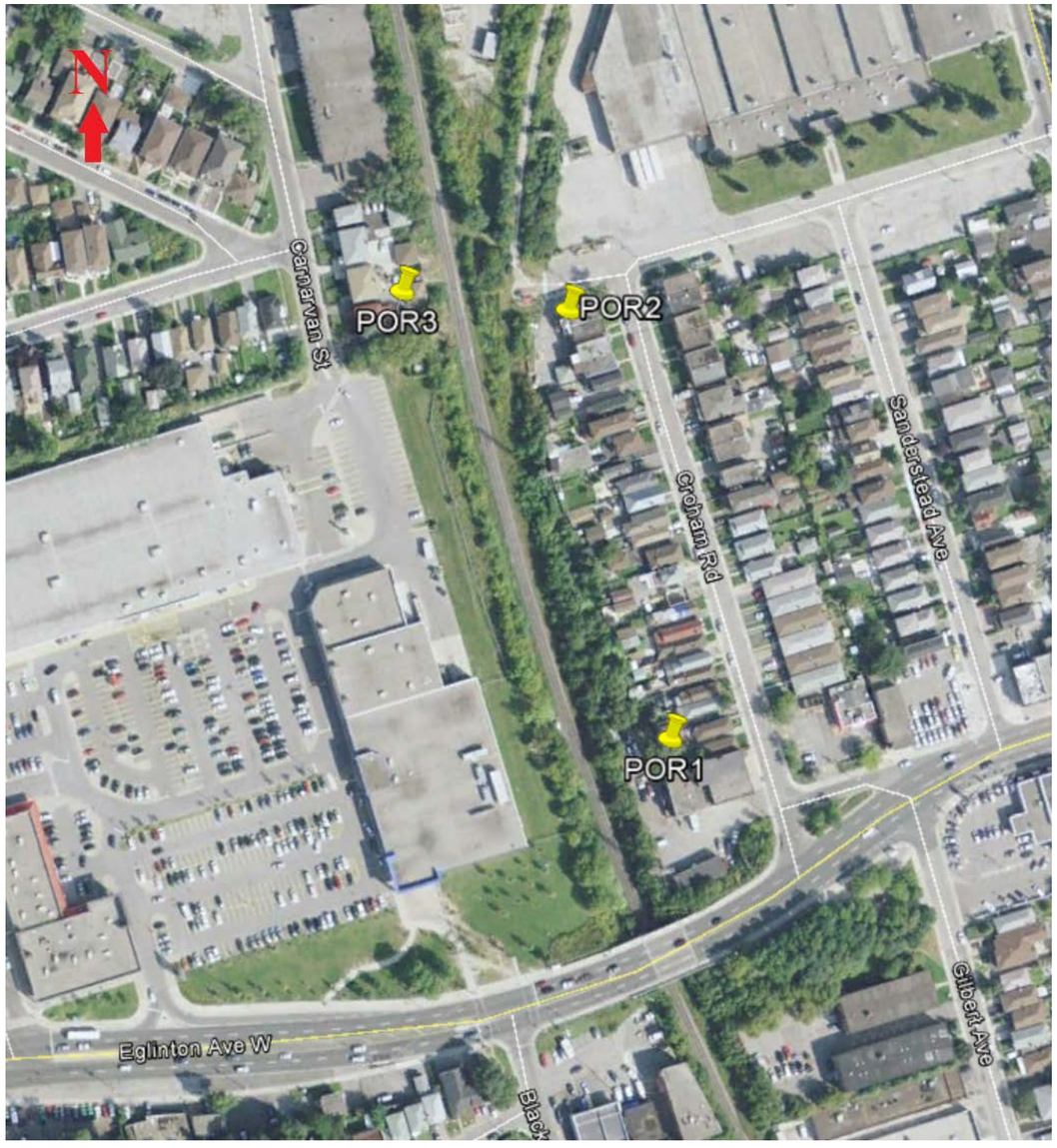
To identify the contribution of noise from acceleration and deceleration of GO trains, several noise level measurements were taken of GO trains passing through Long Branch GO Station as well as GO trains stopping and leaving Long Branch GO Station. The noise level measurements for GO trains passing through the GO Station were compared to the noise level measurements for GO trains stopping and leaving the GO Station. The difference in the average adjusted noise level between pass through trains and trains accelerating or decelerating was 4.8 dBA. Based on the MOEE/GO Draft Protocol - Adjusted Noise Impact Ratings (see Table 5.7), this noise level difference is considered Noticeable.

For the modelling portion of the assessment, points of reception (POR) are chosen to be representative of the receptors of interest with the highest impacts from the Project. The PORs that are representative of worst-case potential noise impacts have been identified and used in the analysis. Daytime point of reception is 3 m from the residential unit toward the corridor at a height of 1.5 m as well as 4.5 m. The 1.5 m height is used to represent an outdoor living area receptor, which is required when evaluating transportation sources, such as train activity. The 4.5 m height is used to assess the impact at a window for a two-storey dwelling. Nighttime receptors are placed in the plane of a bedroom window where sound originating from the Project is received, assumed to be at a height of 4.5 m unless otherwise stated. Three representative PORs have been identified and these points of reception are summarized in Table 2.7 and shown in Figure 2.2.

Table 2.7: Noise Receptors Evaluated for Noise Modelling

Receptor Location	Figure	Description	Receptor Height Above Grade (Day/Night) (m)	Distance to Existing Centre of Closest Rail Line (m)
POR1	2	Residence (6 Croham Road)	1.5 and 4.5 / 4.5	40
POR2	2	Residence (54 Croham Road)	1.5 and 4.5 / 4.5	38
POR3	2	Residence (101 Carnarvon Street)	1.5 and 4.5 / 4.5	23

Figure 2.2: Location of Noise Receptors for Noise Modelling



The MOEE/GO Draft Protocol refers to 'dBA' as the typical unit of measurement used in environmental noise assessments. To account for the non-linear impression of sound pressure level to the human auditory system, a weighting scale is used to correct for the subjective perception of sound. This weighting scale is called the "A-weighting" correction, and when used, the reported sound pressure level is reported as A-weighted decibels (dBA).

The predicted existing noise levels obtained using the computational STAMSON modelling software at each of the representative receptors were used to determine the worst-case impacts of the existing diesel trains. These predicted existing noise levels are given in Table 2.8.

Table 2.8: Existing Noise Modelling Results (STAMSON)

Receptor ID	Period and Receptor Height (m)	Predicted Existing Noise Levels (dBA)
POR1	Daytime – 1.5 m	59
	Daytime – 4.5 m	60
	Nighttime – 4.5 m	55
POR2	Daytime – 1.5 m	58
	Daytime – 4.5 m	59
	Nighttime – 4.5 m	52
POR3	Daytime – 1.5 m	62
	Daytime – 4.5 m	62
	Nighttime – 4.5 m	54

2.3.3.2 Vibration Assessments

Vibration was measured at the west end of Bowie Avenue at a distance of 16.5 m from the existing centre of the rail line. This distance is the shortest distance or closest setback distance from the track and thus represents the worst-case expected vibration impacts at any receptor locations.

Vibration was measured using Type Pro4 Instantel Minimates and Series IV Instantel Geophones. The geophones were inserted into the ground on undisturbed soil until the bottom surface of the sensor was in contact with the ground and bags containing sand or road salt were placed on top of the geophones to weigh them down. The monitoring equipment was set to trigger a recording of the vibration at a level below the threshold 0.14 mm/s.

Vibration is presented in terms of root-mean-square (RMS) velocity (mm/s) in the vertical direction, which is the dominant axis for vibration generated from mobile sources such as trains and most closely correlated with human annoyance and perceptibility.

A linear average of the running average RMS vibration velocity was calculated and the results are given in Table 2.9.

Table 2.9: Existing Vibration Levels

Train #	Running Average RMS Vibration Velocity (mm/s) – Measured at a Distance of 16.5 m from the Centre of the Track		# of Locomotives	# Cars
	Caledonia GO Station (Pass-by)	Rutherford GO Station Rail (Arriving/Departing Station)		
1	0.477	0.226	2	10
2	0.413	0.210	1	10
3	0.427	0.141	1	6
4	0.336	0.220	1	12
5	0.399	0.178	1	6
6	0.474	0.212	1	12
7	0.457	0.238	1	10

Table 2.9 illustrates that the existing vibration impacts based on a moving train through the corridor for the Study Area (at new GO Station site) exceed the 0.14 mm/s RMS limit. As a result, the existing levels measured within the Study Area are taken as the objective limit in accordance to the MOEE/GO Draft Protocol.

2.3.4 Buildings and Structures

2.3.4.1 Existing Right-of-Way

The proposed site for the new GO Station lies in an existing railway ROW approximately 300 m west of the Eglinton Avenue and Caledonia Road intersection within an undeveloped area of land, which is occupied by an existing single track with no station platforms. The railway alignment is curved at the proposed station location, with the western most point at the existing bridge. The railway line has a slight increase in gradient from south to north (approximately 2%).

The grade difference between Eglinton Avenue West and the rail track is approximately 8 m. As the rail track elevation rises in to the north of Eglinton Avenue West, the grade difference between the rail track and the adjacent lands gradually decreases. At Bowie Avenue/Lonborough Avenue there is essentially no grade difference between the rail track and adjacent lands. The embankment to the west has also been profiled between Eglinton Avenue West and Lonborough Avenue to act as an acoustic barrier between the GO rail line and the existing Westside Mall. Similarly, the eastern side of the embankment supports the rear gardens to the residential homes along Croham Road. The existing embankments are relatively steep, and are approximately 45 degrees to the horizontal. The existing embankments are both presently vegetated with trees and bushes.

2.3.4.2 Westside Mall

Westside Mall is located to the west, with residential properties along Croham Road to the east of the proposed station.

At the north-west corner of the site, adjacent to Carnarvon Street and the Westside Mall car park is an electrical transformer that may be impacted by the proposed works in the area.

2.3.4.3 Eglinton Avenue West Bridge

The Eglinton Avenue West Bridge is located at the south end of the Project Area. The structure was constructed in 1930 and then refurbished in both 1964 and 1991 according to the drawings of record. The soffit of the existing Eglinton Avenue West Bridge is 6.8 m above the existing GO Rail corridor, and the bridge has an opening 13.4 m wide.

2.4 Transportation and Utilities

The two major planned Metrolinx projects that will interface with the new GO Station are the Barrie Rail Corridor Expansion and the ECLRT, which are considered near term infrastructure improvements. These projects have not been completed as of the issuance of this Report and were not assessed as part of the existing conditions for the social and built environmental assessment of the Study Area. However, it is expected that these projects will be implemented in advance of the Project and are separate from the proposed work associated with the Project. The Barrie Rail Corridor Expansion and ECLRT Projects have therefore been treated as near term infrastructure improvements for the discussions in this EPR relating to transit interchange.

2.4.1 Transit Network

There are currently no direct connections between local municipal transit and the Barrie rail corridor service within the Study Area.

In the Study Area, transit services are operated by the TTC, as discussed in the following sections.

2.4.1.1 TTC Subway Service

There are two TTC subway lines running in a north-south direction, crossing Eglinton Avenue West as follows:

- University-Spadina Subway branch of Line 1, located approximately 3.9 km to the east of the new GO Station. This line is currently being extended to Vaughan as part of the Toronto York Spadina Subway Extension (TYSSE); and
- Yonge Subway branch of Line 1, located approximately 5.6 km to the east of the new GO Station.

2.4.1.2 TTC Bus Service

The TTC currently operates transit services within the City of Toronto with approximately 40 TTC bus routes intersecting the ECLRT corridor, with opportunities for bus-LRT transfers at the locations where these routes cross Eglinton Avenue West. The ECLRT Environmental Project Report (March 2010) estimated that most of the 681 bus trips that presently travel east-west on Eglinton Avenue West on a daily basis will be replaced by the proposed 488 light rail trips on the planned ECLRT line.

TTC services operating at the new GO Station site and vicinity are identified in Table 2.10 including the plans for the continuation or termination of services following commencement of the ECLRT line.

Table 2.10: TTC Bus Services in Study Area and Vicinity

Existing Service				Post ECLRT service plans*
No.	**Origin**	**Destination**	**Operation**	
32A Eglinton W	Eglinton Station	City of Mississauga, Airport district (Renforth and Skymark)	Peak period, Mon-Fri service.	Route will be shortened to operate from Renforth Station to the proposed Mount Dennis Bus Terminal.
32C Eglinton W	Trethewey Drive	Jane Street/ Lawrence Avenue	All day, everyday service.	
32D Eglinton W	Eglinton Station	Emmett Drive, west of Jane Street	All day, everyday service.	
47B Lansdowne	Lansdowne	North-south routes on Caledonia Road (Yorkdale Station via. Caledonia /Bridgeland)	All day, everyday service.	Will remain operational.
47C Lansdowne	Lansdowne	North-south routes on Caledonia Road (Yorkdale Station via. Caledonia/Orfus)	Peak period, Mon-Fri service.	Will remain operational.
34 Eglinton E	Eglinton Station	Kennedy Station	All day, everyday service.	Service will be renamed “34 Eglinton”. New east-west limited service bus route to operate on Eglinton Ave, parallel to the ECLRT. Service proposed to operate from the Mount Dennis Bus Terminal to Kennedy Station.
332 Eglinton W	Eglinton Station	Toronto Pearson Airport	Overnight period service, every day.	Will remain operational.

** ECLRT Environmental Project Report Addendum (October 2013)*

2.4.1.3 Planned Eglinton Crosstown Light Rail Transit

The ECLRT is forecasted to provide a peak hour maximum capacity of 15,000 riders per hour per direction in an east-west direction along Eglinton Avenue (Metrolinx, 2015).

Without accounting for any transfer activity to/from the GO train at the Caledonia ECLRT Station, the ECLRT Environmental Project Report (TTC / City of Toronto, March 2010) forecasted that the Caledonia ECLRT Station would generate the following rider activity in the 2031 A.M. peak hour:

- Westbound – 100 boardings and 150 alightings; and
- Eastbound – 200 boardings and 50 alightings.

2.4.2 Cycling, Pedestrian and Trail Network

The existing and planned pedestrian and cyclist networks have been identified in this section. In general, the various access modes are segregated (i.e., cars, buses, pedestrians, cyclists); however, due to the physical site constraints there is some overlap in the existing access modes.

2.4.2.1 Bicycle Access

To the west of the Study Area, existing cycling infrastructure run east-west within the Eglinton Avenue West ROW, including an multi-use trail running parallel to the road (south side) between Etobicoke Centennial Park (west of Renforth Drive), to Jane Street. This cycling infrastructure is anticipated to be further extended through the Study Area, as part of the redevelopment of Eglinton Avenue West. The Eglinton Connects Planning Study (March 2014) has proposed the implementation of raised 1.2 m wide cycle track, protected by a 0.9 m separation buffer from the roadway, on both sides of Eglinton Avenue West through the Study Area. Cycling infrastructure is intended to ultimately connect to the cycling network in the broader area, providing a continuous east-west path from Highway 27 to Mount Pleasant. Within the concept plan for the Caledonia ECLRT Station there are provisions provided for bicycle parking facilities (52 spaces).

The former Beltline rail line connects into the existing rail line at the northern end of the new GO Station site, adjacent to Bowie Avenue. At this juncture, this former rail line turns to continue eastward, parallel to Eglinton Avenue West. This former railway line has been converted into York Beltline Trail which acts as a shared use pedestrian/cycleway.

The Eglinton Connects Planning Study (March 2014) provided count data for cyclist activity on Eglinton Avenue West in the area of the new GO Station (Croham Road) with approximately 140 cyclists per day recorded, of which 58% were on sidewalks. In the vicinity of the new GO Station, the York Beltline Trail has relatively low usage presently with 50 cyclists per day recorded, however this usage may increase in the peak summer periods and has the potential to grow significantly with the implementation of the Caledonia ECLRT Station at its termination point.

2.4.2.2 Pedestrian Access

Existing pedestrian facilities along Eglinton Avenue West currently include sidewalks and pedestrian crossings with traffic signals at major intersections, as well as sidewalks on intersecting local and collector roads. Nearby signalized intersections with pedestrian crossings exist at Blackthorn Avenue, approximately 120 m west of the new GO Station and at Caledonia Road, approximately 170 m east of the station.

The Eglinton Connects Planning Study (March 2014) proposes a cross section for Eglinton Avenue West that includes a 3.2 m pedestrian clearway on each side of the road which will provide pedestrian access to the Caledonia ECLRT Station. It is noted that some adjustment of this cross section may be required in the immediate area of the Eglinton Avenue West road bridge over the GO corridor, as well as in the area of the east-west connecting road between Eglinton Avenue West and Croham Road. These adjustments will be coordinated in the detailed designs for the Caledonia GO Station with the ECLRT Project, in consultation with the City of Toronto. A ROW widening beyond 27 m if needed will require an Official Plan Amendment.

The existing Westside Mall lands, located immediately to the west and north of the stations, also provide for pedestrian linkages to the broader area. The City of Toronto has indicated its intention to require that linkages (pedestrian, cyclist and vehicular) be maintained through any redevelopment of these lands. However this additional linkage is not required as part of the currently proposed works.

In addition to the sidewalk facilities within the road ROW, a pedestrian linkage is provided by the York Beltline Trail which is discussed in the subsequent section.

The Eglinton Connects Planning Study (March 2014) provided count data for pedestrian activity on Eglinton Avenue West in the area of the new GO Station (Croham Road) with approximately 1,300 pedestrians per day recorded. In the vicinity of the new GO Station, the York Beltline Trail has relatively low usage presently with approxmately140 pedestrians per day recorded however this usage may increase during the peak summer periods and has the potential to grow significantly with the implementation of the Caledonia ECLRT Station at its termination point.

2.4.2.3 Trail Network

The York Beltline Trail is a 4 m wide multi-use trail, with asphalt surface that commences in the vicinity of the northeast corner of the new GO Station lands, at Bowie Avenue, where the trail is referred to as the York Beltline Trail. The trail runs along the former Belt Line railway corridor and travels for 9 km to the east, ultimately terminating in the Moore Park Ravine. The trail includes bridge crossings of Dufferin Street and Yonge Street. There is no crossing of Allen Road (approximately 2.5 km east of the new GO Station lands, measured along the trail), and trail users must use footpaths parallel to Allen Road to reach the nearest road bridge, a half-block north or south. Other roads are crossed at grade, with no formal pedestrian crosswalks; however, a City of Toronto Report (Beltline Trail Study, May 2013) recommends the addition of various crosswalks at those locations. Immediately to the east of Allen Road, the City of Toronto plans to complete a north-south trail, the Allen Road Greenway, which will run from the York Beltline Trail to Highway 401, parallel to Allen Road. In addition, planned cycling routes have been identified along a number of quiet streets in the study area, namely Blackthorn Avenue running south from Eglinton Avenue West, and Croham Road running north from Eglinton Avenue West, to connect to the York Beltline Trail. Implementation of this cycling infrastructure would provide additional north-south access to the study area. A bicycle connection between Eglinton Avenue West and the York Beltline Trail has not been identified in either the ECLRT study or in the Eglinton Connects Study.

2.4.3 Road Network

A summary of the existing conditions traffic assessment undertaken as a part of this TPAP is provided below. Further details of this analysis are included in the Traffic Impact Study (TIS) Report, which is provided in Appendix J.

Within the Study Area, the existing road network includes the following City of Toronto roads:

- Eglinton Avenue West – major arterial road running east-west, with four basic lanes (two in each direction), two lanes of which are restricted to bus/taxi use during peak periods and which are used for parking or for through traffic during off-peak periods;
- Caledonia Road – minor arterial road running north-south, with two basic lanes;
- Blackthorn Avenue – collector road running north-south with two basic lanes;
- Croham Road – a local road running north-south, with two travel lanes along its south section and one travel lane (plus a parking lane) along its north section. Currently, traffic is restricted to operate one-way northbound between Bowie and about 25 metres north of Eglinton Avenue West. Sanderstead Avenue to the east provides one-way northbound operations (one travel lane plus one parking lane);
- Gabian Way – local road running north-south; also providing access to the Westside Mall, and
- All other roads in the Study Area are classified as local roads (two basic lanes).

The posted speeds on the roads in the Study Area are 50 km/h, with the following exceptions:

- Caledonia Road – south of Eglinton Avenue West – 40 km/h; and
- Blackthorn Avenue – 40 km/h.

2.4.4 Traffic

2.4.4.1 Existing Traffic Volume

The existing maximum peak hour, peak direction traffic is in the order of 1,000 vehicles per day (vpd) (eastbound in the A.M. peak hour and westbound in the P.M. peak hour). Assuming a capacity of 800 vehicles per hour per lane (vph/lane), the existing traffic demand can be accommodated with 2 lanes in each direction. The existing configuration of Eglinton Avenue West includes 2 lanes, in each direction, with one of these lanes (in each direction) reserved for buses and taxis during the peak periods. Traffic operations along Eglinton Avenue West are generally dictated by intersection capacity, rather than link capacity.

2.4.4.2 Existing Traffic Operations and Conditions

The following main intersections have been identified within the Study Area for assessment:

- Caledonia Road/Eglinton Avenue West;
- Croham Road/Eglinton Avenue West;
- Gabian Way/Eglinton Avenue West; and
- Bowie Avenue/Caledonia Road.

From a traffic circulation perspective, both Croham Road and Sanderstead Avenue run northbound one-way, with traffic exiting to Bowie Avenue to connect to Caledonia Road. A short section at the south end of Croham Road is two-way.

Under existing traffic volumes and lane configurations, this TIS forecasts that the intersection of Eglinton Avenue West/Caledonia Road is over-capacity in the P.M. peak hour, with a storage deficiency for eastbound queuing. Under existing conditions, queuing deficiencies were also identified at the intersections of Eglinton Avenue West/Blackthorn Avenue and Eglinton Avenue West/Gabian Way, during both the A.M. and P.M. peak hours. Existing traffic conditions represent those prior to implementation of the ECLRT and the planned conversion of some restricted-use lanes into full-use lanes. The Eglinton Connects Planning Study (March 2014, City of Toronto) forecasts that future traffic operations on Eglinton Avenue West will continue to be acceptable, by maintaining the current two travel lanes in each direction. The implementation of the ECLRT allows for the conversion of the existing peak-period bus / taxi lanes into full-use lanes, which effectively mitigates the existing congestion issues in this area and accommodates the new GO Station development, with minor signal modifications. Segments of Eglinton Avenue West within the vicinity of the Study Area are under construction for the ECLRT, which may also impact current traffic conditions.

2.4.5 Rail Infrastructure

The new GO Station will be located on the Barrie rail corridor, which operates on the Newmarket Subdivision and consists of a single mainline track. The existing horizontal alignment runs adjacent to urbanized areas, including residential and commercial buildings. The existing track alignment curves below the Eglinton Avenue West Bridge, and rises by approximately 2% from south to north with the existing railway in cut formed by Eglinton Avenue West being raised by approximately 8 m to pass over the GO rail corridor.

2.4.6 Rail Services

Existing GO Service

As noted in Section 1.1.6, GO currently operates 14 trains per weekday, seven in the A.M. peak period (southbound direction only) and seven in the P.M. peak period (northbound direction only) on the Barrie rail corridor. Bus services are currently available for the Barrie rail corridor during off-peak hours for stations outside of the City of Toronto. There are currently no connections to the Barrie GO Rail or Bus service at the location of the new GO Station.

The current operation of 14 trains per day was introduced in June 2014, when the service was expanded from the previous operation of 10 trains per day to include the following:

- Two additional southbound trains in the A.M. period (commencing at Maple and arriving at Union Station at 7:47 A.M. and 8:19 A.M.), thus providing 15 minute headways south of Maple; and
- Two additional northbound trains in the P.M. period, leaving Union Station at 15:40 P.M. and 18:45 P.M.

Cordon counts from Fall 2014 are currently available to indicate the ridership on the recently expanded service. Boardings in the A.M. peak period were recorded at over 10,500 suggesting a favourable response by customers to additional service, coupled with continued population and employment growth along the corridor. The 2014 cordon count reported peak ridership, which is noted in Table 2.11.

Planned Barrie Rail Corridor Expansion

For the purposes of this EPR, the planned Barrie Rail Corridor Expansion infrastructure is considered “near term” as it is expected that this infrastructure improvement will be in place in advance of the construction of the Project. However, the increased train service level for the Barrie rail corridor is expected to be gradual, and the timing for the RER to be fully implemented is unknown. A noted in Section 1.1.6, there are three train service levels for the Barrie rail corridor. The GO Rail service level assessed as part of this Project for the planned all-day, two-way service on the Barrie rail corridor– Phase 2 is 36 diesel trains per weekday by horizon period 2022. It is expected that a service level that includes approximately 180 electric trains per weekday by 2025 and beyond (full RER service scenario) will be assessed in studies completed for the Barrie Rail Corridor Expansion and for the system-wide electrification project.

Table 2.11: Barrie Rail Corridor Peak Ridership (Fall 2014)

Direction	Train Number	Number of Peak Point Riders	Percentage Capacity in Use
Southbound	800	1,559	101%
	802	1,921	125%
	804	672	73%
	806	2,375	129%
	808	619	67%
	810	1,876	102%
	812	1,557	101%
Northbound	801	976	106%
	803	1,733	94%
	805	2,090	136%
	807	2,050	111%
	809	1,757	114%
	811	1,509	98%
	813	890	96%

CN Freight

CN freight trips on the Barrie rail corridor are light with only 1 daily at present travelling along the Newmarket Subdivision and on to the main east-west freight corridor (the York and Halton Subdivisions, which cross at a rail/rail grade separation at Snider, approximately Mile 13.0 of the Newmarket Subdivision).

VIA Rail

VIA Rail currently operates 3 transcontinental trains (known as "The Canadian") per week (Tuesday, Friday and Sunday) during the peak season and 2 trains per week during the off peak season (Tuesday and Friday) using a segment of the Barrie rail corridor from Toronto to Vancouver.

2.4.7 Utilities and Underground Services

Due to the mixed use of residential and commercial land surrounding the station location, there are a number of existing utilities and underground services within the projects limits including:

- An existing natural gas service on Croham Road;
- Overhead telecommunication cables and associated signals/cabling along the western side of the Barrie rail corridor;
- An existing storm and sanitary manhole within the vicinity of Eglinton Avenue West and Croham Road intersection and also on Bowie Avenue, approximately 15 m west of the intersection with Croham Road;
- An existing watermain on Croham Road and Bowie Avenue; and
- There is also planned works by the City of Toronto on Croham Road, scheduled for 2016, which should be considered during detailed design phase for the Project. This work includes new storm tunnels, storm sewers and combined sewer replacement.

The implementation of the ECLRT and ECLRT Caledonia Station will also affect the existing utilities within the Project Area. Coordination will be required with the ECLRT Project for utility relocates and connections during detailed design phase of the Project.

2.4.7.1 Hydro One

Existing overhead Hydro One cables and associated towers are located along the eastern side of the Barrie rail corridor. These cables run in a north to south direction, and at the northern end, adjacent to Bowie Avenue they bend to the north east and run along the former Beltline railway.

3.0 Project Description

3.1 Development of ECLRT and Caledonia GO Preferred Concept Design

As previously noted, in preparation for the Caledonia LRT Station (underground station with aboveground access west of the rail corridor), an RCDR was prepared for the new GO Station by ARUP and NORR Limited Architects (September, 2013). A copy of the RCDR is provided in Appendix O. A number of design options were reviewed during the conceptual design process by ARUP and NORR for the development of a future three track aboveground Caledonia GO Station and two platforms. The new GO Station is planned to serve as a transfer point for passengers using the ECLRT and TTC services.

3.1.1 Planning and Design Criteria

Several options were considered for the various station design elements. These options are summarized in Table 3.1 along with a brief explanation of the reason for selecting the preferred design element (shown in BOLD in Table 3.1) that was carried forward to be included in the next stages of the Project.

Table 3.1: Summary of Design Element Options

Design Element	Option 1	Option 2	Rationale for Preferred Option
Platform Curvature	**Curved**	Straight	Curved platform requires less property acquisition
Platform Location	Centred under Caledonia LRT Station	**North of Eglinton Avenue West Bridge**	Placement of platforms north of bridge requires less property acquisition.
Platform/Track Orientation	Two side platforms with three tracks in centre	**East side platform and Island platform with tracks on either side**	Allows for GO train passengers to access two planned tracks and future third track.

The property acquisition resulting from straight platforms was reviewed during the conceptual design phase and was deemed unacceptable for this site. It is considered that the platform curvature is a manageable design constraint that allows the desired location of the station to be maintained within close proximity to the Caledonia ECLRT Station, Eglinton Avenue and the Caledonia community.

3.1.2 Other Design Methods

As noted in Table 3.1 above, the preferred design elements carried forward from the RCDR included one curved side platform and one curved island platform, both located north of the Eglinton Avenue West Bridge. In 2012, prior to commencement of the TPAP for this Project, the 30% design of the new Caledonia GO Station was prepared and presented to various stakeholders in conjunction with the

ECLTR Project. During the TPAP consultation phase, the City of Toronto provided additional feedback to Metrolinx on the proposed site plan and configuration of the new GO Station. The City of Toronto asked Metrolinx to consider a more "urbanized design" locating the proposed GO Station building closer to Eglinton Avenue West and moving the Kiss and Ride to the rear (north side) of the station building. A preliminary alternative site plan and rendering have been prepared and were reviewed with the City of Toronto on February 2, 2016. Metrolinx will continue to work with City of Toronto staff during the detailed design phase of the Project to determine the preferred arrangement for the station building. Drawings SK-110 and SK-111 in Appendix A illustrate the alternative site plan and perspective rendering.

This alternative site layout for the GO Station building and Kiss and Ride is within the existing footprint assessed for the preferred Caledonia GO Station building and Kiss and Ride. As such, the impacts to the natural environment, cultural environment, social and built environments are the same as with the original (preferred) station concept and hence do not require further assessment. If this alternative site layout is subsequently selected as the preferred option during the detailed design phase, traffic impact considerations of the alternative option would need to be further reviewed due to the revised Kiss and Ride access arrangement. These traffic considerations would include queuing on Croham Road and potential impacts to traffic operations if signalization of the Croham Road and Eglinton Avenue West intersection is considered.

3.1.3 Caledonia GO Station Preferred Concept Design

The RCDR proposed the following elements for the new GO Station:

- Side platform on the east side of the corridor with a new track to the west;
- Island platform on the west side of the corridor with a set of new tracks on either side of the platform;
- Station and employee parking at the northwest part of the intersection of Croham Road and Eglinton Avenue West;
- Pedestrian bridge over the rail corridor linking the LRT and GO Station to the bus loop and Kiss and Ride;
- Pedestrian accesses at the north from Bowie Avenue and Carnarvon Street;
- Service access at Croham Road; and
- Provision for future third track as part of all-day, two-way service.

The extent of the lands proposed for re-development in the RCDR are used as the basis of the Assessment scope. The level of design details in the RCDR represents a 30% design completion level. The updated preliminary design plans prepared following the completion of the Assessment will follow the RCDR and include any amendments to the design plans that have been made since the issuance of the RCDR in September 2013, namely provision for future electrification of the Barrie rail corridor.

Drawing SK-102 provided in Appendix A illustrates the revised plan and profile of the preferred design method for implementing the Project.

As the preferred design includes a curved island platform with a minimum width of 7.40 m this will result in reduced sight lines. Accordingly, supplemental Closed Circuit Television (CCTV) will be required to ensure appropriate coverage of the platform to allow train operators to ensure that passengers are clear of the train. The use of mirrors as a back-up for CCTV will be considered during the detailed design phase of the Project.

3.2 Preferred Design Development

The new GO Station will provide a north/south to east/west transit connection option in the City of Toronto and will improve service to customers by connecting GO service to the ECLRT at Eglinton Avenue West. Building a new Toronto station within the City of Toronto between Union Station and the future Downsview Park GO Station will complement planned service improvements and future electrification on the Barrie rail corridor.

The new GO Station infrastructure will be further developed in consultation with the City of Toronto during the detailed design phase of the Project. The new GO Station concept design includes the following facilities on the Barrie rail corridor, sufficient to accommodate all-day, two-way service:

- Station platforms and station building;
- Kiss and Ride area, including taxi and barrier free drop-off (a bus loop is proposed in the Caledonia ECLRT Station development, to jointly serve the ECLRT and the new GO Station);
- Staff/taxi parking area;
- Bicycle parking facilities;
- Pedestrian bridge to span the rail line, linking the Caledonia GO and LRT Stations;
- Provisions for a future pedestrian tunnel under the rail line, linking Carnarvon Street/Westside Mall and Bowie Avenue/York Beltline Trail; and
- No automobile parking will be provided.

Figure 3.1 through Figure 3.5 provide renderings of the Caledonia GO Station from different viewpoints.

Figure 3.1: Caledonia GO Station Overview Rendering

Notes:
1. OCS, OCS portals, portal foundations and protective fencing at Eglinton Avenue West bridge are shown for illustration purposes only. Actual system layout to be determined by Others during detailed electrification design.
2. Cycling infrastructure along Eglinton Avenue West to be implemented by Others in coordination with the City, Refer to SK-104 in Appendix A for Eglinton Connects cross-section.
3. Cycling infrastructure along Croham Road to be further coordinated with the City during the detailed design phase of the Project.

Figure 3.2: Caledonia GO Station Platform Level Rendering

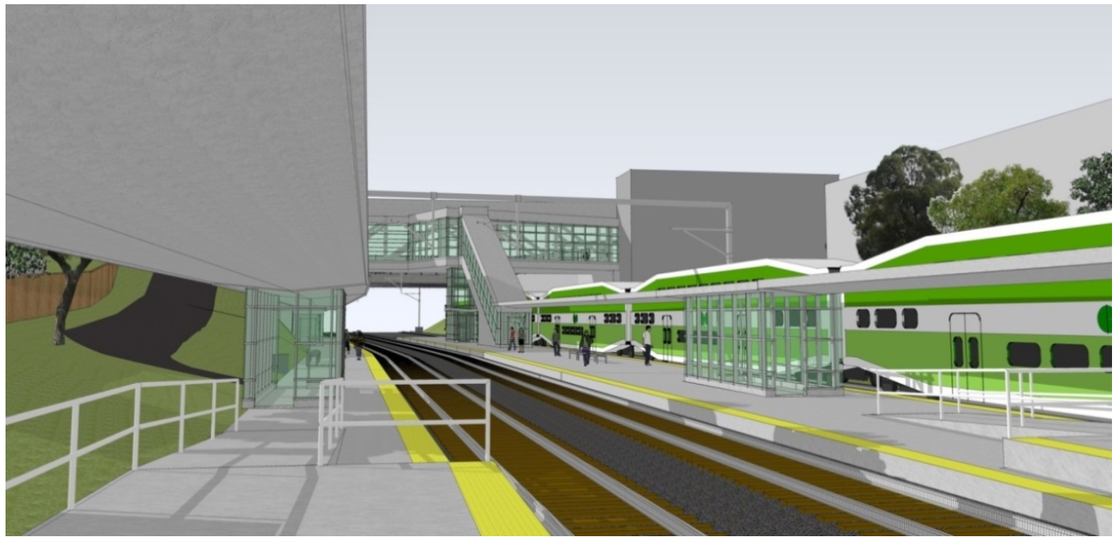


Figure 3.3: Caledonia GO Station Secondary Entrance Rendering – view from York Beltline Trail

Figure 3.4: Caledonia GO Station Connection to the Beltline Trail Rendering

Figure 3.5: Caledonia GO Station Secondary Entrance Rendering – view from Westside Mall

The new GO Station infrastructure will be further developed during the detailed design phase of the Project. As a minimum the following features and facilities will also be included:

- Site servicing connections for gas, hydro, telephone, communications, storm and sanitary'
- Fencing and security requirements'
- Ticket sales booth with staff washrooms'
- Staff rooms (as required)'
- Full service multi-use washrooms'
- Waiting areas'
- Communication, electrical, mechanical and maintenance rooms and emergency generator enclosure'
- Island platform with accessible mini-ramp, canopies, integrated heated shelters and snow-melt system'
- Communications systems – fire, alarm, security, CCTV, Public Address (PA), data and telephone'
- Fare systems' and
- Station facility identification signage and internal way-finding signage.

3.3 Site Conditions and Considerations

3.3.1 Property Acquisition

The planned Barrie Rail Corridor Expansion Project for 3 tracks and 2 platforms requires the existing rail ROW to be widened. The extent of this widening is to be confirmed when the Barrie Rail Corridor Expansion Project design progresses. To minimize land acquisition, the platforms are recommended to be slightly curved and located to the north of the Eglinton Avenue West Bridge as shown in the preferred option. While the approach is to minimize property acquisition, there are a few small parcels of property required adjacent to the rail corridor. Beyond the initial contact made during the Assessment with some of the affected property owners, Metrolinx will continue to engage in appropriate negotiations with all affected property owners regarding the land acquisition required for the Project.

Refinement of the property requirements during the detailed design phase of the Project will determine the final property impacts. Table 3.2 below and Drawing SK-101 provided in Appendix A illustrates of the conceptual design property acquisitions proposed as part of this Assessment.

Condition surveys and monitoring of adjacent buildings and structures should be undertaken pre-construction, during construction and post-construction as required. This requirement for the Caledonia GO Station will be identified during detailed design phase of the Project.

In addition to the property acquisition identified in Table 3.2 further property may be required for temporary construction access and construction easements. As discussed further in Section 3.7.2, construction access and haul routes are recommended to be restricted to ingress/egress directly from Eglinton Avenue West and Bowie Avenue. Temporary construction easements may also be required in order to construct retaining walls. If the need arises to access private property during construction, a temporary permit to enter will be obtained in advance from the property owner prior to any access or works taking place on the subject property.

3.3.2 Structures and Buildings

3.3.2.1 Eglinton Avenue West Bridge

Track Lowering

The existing track will need to be lowered by approximately 0.6 m below both the proposed ECLRT pedestrian bridge and the existing Eglinton Avenue West Bridge to achieve the clearance required for future electrification of the Barrie rail corridor. The Eglinton Avenue West Bridge reconstruction work is recommended to be completed in advance of the new GO Station works through consultation and coordination with the City of Toronto. If the reconstructed Eglinton Avenue West Bridge is not in place at the time of track lowering, the existing bridge may require underpinning of the foundation to allow the track to be lowered.

In an effort to protect for future electrification in the corridor (as discussed in Section 3.6.1), a minimum of 7.4 m of vertical clearance between top of rail and bottom of structure is required as part of the future detailed design for any new structures. As part of the detailed design this clearance should be further confirmed through the completion of a topographical survey. Coordination with the Barrie Rail Corridor Expansion Project must be undertaken if any adjustments to the Preferred Option track profile are proposed.

Increased Right-of-Way

The planned Barrie Rail Corridor Expansion Project, which is being undertaken as a separate project, is examining the provision for 3 tracks and 2 platforms at the new GO Station site. Provision for a potential future 3 track corridor requires the existing Eglinton Avenue West Bridge clear span to be widened from 13.4 m to approximately 27 m. The extent of this widening is to be confirmed when the Barrie Rail Corridor Expansion design progresses.

It is recommended that the reconstruction of the Eglinton Avenue West Bridge be undertaken by the City of Toronto in advance of the proposed works for the Barrie Rail Corridor Expansion Project as previously noted through further discussion and coordination with Metrolinx. Prior to construction, a construction staging and traffic management plan will need to be developed and implemented for the bridge reconstruction. This plan should be coordinated between the City of Toronto and Metrolinx and include details outlining the staging of the works and construction access along with the associated traffic management that will be required. Work should be staged such that the bridge and rail line remains operational at all times through staged lane closures and some of the work will likely be required during off peak work.

3.3.2.2 Westside Mall

Provisions for the future pedestrian tunnel connecting Bowie Avenue and Carnarvon Street will require an existing transformer for Westside Mall to be relocated. This transformer is currently located at the north-west corner of the site, adjacent to Carnarvon Street. The revised location for this transformer will be determined during the detailed design phase of the Project.

3.3.3 Retaining Walls

The proposed wider 27 m rail ROW (at the Eglinton Avenue West Bridge) establishes the clear span of the pedestrian bridge and its associated retaining walls that flank the western and eastern sides of the rail corridor in the area. There is also a grade difference between the existing properties on the edge of the corridor and the proposed rail ROW. In order to minimize encroachment on these private properties, and due to the limited space available, retaining walls are proposed where there is insufficient space in the corridor to address grading requirements. Temporary construction easements will also be required to construct the retaining walls.

The exact extent and location of the required retaining walls will be determined during the detailed design phase of the Project and this work will be completed as part of the Barrie Rail Corridor Expansion Project in association with the extended ROW trackwork. Easement areas within the Caledonia GO Station Project limits have been identified in Table 3.2 and will be further refined during detailed design.

Table 3.2: Proposed Property Acquisitions Summary

Location/ Mileage	Property Identification Number (PIN)	Private Property Encroachment on Rail Corridor		Property Acquisition Required		Construction Easement Required		Description	Ownership
		Dimensions (m) (Approx. & Rounded)	Area (m^2) (Approx. & Rounded)	Dimensions (m) (Approx. & Rounded)	Area (m^2) (Approx. & Rounded)	Dimensions (m) (Approx. & Rounded)	Area (m^2) (Approx. & Rounded)		
Properties within Project Area – Construction Phase 1									
Barrie Rail Corridor –Newmarket Subdivision Mile 5.24 to 6.50	104870709	N/A	N/A	N/A	N/A	N/A	N/A	Rail Corridor parcel from St. Clair Ave. W to Eglinton Ave. W, including Eglinton Ave. W. bridge. Agreements regarding bridge crossing to be confirmed.	Metrolinx
Barrie Rail Corridor –Newmarket Subdivision Mile 6.50 to 8.21	104910499	N/A	N/A	N/A	N/A	N/A	N/A	Rail Corridor parcel from Eglinton Ave. W. to Lawrence Ave. W. Note: location of proposed station and platforms is approximately Mile 6.50 to 6.70.	Metrolinx
Eglinton Ave. W. at Croham Road	104919502	N/A	N/A	41x36 (irregular)	1,275	N/A	N/A	Portion of unopened Road Allowance north/west of the intersection of Eglinton Ave. W. and Croham Road.	City of Toronto
West of Barrie rail corridor, North of Eglinton Ave. W.	104919504	N/A	N/A	206x10 (irregular)	1,819 (Entire Plot)	N/A	N/A	Area west of the existing Barrie rail corridor ROW. Parcel positioned between the rail corridor and 2322-2362 Eglinton Ave. W.	Private
2-4 Croham Road	104910286	N/A	N/A	44x41 (irregular)	1,224 (Entire Plot)	N/A	N/A	Existing commercial property on Croham to be purchased and used for the construction of station building and parking.	Private
101 Carnarvon St.	104910416	9.0x7.5 (irregular)	12	N/A	N/A	6.5x4.0 (irregular)	24	Residential Property	Private
103 Carnarvon St.	104910417	7.5x0.5	4	N/A	N/A	7.5x4.0	30	Residential Property	Private
105 Carnarvon St.	104910104	7.0x0.7	5	N/A	N/A	7.5x4.0	30	Residential Property	Private
107 Carnarvon St.	104910105	4.0x0.7	3	N/A	N/A	7.5x4.0	30	Residential Property	Private
109 Carnarvon St.	104910106	3.5x0.6	2	N/A	N/A	7.5x4.0	30	Residential Property	Private
111 Carnarvon St.	104910107	N/A	N/A	N/A	N/A	7.5x4.0	30	Residential Property	Private
113 Carnarvon St.	104910108	N/A	N/A	N/A	N/A	8.5x4.0	33	Residential Property	Private
Construction Phase 1 Total:			**26**		**4,318**		**207**		
Properties within Project Area – Construction Phase 2									
Toronto Beltline Park	104910370	N/A	N/A	18.5x5.5	101	N/A	N/A	City of Toronto recreational multi-use trail for bicycles and pedestrians.	City of Toronto
2322-2362 Eglinton Ave. W.	104919503	N/A	N/A	32.5x8.5	270	N/A	N/A	Existing retail area on the west side of the GO corridor within the vicinity of the provisional north tunnel.	Private
Construction Phase 2 Total:			0		371		0		
Phase 1 + Phase 2 Total:			26		4,689		207		

Note: Precise property requirements, encroachment limits and requirements for construction easements to be determined during the detailed design phase of the Project.
Indicative property dimensions are provided. Multiplied dimensions do not equal calculated areas due to irregular property shapes and rounded measurements.

3.3.4 Utilities

Due to the mixed use of residential and commercial land surrounding the new GO Station location, there are a number of existing utilities within the projects limits from which the new GO Station building and associated features can connect to. The following works are planned within the Project Area and require coordination with the Project:

- The City of Toronto planned work on Croham Road, scheduled for 2016. This work includes new storm tunnels, storm sewers and combined sewer replacement; and
- ECLRT/ Caledonia LRT Station tunneling and advanced utility relocations.

As part of the concept design the following connections are proposed, this will be further refined during the detailed design phase of the Project:

- Natural gas service connection from Croham Road;
- Storm and sanitary connection within the vicinity of Eglinton Avenue West and Croham Road intersection and also on Bowie Avenue, west of the intersection with Croham Road; and
- Watermain connection from Croham Road and Bowie Avenue.

A number of utilities will require relocation prior to the construction of the new GO Station and associated works. It is expected that utility relocations can be accommodated within the proposed rail ROW. This will be confirmed with the utility companies during the detailed design phase of the Project and this work is recommended to be undertaken as part of the GO Barrie Expansion Project in advance of the new GO Station works. All of the affected utilities will be contacted during the detailed design phase to confirm the utility locations and discuss relocations and cost sharing strategies as appropriate.

This rail ROW utility work should also consider protection for the future electrification of the Barrie rail corridor.

3.3.4.1 Hydro One Diversion

The existing Hydro One overhead power line that runs along the eastern side of the railway tracks needs to be diverted below ground and away from the new GO Station.

The hydro line connecting to the existing tower (tower 17) is in conflict with the proposed pedestrian bridge for the GO Station and will need to be moved underground and the tower removed prior to the works commencing for the new GO Station.

Discussions with Hydro One have not yet been initiated for the relocation of the hydro line along Croham Road in accordance with their occupancy agreement.

3.3.5 Stormwater Management

Most of the grading/drainage for the track structure is contained within the rail ROW. The rail corridor is vegetated with trees and shrubs on either side of the existing tracks.

The construction of the Barrie Rail Corridor Expansion Project track work in advance of the new GO Station work will include widening of the rail ROW and lowering of the existing track as noted earlier. As part of this work it is assumed that the Barrie Rail Corridor Expansion Project will include grading and drainage for the ROW and widening of any existing culverts/swales within the corridor to accommodate the new track alignment and additional tracks. All stormwater work within the rail ROW is assumed to be completed as part of the Barrie Rail Corridor Expansion Project.

As part of the detailed design phase of the Project, a stormwater management plan will be prepared as required to accommodate the new GO Station works.

The details for any localized dewatering requirements during construction are to be confirmed and further developed during the detailed design phase of the Project. Any dewatering plans, including for underground pedestrian connections, will be provided to the TRCA for review and approval. An environmental monitoring plan for mitigating the natural environment during dewatering will be prepared if needed.

An Erosion and Sediment Control (ESC) Plan will also be prepared in compliance with TRCA and Toronto Water guidelines.

Within the Caledonia GO site there is a Caledonia ECLRT stormwater storage area which requires coordination during the construction of the maintenance access ramp to the rail ROW. There is a proposed localized stormwater storage area for the new GO Station site located in the Kiss and Ride area.

3.4 Alterations and Improvements to Transportation Infrastructure

3.4.1 Traffic Generation

3.4.1.1 Traffic Forecasts and Trip Generation

Traffic forecasts on the area road network have been based on the Eglinton Connects Planning Study (March 2014, City of Toronto), augmented by a traffic count taken in the area beyond Eglinton Avenue (i.e., count taken on August 12, 2013 by the City of Toronto at Caledonia Road/Bowie Avenue) and by trip generation forecasts for the local area, using standard trip rates (i.e., Institute of Transportation Engineers Trip Generation Manual) where counts are not available.

One of the three future train service levels noted in Section 1.1.6 have been assessed for trip generation as outlined below.

Future Phase 2 - All-day, Two-way Service – Horizon Period 2022

- A.M. peak period – 8 trains southbound and 0 trains northbound, minimum headways southbound of 15 minutes or longer;
- P.M. peak period – 0 trains southbound and 8 trains northbound, minimum headways northbound of 15 minutes or longer;

- Off-peak periods – 10 trains southbound and 10 trains northbound; and
- Total 36 diesel trains per day

The A.M. peak period (typically 3 hours between 6:30 and 8:30 arriving at Union Station) is forecasted to have approximately 1,200 riders (total, externally generated only) using the combined Caledonia GO Station and Caledonia ECLRT Station, under Future Phase 2 (36 trains).

3.4.1.2 Access Mode and Traffic Distribution

The level of Kiss and Ride activity for the external traffic at the new GO Station and Caledonia ECLRT Station has been assumed to be 10% of the external boarding traffic and 10% of the external alighting traffic, in both the A.M. peak hour and P.M. peak hour. The remaining access modes for this Station are assumed to be via walking, cycling and transit connections. The forecasted external traffic volumes for the combined Caledonia GO Station and ECLRT Station are summarized in the following table, for the Future Phase 2 train service level are summarized in Table 3.3.

3.4.2 Traffic Network and Distribution

A summary of the proposed conditions traffic assessment undertaken as part of the Assessment is provided in this section of the EPR. Further details of this analysis are included in the TIS Report in Appendix J.

Table 3.3: External Traffic from Caledonia GO Station and Caledonia ECLRT Station (Future Phase 2)

Mode	A.M. Peak Hour		P.M. Peak Hour	
	Boardings (riders/hour)	Alightings (riders/hour)	Boardings (riders/hour)	Alightings (riders/hour)
Walk	235	175	175	235
Cycle	25	--	--	25
Bus	35	30	30	35
Kiss and Ride or Taxi	30	20	20	30
Total	**325**	**225**	**225**	**325**

3.4.2.1 Road Network

The Caledonia GO and ECLRT Stations will largely rely on customer access via walking, cycling and transit, while also providing their function as Interchange Stations. Neither the Caledonia ECLRT Station nor the new GO Station provides for customer parking, thereby eliminating the potential for auto-driver mode of access to the stations. A small Kiss and Ride area will be provided, with about 8 vehicle stopping spaces provided, which is considered to be sufficient to meet the forecasted Kiss and Ride demands for this site. It is proposed that LCD digital signage be installed at the station, displaying the real-time trips to assist in traffic management. A small parking area will be designed as part of the detailed design phase of the Project. This parking area will include approximately six parking spaces to accommodate staff (up to four spaces) and provision for taxis (2 spaces) only. Alternate allocation of a portion of this parking area to car share spaces may also be considered during the detailed design phase of the Project.

Strategies developed as part of Metrolinx's Regional Transportation Plan and on-going Smart Commute program are effective in shifting travel demand away from single occupant cars and towards more sustainable modes of travel (i.e., carpooling, walking, cycling, transit). Given the low-impact access modes proposed for the new GO Station, and the low external traffic generation forecasted, it is concluded that the Transportation Demand Management measures will more than offset the direct traffic impacts on the broader transportation network.

3.4.2.2 Traffic Volumes

The new GO Station is expected to generate very little external traffic. As such, there is expected to be negligible impact to the road network, except during construction, where impact will be minimized as far as possible. The most significant impact to the road network during construction will be the reconstruction of Eglinton Avenue West Bridge, which is assumed to be completed in advance of the new GO Station works commencing. It is also expected that the Eglinton Avenue West Bridge will be completed in advance of the revised layout for the Eglinton Avenue West and Croham Road intersection.

3.4.2.3 Future Traffic Operations and Conditions

To confirm traffic operations and the potential to impact access or be impacted by operations of the new GO and ECLRT Stations, the following main intersections have been assessed:

- Caledonia Road / Eglinton Avenue West;
- Croham Road / Eglinton Avenue West;
- Proposed Kiss and Ride at the GO Station / Eglinton Avenue West;
- Proposed Bus Loop at the ECLRT Station / Blackthorn Avenue / Eglinton Avenue West;
- Gabian Way / Eglinton Avenue West; and
- Bowie Avenue / Caledonia Road.

The traffic volume/operations forecasted along Eglinton Avenue West confirm that 2 travel lanes should be provided in each direction to accommodate the peak hours, and that no left turn lanes are required on Eglinton Avenue West at the intersections at Blackthorn Avenue or at Gabian Way.

The intersections in the Study Area are forecasted to have a good Level of Service, with relatively short delays and significant reserve capacities, under Future Phase 2 (2022) background traffic conditions, with the assumed lane configurations. Under Future Phase 2 (2022) total traffic conditions (i.e., with implementation of the new GO Station and Caledonia ECLRT Station with the assumed servicing scenarios); the traffic operations are forecasted to continue to operate acceptably, assuming minor modifications to the signal timing.

3.4.2.4 Traffic Circulation at the Proposed Site

Access to the new GO Station is proposed from Croham Road, with a full-moves access to the taxi/staff parking area and a one-way (ingress only) to the Kiss and Ride. Egress from the Kiss and Ride will be to an un-signalized intersection (stop-controlled), with separate right-turn and left-turn lanes.

Croham Road is one-way northbound, except for a short section at its south end, where two-way traffic is allowed. In order to minimize traffic infiltration through this residential neighbourhood, the two-way section of Croham Road is recommended to be extended to include the two accesses to the new GO Station (i.e., Kiss and Ride and staff/taxi parking).

A new two-way section of Croham Road is recommended to be introduced from Eglinton Avenue West to the planned new access driveways to the new GO Station (approximately 45 m north of Eglinton Avenue West). The Kiss and Ride area is proposed to have an entry-only off of Croham Road and an exit-only off of Eglinton Avenue West (un-signalized). One way northbound traffic operations would remain on Croham Road north of the new driveways and is recommended to be signed for “no through traffic” with increased enforcement to respond to issues of speeding and driving in the wrong direction.

The City of Toronto has identified the potential for a future rear lane, to be implemented to service redevelopment intensification along Eglinton Avenue West, on the lands to the east of Croham Road. This lane is proposed to minimize accesses along Eglinton Avenue West and is not intended to provide access to the GO Station. If such a lane is implemented, it is recommended that this lane be connected to the one-way section of Croham Road, so that traffic will be directed away from the intersection of Eglinton Avenue West / Croham Road, minimizing congestion in the area adjacent to the GO Station.

Signage should be implemented in the areas of the new GO Station and the Caledonia ECLRT Station to restrict the potential for illegal parking. Further, parking in the areas external to the new GO Station lands, particularly along Croham Road and at the Westside Mall and Kiss and Ride activity are recommended to be monitored, after commencement of operations at these stations. If parking becomes an issue in these areas, increased enforcement by the City of Toronto is recommended.

3.4.3 Rail Infrastructure

The new GO Station is proposed as an Interchange Station to the planned Caledonia ECLRT Station (expected to be operational in 2021), and to provide GO rail service to the local area. There is currently significant demand for travel in this corridor.

All of the track work is assumed to be completed as part of the Barrie Rail Corridor Expansion Project, a separate initiative. As part of this work, approximately 750 m of track requires to be realigned to accommodate the provision for future electrification and the required clearance beneath the existing Eglinton Avenue West Bridge (Station 2+620 to 3+360). A conceptual track and profile is included on Drawing SK-102 provided in Appendix A. The following design criteria are considered to be part of the preliminary design for this track work:

- 315 m length curved island platform with minimum width of 7.40 m;
- Provision for a 315 m length curved side platform with width between 3.6 to 4.9 m;
- Consideration of track and platform curvature and super-elevation requiring additional space and the impact on train operator sight lines;
- Separation between the track centre lines will be a minimum of 4.3 m;
- New mainline track construction to be all new materials. It is assumed that this will include 115 lb. continuously welded rail, 8’6” wooden ties, 225 mm depth Ballast and 300 mm depth sub-ballast;
- Modification or widening to existing ditches, structures and retaining walls may be necessary to accommodate the additional tracks;
- Existing infrastructure to be widened/ replaced as required;
- Eglinton Avenue West Bridge works to be completed by the City of Toronto through discussion and coordination with Metrolinx and in advance of the Barrie Rail Corridor Expansion works. This work is to be staged such that impact to rail and roadway operations are minimal;
- Existing bridge to be suitably supported if Barrie Rail Corridor Expansion track work is commenced prior to the City of Toronto bridge reconstruction work being completed;
- In order to minimize additional property requirements and encroaching on adjacent private properties due to the limited space available, retaining walls are proposed where new track is being added and where there is limited space available in the corridor to address grading requirements; and
- Existing train speeds within the corridor will be maintained as part of the proposed realignment and expansion to the rail ROW.

3.4.3.1 CN Freight Infrastructure

It is not expected that the Project will have any impact on the existing CN freight infrastructure.

3.4.3.2 VIA Rail Service

It is not expected that the Project will have any impact on the existing VIA Rail service.

3.4.4 Transit Infrastructure

The new GO Station will serve as a transfer point for passengers using the ECLRT and other forms of transit services.

3.4.4.1 TTC Subway Service

The implementation of the new GO Station will provide transfer connections to the TTC Subway from the GO Rail service using the planned ECLRT providing improved opportunities for enhanced inter-regional travel.

3.4.4.2 TTC Bus Service

Access

The planned bus access to the Caledonia ECLRT Station and GO Station is shown on Drawing SK-101 provided in Appendix A. A bus loop is proposed at the Caledonia ECLRT Station to service this station and the new GO Station. The concept plan for the Caledonia ECLRT Station includes provision for two bus parking stalls within this loop, which is proposed off of Eglinton Avenue West, with an exit at the existing signalized intersection, opposite to Blackthorn Avenue.

Service

The construction of new GO Station will provide an interchange to the TTC services that continue to serve the area, for transfers to the ECLRT or the GO rail lines at these stations and provide improved opportunities for inter-regional travel.

With the implementation of the ECLRT line it is expected that most of the bus trips that presently travel east-west on Eglinton Avenue West on a daily basis will be replaced by the proposed light rail trips on the planned ECLRT line. As identified previously in Table 2.10, the TTC currently operates Bus Routes 32, 47B/C and 332 within the Study Area. The ECLRT Environmental Project Addendum (October 2013) report indicates that TTC Bus Routes on Eglinton Avenue will continue to run on Eglinton Avenue West after implementation of the ECLRT. TTC bus route 332 will remain operational and bus route 32 will be shortened to operate from Renforth Station to the proposed Mount Dennis Bus Terminal. TTC bus route 34 will operate a new east-west limited service route on Eglinton Avenue, parallel to the ECLRT. This service is proposed to operate from the Mount Dennis Bus Terminal to Kennedy Station. TTC Bus Routes 47B/47C (Lansdowne) are anticipated to continue to operate along Eglinton Avenue West and will divert via the Caledonia ECLRT Station bus loop, once operational, a diversion of about 550 m (total, two-way) for this route.

Planned ECLRT

One of Metrolinx's goals are to connect the municipal transit initiative with the GO rail stations in order to promote the shift from automobile to transit alternatives. The implementation of the new GO Station will assist in achieving this goal by providing connectivity between GO Rail and the Transit infrastructure, through the planned completion of ECLRT and the interface with Caledonia ECLRT Station.

3.4.5 Pedestrian Access and Cycling Opportunities

The proposed pedestrian and cyclist access to the new GO Station is considered in this section. Within the constraints offered by the site and its surrounding linkages, the site designs strive to maximize the segregation of the various access modes (i.e., cars, buses, pedestrians and cyclists). The introduction of a bridge crossing and a tunnel crossing at the new GO Station will provide additional opportunity to direct pedestrians and cyclists along routes that reduce the potential for conflicts between access modes.

3.4.5.1 Pedestrian Access

It is expected that the construction of the new GO Station will improve the existing pedestrian infrastructure and connectivity between public transport and assist Metrolinx in achieving its goal to promote the shift from automobile to transit alternatives. Primary pedestrian access to the new GO Station will be from the sidewalks on Eglinton Avenue West. The provision of adequate pedestrian and cyclist linkages to the new stations, along with transit interchange opportunities, will reduce the vehicular impacts on the road network by promoting access modes that are not autocentric. These measures tie into the City of Toronto Transportation Demand Management (TDM) strategies.

Preliminary discussions have been initiated with the City of Toronto Planning Department and City of Toronto Transportation Services Department to confirm pedestrian connections in the area of the new GO Station and Caledonia ECLRT Station. The access and transportation network linkages proposed for the new GO Station have taken into account previous planning work, including transportation network constraints/opportunities identified in the City of Toronto's 2016 Cycling Network Plan and Amendment No. 274 to Toronto's Official Plan. City of Toronto is encouraged to continue to implement Transportation Demand Management measures, in accordance with the policies set out in Amendment No. 274 to the Official Plan.

Walking is anticipated to be an important mode of access to the Caledonia ECLRT Station and new GO Station, particularly for riders within one kilometer of the stations. Potential intensification of the land uses in this area, through redevelopment along Eglinton Avenue West, the Westside Mall lands and the Castlefield and Caledonia Design and Décor District, will support the use of this mode of access and could tie into the City of Toronto TDM strategies. Pedestrian travel to/from the new GO Station and the Caledonia ECLRT Station is forecasted to be approximately 400 pedestrians per hour during peak periods. Existing pedestrian facilities along Eglinton Avenue West currently include sidewalks and pedestrian crossings with traffic signals at major intersections, as well as sidewalks on intersecting local and collector roads. While Metrolinx promotes Active Transportation modes, such linkages should be designed with safety in mind.

The proposed cross-section for Caledonia ECLRT Station includes a 3.2 m pedestrian clearway on each side of Eglinton Avenue West; this will provide pedestrian access to the Caledonia ECLRT Station and also to the main entrance of the new GO Station. Pedestrians may also use the sidewalks on Croham Road, which are located on both sides of the road to access the station. Pedestrians will access the eastern and central island GO platform via elevators and stairways.

To connect the Caledonia GO and ECLRT Stations with the new Kiss and Ride, a pedestrian bridge is proposed to span over the GO rail corridor. This bridge is designed to be a part of the primary entrance to these two stations, with entrances and exits to the west and east of the rail corridor.

Provision for a secondary entrance/exit in the future is proposed at the northern end of the new GO Station site to provide access to the rail platforms and a connection between Carnarvon Street/Westside

Mall and Bowie Avenue/York Beltline Trail. Since the rail corridor is close to grade at this location, the provision of a tunnel is considered more suitable than a bridge, due to the higher clearance requirements of a bridge (7.4 m) as compared to a tunnel (3.9 m).

The draft concept plan for the new GO Station provides for crosswalks on Eglinton Avenue West at Blackthorn Avenue, the new GO Station Kiss and Ride parking lot and at the access to the Westside Mall. All signalized intersections with pedestrian crossings will remain in place. Considering that pedestrian linkages are provided in all directions from the stations, the volumes of pedestrians crossing Eglinton Avenue West is forecasted to be relatively low. The existing traffic signals at Blackthorn Avenue will remain, providing a controlled crossing of Eglinton Avenue West, adjacent to the new GO Station. Additional pedestrian crossings of Eglinton Avenue West are not proposed at this time to facilitate the operations of the new GO Station and Caledonia ECLRT Station, due to the relatively low external pedestrian activity forecasted in these areas, the availability of existing signalized intersections in close proximity to the stations, and the potential to adversely impact traffic mobility on Eglinton Avenue West.

An earlier concept plan had proposed an additional pedestrian crossing on Eglinton Avenue West, at the exit of the new GO Station Kiss and Ride. However, considering the need to maintain vehicular mobility along Eglinton Avenue West, it is considered to be premature to recommend a pedestrian crossing in this area, without further monitoring to support the demand for such a crossing. Therefore, monitoring of pedestrian activity is recommended to continue, after commencement of operations at the Caledonia GO and Caledonia ECLRT Stations, at the exit of the Kiss and Ride and at the exit of the Westside Mall, to determine if additional pedestrian crossings on Eglinton Avenue West are required at those locations. It is acknowledged that the assessment, of the need to establish a new pedestrian crossing of Eglinton Avenue West at the Station access, should be based on both vehicular considerations as well as AODA requirements, safety guidelines and placemaking. If further pedestrian crossings are warranted, traffic operations should be coordinated between the closely spaced signals, based on a future signal coordination study for this section of the corridor.

The existing Westside Mall lands, located immediately to the west and north of the stations, also provide for pedestrian linkages to the broader area. The City has indicated its intention to require that linkages (pedestrian, cyclist and vehicular) be maintained through any redevelopment of these lands. There is potential for a future multi-use trail on the west side of the GO rail corridor to be developed by Others as part of redevelopment of the Westside Mall land, which would improve the pedestrian linkages in this area, particularly to the Caledonia ECLRT Station and to the provisional pedestrian tunnel. However this additional linkage is not required as part of the currently proposed works.

In addition to the sidewalk facilities within the road right-of-ways in the Study Area, a pedestrian linkage is also provided by the York Beltline Trail.

Continued monitoring of access and transfer activity at the Caledonia GO and ECLRT Stations is recommended to confirm the adequacy of TDM measures and to recommend additional measures, if required, to respond to access demands and to support low-impact access modes. In this respect, Metrolinx will endeavour to provide sufficient bicycle parking facilities to adequately meet demands. Metrolinx will also continue to implement TDM in the Study Area, through their Smart Commute program, as well as to investigate opportunities for integration of Bike Share and Car Share facilities as part of the new GO Station designs.

3.4.5.2 Bicycle Access and Opportunities

The construction of the new GO Station is expected to improve the existing cycling infrastructure and connectivity between the public and public transit and assist Metrolinx in achieving its goal to promote the shift from automobile to transit alternatives.

The access and transportation network linkages proposed for the new GO Station have taken into account previous planning work, including transportation network constraints/opportunities identified in the City of Toronto *2016 Cycling Network Plan* and Amendment No. 274 to Toronto's Official Plan. Preliminary discussions have been initiated with the City of Toronto Planning Department and City of Toronto Transportation Services Department, to confirm cyclist connections in the area of the Caledonia GO and ECLRT Stations.

Cycling is anticipated to be a significant mode of access to the stations, particularly for riders within 5 km of the stations. Potential intensification of the land uses in this area, through redevelopment along Eglinton Avenue West, will increase the use of this mode of access and could tie into the City of Toronto TDM strategies. Cyclist travel to/from the Caledonia GO and the ECLRT Stations will be approximately 25 cyclists per hour during peak periods.

The cross section for Eglinton Avenue West, as proposed in the *Eglinton Connects Planning Study* (March 2014, City of Toronto), is recommended to be implemented prior to the opening of the Caledonia ECLRT Station and GO Station to improve bicycle access to the two stations. The concept plan for the Caledonia ECLRT Station and GO Station provides access to bicycle parking facilities at both stations (52 spaces at the Caledonia LRT Station and 16 spaces at the GO Station).

In addition to the on-road cycling facilities proposed on Eglinton Avenue West, improvements are proposed on Croham Road to provide a cyclist linkage between the GO Station and the York Beltline Trail. This cycle connection is now included in the City of Toronto's *2016 Cycling Network Plan*.

Croham Road presently has an asphalt width of 8.6 m, within a 20 m ROW, with travel one-way northbound. One-hour parking is allowed along the west side of Croham Road between the hours of 8 A.M. and 7 P.M., 7 days a week. There are monolithic sidewalks on both sides of the street. The improvements to the cycling facilities that are recommended for Croham Road include the following:

- Addition of contra-flow cycling infrastructure for southbound bicycle travel on Croham Road, which is a one-way road northbound for vehicular travel;
- Relocation of on-street parking on Croham Road from the west side to the east side of the road. Possible addition of '*sharrow*' markings to facilitate northbound bicycle travel on this road; and
- Residential one-way road section of Croham Road is recommended to be signed for "no through traffic, bicycles excepted", and that enforcement be increased to respond to issues of speeding and driving the wrong direction. Further design enhancements will also be considered in the detailed

designs (e.g., pavement markings and/or guideposts) to facilitate safe and efficient cycling movement in this area.

It is proposed that bicycle parking be provided for the new GO Station in the area of the north tunnel at both the east and west access points. The north tunnel will include stairs and elevator access. Cyclists will be required to dismount and walk to connect through the tunnel. The usage of the bicycle parking will be monitored, after commencement of operations, to ensure that sufficient parking facilities are provided to meet demand. There is potential for a future multi-use trail on the west side of the GO rail corridor to be developed by Others as part of redevelopment of the Westside Mall area connecting to this tunnel. The pedestrian/ cyclist facilities on Eglinton Avenue West will be completed as part of the ECLRT Project. It is recommended that the City of Toronto continue to implement other improvements to cyclist infrastructure in the Study Area, as identified in their *2016 Cycling network Plan*.

3.5 Project Implementation

This study is the first step in a larger process to further define the scope and scale of the new GO Station Building, pedestrian bridge and associated works. Decisions regarding the potential implementation of the Project, including funding, will be informed, in part, by its findings. Other factors to be considered as part of the project implementation include:

- Metrolinx/Agency Approvals;
- Detailed Design;
- Design Approvals;
- Construction and Construction Staging; and
- Operations and Maintenance.

3.6 Future Design Considerations

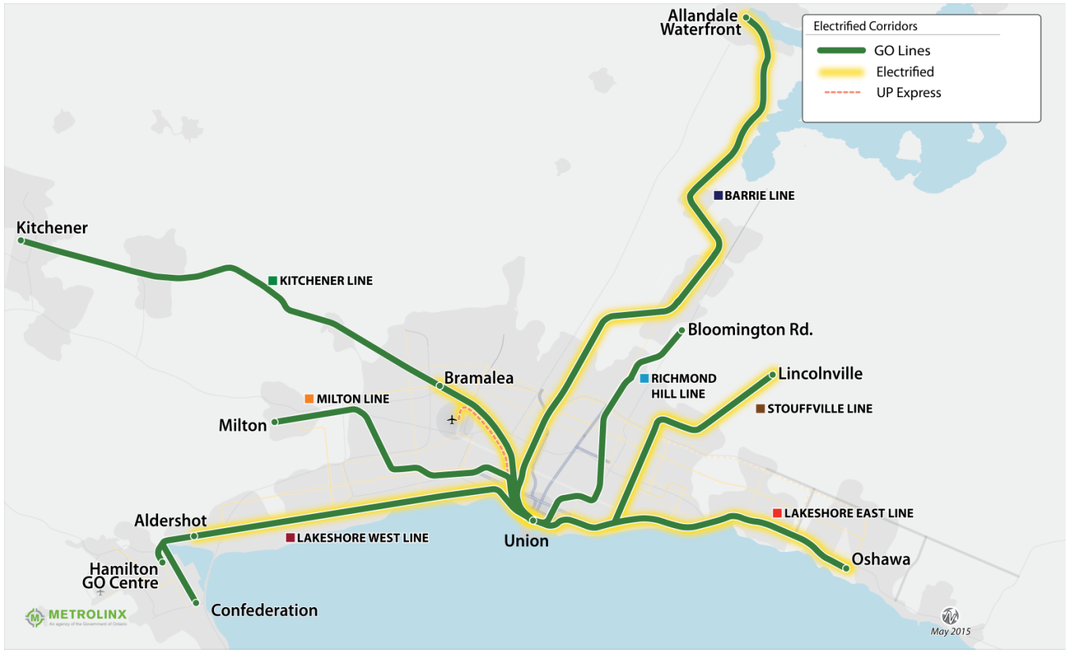
3.6.1 Electrification

In January 2010, Metrolinx initiated an electrification study of the entire GO rail system as a future alternative to diesel trains now in service. The study was completed in December 2010 and the results of the study are documented in a comprehensive Electrification Study Report (Metrolinx, December 2010). The primary purpose of the Electrification Study was to provide Metrolinx with the information needed to decide how GO trains will be powered in the future: using electricity, enhanced diesel technology or other means. Of the possible network options, 6 options were carried forward for more detailed study. One of the 6 options carried forward, Option 15 entails the partial electrification of Lakeshore West and East rail corridors from Bowmanville GO Station to James Street GO Station in Hamilton and full electrification of the Airport Rail Link (now Union Pearson Express), the Georgetown rail corridor (now Kitchener rail corridor), the Milton rail corridor and the Barrie rail corridor. Figure 3.6 illustrates the rail corridors that will be electrified through the RER program.

Since the completion of the Electrification Study, the province has announced RER. Metrolinx has formed a specific RER group whose mandate is to study and plan for the future electrification of the GO network, which will include a future Environmental Assessment, and design standards for structures and facilities. Metrolinx has identified the need to provide “protection for electrification” in the design of the new GO Station. The following provisions are required to be in place to adequately protect for future electrification of the Barrie rail corridor:

- Assess the benefits and impacts to the Project Area;
- Ensure all infrastructure is grounded and bonded;
- Provide space for Overhead Catenary System (OCS) structures, poles and portals; and
- Ensure all third party utilities and structures crossing above, under or within the rail corridor follow appropriate requirements and standards.

Figure 3.6: Future Electrified Rail Corridors



The details of the above provisions will be worked out between the Project Team and the Barrie Rail Corridor group as the electrification environmental study progresses.

3.6.2 Other Future Design Considerations

Although plans are only conceptual at this stage, the following items will be required to be considered as part of the detailed design phase of the Project to accommodate the Caledonia Station works:

- Infrastructure design, including platforms and stormwater connections;

- Utility design;
- Structural design, including but not limited to, station, shoring, retaining walls, tunnels;
- Architectural design associated with the station and tunnel;
- Stormwater management design;
- Mechanical design associated with the station, tunnel and potential snow melt system;
- Electrical design, including but not limited to, station, electrical/communications alterations, lighting, grounding and bonding, etc.;
- Traffic design to review traffic circulation of Caledonia GO Station;
- Landscaping design and arborist for tree inventory assessment;
- Geotechnical investigations;
- Noise, vibration and air quality investigations (both during construction and post construction);
- Construction cost;
- Signage design; and
- Designated substances survey of existing structures and buildings identified as part of the works.

The final design for new GO Station will also need to take into account any revisions to other ongoing related transit projects (e.g., ECLRT and the Barrie Rail Corridor Expansion).

3.7 Construction Phasing and Commitments

It is assumed that some of the work required for the new GO Station Project will be undertaken by Others in advance of the work for the Project commencing. As previously noted, it is expected that the City of Toronto will undertake the Eglinton Avenue West Bridge reconstruction/widening to accommodate the Barrie Rail Corridor Expansion including rail ROW widening through discussion and coordination with Metrolinx. It is expected that the track work within the new GO Station limits will be undertaken as part of the Barrie Rail Corridor Expansion Project works. For the purposes of construction phasing for the new GO Station Project, this track work is identified as Phase 1 which is assumed by Others at present, however this is dependent on how the schedule for each project progresses to the construction stage. Phase 2 identifies the works that will be required for the Project and Phase 3 includes the provisional work as outlined below. Some of these activities are discussed further in the subsequent sections:

Construction Phase 1 (Assumed to be completed by the Barrie Rail Corridor Expansion Construction Contract):

- Utility, fiber optic and signal cable protection/relocation for rail related works;
- Site preparation including removal of vegetation within the corridor;
- Construction of retaining walls;
- Drainage and Stormwater Management works;
- Grading and Lowering of the existing mainline track; and
- Landscaping and fencing.

Construction Phase 2 (Caledonia GO Station Site):

- General works for the station and platforms including site clearance and utility protection within the corridor;
- Site preparation including removal of vegetation within the corridor;
- Site service connections and Stormwater Management;
- New Station Building;
- New pedestrian bridge;
- New island platforms including mini-platforms and shelters;
- Provisions for pedestrian tunnels and elevators;
- Kiss and Ride/Taxi Drop-off;
- Staff parking; and
- Landscaping and fencing.

Construction Phase 3 (Provisional Work for Caledonia GO Station Site):

- Provisional future north pedestrian tunnel; and
- Provisional future side platform.

3.7.1 Construction Laydown

Construction laydown areas are expected to be established during the detailed design phase of the Project on the new GO Station lands.

3.7.2 Construction Commitments

During the detailed design phase of the Project, Metrolinx will look at opportunities to use low impact construction methodologies, where feasible. Construction access and haul routes should be restricted to ingress/egress directly from Eglinton Avenue West and Bowie Avenue. Construction access should be provided from Bowie Avenue to the main new GO Station building via a service road, located along the rail line and immediately west of the residential lots on Croham Road. Temporary construction easements will likely be required in order to construct the retaining walls. If the need arises to access private property, property owners would be contacted in advance of the works and a temporary permission to enter obtained prior to work commencing on private property. Easement areas within the Caledonia GO Station Project limits have been identified previously in Table 3.2 and will be further refined during the detailed design phase of the Project.

Construction traffic and construction parking should be restricted from using the one-way section of Croham Road, to minimize the potential for conflict with the existing residential uses in this area.

The contractor will be required to develop and implement a traffic management plan including traffic, transit, cyclist and pedestrian management strategies to address potential traffic infiltration, operations and safety concerns for the construction of the new GO Station. This plan should be coordinated with Metrolinx and the City of Toronto and include details outlining construction staging/scheduling,

construction access (including considerations for bicycle traffic and access to businesses, residences, trails and parks), parking and laydown areas for the implementation of the new GO Station.

Residents will likely experience the passage of trucks or trains removing and supplying materials to the construction area during the construction period. Exact timing of construction activities will be determined at a future date and details included in the contractor's traffic management plan.

Construction site maintenance requirements including noise and vibration mitigation measures should be included in the construction contract documents. The Contractor will be required to select appropriate construction methods taking into account the proximity to existing services to minimize or avoid impacts from construction vibration.

During construction, the Contractor will be required to apply best management practices to mitigate any air quality impacts caused by construction dust. Non-chloride dust suppressant is recommended to reduce the potential of off-site dust impacts from construction activities. Dust control mitigation will be in accordance with the Environment Canada "Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities" report.

3.7.3 Site Preparation and Clearing

Environmental protection measures will be designed to reduce vegetation removals along the study corridor. In consultation with TRCA, a detailed landscaping plan will be prepared to address vegetation impacts. An inventory of vegetation to be removed will be prepared and vegetation protection and compensation plans will be prepared and implemented with site-specific measures to mitigate disturbance effects.

Erosion and sediment control (ESC) measures will be implemented during the construction phase of the Project to ensure stormwater runoff entering area sewers and then watercourses is not laden with sediment. The Greater Golden Horseshoe Area Conservation Authorities (GGHACA) *Erosion and Sediment Control Guidelines for Urban Construction* (December 2006) will be followed to ensure the proper ESC measures are installed and monitored during construction.

3.7.4 Retaining Wall Construction

It is proposed that retaining walls be constructed as part of the track improvements phase of the Project. It is expected that small to medium-sized excavating/compacting, and hauling equipment will be required during construction of the walls.

The extent and location of the proposed retaining walls will be determined during the detailed design phase of the Project using geotechnical investigation information.

3.7.5 Site Service Connections and Stormwater Management

All service connections will be defined during the detailed design phase for the Project. It is also intended that detailed stormwater management, dewatering and erosion sediment control plans will be required as part of the detailed design for the Project.

Within the new GO Station site there is a Caledonia ECLRT stormwater storage area which requires coordination during the construction of the maintenance access ramp to the ROW. There is a proposed localized stormwater storage area for the new GO Station site located in the Kiss and Ride.

It is assumed that all stormwater work within the ROW will be completed as part of the Phase 1 track work during the construction of the Barrie Rail Corridor Expansion Project.

3.7.6 Track Bed Construction and Grading

When the section of the existing track is scheduled to be lowered and realigned, staging and phasing of this work will be critical as the current service will need to be maintained.

Subject to detailed geotechnical investigations and engineering design, it is planned that excavated soils from cut sections will be used to construct fill sections, thus encouraging reuse of excess soils. Excess soils will be managed following MOECC's Management of Excess Soil – A Guide for Best Management Practices (Jan 2014). If contaminated soils are encountered during excavation, soil characterization will be completed to determine the appropriate treatment. The handling of excess soil materials on-site will be further detailed within the Soil Management Plan, to be prepared by a Qualified Professional during the detailed design phase and form part of the Construction Contract.

A ground and soil management strategy will be developed to mitigate the potential groundwater impact during construction.

Track construction work will be completed by a qualified track contractor with track equipment and with little need for access from the adjoining properties. It is expected that small to medium-sized excavating, compacting and hauling equipment, as typically used on construction sites, will be used on the Project. All construction materials and equipment will be transported to the site on the rail line or by truck.

The track profile for the proposed design is shown in Drawing SK-102 provided in Appendix A.

3.7.7 Landscaping

As part of the detailed design phase of the Project appropriate landscape elements including fencing will be selected for the Project Area.

3.7.8 Wayfinding Signage and Station Signage

As part of the detailed design phase of the Project, the station and facility identification signage, employee and taxi parking and internal way-finding signage will be developed. During construction temporary signage will also be required and installed by the Contractor.

3.8 Preliminary Cost Estimate

The preliminary capital cost estimates associated with the new GO Station construction works have been prepared based on the assumption that the Eglinton Avenue West Bridge reconstruction and the Hydro One tower and overhead hydro line relocation will be completed in advance of the new GO Station works under separate projects. The costs shown in Table 3.4 provide a summary of the estimated construction costs based on the preliminary design, reflecting the level of detail achieved as part of the Assessment. For a further breakdown of the preliminary estimated costs refer to Appendix N.

Table 3.4: Summary of Preliminary Construction Cost Estimate

Item No.	Description	Components Included	Estimate Cost[1]
Construction Phase 1 (Assumed to be undertaken as part of the Barrie Rail Corridor Expansion Contract):			
1.1	General work	Including utility and service protection, environmental protection measures, site preparation and clearance.	$1,000,000.00
1.2	Civil Track/ ROW works	Construction of retaining walls, grading, drainage and stormwater, track lowering and provision for an additional/future track.	$4,400,000.00
		Phase 1 Subtotal	***$5,400,000.00***
Construction Phase 2			
2.1	General work	Including utility protection, environmental protection measures and site clearance.	$1,500,000.00
2.2	New Station Building	Including electrical, communications and mechanical system works.	$8,000,000.00
2.3	New Pedestrian Bridge	Including elevators, stairs and ramps along with all electrical and mechanical works and connections to existing services.	$5,000,000.00
2.4	New Island Platform	Including stormwater drainage, accessible mini platforms, platform canopies, integrated heated shelters and platform snow-melt system.	$5,500,000.00
2.5	Kiss and Ride/Drop-off and Staff Parking Area	Including all civil works for access roads, lighting, site servicing and landscaping.	$1,500,000.00
		Phase 2 Subtotal	***$21,500,000.00***
Construction Phase 3 (Provisional):			
P1	Provisional Future Side Platform	Including stormwater drainage, accessible mini platforms, platform canopies, integrated heated shelters and platform snow-melt system.	$4,000,000.00
P2	Provisional Future North Pedestrian Tunnel	Including temporary works, elevators and stairs along with all electrical and mechanical works and connections to existing services.	$8,300,000.00
		Phase 3 Subtotal	***$12,300,000.00***

Item No.	Description	Components Included	Estimate Cost[1]
Cash Allowances:			
CA1	Cash Allowance for Utility Charges (inc. locates and relocation)		$1,200,000.00
CA2	Cash Allowance for Water Connection		$300,000.00
CA3	Cash Allowance for Sanitary Connections		$300,000.00
CA4	Cash Allowance for Contaminated Land Removal (Phase 1 work)		$1,500,000.00
CA5	Cash Allowance for Contaminated Land Removal (Phase 2/3 work)		$1,000,000.00
CA6	Cash Allowance for Wayfinding and Signage		$60,000.00
CA7	Cash Allowance for Testing, Inspection and Commissioning		$300,000.00
CA8	Cash Allowance for City of Toronto Permits		$60,000.00
CA9	Cash Allowance for Paid Duty Officer		$300,000.00
CA10	Cash Allowance for Project Coordination		$1,500,000.00
		Cash Allowance Subtotal	***$5,500,000.00***
Contingency (30%)			$12,000,000.00
		Estimated Preliminary Construction Contract Price (excl. HST)[2]	**$58,000,000.00**

Notes:
1. Summed items may not equal the subtotal and total cost due to rounding of significant figures.
2. Estimate does not include for flagging or winter work conditions.

4.0 Stakeholder Consultation Process

The process of consulting and engaging with stakeholders is a major component of the TPAP. TPAP consultation began in July 2014; however an initial introduction to the new GO Station was provided at a Public Open House hosted on May 14, 2012 by TTC and Metrolinx for the unveiling of the preliminary design for the Caledonia ECLRT Station. In addition, online consultation ran from May 24 to 28, 2012 and invited visitors to thecrosstown.ca to access the same slide show displayed at the Public Open House. A copy of the "Caledonia Station Public Consultation Report - Open House and Online Consultation #1, July 3, 2012" is found in the Stakeholder Consultation Report (Appendix K). The following sections provide a summary of all consultation activities undertaken as part of the Assessment. Further details regarding consultation with review agencies, municipalities, Aboriginal communities and members of the public are available in the Stakeholder Consultation Report in Appendix K.

4.1 Overview of Stakeholder Consultation Process

The TPAP included a consultation program based on the following principles that the program will:

- Make all reasonable efforts to ensure that potentially affected or interested parties have information available to them and are given the opportunity to make their views known;
- Be transparent by documenting the consultation process for the development of the Assessment so that the process can be understood and tracked;
- Be responsive by providing opportunities for interested parties to comment on the Project at key stages and by ensuring that such comments are addressed in the EPR;
- Be meaningful by identifying how comments and concerns have been considered throughout the Assessment; and
- Be flexible by allowing response to new issues that emerge as the Assessment proceeds.

In order to achieve these goals, consultation was carried out prior to commencement of the TPAP and throughout the process. All consultation activities were carried out in accordance with O.Reg. 231/08, Transit Projects and Metrolinx Undertakings. The consultation program included:

- Notifications;
- Public meetings;
- Meetings with agencies;
- Identification of, and correspondence with, potentially affected Aboriginal communities; and
- Public review opportunities.

4.1.1 Project Organization and Consultation Process

Due to the timelines associated with the TPAP, several activities were carried out before the process began. As such, the Project is organized into activities carried out prior to TPAP commencement (pre-TPAP) and those carried out during the formal TPAP period.

The purpose of pre-TPAP consultation was to identify stakeholders, introduce the Project and TPAP and gather preliminary concerns and comments.

During the TPAP phase, consultation focused on follow-up with stakeholders, confirmation that concerns had been adequately addressed and identification of any additional concerns.

4.1.2 Notification

As part of the consultation process, notices for each stage of the Assessment, including Public Meeting #1, TPAP Commencement, Public Meeting #2 and TPAP Completion were mailed to stakeholders who expressed an interest in being informed about the Project. These notices were also posted in local newspapers and electronically on the Metrolinx website. Review agencies and Aboriginal communities were mailed notices with an accompanying cover letter and response form to encourage continued dialogue. Details regarding notification, copies of notices mailed and the contact list used for notification are provided in the Stakeholder Consultation Report in Appendix K.

4.2 Pre-TPAP Consultation Program

Prior to initiation of the TPAP through the issuance of the Notice of Commencement, several pre-TPAP activities were conducted in order to ensure the consultation process met all requirements under the TPAP, including:

- Consultation with the Director of the Environmental Approvals Branch of the MOECC to obtain a list of agencies to contact in order to identify interested Aboriginal communities;
- Meetings/correspondence with Stakeholders (see Section 4.2.3.2):
  - TTC;
  - TRCA;
  - City of Toronto: Transportation Planning;
  - City of Toronto: Strategic Planning Initiatives;
  - City of Toronto: Transportation Services;
  - City of Toronto: Engineering and Construction Services;
  - City of Toronto: Heritage Preservation Services;
  - City of Toronto: Parks, Forestry and Recreation;
  - City Councilors within the Study Area;
  - Hydro One;
  - Infrastructure Ontario (IO); and
  - Members of Provincial Parliament (MPPs) within the Study Area.
- Public Meeting #1.

A summary of pre-TPAP consultation and copies of minutes of meetings held stakeholders are in the Stakeholder Consultation Report in Appendix K.

4.2.1 Contact List

Initial consultation was done with the Director of the MOECC, Ministry of Aboriginal Affairs (MAA), and Aboriginal Affairs and Northern Development Canada (AANDC) in conjunction with a search of the Aboriginal and Treaty Rights Information System (ATRIS) to identify potentially affected Aboriginal communities. An additional background screening was then completed to determine appropriate agencies and stakeholders who may have interest in the Project based on proposed Project Works and proximity. The City of Toronto was contacted to obtain a list of landowners with properties located within 30 m of the transit project (defined in O.Reg. 231/08, Transit Projects and Metrolinx Undertakings, as the station footprint, construction zone, maintenance areas and all ancillary features). A Master Stakeholder Contact list was created to include interested agencies, Aboriginal groups and residents. Contacts included:

- The Director of the MOECC Environmental Approvals Branch (EAB);
- The Director of the MOECC Regional Office;
- Aboriginal communities identified through consultation with Aboriginal Agencies;
- Property owners within 30 m of the transit project;
- Local Municipalities;
- Applicable regulatory agencies, in accordance with Schedule 2 of O.Reg. 231/08 (Transit Projects and Metrolinx Undertakings); and
- Other people, groups or organizations which may have an interest in the Project (e.g., ratepayers groups, business improvement area groups, community organizations, etc.).

The Master Stakeholder Contact list used for the distribution of project related notices throughout the pre-TPAP phase as well as the TPAP and was updated as correspondence was received. Correspondence was tracked within the contact list to ensure all comments received were considered and incorporated into the decision making process for the Assessment. Further discussion of comments brought forth through consultation received and a copy of the Master Stakeholder Contact list are available in the Stakeholder Consultation Report in Appendix K.

4.2.2 Public Meeting #1

Public Meeting #1 was held on May 26, 2015 at York Memorial Collegiate as part of the pre-TPAP consultation. The purpose of the meeting was to present information regarding the TPAP, Metrolinx's transportation goals, project background and purpose, existing conditions, and updated design concepts, while providing the public with an opportunity to comment on the project prior to issuing the Notice of Commencement. A notice of Public Meeting #1 including date, time, location and project purpose details was posted in the York Guardian and the Bloor West Villager newspapers, on the Metrolinx website[3] and mailed to all stakeholders on the Master Stakeholder Contact List. Further details regarding the format of the meeting, information presented, attendance summary and comments received is available in the

[3] http://www.metrolinx.com/en/aboutus/mediarelations/news/20150424_Caledonia_Station_EA.aspx

Public Meeting #1 Summary Report, which is included in the Stakeholder Consultation Report (Appendix K).

4.2.3 Stakeholder Consultation

4.2.3.1 General Public and Property Owner Consultation

Comments were received from five property owners and interested members of the public as a result of Public Meeting #1. A summary of these comments received, as well as redacted copies of emails and letters received are available in the Public Meeting #1 Summary Report, which is included in the Stakeholder Consultation Report (Appendix K). Comments received are summarized in Table 4.1.

Table 4.1: Public and Property Owner Comments from Public Meeting # 1 and Project Team Response

General Comment	Project Team Response
Scheduling/Service/Costs/Transit Coordination	
Future consideration for bike path parallel with tracks to Union Station.	Comment noted.
Connection of York Beltline Trail to rail station.	Comment noted. Metrolinx will work with City of Toronto Planning as a part of the Assessment to discuss opportunities to coordinate station development with cycling plans.
Storage for cyclist	Bike storage area is being incorporated into the Caledonia GO Station design.
Presentation Comments	
Was impressed with the new GO Station and would like access to display boards.	Comment noted. Link to online location of boards provided.
Noise Impacts	
Noise and vibration impacts (from train slowing down and coming to a stop while being boarded, gaining momentum as it proceeds down the corridor, stopping and passing) disturbing local residents.	As part of the Assessment, a noise and vibration impact assessment will determine acceptable noise limits in the area, based on current noise levels and the projected noise levels due to the addition of the new GO Station. Required mitigation measures will be determined based on results.
Concern with increase in noise if trains are to stop every 15 minutes. Request for appropriate noise barrier implementation to reduce resident disturbance.	A noise and vibration impact assessment is being undertaken as noted above. The 15-minute service will not be introduced until after the corridor is electrified, which will assist in reducing any potential increased noise.
Visual Impacts to Local Properties	
Potential for destructive mischief to local property and waste from passengers waiting for trains.	Metrolinx always puts safety first and ensures that stations are properly maintained and monitored to this type of behaviour.
Light pollution impacts created by the new station	Although light pollution is not determined during the TPAP phase of the Project, Metrolinx station/platform lighting design will be completed in a manner which minimizes glare and light to adjacent lands.
Visual landscape impacts from tree removal.	As part of the Assessment, a Tree Inventory and Arborist Report will be completed. Metrolinx will work with the City of Toronto, TRCA and local residents to assess the impacts of the Project and to determine mitigation/restoration options. Typically, if trees have to be removed, they will be replaced at a 3 to 1 ratio.
Air Quality Concerns	
Concern with pollution and emissions generated by the trains and a station.	As part of the Assessment, an Air Quality Impact Assessment will be completed and any mitigation measures identified. It should be noted that Metrolinx is committed to electrifying service on the Barrie corridor by 2025 and beyond, which would eliminate local air emissions.
Traffic Concerns	
Concern with increased pedestrian and vehicular traffic through local neighbourhoods.	As part of the Assessment, a Traffic Impact Assessment will be completed. Results of this study will be available to the public at the next public meeting in fall 2015.
Technical Design Concerns	
Concern with design of platform at new station creating inconvenient path for passengers. Suggested alternative configuration for passenger routing between the Caledonia GO and LRT Stations (access to the Caledonia LRT Station from the GO Station area platforms via a pedestrian tunnel underneath the rail corridor).	Comment noted. A tunnel configuration was considered during the initial stage of the Project along with a number of alternatives. While a tunnel was the initial design consideration, existing site grades proved to promote the overhead pedestrian bridge option. The pedestrian bridge eliminates the need for an intermediate LRT concourse level below the railway corridor and reduces the total number and distribution of stairs, escalators and elevators throughout the station. Wayfinding is further simplified with a pedestrian bridge, as the primary circulation routes are noticeable directly from the primary entrances.

4.2.3.2 Review Agency and Municipal Consultation

Metrolinx met with a number of stakeholders during the pre-TPAP consultation period to initiate meaningful consultation relationships. Meetings were held with:

- TTC – April 28, 2015;
- City of Toronto – May 7, 2015 and September 17, 2015;
- Councilors within the Study Area – May 20, 2015;

- Members of Provincial Parliament (MPPs) within the Study Area – May 20, 2015; and
- Hydro One and IO – July 29, 2015.

In addition to the meetings listed above, written comments were received from the City of Toronto, TRCA MNRF and MTCS.

Minutes of meetings and correspondence with review agencies and City of Toronto throughout the pre-TPAP period are included in the Stakeholder Consultation Report (Appendix K) and summarized in Table 4.2.

Table 4.2: Comments Provided by Review Agencies and the City of Toronto During Pre-TPAP Consultation Period

Comment	Project Team Response
Toronto Transit Commission- April 28, 2015 Meeting	
TTC staff questioned whether the bus loops have been moved to the west side of the station in the preliminary design.	Metrolinx provided an overview of the Caledonia GO Station Project and confirmed that bus loops have been moved.
City of Toronto- May 7, 2015 Meeting	
City of Toronto staff requested a similar schedule to be mapped out for the Caledonia GO Station Project as was done for the Davenport Project.	Metrolinx provided a presentation with information on the 2010 and 2014 feasibility studies for the Caledonia GO station. It was indicated that a schedule would be provided at the next meeting.
Instead of having the new GO Station aboveground, would like underground to be considered to potentially lessen impacts to the community.	There are issues with below-ground facilities, including operating costs of dewatering and lifecycle impacts. Above vs. below-ground facilities were assessed through preliminary work. The preferred option is above ground and this option will be the subject of the Assessment.
The City of Toronto's Official Plan shows a GO Station to be implemented at Bloor Street. The City of Toronto is interested in having this station constructed; however, it is understood that there are constraints associated with the new GO Station.	The Metrolinx corporate strategy does not currently include a Bloor St. Station. Stations are determined based on a business case that considers ridership, trip time and technical factors. This could be considered in the future and may be more feasible with electrification of the system.
Area Councillors- May 20, 2015 Meeting	
Would like there to be connectivity of the York Beltline Trail to the new GO Station.	There is a planned tunnel to provide secondary access to the GO platforms at the York Beltline Trail, Bowie Avenue and Carnarvon St. intersection.
There are community groups that should be notified about public meetings. Councillor Colle will provide Metrolinx with a list of community groups to consult.	Metrolinx will add community groups to the contact list upon receipt.
Hydro One and Infrastructure Ontario- July 29, 2015 Meeting	
Hydro One and IO provided information about their technical review process during the detailed design phase of the Project to review Hydro One structures and facilities in the study area and to address land easements, permits, licences associated with any necessary infrastructure relocations.	Hydro One and IO will be kept informed of the Project progress and will be contacted during the detailed design phase of the Project.
City of Toronto- September 17, 2015 Meeting	
Would prefer use of glass screening on bridge vs. opaque to allow pedestrians to view the Station.	Will be considered as part of future design development.
Asked for further consideration of pedestrian crossings to ensure pedestrians can cross the corridor safely.	Will be considered as part of future design development.
Noise levels generated during construction should be controlled to minimize the amount of potential complaints received from residents; residents could be concerned about use of 'bells'.	Mitigation measures will be put in place to reduce construction noise; however, the use of 'bells' on trains is required by Transport Canada for safety reasons.
Ministry of Natural Resources and Forestry- Email correspondence May 1, 2015	
Noted that there are no records of Areas of Natural and Scientific Interest, wetlands, or SAR in the Study Area. If any are identified through the assessment MNRF should be contacted.	Comments noted.
Toronto and Region Conservation Authority- Letter Correspondence May 5, 2015	
A portion of the study area is in a TRCA Regulated Area; however the location of the station is not within a Regulated Area.	Noted.
The MNRF should be contacted pertaining to provincially endangered species in the study area. The relevant federal agency should be contacted in regards to federally endangered species.	Noted. MNRF was contacted on April 24, 2015.
Toronto and Region Conservation Authority- Letter Correspondence June 2, 2015	
Indicated they would not attend Public Meeting #1 but requested a copy of all presentation materials.	Presentation materials were provided

Comment	Project Team Response
City of Toronto Planning Division- Email correspondence July 6, 2015*	
Incorporation of cycling and pedestrian paths should be included as part of the development, as well as opportunities to cross the rail corridor.	The station concept plan includes a potential connection to the York Beltline Trail and a bridge crossing to link the GO Station with the LRT Station. A potential future tunnel crossing is also proposed.
The Assessment should discuss all modes of transportation used in the area of the new GO Station, including the number of trips and the impact on infrastructure as a result of growth in the area.	A Traffic Impact Study has been prepared as part of the Assessment, which identifies opportunities for improving active transportation connections for walking, cycling and transit connections.
Design of the station should incorporate TDM strategies, such as infrastructure to encourage walking, cycling and ride share program opportunities including priority parking for ride share.	There are no long-term parking facilities proposed. Therefore, there are limited opportunities for priority parking for car share. Access to the station will primarily be through walking, cycling and transit. Opportunities for bike share and options for car share will continue to be reviewed and discussed.
Some design options presented in the Castlefield-Caledonia Class EA do not consider the LRT Station.	This EA will be acknowledged in the Socio-Economic and Land Use Characteristics Report. Discussions will be held with the City of Toronto regarding design details.
The Castlefield-Caledonia Design and Décor District Urban Design Guidelines should be reviewed.	This guideline will be considered during development of the detailed design plans for the station.
Ministry of Tourism Culture and Sport- Email/Letter correspondence October 20, 2015)	
The archaeologist must submit the assessment reports directly to the Minister for review by an Archaeology Review Officer.	The licenced archaeologist will submit the Stage 1 Archaeological Assessment to MTCS.
It is recommended that a CHER be completed for both the Eglinton Avenue Road Bridge and the Beltline Rail Junction / Kay Gardner Beltline Park.	The CHER reports have been completed as requested and are included in the EPR.
If the CHER determines cultural heritage value or interest is present on either property, an HIA report must be completed.	Noted, in the event cultural heritage value or interest is present, an HIA report will be completed.

*A comprehensive comment/response table was prepared and sent to the City of Toronto to address their comments. A copy is provided in the Stakeholder Consultation Report (Appendix K).

4.2.3.3 Aboriginal Community Consultation

The following Aboriginal communities were identified as potentially having Aboriginal rights, treaty rights or other interests in the study:

- Chippewas of Georgina Island;
- Mississaugas of New Credit First Nation;
- Mississaugas of Scugog Island First Nation;
- Mohawks of the Bay of Quinte;
- Six Nations of the Grand River;
- Haudenosaunee Confederacy; and
- Métis Nation of Ontario.

Each community was sent a Notice of Public Meeting #1. No comments were received from any Aboriginal communities during the pre-TPAP consultation period.

4.3 TPAP Consultation Program

Following the pre-TPAP consultation program, the TPAP commenced upon the issuance of the Notice of Commencement on October 29, 2015. During the TPAP, the Master Stakeholder Contact List used during the pre-TPAP consultation program was used to track comments received to ensure they were incorporated into the Assessment and were responded to appropriately.

4.3.1 Notice of Commencement

In order to inform the public, regulatory agencies, Aboriginal Communities and other interested persons of the initiation of the TPAP, a Notice of Commencement was posted in the York Guardian and Bloor West Villager newspapers on October 29, 2015 and November 5, 2015, on Metrolinx's website, and mailed to all stakeholders identified in the Master Stakeholder Contact list and property owners within a 100 m radius of the Project Area. A copy of the Master Stakeholder List can be found in the Stakeholder Consultation Report (Appendix K).

4.3.2 Public Meeting #2

Public Meeting #2 was held on November 17, 2015 at York Civic Centre. The purpose of the meeting was to present information regarding the TPAP, results of environmental studies, preliminary design concepts while providing the public with an opportunity to comment on the Project. A notice of the PIC including date, time, location and Project purpose details was posted in the local newspapers, on Metrolinx's website[4] and mailed to all stakeholders on the Master Stakeholder Contact List. Further details regarding the format of the meeting, information presented, attendance summary and comments received is available in the Public Meeting #2 Summary Report, which is provided in the Stakeholder Consultation Report (Appendix K).

[4] http://www.metrolinx.com/en/aboutus/mediarelations/news/20150424_Caledonia_Station_EA.aspx

The meeting included an Open House format with display boards, a presentation and a Q/A session. Most questions raised during the Q/A session included issues related construction, electrification and noise/vibration. Attendees were encouraged to complete a comment sheet. Attendees and other stakeholders had an opportunity to submit further comments by December 8, 2015. A total of four comment sheets were received from general public and property owners. These issues raised in the comment sheets are discussed in Section 4.3.3.1. All comments have been addressed and/or incorporated into the Project design and mitigation plan.

4.3.3 Stakeholder Consultation

4.3.3.1 General Public and Property Owner Consultation

Comments were received from four property owners and interested members of the public as a result of Public Meeting #2. A summary of these comments received, as well as redacted copies of emails and letters received are available in the Public Meeting #2 Summary Report, which is included in the Stakeholder Consultation Report (Appendix K). Comments received are summarized in Table 4.3.

Table 4.3: Public and Property Owner Comments from Public Meeting #2 and Project Team Response

General Comment	Project Team Response
Noise Impacts	
Concern regarding noise from trains.	As part of the Assessment, a noise and vibration impact assessment will determine acceptable noise limits in the area, based on current noise levels and the projected noise levels due to the addition of the new GO Station. Required mitigation measures will be determined based on results.
Concern regarding noise that will result from construction.	Noise control measures shall be implemented where required during the construction phase, such as restricted hours of operation and the use of appropriate machinery and mufflers. Impacts to be managed to ensure compliance with provincial regulations and local bylaws (where possible).
Impacts to Local Properties	
Concern that house value will decrease as a result of proximity to the station.	Comment noted. Metrolinx is not in a position to comment on property values adjacent to the rail corridor or station; it is outside of the scope and expertise of this Project and the Project Team. Concerned residents should consult with qualified, real estate professionals.
Traffic Concerns	
Traffic along Croham Road will only get worse especially during rush hour. More likely for people to travel the wrong way.	Meetings have been held with the City of Toronto a few times. During the meetings, discussions pertaining to how to keep traffic circulation at the bottom end of the road and how to discourage traffic from cutting through occurred. There is another meeting planned with the City of Toronto soon.
Concern that since there is no parking at the station, cars will be parked along local streets.	The Caledonia GO Station is an urban GO Station. Most individuals travelling to the GO Station will either be arriving by public transit (e.g., TTC bus or ECLRT), by bicycle or on foot. The Kiss and Ride will allow for people to be dropped off at the GO Station building via automobile.
Technical Design Concerns	
The proposed crossing at Castlefield is dangerous.	Metrolinx puts safety first and is working with municipalities to determine the safest ways for the crossing to be implemented.
Instead of building a pedestrian tunnel, perhaps construct a bridge to the trail [York Beltline Trail].	Comment noted.

4.3.3.2 Review Agency and Municipal Consultation

In addition to consultation efforts performed through stakeholder meetings, comments were received from agencies throughout the 120 Day Regulated Time Period between Notice of Commencement and Notice of Completion. A comprehensive account of these comments and the Project Team responses to these comments are included in the Stakeholder Consultation Report (Appendix K). The key comments raised by agencies are summarized in Table 4.4 with Project Team responses.

Table 4.4: Comments Provided by Review Agencies and the City of Toronto During TPAP Consultation Period

Comment	Project Team Response
City of Toronto Transportation Planning and Cycling Infrastructure- Comments Received November 3, 2015	
Connectivity to the Beltline Trail should be considered as part of the infrastructure improvements.	Connectivity to Beltline trail will be included in the detailed designs, following concepts proposed in the TIS and EPR.

Comment	Project Team Response
Cyclist On-Road and trail connectivity in the vicinity of Caledonia station will be added to the Cycling 10 year network plan. Specific improvement to roads and infrastructure within the vicinity of the station will be considered and designed at a later date in accordance with existing plans.	It is acknowledged that the City of Toronto intends to add cyclist connectivity in the area of the station to their ongoing completion of a 10 year cycling plan. The feasibility of establishing a multi-use trail along the Barrie GO rail corridor will also be further reviewed in the ongoing TPAP for the Barrie GO Rail Corridor Expansion.
When TIS is available, it should be submitted for City Staff review.	The Draft TIS report was provided to the City of Toronto on October 16, 2015.
Infrastructure Ontario- Letter Correspondence November 4, 2015	
The proposal may impact IO managed properties and/or the activities of tenants present on IO managed properties. In order to determine if IO property is within your study area, IO requires that the proponent of the Project conduct a title search by reviewing parcel register(s) for adjoining lands, to determine the extent of ownership.	The adjoining lands to the Project Area are not owned by Ministry of Economic Development, Employment and Infrastructure (MEDEI) or its predecessors.
Please remove IO from your circulation list, with respect to this Project, if Minister of Economic Development, Employment and Infrastructure (MEDEI) owned lands are not anticipated to be impacted.	Comment noted.
City of Toronto- November 9, 2015 Meeting	
Alteration of dead end of York Beltline Trail is possible, however Metrolinx would have to follow Parkland removal / compensation processes.	Comment noted.
Inquiry regarding why north pedestrian tunnel is part of future work.	The tunnel was originally part of future works due to capacity constraints associated with adding the third track.
The tunnel should allow for through movement of bicycles.	Cyclists will be allowed to use the tunnel, however they will have to dismount before using the stairs or elevator. Cycling through the tunnel will also not be permitted.
Are bike lanes proposed along Eglinton Avenue West and Croham Road?	Metrolinx will rely on the City of Toronto to implement their cycling plan to allow connectivity to the station.
Where will bikes be stored?	Bike storage will be provided at the entrance to the station off Croham Road.

Comment	Project Team Response
Removal of mature trees will be required from the Westside Mall property.	Detailed design will outline the need for tree removal or a retaining wall. If tree removal is necessary, Metrolinx will implement a replacement plan in line with municipal guidelines..
Can a step-wall be designed in place of the retaining wall to allow for more plantings?	The option will be considered during the detailed design phase of the Project.
When will more information be available on fare integration.	Work is underway to develop a seamless GTHA fare system across all transit operators enabled by Presto. Presto is fully operational across the GO system. All 69 TTC subway stations are expected to be PRESTO enabled by the end of 2016.
Rendering/Design Recommendations from the COT: In keeping with urban design strategies, consider relocating the GO station building towards Eglinton Avenue West and pushing back the Kiss and Ride to align with staff parking area. Need to remove intersection lines along Eglinton Avenue West and Croham Road, because it gives the impression that a signalized intersection will be added at the existing Kiss and Ride entrance. Need to counterbalance cyclist traffic on Croham Road (show bike lanes on Eglinton Avenue West and Croham Road or add note on options to be considered). The homes along Carnarvon Street and Croham Road should be reduced in size. Currently seem like commercial/industrial buildings.	A preliminary alternative site plan has been prepared for review, consideration and discussion with City of Toronto and other stakeholders. Drawings SK-110 and SK-111 outlines the alternative site plan and perspective rendering (see Appendix A).
Ministry of Culture Tourism and Sport – Comments Received November 25, 2015	
Upon review of the CHER and CHER Recommendation Report for the York Beltline Trail, advised that since the York Beltline Trail was determined to have cultural heritage value or interest (CHVI) Project impacts will have to be considered. As such an Heritage Impact Assessment (HIA) will need to be prepared.	Upon review of the CHER and CHER Recommendation Report for the York Beltline Trail, advised that since the York Beltline Trail was determined to have cultural heritage value or interest (CHVI) Project impacts will have to be considered. As such an Heritage Impact Assessment (HIA) will need to be prepared.

Comment	Project Team Response
Ministry of the Environment and Climate Change Environmental Approvals Branch (Waste)- Comments Received December 11, 2015	
The Report does not describe how to manage the construction waste. Could more information on the kinds of construction wastes that are expected to be generated and how to manage these wastes be provided?	Text will be added to the Permit and Approval Requirements Report detailing Record of Site Conditions and hazardous waste transportation. The most significant construction waste is expected to be the disposal of soil from 2-4 Croham Road.
There were a number of compounds found within the soils sampled that exceed of the applicable standards. Additional investigation is recommended to delineate the horizontal and vertical extent of soil impacts.	Further geotechnical investigation will be undertaken including soil and groundwater sampling during the detailed design phase of the Project to determine the extent of any contaminants and for consideration of a waste management strategy for any contaminated waste material identified.
Ministry of the Environment and Climate Change Environmental Approvals Branch (Wastewater) - Comments Received December 18, 2015	
In application of ECA for the proposed permanent STM works, clearance letters from TRCA and municipal authority (i.e., City of Toronto - Toronto Water, Urban Forestry) should be provided to the MOECC confirming that the proposed STM system design meets the design guidelines and regulations of these authorities, and they have no objections to the proposed STM works.	The stormwater management plan for the discharge of water and wastewater from the Caledonia GO Station site will be provided to the TRCA and City of Toronto for their review and comment.
Contaminated soils removal is listed as a provisional construction item in the Report. Should groundwater be found to be contaminated, prior to the commencement of excavation, dewatering and groundwater disposal, a temporary ECA shall be applied for and obtained, in addition to obtaining a permit to take water from the MOECC.	It is not expected that the proposed Caledonia GO Station will have any effect on the surrounding groundwater resources during operation. Any dewatering activities during construction of the proposed station may however have an impact. The requirement for dewatering during construction activities will be confirmed as part of the Geotechnical Investigation during the detailed design phase of the Project.
City of Toronto City Planning - Comments Received December 22, 2015	
Recommend green roofs for Caledonia station to encourage and showcase environmental sustainability.	The GO station building design will aim to achieve Leadership in Energy and Environmental Design (LEED) Silver as a minimum.
Construct bridge rather than pedestrian tunnel for access off Bowie Ave and Carnarvon St.	With the future electrification of the corridor, clearance requirements for a bridge would be a minimum of 7.4 m over the rail corridor. In this circumstance, it is considered more suitable to maintain Metrolinx's standard of constructing a pedestrian tunnel.
Relocate and integrate the kiss in ride with the staff parking and shift the building forward with a closer relationship to Eglinton Ave W. The kiss and ride lot exit is very close to a crosswalk on Eglinton Ave. Confirm the form of control at this location.	The orientation of the station building, Kiss and Ride and staff parking will remain in its current configuration for the final EPR documentation. However, the final EPR will include an alternative site plan and rendering to illustrate a possible re-orientation. This alternative design was considered after the Project commenced TPAP. Stop control has been proposed for the Kiss and Ride egress. Signal control may be possible.
Design the character of the bridge and platform around the bridge with reference to the rail heritage character of the belt line.	The character of the surrounding area will be considered during the detailed design phase of the Project. As part of the HIA completed for the York Beltline Trail, a recommendation has been made to replace the existing landscaping features of the west trailhead with an equivalent or enhanced feature.
This can trigger potential site specific zoning bylaw requirements that impact land use development - especially in EA study area.	Any impacts that are identified that would trigger zoning bylaw amendment will be identified to the City. Metrolinx will consult with the City and comply where reasonable.
The proposed Metrolinx ROW has potential development impact to adjacent properties.	There are 7 properties identified for construction easement at the north limit of the Project area on the west side (Carnarvon Street). Acquisition of land from these properties will be minimized to allow earthwork support at the track and where possible limited to a construction easement rather than acquisition.
All GO Stations should consider the incorporation or protection for Share Bicycle facilities on site to further encourage cycling trips in the area.	Bike storage will be accommodated at the Caledonia GO and ECLRT Stations. Once the stations are operational, if there is demand for additional bicycle infrastructure and integration with bike share stations.
Would the work done as part of the Barrie Rail Corridor Expansion be factored into the final report?	The BRCE work will not be contained in the final Caledonia EPR / TIS but rather will be contained appropriately in the BRCE Project EPR / TIS.

Comment	Project Team Response
Consideration to move the Kiss and Ride to the west of the tracks to join with the ECLRT Station and to utilize the existing signal.	There is not sufficient space to accommodate a Kiss and Ride at the ECLRT Station west of the rail corridor. A bus loop for TTC Caledonia Bus Route is already planned at this location.
The TIS did not factor in the additional growth and ridership generated from planned growth within the specific time frame outlined in the section along the Barrie GO Corridor.	The Metrolinx ridership forecasting / modelling was based on the macro modelling in the GTHA, which is assumed to include the planned growth along the Barrie rail corridor.
Pedestrian amenities and infrastructure should be improved / upgraded.	The implementation of the Eglinton Connects cross-section will provide improved pedestrian connection along Eglinton Avenue West connecting the Caledonia GO Station to the adjacent signalised pedestrian crossings at Blackthorn Avenue and Caledonia Road.
Are there surveys of existing Kiss-Ride operation to help justify that 8 vehicle stopping spaces are sufficient?	The Kiss and Ride area provided is based on demands at stations that have similar conditions on the space available.
City of Toronto Transportation Services - Comments Received December 22, 2015	
Circulation patterns have the potential for safety conflicts between pedestrians on Eglinton and those exiting the kiss and ride lot. Recommendation is to have the kiss and ride lot to be fully accessed from the side street only.	There is the potential for vehicular/pedestrian conflicts for traffic leaving the Kiss and Ride, regardless of the option chosen. Signals at the Croham/Eglinton intersection (with all access moved to Croham) will reduce this conflict.
City of Toronto Parks, Forestry & Recreation - Comments Received December 22, 2015	
Urban Forestry requires an Application to Injure or Destroy Trees and applicable fees for permission to injure and to remove trees.	During the detailed design phase of the Project, Metrolinx will submit an Application to Injure or Destroy Trees and applicable fees for trees that are located either on private lands, on City right of way and on parkland to the City of Toronto.
Urban Forestry requires a minimum of three new trees planted to compensate for the loss of each protected private tree approved for removal.	A landscape plan will be prepared during the detailed design phase of the Project, with the recommendations (where reasonable), as noted. The tree compensation scenario will be confirmed with Metrolinx, the City of Toronto and TRCA to determine the preferred approach.
City of Toronto Transportation Services - Comments Received December 23, 2015	
An inventory of Signal infrastructure should be taken before construction begins. After construction, a City representative, or Contractor working on behalf of the City, will accept the final installation.	Acknowledged. Metrolinx will work with the City of Toronto to ensure active traffic signals are maintained during design and construction.
Toronto and Region Conservation Authority - Comments Received January 11, 2016	
Please confirm whether Metrolinx will be pursuing a review under the TRCA Voluntary Project Review as per our service level agreement with Metrolinx.	Metrolinx will pursue a review under the TRCA Voluntary Project Review as per our service level agreement with TRCA for the Caledonia GO Station Project.
In order to avoid overall ecological net loss, we recommend that Metrolinx look for opportunities to replace the loss in habitat in a more favourable location within close proximity to the site/area of impact if possible.	Metrolinx will work with TRCA to determine potential opportunities to replace loss in habitat and habitat enhancement.
Staff recommends that City of Toronto tree replacement guidelines should be considered when determining appropriate replacement/compensation expanse.	City of Toronto tree replacement guidelines will be considered during the detailed design phase of the Project to determine appropriate replacement / compensation areas.
The Project study area is close to TRCA's Terrestrial Natural Heritage Target System Strategy and areas identified within our habitat implementation plans for the Black creek watersheds. There may be opportunities to work with Metrolinx to identify for natural heritage enhancement opportunities. Alternatively, there may be opportunities to channel ecological contributions towards ravine protection programs identified by the city for this area.	Site review has determined that the ravine through this area is not a feature with contiguous woody vegetation throughout its extents. It is noted that no impacts are expected to adjacent ravine lands as a result of the proposed Project Work. As part of this tree replacement/ compensation plan, it is recommended that enhancements to parklands adjacent to the site; such as Woodborough Avenue Park; and the adjacent expanded right-of-way are the priority for compensation plantings.
Staff further encourages Metrolinx to explore low impact construction methodologies to reduce impacts of the proposed expansion on the natural environment. Please consider water quality control for all impervious areas.	During the detailed design phase of the Project, Metrolinx will look at opportunities to use low impact construction methodologies.
Toronto Transit Commission - Comments Received January 27, 2016	
The description of TTC existing bus routes is out of date.	The EPR will be updated to reflect the correct bus route information.

Comment	Project Team Response
Ministry of the Environment and Climate Change Environmental Approvals Branch - Comments Received January 27, 2016	
The Transit Project Assessment Process (TPAP) should be open and transparent. This is to ensure that any interested person will be able to follow the process through its various stages of planning and decision making until a preferred undertaking is selected. Anyone should be able to trace the results of the TPAP, using the evaluation approaches and methodology that support.	The TPAP for the Caledonia GO Station included a variety of opportunities for the public to be aware of the Project, to follow its progress and provide comment at various stages.
Provide sufficient information about the potential environmental effects (both positive and negative) of a proposed undertaking in order to demonstrate that the proposed undertaking achieves environmental protection.	Technical studies, covering a variety of potential environmental effects were undertaken. These studies provide detailed information, using sound scientific, engineering and planning practices, regarding the potential environmental effects of the Project and how they will be mitigated.
Metrolinx should give consideration in the EPR to the effects of climate change as part of its assessment for the proposed Project and what can be done to lesson any potential risks.	Consideration of the impacts that the Project will have on climate change and the effects that a changing climate may have on the Project will be included in the final EPR.
It should be noted that the province of Ontario has a multi-barrier approach to protect drinking water. The first step is protecting the surface or ground water that supplies municipal drinking water systems. This is called source protection; and, source water protection should be considered as part of the TPAP.	It will be noted in the Permit and Approvals report that according to information obtained from the CTC Source Protection Region website and the approved protection plan for this area that there are no wellhead protection areas or intake protection zones located in this area.
Ministry of the Environment and Climate Change Central District - Comments Received January 29, 2016	
The comprehensive analysis approach used in this AQIA does not provide a comparable assurance against negative impacts on the environment or nearby sensitive receptors. Therefore, in order to provide sufficient assurance that this Project will not degrade the local or regional air quality, the credible worst-case scenario must be assessed.	A comprehensive, cumulative effects analysis refers to the assessment of the local air quality impacts of a project over an extended period of time, desirably 5 years, by using expected future emissions and the most recent meteorological and air quality data available. It produces estimates of not only the actually expected maximum concentrations but a complete statistics of concentrations over 5 years, which can be used for any further assessment of human health implications.

Comment	Project Team Response
	A credible worst-case analysis predicts concentrations under only one set of meteorological and air quality conditions, which are intended to represent a worst-case that is likely to materialize. After reviewing many Metrolinx AQ& Greenhouse Gas (GHG) studies, it was concluded that in all projects, at least one pollutant (e.g., benzo-a-pyrene and benzene) would exceed its criteria, and the comprehensive analysis would be needed. Hence, a comprehensive, cumulative effects analysis was completed for this Project.
It is critical to compare the maximum predicted concentration for each contaminant against the air quality threshold levels to more accurately determine the impact of the Project. These maximum concentrations for the future build scenario should also be compared against those for the future no build scenario.	Table 15-19 in Section 5.2 of the Air Quality Impact Assessment Report and Section 5.3.1 of the EPR have been revised to include the maximum predicted concentration for each contaminant against the air quality threshold levels. The maximum concentrations for the future build scenario are also compared to those for the future no build scenario.
The AQIA presented the results as the median concentrations of all six sensitive receptors combined, rather than as the maximum predicted concentrations at each individual receptor. Results are specific to the receptor location and they should not be combined to yield one value for comparison against standards and guidelines. Furthermore, the maximum values should be used to derive the % of criterion, rather than the median.	Table 15-19 in Section 5.2 of the Air Quality Impact Assessment Report and Section 5.3.1 of the EPR have been updated to outline the maximum predicted concentrations at each individual receptor in addition to the median concentrations. The maximum values shown now derive the % of criterion.
Typically transit AQIAs assess CO, SO2, and O3 and other air toxics in addition to NO2, PM2.5, b(a)p, benzene and acrolein. We recommend adding an explanation into the report as to why these contaminants were not included in this assessment.	An explanation has been added to Section 3.1 of the Air Quality Impact Assessment Report to confirm why these contaminants were not included in the Assessment.
This AQIA is based on the assumption that the GO Transit fleet will be operating to Tier 4 emission standards. Therefore, Metrolinx should make a commitment to using Tier 4 engines for this Project.	Metrolinx is committed to deploying the latest fleet technology available. The exact timing of all stock being equipped with Tier 4 compliant engines has not been determined.

Comment	Project Team Response
As the Project is proposed to involve the transfer of ownership of a property that is currently known to be contaminated above applicable standards, the requirements of Ontario Regulation 153/04 may be applicable. We recommend that the requirements of Ontario Regulation 153/04 should be included in the EPR regarding the 2-4 Croham Road property.	Permitting requirements related to Ontario Regulation 153/04 are not applicable as Metrolinx has a due diligence process that will be undertaken for the property acquisition of 2-4 Croham Road. In addition, it should be noted that during detailed design, further geotechnical investigations will be undertaken including soil and groundwater sampling to determine the extent of any contaminants. A soil management plan will be prepared by a Qualified Professional during the detailed design phase and form part of the Construction Contract for handling and transporting any excess fill materials.
We recommend that a Stormwater Management (SWM) Plan should be developed under the TPAP for the proposed Caledonia Go Station. While the majority of the work may be conducted at detail design, a SWM Plan under the TPAP should include enough preliminary details as to evaluate impacts and benefits of the different proposals and to select the preferred alternative.	A SWM design and report will be prepared during the detailed design phase of the Project and has not been prepared as part of the TPAP.
Soil conservation and management should be integrated into all aspects of the planning and development processes.	The preparation of a soil management strategy will be undertaken as part of the detailed design phase of the Project in association with the Geotechnical Investigation.
City of Toronto City Planning - Comments Received January 29, 2016	
Signal implementation or pedestrian crossing at Croham Rd should not be viewed depending on vehicular speed and movement but should consider AODA requirements, safety guidelines and to improve the existing placemaking environment.	The options for establishing a pedestrian crossing of Eglinton Avenue West, at Croham Road, will include vehicular considerations as well as AODA requirements, safety guidelines and placemaking. Detailed designs will consider these factors in greater detail.
Need to consider and discuss impact to pedestrian, cycling and transit network as well - cannot solely focus on vehicular movement.	Caledonia GO Station is primarily a transfer station and external pedestrian/cyclist movement is relatively low along any particular route.
Need to provide sufficient bicycle parking spaces for all day users.	The existing concept design includes the provision for up to 16 bicycle parking spaces at the station building and space provision for up to 48 at the north tunnel. Metrolinx will endeavour to monitor usage of the bicycle parking to provide sufficient facilities to meet demand.
City of Toronto Transportation Services - Comments Received January 29, 2016	
Confirm the proponent from the MUT on the west side of the GO rail corridor. This is not in the City Trails Plans. Will it be part of the Caledonia Station work?	The multi-use trail was shown as a possible access enhancement for long term consideration to the ECLRT, under the understanding that the City was still pursuing a trail connection along the Barrie GO Rail corridor. This is not part of the Caledonia GO Station development plans.
Are there potential impacts to trail users on the York Beltline due to station construction?	A protected zone for pedestrians and cyclists alongside the construction area will be considered during the detailed design phase of the Project.
What time of year and day were counts done - that may be influence on low usage?	The volumes reported were baseline counts, completed on a weather-neutral weekday in June or September.
Information relating to any traffic or cycling bylaw changes also require council approval. What about approvals for city and park property - including council approval?	Metrolinx will continue to engage the City during detailed design for the Project. Text will be included in the Permit and Approval Report and the EPR to include submittals for work within and/or adjacent to City and Park property for City review and comment.
City of Toronto Engineering and Construction Services - Comments Received January 29, 2016	
Investigation and confirm if the existing Eglinton West Bridge is to be widened/replaced. Ensure the bridge structure is grounded and bonded for electrification protection purposes.	To accommodate the 2 track alignment and platform configuration impacts to the Eglinton Avenue West Bridge will be confirmed during detail design, if needed. The reconstruction of the Eglinton road bridge will be coordinated between the City and Metrolinx as part of the Barrie Rail Corridor Expansion Project, which is protecting for a 3 track alignment. Similarly the grounding and bonding of the existing bridge for electrification of this corridor will also be coordinated between the City and Metrolinx as part of the System Wide Electrification project.

Comment	Project Team Response
Further analysis and detailed understanding of the geotechnical and environmental requirements of the Project are required.	Additional investigation and studies will be undertaken to support the detailed design phases of this Project. This investigation will allow appropriate design and mitigation to be determined.
Assess potential for the erosion of soils and impacts to surface water and groundwater as part of construction and development. Discuss dewatering potential.	Text will be added to the Permit and Approval Requirements Report detailing Temporary ECA - groundwater and surface water.
City of Toronto Parks, Forestry & Recreation - Comments Received January 29, 2016	
Confirm if the EPR is intended to satisfy the Official Plan Policy 3.4.12 that "an impact study may be required in accordance with guidelines established for this purpose"? If so, were the terms of reference for a Natural Heritage Impact Study approved by the city in advance of the study, and who approved them?	A Terms of Reference was not provided to nor reviewed by the City. The Environmental Project Report and supporting documentation (i.e., Tree Inventory Report) has been provided for City staff comment to remain within the intent of the City's policies.
Misleading to say that "…there are no significant adverse environmental effects anticipated from the development of the station". "Significant" is relative, and the loss of any canopy is a setback to the City's Canopy Target. Instead, it should be indicated that the development of the station will have an impact on a feature identified for protection in the OP as NHS, and that this impact will be studied and appropriately mitigated.	The impacts resulting from the removal of vegetation within the natural heritage system will be identified and reference to 'significant' effects will be revised.
City of Toronto – February 2, 2016 Meeting	
Metrolinx and Burnside presented the City of Toronto staff a draft site plan and rendering illustrating an alternative orientation of the GO Station building and Kiss and Ride. The City of Toronto noted that they welcome the inclusion of the Alternative Design and that this option is considered by the City of Toronto to provide further benefits for cycling/pedestrians and has a more urbanized design compared to the Preferred Design.	
The City of Toronto noted that they also prefer the alternative option, since majority of transit users will be pedestrians/cyclists and the alternative design invites this type of usage.	Metrolinx acknowledged the City of Toronto's input and noted that Metrolinx understands the City of Toronto's vision for the Station.
The City of Toronto enquired what the process would be for reviewing the Preferred and Alternative Designs after the TPAP Notice of Completion.	Metrolinx advised that the TPAP finalization is the environmental approval for the preferred option, and that the Alternative Design option is also considered as part of the TPAP with Traffic Impact Assessment being updated to account for that option.
City of Toronto requested the note on the rendering relating to the cycling infrastructure be revised to note "by Others". This is based on the fact that the cycling lanes are to be accommodated as part of the ECLRT works.	It was agreed that the Croham Road cycling infrastructure requires further discussion and coordination with the City. The cycling infrastructure to be constructed as part of the ECLRT Project is amended as requested.
Metrolinx and Burnside acknowledged to the City of Toronto that a submission will be made to the City of Toronto for any tree removal on City or public property.	Metrolinx advised that the 3:1 planting compensation will be met and advised that conservation authorities will be consulted for tree removal within the Metrolinx Right of Way.
City may have comments on the Alternative Design that relate to the detailed design phase (e.g. requirement for a 1.5m landscape buffer transitioning adjacent to residential properties). The City further identified that this may provide opportunity for water retention.	Noted that this may be a suitable location of replacement tree planting.
Ministry of Natural Resources and Forestry - Comments Received February 5, 2016	
Please advise if Chimney Swift are found using the chimney at 2-4 Croham Drive.	During the detailed design phase of the Project, a survey will be conducted at 2-4 Croham Road to determine if the chimney is capped or uncapped. If the chimney is uncapped, species-specific surveys will be undertaken for evidence of current use by Chimney Swift during the appropriate timing windows noted below or with MNRF approved survey protocols. If evidence of use is confirmed, it is acknowledged that the MNRF will be notified and further consulted to determine suitable mitigation, as this bird species is protected under the Environmental Species Act, 2007.

Comment	Project Team Response
Ministry of Tourism, Culture and Sport - Comments Received February 5, 2016	
The City is to be consulted not just about whether a resource has existing heritage recognition, but you also need to provide the City and other heritage stakeholders "with opportunities to participate in understanding and articulating the property's cultural heritage value and in making decisions about its future."	Metrolinx will continue to consult with MTCS and the City of Toronto during the detailed design phase for this Project.
The City's Heritage Preservation Services unit must be given the opportunity to review the CHER and the Statement of Cultural Heritage Value. Comments received should be addressed in those documents. Similarly, the City's Heritage Preservation Services unit should be provided with the opportunity to review the HIA.	Metrolinx has submitted the related draft CHER and HIA to the City of Toronto Heritage Preservation Services for review. Comments were received January 2016 and Metrolinx responses have been provided to the City. A copy of the City of Toronto comment log will be appended to the Final EPR.

4.3.3.3 Aboriginal Community Consultation

The following Aboriginal communities were provided a copy of the Notice of Commencement:

- Chippewas of Georgina Island;
- Mississaugas of New Credit First Nation;
- Mississaugas of Scugog Island First Nation;
- Mohawks of the Bay of Quinte;
- Six Nations of the Grand River;
- Haudenosaunee Confederacy;
- Métis Nation of Ontario;
- Alderville First Nation;
- Kawartha Nishnawbe First Nations;
- Curve Lake First Nation;
- Hiawatha First Nation; and
- Conseil De La Nation Huronne Wendat.

Comments received from Aboriginal communities throughout the TPAP are included in the Stakeholder Consultation Report (Appendix K) and summarized in Table 4.5.

Table 4.5: Comments Provided by Aboriginal Communities During TPAP Consultation Period

Comment	Project Team Response
Hiawatha First Nation- Letter Correspondence November 6, 2015	
As per the Hiawatha First Nation Consultation Protocol, your proposed Project is deemed to have little, if any, impact on Hiawatha First Nation's traditional territory and/or rights.	Comment noted.
Please keep us apprised of any updates, archaeological findings, and/or of any environmental impacts, should they occur. Hiawatha First Nation requests you contact us if archaeological artifacts are found as we require our trained archaeological liaisons be present at the archaeological sites during the assessments. We also ask that you forward any archaeological reports to Hiawatha First Nation as they are completed. Any maps pertaining to the Project should be sent to Hiawatha First Nation in a shape file.	A copy of the Stage 1 Archaeological Assessment Report completed for this Project was provided to Hiawatha First Nation on November 26, 2016.
Hiawatha First Nation reserves the right to provide additional comment should further development result in additional potential impact on our traditional territory and rights. Please be aware that while we request to be kept appraised throughout all phases of this Project, we may not always have representation at all stakeholders meetings.	Comment noted.

4.4 Notice of Completion and EPR Review

Within 120 days of issuing the Notice of Commencement, a Notice of Completion of Environmental Project Report was published in the York Guardian and Bloor West Villager newspapers on February 25, 2016 and March 3, 2016. The notice has also be posted on the Metrolinx website and messaging was displayed on the Metrolinx Twitter feed and Facebook page. The notice has also been mailed to all stakeholders on the Master Stakeholder Contact List, which includes potentially interested or affected residents, anyone who has expressed an interest in the Project, agencies and Aboriginal communities.

If a stakeholder (member of the public, regulatory agencies, Aboriginal community etc.) is concerned with the undertakings of the Project, they are welcome to submit objections to the MOECC Environmental Approvals Branch for the Minister to consider. Objections must be provided in writing and can only be

submitted during the 30-day review period of the EPR, commencing at the issuance of the Notice of Completion. For this Project, the 30-day review period of the EPR will close on March 28, 2016.

Following the 30-day final review period, the Minister will, within 35 days, review any objections and will provide the proponent of the transit project:

a) A notice to proceed with the transit project as planned in its EPR;

b) A notice that requires the proponent to take further steps, which may include further study or consultation; or

c) A notice allowing the proponent to proceed with the transit project subject to conditions.

4.5 Commitments to Future Work and Consultation

Metrolinx has committed to ensuring that consultation with agencies, the public and Aboriginal communities will continue through the detailed design phase, construction and operational phases of the Project. A Consultation Plan will be prepared at the commencement of each of these phases and will include, as applicable:

- Steps that will be taken to notify all stakeholders of major milestones, any project amendments and other opportunities for comment;
- A system to allow and document public concerns, complaints and Metrolinx's responses; and
- Any additional regulatory consultation and notification requirements.

4.6 Statement of Completion

A Statement of Completion will be issued no earlier than 65 days after the Notice of Completion was published. The Statement of Completion will indicate Metrolinx's intention to proceed with the new GO Station Project in accordance with the EPR and any revisions which may have been made during the review period. The Statement of Completion will be sent to the MOECC Director and Regional Director and will be posted on Metrolinx's website.

5.0 Project Environmental Effects, Impact Assessment, Mitigation and Monitoring Plan

An assessment of potential impacts to the existing conditions noted in Section 2.0 as a result of the development of the new GO Station was completed.

The Project Area for the new GO Station is generally located on previously disturbed lands. Based on an assessment of potential impacts to the existing conditions noted in Section 2.0, there are no significant adverse environmental effects anticipated from the development of the station. Therefore, with appropriate mitigation measures, the potential environmental impacts from the development of the station are expected to be minimized.

In general, construction activities at the station will include: site preparation, construction of retaining walls, grading, drainage, dewatering of excavations (as required), stormwater management, new platforms, new pedestrian bridge/tunnel and elevators, utility protection/relocation, station building construction and landscaping.

An Impact Assessment, Mitigation and Monitoring Report (provided in Appendix L) has been prepared as a part of this TPAP to document all potential environmental impacts that may occur during the construction or operation and maintenance of the new GO Station. The report also identities proposed measures to mitigate the impacts that the Project may have on natural, cultural, social/built environments and transportation and utilities within the Study Area. The report outlines a Monitoring Plan to ensure that the mitigation measures have been implemented and are effective.

Environmental effects associated with the pre-construction, construction and operation and maintenance phases of the Project and associated mitigation measures and monitoring activities are summarized in the following sections. Section 5.1 provides tabular summary of the environmental effects/impacts, mitigation and monitoring plan for the pre-construction and construction phase. Section 5.2 provides a summary of the environmental effect/impacts and mitigation measures for the operation and maintenance phase.

5.1 Climate Change

Climate change is usually associated with any significant change in long-term weather patterns. Weather patterns can change the composition of the atmosphere which results in processes that alter global temperature and precipitation. These processes can ultimately lead to increased occurrence of extreme weather events such as floods, droughts, ice storms and heat waves. In an effort to mitigate climate change and the effect it can have on the environment, government agencies have created strategies and guidelines to reduce GHG emissions into the atmosphere, including carbon dioxide.

The Government of Ontario has committed to reducing GHG emissions to 80% below 1990 levels by 2050 and has established two mid-term targets of 15% below 1990 levels by 2020 and 37% below 1990 levels by 2030 (MOECC, 2015).

The Ministry of Environment and Climate Change (MOECC) has developed a Climate Change Strategy (MOECC, 2015), which outlines the five areas that Ontario will focus on in order to achieve the GHG reduction targets, including:

1. A prosperous low-carbon economy with world-leading innovation, science and technology;

2. Government collaboration and leadership;

3. A resource-efficient, high-productivity society;

4. Reducing GHG emissions across sectors; and

5. Adapting and thriving in a changing climate.

Metrolinx, an agency of the Government of Ontario, is committed to ensuring that the transit network, including new facilities, will have a low-carbon footprint and contribute to a clean and healthy environment for future generations (Metrolinx, 2014), goals which are aligned with the MOECC Climate Change Strategy. Metrolinx will also align with the spirit of Bill 6, an Act to enact the Infrastructure for Jobs and Prosperity Act (Ontario, 2015). Section 3.11 of Bill 6 states that:

> *Infrastructure planning and investment should minimize the impact of infrastructure on the environment and respect and help maintain ecological and biological diversity, and infrastructure should be designed to be resilient to the effects of climate change.*

5.1.1 Effects of the Project on Climate Change

The effect of the Project on climate change has been considered, specifically on how the Project would reduce the natural environment's ability to remove carbon from the atmosphere.

Sustainability

Metrolinx has developed a Five Year Sustainability Strategy 2015-2020 that outlines goals regarding how Metrolinx will implement a plan to meet the needs of the public and continue to improve the transportation system. Metrolinx's Sustainability Strategy is based on the International Association of Public Transport (UITP) and the American Public Transportation Association (APTA) sustainability commitments. These associations aim to enhance quality of life and promote sustainable transportation in urban areas. Both of these programs support becoming more sustainable by following a framework of requirements and measuring progress year over year. Deliverables listed in the Five Year Strategy include:

- Establish an executive-sponsored corporate Sustainability Framework by 2015, addressing energy use, emissions and environmental management, and develop and implement workplans and supporting policies for priority initiatives.;
- Attain APTA Sustainability Commitment Gold status by 2017 and UITP Sustainability Charter Full Signatory status by 2016;
- Establish a corporate Climate Adaptation Plan covering facilities, practices and protocols, by 2018;
- Introduce cleaner twin-engine Tier 4 locomotives to the GO Transit fleet in 2016, beginning an ongoing conversion program;

The strategies outlined in the UTIP and APTA are consistent with the five MOECC Climate Change Strategy areas, as outlined above. APTA works to improve and advance public transportation and has set Transit Sustainability Guidelines. The guidelines outline emission and pollution control as well as how to efficiently use resources. UTIP desires to improve quality of life by supporting and working to advance sustainable transportation in urban areas. UTIP has written a Climate Action with Public Transport report. The report discusses recommendations to further mitigate climate change through the use of public transit. Some of the recommendations include having stronger international and local policies and bridging the financial gap between sustainable technologies and non-renewable resources. The UTIP and APTA guidelines will help Metrolinx move towards the vision of achieving Ontario's Climate Change Strategy.

The new GO Station building design will aim to achieve Leadership in Energy and Environmental Design (LEED) Silver Certification as a minimum, as per Canada Green Building Council standards. LEED is a rating system that was developed to encourage environmental performance requirements to create an environmentally sustainable development. Achieving LEED Certification would further increase the sustainability of the new GO Station by improving air and water quality, enhancing urban ecology, reducing GHG emissions and reducing solid waste.

Transit

The implementation of the new GO Station will promote public transportation and "transit supportive" neighbourhoods. Public transportation is a beneficial service that can reduce traffic congestion and reduce the need for new road infrastructure, as well as reduce carbon emissions and air quality concerns associated with automobile use. Improvements to transit will decrease the average commute time, even with an increasing population (Metrolinx, 2008). Consequently, more people will use public transportation, which will result in a decrease to vehicular GHG emissions emitted per resident, leaving the air cleaner (Metrolinx, 2008).

Vegetation

As noted in the Tree Inventory Plan (see Appendix C of the EPR), the construction of the new GO Station will require the removal of trees and vegetation, which will result in a temporary loss of an existing carbon sink within the local environment of the Study Area. The majority of the trees to be removed are Manitoba Maple, a short-lived species.

Measures for the compensation of existing tree loss and replacement will be specified in a Landscape Plan, developed during the detailed design phase of the Project. The Landscape Plan will include provision for replacing trees of high quality, long living, native species such as Sugar Maple and Bur Oak that will continue to sequester carbon throughout their relatively longer lifespan. The tree compensation plans will follow the City of Toronto's replacement policy which requires that for every one tree removed

with greater than 30 cm Diameter at Breast Height, three trees be planted in its place. This compensation will allow for an overall increase in tree contribution towards any carbon sequestration by the Project.

5.1.2 Effects of Climate Change on the Project

Consideration has been given on how the changing climate has the potential to impact the Project and the proposed infrastructure for both the present (pre-construction and construction phases of the Project) as well as the future long-term operation of the new GO Station.

Stormwater Management

Precipitation, whether it is rainfall, snowfall, or other forms of frozen/ liquid water, is the key climate and weather-related variable of concern in stormwater management. As a result of climate change, storm events are predicted to become more intense, which can result in larger volumes of precipitation at one time. Other climate variables such as temperature are major inputs to evaporation and snowmelt processes. Increases in temperature are likely to impact precipitation and snowmelt runoff volumes discharged to storm sewer systems, however, temperature is not considered in storm sewer design.

Current stormwater management practices include the use of Intensity-Duration-Frequency (IDF) data and design storms (e.g., Chicago Storm, Regional Storm). In order to consider the potential implications of the changing climate on the Project, a number of storms that exceed the current design standard and the most up-to-date IDF curves will be used in the design of stormwater systems. A detailed Stormwater Management Plan will be implemented during the detailed design phase of the Project to ensure that runoff from rainfall is controlled in line with the City of Toronto Wet Weather Flow Guidelines (November 2006). The stormwater management design for the new GO Station may incorporate Low Impact Development (LIDs) measures. LID technology could be considered for the Kiss and Ride or staff parking areas of the new GO Station. LID technology has been successfully implemented at the East Gwillimbury GO Station Kiss and Ride in 2014 (TRCA, December 2012).

LIDs would serve the purpose of controlling stormwater quantity and quality and would aid in promoting a more naturalized control of stormwater. LIDs would allow for increased infiltration of the stormwater, which would be beneficial should storms increase in intensity. The design of the LIDs would follow the Low Impact Development Guidelines for Stormwater Management Design (TRCA/CVC, 2010). Over the long-term operation of the new GO Station, storm water management facilities including LIDs would be monitored by GO Transit operation staff to ensure that these features are maintained appropriately and repaired where required.

Erosion and Sediment Control

An increase in storm intensity can make erosion and sedimentation more likely in the Study Area, especially during construction. Erosion and sediment control (ESC) measures will be implemented during the construction phase of the Project to ensure stormwater runoff entering area sewers and then watercourses is not laden with sediment. The Greater Golden Horseshoe Area Conservation Authorities (GGHACA) Erosion and Sediment Control Guidelines for Urban Construction (December 2006) will be followed to ensure the proper ESC measures are installed during construction and monitored during post-construction period.

5.2 Pre-Construction and Construction Phase Effects/Impacts, Mitigation and Monitoring

Based on the findings of the individual environmental studies completed in support of the Assessment, there are a number of potential environmental effects or impacts that could occur to the natural, cultural, social and built environments and transportation and utilities within the Study Area during the construction phase of the Project. Table 5.1 summarizes all the potential impacts to these features and includes general mitigation measures (to be implemented during pre-construction) and construction mitigation measures. Table 5.1 also provided proposed monitoring activities to ensure that the mitigation measures are being effectively implemented.

Table 5.1: Pre-Construction and Construction Phase Effects/Impacts, Mitigation and Monitoring Plan

Environmental Factor	Potential Impacts	General Mitigation	Construction Mitigation	Monitoring Plan
Natural Environment				
Terrestrial Environment and Species at Risk	Permanent removal or disturbance of vegetation that comprises the City of Toronto's Natural Heritage System, during construction.	Compensation to include both trees and plantable area/planting locations. Develop landscape plans to stabilize and re-vegetate any disturbed areas surrounding buildings and facilities. The landscape plan shall include provisions for replacement plantings comprised of high quality native, non-invasive species. Coordinate adjacent offsite planting locations with City of Toronto and TRCA.	Limit vegetation disturbance associated with the footprint of the station facilities to the furthest extent possible. Keep the movement of equipment and machinery to the designated staging areas and work zones and ensure the following of environmentally sound practices. The movement of equipment and machinery shall be kept to the designated staging areas and work zones and environmentally sound practices shall be followed. For trees on property situated on or adjacent to construction sites: • Silt fencing and/or tree protection fencing shall be installed in accordance with the City's Tree Protection Policy, the approved Tree Protection Plan, and/or as agreed to by Urban Forestry, to protect existing vegetation not proposed for injury or removal. This applies to trees on the construction site and on properties adjacent to the construction site (neighbour trees). • Tree protection barriers must be installed around trees to be protected using plywood clad hoarding or an equivalent approved by Urban Forestry (Toronto). All supports and bracing to safely secure the barrier should be outside the Tree Protection Zone (TPZ). All such supports and bracing should minimize damage to roots outside the TPZ. • Topsoil shall be stockpiled separately from other soil materials and used for restoration to facilitate natural regeneration of native species. • Install compensation plantings in accordance with landscape plans.	An environmental inspector shall regularly monitor construction to ensure that activities do not encroach into vegetated areas beyond the scope of work. Ensure success of plant establishment through planting contractor warranty inspections. Silt fencing and/or tree protection fencing (along with signage for TPZs) shall be monitored regularly by an environmental inspector to ensure they are functioning and maintained, as required. If the silt fencing and tree hoarding are not functioning, alternative measures shall be implemented and prioritized above other construction activities. Following construction, all new vegetation, natural restoration, and compensation plantings must continue to be watered and monitored until established.
	Potential for the encroachment by contractors and equipment into protected vegetation zones on adjacent lands (parklands).	N/A	Install sturdy vegetation protection measures (e.g., paige wire fencing) with signage.	Qualified personnel are required to inspect and repair protection measures as needed.

Environmental Factor	Potential Impacts	General Mitigation	Construction Mitigation	Monitoring Plan
	Loss of onsite trees to accommodate construction.	Tree replacement will occur where the trees' function is being lost for screening or landscape aesthetics (where reasonable and space permits). Tree replacement methods to be implemented by the Landscape Contractor will be documented on the Landscape Plan.	Implement tree replacement as per specifications on Landscape Plan. Install tree protection fence around trees be preserved where adjacent to construction work zones.	Monitor that trees protection measures are installed correctly and in good repair.
	Trees to be preserved adjacent to construction zones impacted by construction.	Tree Protection Plan to be prepared in coordination with detailed design to identify locations of tree protection fence, in accordance with City By-Law requirements.	Install tree protection fence around trees to be preserved.	Monitor that trees protection measures are installed correctly and in good repair.
	Potential to impact if trees, numbers 1 and 2, as identified in the Tree Inventory Plan (Appendix C) to be in poor condition fall near the track.	Consult with project arborist during the detailed design phase of the Project to determine if tree numbers 1 and 2 should be removed and establish an appropriate tree removal plan.	If tree numbers 1 and 2 are to be removed, the Contractor will follow the measures for tree removal as set out in the tree removal plan.	Monitoring to confirm that these trees are felled as part of the construction phase.
	Potential for disturbance to breeding bird or migratory bird and their habitat by the construction of the new GO Station.	Ensure that timing constraints are applied to avoid vegetation clearing (including grubbing) and/or structure works (construction, maintenance) during the core breeding bird period. Note: Environment Canada broadly defines the core breeding bird period for open habitat (in which vegetation clearing should be avoided) in nesting Zone C (Ontario) as typically April 26 to July 31; however, this period can extend earlier and later for some species. This window stipulates when clearing should be avoided to prevent impacts to open habitat. This window is separate from timing windows for completion of breeding bird surveys, generally from May 24-July 10 (as stipulated by Bird Studies Canada (Cadman, M.D., et al., 2007). Active nests (nests with eggs or young birds) of protected migratory birds, including SAR protected under the ESA, 2007, cannot be destroyed.	If a nesting migratory bird (or SAR protected under ESA, 2007) is identified within or adjacent to the construction site and the construction activities are such that continuing construction in that area would result in a contravention of the MBCA or ESA, 2007, all activities will stop and the Contract Administrator (with assistance from a Qualified Avian Biologist) will discuss mitigation measures with the Metrolinx - Environment Program and Assessment department. MNRF and Environment Canada should be contacted to discuss mitigation options. The Contractor Administrator will instruct the Contractor on how to proceed based on the mitigation measures established through discussions with Metrolinx, MNRF and/or Environment Canada.	Breeding bird surveys are not required. Given the small footprint of the Study Area, nest surveys may be carried out by skilled and experienced observers using appropriate methodology (as per Environment Canada guidelines) immediately prior to vegetation removal (i.e., 1-2 days).

Environmental Factor	Potential Impacts	General Mitigation	Construction Mitigation	Monitoring Plan
	Potential for removal of Chimney Swift (Chaetura pelagica) habitat in the chimney on the structure at 2-4 Croham Road (to be confirmed by future targeted surveys, if necessary).	Prior to removal of the structure, confirmation is required to determine if the chimney structure is being used by Chimney Swift. If the chimney structure is not sealed or capped, species-specific surveys may need to be completed during the appropriate timing windows (as per Bird Studies Canada survey protocols) and in consultation with the local MNRF District Office SAR Biologist. In the event that SAR are found within the study limits, an MNRF SAR Biologist will be contacted for advice as these animals are protected under ESA, 2007.	N/A	If the chimney structure at 2-4 Croham Road is determined not to be sealed or capped, monitor the structure during the appropriate timing windows (as per Bird Studies Canada survey protocols and consultation with MNRF) to determine if Chimney Swift are present.
	Temporary displacement and disturbance of, wildlife and wildlife habitat during the construction phase (i.e., vegetation removals, noise).	Develop a Landscape Plan to stabilize and revegetate any disturbed areas surrounding buildings and facilities. The Landscape Plan shall include provisions for replacement plantings comprised of high quality native, non-invasive species. Install compensation plantings in offsite lands in coordination with City of Toronto and TRCA. Landscape plans and coordination with agencies to coordinate compensation plantings on adjacent lands to provide improved habitat for wildlife.	Some wildlife may be displaced during construction activities and after construction of the GO Station. Some wildlife habitat may be removed as a result of the proposed activities. It is expected that wildlife inhabiting the Study Area are species which are tolerant of disturbance and are resilient to changes in urban environments. It is expected that these species which have adapted to existing disturbances will return upon completion of the construction activities and will utilize habitat that will be present. In the event that an animal encountered during construction does not move from the construction zone, the Contract Administrator will be notified. If the construction activities are such that continuing construction in the area would result in harm to wildlife, construction activities in that location will temporarily stop and MNRF will be contacted for direction. In the event that SAR are found within the study limits all activities will stop and mitigation options will be discussed with the Metrolinx - Environment Program and Assessment department, whereby an MNRF SAR Biologist may be contacted for advice as these animals are protected under ESA, 2007.	Monitor that any animals encountered are reported to the Contract Administrator and that no harm comes to animals during construction.

Environmental Factor	Potential Impacts	General Mitigation	Construction Mitigation	Monitoring Plan
Soils, Drainage and Hydrogeology	Potential for the erosion of soils and impacts to surface water and offsite lands during the construction period.	An Erosion and Sediment Control (ESC) Plan will be developed in consultation with Toronto and Region Conservation Authority (TRCA). Implementation of the ESC measures will conform to recognized standard specifications such as Ontario Provincial Standards Specification (OPSS) and the requirements of the TRCA. The ESC Plan will also take into account the Greater Golden Horseshoe Area Conservation Authorities (GGHACA) Erosion and Sediment Control Guidelines for Urban Construction.	Implement and maintain ESC Plan during construction phase.	Qualified personnel are required to inspect and repair ESC measures as needed.
	Potential for the movement of contaminated soils around or away from site. Impact would affect Project scope and costs.	N/A	A Soil Management Plan (SMP) shall be prepared by a Qualified Professional during the detailed design phase and form part of the Construction Contract for managing soil materials onsite (including excavation, location of stockpiles, reuse, and offsite disposal).	Monitor the movement of soils to ensure the SMP is followed.
	Potential contamination of soils resulting from a spill or release of fuels and toxic substances during construction.	An emergency response and communications plan will be developed during detailed design to ensure proper mitigation and notification procedures are in place regarding soil quality during Project operation.	Refueling of equipment and fuel storage shall be conducted in designated areas with spill protection.	Monitor for leaks and spills
	Potential impacts to groundwater from construction activities including dewatering activity and potential contamination from leaks, spills.	Investigate potential for localized groundwater impacts and retain services for a detailed hydrogeological study, if recommended following geotechnical investigations. Consult TRCA if hydrogeological studies are undertaken. Coordinate any dewatering requirements with the other project works that may be ongoing in the Project Area, including Barrie Rail Corridor Expansion Project and Eglinton Crosstown LRT. Determine dewatering requirements as applicable for the construction works including building/ bridge foundations and track lowering and consult with the TRCA on dewatering for construction work.	Contractor and Construction Administrator to implement dewatering in accordance with the TRCA approved plans.	Monitor for leaks and spills

Environmental Factor	Potential Impacts	General Mitigation	Construction Mitigation	Monitoring Plan
	Potential for dewatering activities required for construction of the new GO Station to affect the Eglinton Avenue West Bridge structure and substructure.	In conjunction with the Geotechnical Investigation, a dewatering plan will be prepared, if required, for the construction of the new GO Station works. This dewatering plan will be cognizant of any dewatering activities that are ongoing for the ECLRT or Barrie Rail Corridor Expansion Project. Consultation will be sought from the TRCA.	N/A	The bridge will be monitored during construction of the new GO Station works by way of pre-condition and post-condition monitoring.
Cultural Environment				
Archaeological Resources	Potential to impact archaeological resources, project schedule and scope in the event that an isolated or deeply buried archaeological deposit that was not found during Stage 1 Archaeological Assessment is unearthed during construction.	In the event that an isolated or deeply buried archaeological deposit is unearthed during construction, further archaeological studies will be completed.	Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. If the Contractor or a person under direction of the Contractor discovers an archaeological resource, they must cease alteration of the site immediately. The Contractor shall engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Sec. 48 (1) of the *Ontario Heritage Act*.	N/A
Cultural Heritage	Potential direct impacts to the York Beltline Trail, which has been identified as a PHP under O.reg 9/06 (if acquired by Metrolinx), may include the loss of the resource through demolition or the displacement of resources through relocation. Potential indirect impacts may include the construction disruption of resources by introducing physical, visual, audible or atmospheric elements that are not in keeping with the resources/their setting.	A minimal intervention approach will be adopted with like-for-like replacement or enhanced provision of landscape features for areas directly impacted by the Project.	Staging/construction activities should be planned to avoid impacts to identified heritage attributes. Landscaping/rehabilitation should be undertaken in a manner that is sympathetic to overall setting.	Monitoring to confirm that staging/construction activities avoid impact to heritage attributes.

Environmental Factor	Potential Impacts	General Mitigation	Construction Mitigation	Monitoring Plan
Social and Built Environments				
Socio-Economic and Land Use	Potential for temporary impacts during the construction phase that could potentially disrupt access to existing businesses, residents and parkland.	Discussions and consultation to be held with affected businesses to determine appropriate mitigation to minimize effects.	A traffic management plan for the construction phase will be developed by the contractor for approval by Metrolinx (to include considerations for bicycle traffic and access to businesses, residences, multi-use trails and parks).	Monitor that traffic management plan is effective.
	Potential for aesthetic impacts during the construction phase (i.e., temporary storage sites for equipment, stock piling of substrate materials, etc.).	N/A	Construction delays will be avoided to the extent possible in order to minimize the construction time. All stockpiled materials will be fenced and the construction area will be minimized to the extent possible to ensure that the construction zone does not sprawl beyond what is necessary.	Monitor that all stockpiled materials are fenced and the construction area is minimized and not sprawling beyond that which is necessary.
	Loss and/or disruption of businesses at 2-4 Croham Road as a result of the removal of the building for the construction of new GO Station, including the potential for the loss or relocation of a small number of jobs in the area.	Although a small number of jobs could be lost or relocated outside of the neighbourhood, it is anticipated that the new GO Station and spin-off redevelopment of the area will result in overall job growth.	N/A	N/A
Air Quality	Potential for construction vehicle or dust emissions that could affect businesses, residents and parkland users during construction stage.	A mitigation and resolution process including a complaint response protocol for dust emissions will be prepared during the detailed design phase of the Project, implemented by the Contractor prior to construction and maintained by the Contractor during construction.	Vehicles/machinery and equipment shall be in good repair, equipped with emission controls, as applicable, and operated within regulatory requirements. Onsite vehicle speeds will be reduced. The contractor shall also be required to implement dust suppression measures to reduce the potential for airborne particulate matter resulting from construction activities. This should be in the form of water applications on exposed soils. The contractor shall also ensure that wheels of vehicles leaving the site are washed down, when necessary and vehicles carrying dusty materials will be securely covered before leaving the site.	Regular inspection of construction work zones to ensure that dust suppression measures are being adequately applied. If dust suppression measures are not functioning properly, alternative measures shall be implemented immediately and prioritized above other construction activities.

Environmental Factor	Potential Impacts	General Mitigation	Construction Mitigation	Monitoring Plan
Noise	Potential for temporary noise impacts that could affect businesses, residents and parkland users during the construction stage.	A mitigation plan and process to resolve any impacts including a complaint protocol for construction noise shall be prepared during the detailed design phase of the Project, implemented by the Contractor prior to construction and maintained by the Contractor during construction.	Noise control measures shall be implemented where required during the construction phase, such as restricted hours of operation and the use of appropriate machinery and mufflers. Impacts to be managed to ensure compliance with provincial regulations and local bylaws (where possible).	Regular monitoring of construction noise to ensure that noise control measures are being adequately applied. If noise control measures are not functioning properly, alternative measures shall be implemented immediately and prioritized above other construction activities.
Vibration	Potential for temporary vibration impacts that could affect businesses, residents and parkland users during the construction stage	A mitigation and resolution process to prevent impacts including a complaint response for construction vibration shall be prepared during the detailed design phase of the Project, implemented by the Contractor prior to construction and maintained by the Contractor during construction.	A complaint response protocol for nuisance impacts including construction vibration shall be prepared during the detailed design phase of the Project, implemented by the Contractor prior to construction and maintained by the Contractor during construction.	N/A
Transportation and Utilities				
Traffic	Construction ingress/egress impacts on adjacent neighbourhoods.	Detailed traffic management plan for construction staging and hauling routes to be developed by contractor.	Construction access route and construction parking to be restricted.	Regular monitoring of construction access operations.
Utilities and Municipal Services	A number of utilities and municipal services will require relocation prior to the construction of the new GO Station and associated works. There is potential for these works to impact adjacent properties.	Efforts will be made to relocate the utilities and municipal services within the proposed rail ROW.	Efforts will be made to limit impacts of relocation activities within the Project property as much as possible during construction.	N/A

5.3 Operational and Maintenance Phase Effects/Impacts and Mitigation

5.3.1 Air Quality

An Air Quality Impact Assessment was completed to characterize existing air quality conditions and determine the impact of the Project on the air quality during the operation of the Project. The following section describes air quality effects/impacts to the Project on the Study Area and associated mitigation measures. Existing air quality conditions at the Study Area were discussed earlier in Section 2.3.2. Together these sections summarize the key findings of the Air Quality Impact Assessment. Further details on the assessment can be found in the full Air Quality Impact Assessment Report, provided in Appendix H.

Currently, there are 14 trains operating on weekdays during peak hours (7 southbound trains in the morning and 7 northbound trains in the afternoon) within the Barrie rail corridor, with no off-peak service.

The future volume of trains will be up to 36 trains per day by 2022. Electric trains expected to be introduced in 2025 and beyond will not produce local air emissions. All emissions are associated with the electricity generation and therefore are not modelled in the assessment. For the purposes of assessing future air quality impacts, 2 scenarios were considered:

- "No Build" scenario - implies that there would be no station, no new train traffic but there would be an increase in road traffic; and
- "Future" scenario - implies the new GO Station would be built; there would be increased train traffic on the corridor and an increase in road traffic.

Background conditions for "Future" scenario were assumed to be the same as in the "No Build" scenario. The "Future" scenario includes the new GO Station and all associated operations. A passenger drop-off and pick-up area east of the rail tracks will have emissions associated with the Project. Also, a small fraction of increased traffic on Caledonia Road and Eglinton Avenue West is predicted due to passengers driving to the new GO Station will also contribute to the emissions load.

The local air quality impacts of the project were assessed by applying credible worst-case and cumulative effects analyses, as recommended in the Ministry of Transportation "Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas (GHG) Emissions of Provincial Transportation Projects".

The assessment took into consideration the introduction of Tier 4 technology for the GO MP40 locomotive fleet, which leads to improved air emissions. Emissions were based on GO Tier 3 notch settings assuming the same horsepower for Tier 4 notch settings. It is noted that Metrolinx are committed to deploying the latest fleet technology available. The exact timing of all stock being equipped with Tier 4 compliant engines has not been determined.

Dispersion modelling was used to predict future air quality impacts for the two future scenarios. All model simulations provided hourly results. Where the criterion is on an hourly basis, the hourly results are reported. If the criterion is on a daily (24 hour) basis, the average of the 24 hours of that day is reported. If there is a missing hour, the average is the total of the hours in that day divided by the number of hours of data for that day. The annual results are the average of the values for the year.

The results are separated by contaminant and shown in Table 5.2 to Table 5.6.

Of the five contaminants modelled, benzene and benzo(a)pyrene (B[a]p) exceed their respective criteria as the overall levels in the province (ambient background levels) already exceed those criteria. The measured values used for the background provide the majority of the amounts shown. These same values would be found almost everywhere in the province. Therefore, the exceedances of benzene and benzo(a)pyrene are not attributed to the new GO Station.

The median predicted impact approaches or exceeds the criterion for some contaminants; however, some conservative assumptions were made for the assessment, which have led to an overestimation of the air quality impacts. For example, passenger vehicle emissions were assumed not to change over the next 10 years. In fact, the background concentration of many passenger vehicle contaminants has seen steady decline over the last number of years and this trend is expected to continue.

The direct contribution to local air quality has been shown to be small. At distances further from the rail corridor, the impact from increased diesel trains will be even smaller so regional impact will be very small. As the service becomes more frequent, there may be a shift from personal vehicles to transit which could reduce the levels of CACs in the area. The traffic predicted in the study shows a small increase on some roads and a small decrease on another road. When the trains are replaced with electric trains, the entire local contribution will be removed but that amount is small so the air quality improvement will also be modest.

The results of these analyses are consistent and indicate that the proposed project will have a very small local air quality impact, even on the most affected sensitive receptors. This conclusion is reached by comparing the predicted ambient pollutant concentrations for the "no-build" and "build" scenarios. The results also indicate that the project shall not cause exceedance of any of the air quality criteria and standards, even at the most affected sensitive receptors. In cases where the modelling shows an exceedance of criteria in the future, it is a reflection of background conditions that already exceed the criterion and not a result of the new GO Station. For example, benzene increases from 170.80% to 170.84% of criterion while benzo(a)pyrene increases from 813.7% to 816.2% of criterion. This is due to the background concentration for these pollutants already being above threshold without the added contribution from the Project. The elevated background levels of these contaminants are not unique to the study area, but are a widespread occurrence across southern Ontario. Although the background concentrations are high, the incremental project-related contribution to the cumulative concentrations of Benzene and B[a]p was found to be small. Therefore, air quality mitigation is not required and hence, this report does not recommend any local air quality impact mitigation.

GHG impact assessment on a regional scale was completed as part of this study. The regional air quality and GHG emission implications of the project were assessed by quantifying the air contaminant and GHG emissions associated with the project for the "build" and "no build" scenarios. Total annual emissions

were based on the annual train kilometres travelled for the reference year. Annual emissions were compared to the total provincial emissions to estimate the magnitude of the impact from the Project. Provincial emissions were taken from Environment Canada National Inventory Report on Greenhouse Gases for 2012 calendar year. A potential air quality and greenhouse gas emission impact from the Project was determined to be insignificant on a regional scale. The total annual emissions are expected to be well below 0.01% of the provincial levels. Hence, this report does not recommend any air quality impact mitigation.

Table 5.2: Maximum Results at Each Sensitive Receptor for Table 25: Acrolein

Contaminant	Averaging Period	Scenario	Receptor Address	UTM X Coordinate	UTM Y Coordinate	Criterion (µg/m^3)	MOE 90th Percentile (µg/m^3)	Maximum (µg/m^3)	Maximum % of Criterion (%)
Acrolein	1-HR	NoBuild	3 Lonborough Ave	623571.00	4839063.00	4.5	N/A	1.1752	26.1%
Acrolein	1-HR	NoBuild	107 Carnarvan St	623617.17	4839091.85	4.5	N/A	1.1759	26.1%
Acrolein	1-HR	NoBuild	50 Croham Rd	623701.82	4839052.16	4.5	N/A	1.1757	26.1%
Acrolein	1-HR	NoBuild	14 Croham Rd	623742.53	4838931.64	4.5	N/A	1.1761	26.1%
Acrolein	1-HR	NoBuild	502 Gilbert Ave	623820.19	4838809.62	4.5	N/A	1.1756	26.1%
Acrolein	1-HR	NoBuild	541 Blackthorn Ave	623675.20	4838735.74	4.5	N/A	1.1757	26.1%
Acrolein	1-HR	Future	3 Lonborough Ave	623571.00	4839063.00	4.5	N/A	1.1766	26.1%
Acrolein	1-HR	Future	107 Carnarvan St	623617.17	4839091.85	4.5	N/A	1.1794	26.2%
Acrolein	1-HR	Future	50 Croham Rd	623701.82	4839052.16	4.5	N/A	1.1793	26.2%
Acrolein	1-HR	Future	14 Croham Rd	623742.53	4838931.64	4.5	N/A	1.1823	26.3%
Acrolein	1-HR	Future	502 Gilbert Ave	623820.19	4838809.62	4.5	N/A	1.1882	26.4%
Acrolein	1-HR	Future	541 Blackthorn Ave	623675.20	4838735.74	4.5	N/A	1.1766	26.1%
Acrolein	24-HR	NoBuild	3 Lonborough Ave	623571.00	4839063.00	0.4	0.1872	1.1747	293.7%
Acrolein	24-HR	NoBuild	107 Carnarvan St	623617.17	4839091.85	0.4	0.1872	1.1748	293.7%
Acrolein	24-HR	NoBuild	50 Croham Rd	623701.82	4839052.16	0.4	0.1872	1.1748	293.7%
Acrolein	24-HR	NoBuild	14 Croham Rd	623742.53	4838931.64	0.4	0.1872	1.1751	293.8%
Acrolein	24-HR	NoBuild	502 Gilbert Ave	623820.19	4838809.62	0.4	0.1872	1.1750	293.7%
Acrolein	24-HR	NoBuild	541 Blackthorn Ave	623675.20	4838735.74	0.4	0.1872	1.1751	293.8%
Acrolein	24-HR	Future	3 Lonborough Ave	623571.00	4839063.00	0.4	0.1872	1.1755	293.9%
Acrolein	24-HR	Future	107 Carnarvan St	623617.17	4839091.85	0.4	0.1872	1.1769	294.2%
Acrolein	24-HR	Future	50 Croham Rd	623701.82	4839052.16	0.4	0.1872	1.1768	294.2%
Acrolein	24-HR	Future	14 Croham Rd	623742.53	4838931.64	0.4	0.1872	1.1775	294.4%
Acrolein	24-HR	Future	502 Gilbert Ave	623820.19	4838809.62	0.4	0.1872	1.1779	294.5%
Acrolein	24-HR	Future	541 Blackthorn Ave	623675.20	4838735.74	0.4	0.1872	1.1756	293.9%

Table 5.3: Maximum Results at Each Sensitive Receptor for Table 26: Benzene

Contaminant	Averaging Period	Scenario	Receptor Address	UTM X Coordinate	UTM Y Coordinate	Criterion (µg/m^3)	MOE 90th Percentile (µg/m^3)	Maximum (µg/m^3)	Maximum % of Criterion (%)
Benzene	24-HR	NoBuild	3 Lonborough Ave	623571.00	4839063.00	2.3	0.7705	1.5708	68.3%
Benzene	24-HR	NoBuild	107 Carnarvan St	623617.17	4839091.85	2.3	0.7705	1.5709	68.3%
Benzene	24-HR	NoBuild	50 Croham Rd	623701.82	4839052.16	2.3	0.7705	1.5709	68.3%
Benzene	24-HR	NoBuild	14 Croham Rd	623742.53	4838931.64	2.3	0.7705	1.5709	68.3%
Benzene	24-HR	NoBuild	502 Gilbert Ave	623820.19	4838809.62	2.3	0.7705	1.5709	68.3%
Benzene	24-HR	NoBuild	541 Blackthorn Ave	623675.20	4838735.74	2.3	0.7705	1.5709	68.3%

Contaminant	Averaging Period	Scenario	Receptor Address	UTM X Coordinate	UTM Y Coordinate	Criterion (µg/m^3)	MOE 90th Percentile (µg/m^3)	Maximum (µg/m^3)	Maximum % of Criterion (%)
Benzene	Annual	NoBuild	3 Lonborough Ave	623571.00	4839063.00	0.45	N/A	0.7705	171.2%
Benzene	Annual	NoBuild	107 Carnarvan St	623617.17	4839091.85	0.45	N/A	0.7705	171.2%
Benzene	Annual	NoBuild	50 Croham Rd	623701.82	4839052.16	0.45	N/A	0.7706	171.2%
Benzene	Annual	NoBuild	14 Croham Rd	623571.00	4839063.00	0.45	N/A	0.7705	171.2%
Benzene	Annual	NoBuild	502 Gilbert Ave	623617.17	4839091.85	0.45	N/A	0.7706	171.2%
Benzene	Annual	NoBuild	541 Blackthorn Ave	623701.82	4839052.16	0.45	N/A	0.7705	171.2%
Benzene	24-HR	Future	3 Lonborough Ave	623571.00	4839063.00	2.3	0.7705	1.5710	68.3%
Benzene	24-HR	Future	107 Carnarvan St	623617.17	4839091.85	2.3	0.7705	1.5713	68.3%
Benzene	24-HR	Future	50 Croham Rd	623701.82	4839052.16	2.3	0.7705	1.5713	68.3%
Benzene	24-HR	Future	14 Croham Rd	623742.53	4838931.64	2.3	0.7705	1.5716	68.3%
Benzene	24-HR	Future	502 Gilbert Ave	623820.19	4838809.62	2.3	0.7705	1.5711	68.3%
Benzene	24-HR	Future	541 Blackthorn Ave	623675.20	4838735.74	2.3	0.7705	1.5710	68.3%
Benzene	Annual	Future	3 Lonborough Ave	623571.00	4839063.00	0.45	N/A	0.7706	171.3%
Benzene	Annual	Future	107 Carnarvan St	623617.17	4839091.85	0.45	N/A	0.7708	171.3%
Benzene	Annual	Future	50 Croham Rd	623701.82	4839052.16	0.45	N/A	0.7707	171.3%
Benzene	Annual	Future	14 Croham Rd	623571.00	4839063.00	0.45	N/A	0.7709	171.3%
Benzene	Annual	Future	502 Gilbert Ave	623617.17	4839091.85	0.45	N/A	0.7711	171.4%
Benzene	Annual	Future	541 Blackthorn Ave	623701.82	4839052.16	0.45	N/A	0.7708	171.3%

Table 5.4: Maximum Results at Each Sensitive Receptor for Table 27: Benzo[a]pyrene

Contaminant	Averaging Period	Scenario	Receptor Address	UTM X Coordinate	UTM Y Coordinate	Criterion (µg/m^3)	MOE 90th Percentile (µg/m^3)	Maximum (µg/m^3)	Maximum % of Criterion (%)
Benzo(a)pyrene	24-HR	NoBuild	3 Lonborough Ave	623571.00	4839063.00	0.00005	1.406E-04	1.082E-03	2163.1%
Benzo(a)pyrene	24-HR	NoBuild	107 Carnarvan St	623617.17	4839091.85	0.00005	1.406E-04	1.082E-03	2163.1%
Benzo(a)pyrene	24-HR	NoBuild	50 Croham Rd	623701.82	4839052.16	0.00005	1.406E-04	1.082E-03	2163.1%
Benzo(a)pyrene	24-HR	NoBuild	14 Croham Rd	623742.53	4838931.64	0.00005	1.406E-04	1.082E-03	2163.3%
Benzo(a)pyrene	24-HR	NoBuild	502 Gilbert Ave	623820.19	4838809.62	0.00005	1.406E-04	1.082E-03	2163.3%
Benzo(a)pyrene	24-HR	NoBuild	541 Blackthorn Ave	623675.20	4838735.74	0.00005	1.406E-04	1.082E-03	2163.3%
Benzo(a)pyrene	Annual	NoBuild	3 Lonborough Ave	623742.53	4838931.64	0.00001	N/A	1.391E-04	1391.1%
Benzo(a)pyrene	Annual	NoBuild	107 Carnarvan St	623820.19	4838809.62	0.00001	N/A	1.391E-04	1391.2%
Benzo(a)pyrene	Annual	NoBuild	50 Croham Rd	623675.20	4838735.74	0.00001	N/A	1.392E-04	1391.9%
Benzo(a)pyrene	Annual	NoBuild	14 Croham Rd	623571.00	4839063.00	0.00001	N/A	1.391E-04	1391.3%
Benzo(a)pyrene	Annual	NoBuild	502 Gilbert Ave	623617.17	4839091.85	0.00001	N/A	1.392E-04	1391.8%
Benzo(a)pyrene	Annual	NoBuild	541 Blackthorn Ave	623701.82	4839052.16	0.00001	N/A	1.392E-04	1391.8%
Benzo(a)pyrene	24-HR	Future	3 Lonborough Ave	623571.00	4839063.00	0.00005	1.406E-04	1.082E-03	2163.7%
Benzo(a)pyrene	24-HR	Future	107 Carnarvan St	623617.17	4839091.85	0.00005	1.406E-04	1.082E-03	2164.3%

Contaminant	Averaging Period	Scenario	Receptor Address	UTM X Coordinate	UTM Y Coordinate	Criterion (µg/m^3)	MOE 90th Percentile (µg/m^3)	Maximum (µg/m^3)	Maximum % of Criterion (%)
Benzo(a)pyrene	24-HR	Future	50 Croham Rd	623701.82	4839052.16	0.00005	1.406E-04	1.082E-03	2164.2%
Benzo(a)pyrene	24-HR	Future	14 Croham Rd	623742.53	4838931.64	0.00005	1.406E-04	1.082E-03	2164.3%
Benzo(a)pyrene	24-HR	Future	502 Gilbert Ave	623820.19	4838809.62	0.00005	1.406E-04	1.082E-03	2163.6%
Benzo(a)pyrene	24-HR	Future	541 Blackthorn Ave	623675.20	4838735.74	0.00005	1.406E-04	1.082E-03	2163.6%
Benzo(a)pyrene	Annual	Future	3 Lonborough Ave	623571.00	4839063.00	0.00001	N/A	1.393E-04	1393.0%
Benzo(a)pyrene	Annual	Future	107 Carnarvan St	623617.17	4839091.85	0.00001	N/A	1.396E-04	1395.8%
Benzo(a)pyrene	Annual	Future	50 Croham Rd	623701.82	4839052.16	0.00001	N/A	1.393E-04	1393.0%
Benzo(a)pyrene	Annual	Future	14 Croham Rd	623742.53	4838931.64	0.00001	N/A	1.396E-04	1395.8%
Benzo(a)pyrene	Annual	Future	502 Gilbert Ave	623820.19	4838809.62	0.00001	N/A	1.397E-04	1397.1%
Benzo(a)pyrene	Annual	Future	541 Blackthorn Ave	623675.20	4838735.74	0.00001	N/A	1.394E-04	1394.0%

"90th Percentile" shows the 90th Percentile value obtained from the hourly or daily average values from the appropriate MOECC or Environment Canada (NAPS) monitoring station.
For the remainder, the values in the table are generated in the following manner:

- The model is run to generate predicted values at every Sensitive Receptors (SR) for every hour from January 1, 2009 through December 31, 2013.
- For every hour, the modelled value is added to the background value recorded during the same hour (unless there is no background value).
- The total number of values (approximately 365*24*5 - missing data records) is sorted by value with the largest value at the top.
    - The maximum is the largest value (top)
    - The 90th percentile is the value which is 10% from the top of the list. If the calculation results in a value between two actual values, the higher value is selected.
- For the 24-HR averaging period, the list of values is created by averaging the hourly values into daily values resulting in (365 * 5 + 1) values (2012 is a leap year).
    - The values are generated in the same manner as for the hourly values except that the daily average values are used.
- For the annual averaging period, the list of values is created by averaging the hourly values into annual values resulting in 5 values.
    - The values are generated in the same manner as for the hourly values except that the annual average values are used.
- The "Maximum % of Criterion (%)" is the maximum predicted value for that Averaging period, scenario, and receptor compared to the appropriate criterion in column 7.
- Maximum % of Criterion = (Receptor Maximum)/(Criterion)

Table 5.5: Maximum Results at Each Sensitive Receptor for Table 28: Nitrogen Dioxide

Contaminant Name	Averaging Period	Scenario	Receptor Address	UTM X	UTM Y	Criterion (µg/m^3)	Toronto West 90th Percentile (µg/m^3)	Toronto West Maximum (µg/m^3)	Maximum % of Criterion (%)	Toronto Downtown 90th Percentile (µg/m^3)	Toronto Downtown Maximum (µg/m^3)	Maximum % of Criterion (%)
NO2	1-HR	NoBuild	3 Lonborough Ave	623571.00	4839063.00	400	65.76	151.83	38.0%	53.81	139.45	35%
NO2	1-HR	NoBuild	107 Carnarvan St	623617.17	4839091.85	400	65.76	152.67	38.2%	53.81	141.50	35%
NO2	1-HR	NoBuild	50 Croham Rd	623701.82	4839052.16	400	65.76	152.43	38.1%	53.81	141.01	35%
NO2	1-HR	NoBuild	14 Croham Rd	623742.53	4838931.64	400	65.76	152.43	38.1%	53.81	141.08	35%
NO2	1-HR	NoBuild	502 Gilbert Ave	623820.19	4838809.62	400	65.76	152.04	38.0%	53.81	140.10	35%
NO2	1-HR	NoBuild	541 Blackthorn Ave	623675.20	4838735.74	400	65.76	151.84	38.0%	53.81	139.52	35%
NO2	1-HR	Future	3 Lonborough Ave	623571.00	4839063.00	400	65.76	162.35	40.6%	53.81	153.19	38%
NO2	1-HR	Future	107 Carnarvan St	623617.17	4839091.85	400	65.76	187.98	47.0%	53.81	173.97	43%
NO2	1-HR	Future	50 Croham Rd	623701.82	4839052.16	400	65.76	184.23	46.1%	53.81	171.07	43%
NO2	1-HR	Future	14 Croham Rd	623742.53	4838931.64	400	65.76	182.13	45.5%	53.81	169.39	42%
NO2	1-HR	Future	502 Gilbert Ave	623820.19	4838809.62	400	65.76	157.42	39.4%	53.81	150.38	38%
NO2	1-HR	Future	541 Blackthorn Ave	623675.20	4838735.74	400	65.76	154.06	38.5%	53.81	146.34	37%

Contaminant Name	Averaging Period	Scenario	Receptor Address	UTM X	UTM Y	Criterion (µg/m^3)	Toronto West 90th Percentile (µg/m^3)	Toronto West Maximum (µg/m^3)	Maximum % of Criterion (%)	Toronto Downtown 90th Percentile (µg/m^3)	Toronto Downtown Maximum (µg/m^3)	Maximum % of Criterion (%)
NO2	24-Hr	NoBuild	3 Lonborough Ave	623571.00	4839063.00	200	54.06	87.54	43.8%	46.00	82.66	41%
NO2	24-Hr	NoBuild	107 Carnarvan St	623617.17	4839091.85	200	54.06	87.71	43.9%	46.00	82.95	41%
NO2	24-Hr	NoBuild	50 Croham Rd	623701.82	4839052.16	200	54.06	87.67	43.8%	46.00	82.88	41%
NO2	24-Hr	NoBuild	14 Croham Rd	623742.53	4838931.64	200	54.06	87.72	43.9%	46.00	82.92	41%
NO2	24-Hr	NoBuild	502 Gilbert Ave	623820.19	4838809.62	200	54.06	87.64	43.8%	46.00	82.78	41%
NO2	24-Hr	NoBuild	541 Blackthorn Ave	623675.20	4838735.74	200	54.06	87.61	43.8%	46.00	82.72	41%
NO2	Annual	NoBuild	3 Lonborough Ave	623742.53	4838931.64	60	N/A	40.08	66.8%	N/A	32.98	55%
NO2	Annual	NoBuild	107 Carnarvan St	623820.19	4838809.62	60	N/A	40.16	66.9%	N/A	33.13	55%
NO2	Annual	NoBuild	50 Croham Rd	623675.20	4838735.74	60	N/A	40.11	66.9%	N/A	33.01	55%
NO2	Annual	NoBuild	14 Croham Rd	623571.00	4839063.00	60	N/A	40.15	66.9%	N/A	33.10	55%
NO2	Annual	NoBuild	502 Gilbert Ave	623617.17	4839091.85	60	N/A	40.17	67.0%	N/A	33.13	55%
NO2	Annual	NoBuild	541 Blackthorn Ave	623701.82	4839052.16	60	N/A	40.13	66.9%	N/A	33.05	55%
NO2	24-Hr	Future	3 Lonborough Ave	623571.00	4839063.00	200	54.06	90.93	45.5%	46.00	84.53	42%
NO2	24-Hr	Future	107 Carnarvan St	623617.17	4839091.85	200	54.06	95.78	47.9%	46.00	87.43	44%
NO2	24-Hr	Future	50 Croham Rd	623701.82	4839052.16	200	54.06	94.88	47.4%	46.00	86.90	43%
NO2	24-Hr	Future	14 Croham Rd	623742.53	4838931.64	200	54.06	94.51	47.3%	46.00	86.73	43%
NO2	24-Hr	Future	502 Gilbert Ave	623820.19	4838809.62	200	54.06	89.86	44.9%	46.00	83.93	42%
NO2	24-Hr	Future	541 Blackthorn Ave	623675.20	4838735.74	200	54.06	89.29	44.6%	46.00	83.60	42%
NO2	Annual	Future	3 Lonborough Ave	623742.53	4838931.64	60	N/A	41.62	69.4%	N/A	33.90	57%
NO2	Annual	Future	107 Carnarvan St	623820.19	4838809.62	60	N/A	43.96	73.3%	N/A	35.38	59%
NO2	Annual	Future	50 Croham Rd	623675.20	4838735.74	60	N/A	40.88	68.1%	N/A	33.44	56%
NO2	Annual	Future	14 Croham Rd	623742.53	4838931.64	60	N/A	43.77	72.9%	N/A	35.25	59%
NO2	Annual	Future	502 Gilbert Ave	623820.19	4838809.62	60	N/A	43.56	72.6%	N/A	35.13	59%
NO2	Annual	Future	541 Blackthorn Ave	623675.20	4838735.74	60	N/A	41.21	68.7%	N/A	33.65	56%

Table 5.6: Maximum Results at Each Sensitive Receptor for Table 28: Particulate Matter <2.5 µm

Contaminant Name	Averaging Period	Scenario	Receptor Address	UTM X	UTM Y	Criterion (µg/m3)	Toronto West 90th Percentile (µg/m^3)	Toronto West Maximum (µg/m^3)	Maximum % of Criterion (%)	Toronto Downtown 90th Percentile (µg/m^3)	Toronto Downtown Maximum (µg/m3)	Maximum % of Criterion (%)
PM2.5	24-HR	NoBuild	3 Lonborough Ave	623571.00	4839063.00	27	13.04	33.80	125.2%	12.63	35.01	130%
PM2.5	24-HR	NoBuild	107 Carnarvan St	623617.17	4839091.85	27	13.04	33.80	125.2%	12.63	35.01	130%
PM2.5	24-HR	NoBuild	3 Lonborough Ave	623571.00	4839063.00	27	13.04	33.81	125.2%	12.63	35.01	130%
PM2.5	24-HR	NoBuild	107 Carnarvan St	623617.17	4839091.85	27	13.04	33.81	125.2%	12.63	35.02	130%
PM2.5	24-HR	NoBuild	50 Croham Rd	623701.82	4839052.16	27	13.04	33.81	125.2%	12.63	35.02	130%
PM2.5	24-HR	NoBuild	14 Croham Rd	623742.53	4838931.64	27	13.04	33.83	125.3%	12.63	35.04	130%

Contaminant Name	Averaging Period	Scenario	Receptor Address	UTM X	UTM Y	Criterion (µg/m3)	Toronto West 90th Percentile (µg/m^3)	Toronto West Maximum (µg/m^3)	Maximum % of Criterion (%)	Toronto Downtown 90th Percentile (µg/m^3)	Toronto Downtown Maximum (µg/m3)	Maximum % of Criterion (%)
PM2.5	24-HR	NoBuild	502 Gilbert Ave	623820.19	4838809.62	27	13.04	33.83	125.3%	12.63	35.04	130%
PM2.5	24-HR	NoBuild	541 Blackthorn Ave	623675.20	4838735.74	27	13.04	33.83	125.3%	12.63	35.04	130%
PM2.5	Annual	NoBuild	3 Lonborough Ave	623742.53	4838931.64	8.8	N/A	8.45	96.0%	N/A	8.27	94%
PM2.5	Annual	NoBuild	107 Carnarvan St	623820.19	4838809.62	8.8	N/A	8.45	96.0%	N/A	8.27	94%
PM2.5	Annual	NoBuild	50 Croham Rd	623675.20	4838735.74	8.8	N/A	8.47	96.2%	N/A	8.29	94%
PM2.5	Annual	NoBuild	14 Croham Rd	623571.00	4839063.00	8.8	N/A	8.45	96.1%	N/A	8.27	94%
PM2.5	Annual	NoBuild	502 Gilbert Ave	623617.17	4839091.85	8.8	N/A	8.47	96.2%	N/A	8.29	94%
PM2.5	Annual	NoBuild	541 Blackthorn Ave	623701.82	4839052.16	8.8	N/A	8.46	96.2%	N/A	8.29	94%
PM2.5	24-HR	Future	3 Lonborough Ave	623571.00	4839063.00	27	13.04	33.85	125.4%	12.63	35.06	130%
PM2.5	24-HR	Future	107 Carnarvan St	623617.17	4839091.85	27	13.04	33.91	125.6%	12.63	35.12	130%
PM2.5	24-HR	Future	50 Croham Rd	623701.82	4839052.16	27	13.04	33.92	125.6%	12.63	35.12	130%
PM2.5	24-HR	Future	14 Croham Rd	623742.53	4838931.64	27	13.04	34.00	125.9%	12.63	35.21	130%
PM2.5	24-HR	Future	502 Gilbert Ave	623820.19	4838809.62	27	13.04	33.87	125.4%	12.63	35.08	130%
PM2.5	24-HR	Future	541 Blackthorn Ave	623675.20	4838735.74	27	13.04	33.86	125.4%	12.63	35.07	130%
PM2.5	Annual	Future	3 Lonborough Ave	623571.00	4839063.00	8.8	N/A	8.48	96.3%	N/A	8.30	94%
PM2.5	Annual	Future	107 Carnarvan St	623617.17	4839091.85	8.8	N/A	8.51	96.8%	N/A	8.34	95%
PM2.5	Annual	Future	50 Croham Rd	623701.82	4839052.16	8.8	N/A	8.48	96.4%	N/A	8.31	94%
PM2.5	Annual	Future	14 Croham Rd	623742.53	4838931.64	8.8	N/A	8.52	96.8%	N/A	8.34	95%

"90th Percentile" shows the 90th Percentile value obtained from the hourly or daily average values from the appropriate MOECC or Environment Canada (NAPS) monitoring station.
For the remainder, the values in the table are generated in the following manner:

- The model is run to generate predicted values at every Sensitive Receptors (SR) for every hour from January 1, 2009 through December 31, 2013.
- For every hour, the modelled value is added to the background value recorded during the same hour (unless there is no background value).
- The total number of values (approximately 365*24*5 - missing data records) is sorted by value with the largest value at the top.
    - The maximum is the largest value (top)
    - The minimum is the smallest value (bottom)
    - The median is the value in the middle of the list. If there is an even number of values so that the middle value is between two actual values, the higher value is selected.
    - The 90th percentile is the value which is 10% from the top of the list. If the calculation results in a value between two actual values, the higher value is selected.
- For the 24-HR averaging period, the list of values is created by averaging the hourly values into daily values resulting in (365 * 5 + 1) values (2012 is a leap year).
    - The values are generated in the same manner as for the hourly values except that the daily average values are used.
- For the annual averaging period, the list of values is created by averaging the hourly values into annual values resulting in 5 values.
    - The values are generated in the same manner as for the hourly values except that the annual average values are used.
- The "Maximum % of Criterion (%)" is the maximum predicted value for that Averaging period, scenario, and receptor compared to the appropriate criterion in column 7.
- Maximum % of Criterion = (Receptor Maximum)/(Criterion)

Toronto Downtown values are generated identically to the Toronto West values except that the background hourly values used are taken from the MOECC's Toronto Downtown monitoring station.

5.3.2 Noise

Akoustik Engineering Limited was retained to complete a noise and vibration assessment for the Study Area. The Noise and Vibration Impact Assessment Report documenting the methodology and findings of the assessment is provided in Appendix I. The Noise and Vibration Impact Assessment has been divided chronologically into 2 components for evaluation to correspond with three service scenarios:

- Existing: impacts within the Study Area based on current operating conditions with current 2015 traffic volumes;
- Future Phase 1: impacts within the Study Area with the addition of a new GO Station (Caledonia) operating with current 2015 traffic volumes; and
- Future Phase 2: impacts within the Study Area based on provision of all-day, two-way service (an expansion with increased trains over the entire day as well as an additional second track allowing trains to travel both north and southbound) along the existing route operating with predicted 2022 traffic volumes of 36 diesel trains per day.

The existing noise levels associated with the current train service levels were discussed in Section 2.3.3.

The desirable noise level objective, as defined in the MOEE/GO Draft Protocol, is that the daytime L_{EQ} (16-hr, 07:00 h to 23:00 h) produced by future rail service operation of the project under assessment does not exceed the higher of:

- The existing daytime ambient sound level (combined with the sound level from existing rail activity); or
- 55 dBA L_{EQ} (16-hr).

Furthermore, the desirable objective for MOEE/GO Draft Protocol also suggests that the night-time L_{EQ} (8-hr, 23:00 h to 07:00 h) produced by the future GO rail service operation of the project does not exceed the higher of:

- The existing night-time ambient sound level (combined with the sound level from existing rail activity); or
- 50 dBA LEQ (8-hr).

The MOEE/GO Draft Protocol states that noise effects at a point of reception shall be expressed in terms of the Adjusted Noise Impact. The Adjusted Noise Impact is based on the difference between existing noise (i.e., including ambient and existing rail noise) and future noise (i.e., including ambient and future rail noise). Where the existing noise is less than 55 dBA L_{EQ} (16-hr) during the daytime or 50 dBA L_{EQ} (8-hr) during the night-time, the existing noise shall be taken as 55 dBA L_{EQ} (16-hr) daytime or 50 dBA L_{EQ} (8-hr) night-time.

According to the MOEE/GO Draft Protocol, the noise impacts shall be rated with respect to the objectives outlined in Table 5.7.

Table 5.7: MOEE/GO Draft Protocol - Adjusted Noise Impact Ratings

Adjusted Noise Impact	Rating
0 - 2.99 dB	Insignificant
3 - 4.99 dB	Noticeable
5 - 9.99 dB	Significant
10 + dB	Very Significant

In cases where the Adjusted Noise Impact is considered “Significant” or greater (i.e., 5 dB or greater), the potential to mitigate will be evaluated based on administrative, operational, economic and technical feasibility.

The predicted noise from rail services for the Study Area was modelled using STAMSON noise modelling software for both the existing and future noise. The Adjusted Noise Impact was determined at each POR. The predicted noise levels obtained using the computational STAMSON modelling software at each of the representative receptors were used to determine the worst-case impacts from these results and are given in Table 5.8.

Table 5.8: Noise Modelling Results (STAMSON) – Rail Services Adjusted Noise Impacts

Receptor ID	Period and Receptor Height (m)	Predicted Project Noise Levels (dBA)			Objective (dBA)	Adjusted Noise Impact (dB)	5 dB or Greater Increase?	Recommended Mitigation?
		Existing	Phase 1	Phase 2				
POR1	Daytime – 1.5 m	59	57	60	59	0	No	No
	Daytime – 4.5 m	60	58	60	60	0	No	
	Nighttime – 4.5 m	55	54	54	55	0	No	
POR2	Daytime – 1.5 m	58	55	57	58	0	No	No
	Daytime – 4.5 m	59	56	58	59	0	No	
	Nighttime – 4.5 m	52	49	51	52	0	No	
POR3	Daytime – 1.5 m	62	58	59	62	0	No	No
	Daytime – 4.5 m	62	58	59	62	0	No	
	Nighttime – 4.5 m	54	51	54	54	0	No	

From the modelled results, the adjusted Noise Impact value for all receptors is less than 5 dB for both the Phase 1 and Phase 2. The adjusted impact values do not exceed the 5 dB limit due to the fact that once the new GO Station is in operation the trains will be decelerating, stopping and then accelerating out of the station; conditions which produce substantially the same noise levels compared to present noise impacts from the high speed train pass-bys at the same location. As such, mitigation for the control of noise is not required for Phase 1 and Phase 2. However, because the Phase 1 results in an initial reduction in noise, residents may perceive a notable increase in noise between the initial operation of Caledonia Station and the full implementation of future phases.

A supplementary study was performed to determine the impact of noise from train bells and the acceleration and deceleration of trains entering and exiting a GO Station. To identify the contribution of the bell, several noise level measurements were taken of GO trains driving by Long Branch GO Station

(on Lakeshore West rail corridor) with the bell sounding. Other measurements were taken of GO trains driving by Clarkson Park (on Lakeshore West rail corridor) without the bell sounding. When the average noise levels measured at these two locations were compared, there was no difference in noise levels. This result illustrates that the noise level from the bell is not distinguishable from the noise level of the train engine.

To identify the contribution of noise from acceleration and deceleration of GO trains, several noise level measurements were taken of GO trains passing through Long Branch GO Station as well as GO trains stopping and leaving Long Branch GO Station. The noise level measurements for GO trains passing through the GO Station were compared to the noise level measurements for GO trains stopping and leaving the GO Station. The difference in the average adjusted noise level between pass through trains and trains accelerating or decelerating was 4.8 dBA. Based on the MOEE/GO Draft Protocol - Adjusted Noise Impact Ratings (see Table 5.7) this noise level difference is considered Noticeable but is not at a level that requires mitigation to be considered.

5.3.3 Vibration

Vibration impacts associated with the new GO Station once in operation are discussed in below; however, no mitigation measures are required since vibration impacts at the Study Area are expected to be less than the current level (the objective value) once the Caledonia Station become operational.

The desirable objective of the MOEE/GO Draft Protocol is that the vibration velocity produced from the GO Project at a point of vibration reception does not exceed:

- 0.14 mm/s; or
- The existing vibration levels where existing operations produce vibration which exceeds 0.14 mm/s.

Furthermore, the MOEE/GO Draft Protocol stipulates that the requirement to evaluate mitigation is triggered when the vibration velocity exceeds the objective by 25% or more (i.e., the greater of 0.175 mm/s, or a 25% increase over existing levels).

The thresholds for various levels of human perception of vibration are lower than the thresholds for damage to structures, therefore meeting perception criteria will ensure building damage criteria are also met. The MOEE/GO Draft Protocol vibration criteria are consistent with perception criteria; hence, the study focuses on the changes in the perceptibility of vibration.

Vibration at the Rutherford GO Station was measured in order to predict vibration levels at the new GO Station. The reason for this is that the present Rutherford conditions, both environmental and rail operations (train type, locomotive/car number, speeds, etc.) are similar to the future Caledonia conditions, and therefore are comparable. The only differences between the 2 locations is that the noise levels measured within the Study Area are for a train pass-by at approximately 80 km/hr. (50 mph, present conditions) and the levels measured at the Rutherford location are representative of a train pulling into a station and subsequently departing from the station, which can be representative of the future vibration levels within the Study Area.

A linear average of the running average RMS vibration velocity was calculated and the results are given in Table 5.9 for the 2 measurement locations. Table 5.9 illustrates that the existing vibration impacts for the Study Area exceed the 0.14 mm/s RMS limit. As a result, the existing levels measured within the Study Area are taken as the objective limit in accordance to the MOEE/GO Draft Protocol. Table 5.9 also illustrates that the measured vibration impacts based on the arrival and departure of a train at the Rutherford GO Station are much lower than the objective limit, but still exceed the 0.14 mm/s limit. This reduced impact is due to the lower speed of the trains at the station. Based on the measured vibration levels, the vibration impacts within the Study Area for Phase's 1 and 2 of the Project are not expected to exceed the objective level. As such, mitigation measures for vibration are not required.

Table 5.9: Vibration Assessment Results for GO Trains

Train #	Running Average RMS Vibration Velocity (mm/s) – Measured at a Distance of 16.5 m from the Centre of the Track		# of Locomotives	# Cars
	New GO Station (Pass-by)	Rutherford GO Station Rail (Arriving/Departing Station)		
1	0.477	0.226	2	10
2	0.413	0.210	1	10
3	0.427	0.141	1	6
4	0.336	0.220	1	12
5	0.399	0.178	1	6
6	0.474	0.212	1	12
7	0.457	0.238	1	10

5.3.4 Traffic

Based on the findings presented in the TIS Report, the operation of the new GO Station has the potential to result in a number of traffic impacts, which may be experienced by station patrons, neighbouring businesses, residents and parkland users. Recommended mitigation measures to avoid and limit potential impacts are discussed in further detail in the report (Appendix J). A summary of the potential impacts to traffic and associated mitigation measures is provided in the following sections.

Operational Impacts

1. Potential parking issues on Croham Road and Westside Shopping Centre lands, resulting from operations of the new GO Station.

2. Additional pedestrian demands, created by the station, for crossing of Eglinton Avenue West and impact on traffic mobility.

3. Potential to aggravate traffic issues on Croham Road (speeding, wrong-way traffic operation, illegal parking).

4. Potential increase in auto traffic versus more sustainable modes of access, impacting station access and traffic mobility.

Mitigation Plan

General Mitigation

1. Increased signage and parking enforcement in the area of the Caledonia GO Station.

2. Monitoring of pedestrian activity after commencement of GO Rail operations. Completion of signal coordination plan for Eglinton Avenue West.

3. Ongoing monitoring of traffic operations after implementation of the new GO Station.

4. Ongoing monitoring of traffic operations on Eglinton Avenue West and improvements to this road.

1. Future traffic signal coordination studies on Eglinton Avenue West.

2. Increased TDM initiatives.

6.0 Community Benefits and Impacts

6.1 Community Benefits

A variety of provincial, regional and municipal policies are in place to promote public transportation and "transit-supportive" neighbourhoods. These policies recognize that public transportation is a beneficial service that can:

- Improve the quality of life for local citizens by providing them with personal mobility and freedom by offering more transit options to get to work, school, healthcare centres, places of worship, shopping opportunities and others;
- Provide opportunity for increased densification and rejuvenation with potential for increased localized employment and new denser mixed use residential units that appeal to both aging/retiring and young professional demographics;
- Open access to new job opportunities for those who could previously not travel beyond their local neighbourhood;
- Reduce traffic congestion and reduce the need for new and expensive road infrastructure;
- Reduce carbon emissions and air quality concerns associated with automobile use; and
- Allow citizens to save money on gas, vehicles, vehicle maintenance, insurance and other automobile related costs.

As noted in The Big Move (2008), the GTHA is experiencing an aging population. In Ontario, it is expected that the population of those 65 years and older will double in the next 25 years. As people age, the portion of the population without a driver's license will increase, creating greater dependence on public transportation. Therefore, access to a wide-ranging transportation network is important in ensuring there is less loss of independence or mobility in the retirement years.

This also applies to other segments of the population who have limited or no access to automobiles, including children, people with special needs and those who cannot afford the cost of a car.

In addition to the benefit of transit service itself, public transportation hubs can result in a variety of spin-off and indirect benefits. Transit stations can promote economic development and drive community growth.

The Canadian Urban Transit Association (CUTA) (2010) reviewed a number of transit-related economic studies and found that for every dollar spent on transit infrastructure, approximately $1.50 will be generated in local economic activity.

According to the Centre for Transit-Oriented Development (Belzer et. al., 2011), the number of jobs in transit-serviced locations is growing, particularly in highly skilled sectors and knowledge-based industries. There are a variety of factors that affect where a firm may choose to locate. For firms requiring highly skilled labour, access to a pool of talented and highly skilled labour force may be of critical importance. In such instances, locations near a large transit hub can be highly beneficial. Many employers choose to

take advantage of the expanded access to the workforce provided by a transit-friendly location. As noted by Belzer (2011), this includes the transit-dependent and also the increasingly expanding "transit-dependent-by-choice". This population tends to include young workers in knowledge-based sectors who prefer to live in pedestrian-friendly urban areas. They often elect not to drive as a lifestyle choice. Industries wishing to attract this portion of the labour force need to take this into consideration.

The highly skilled labour force is not the only population that benefits from public transit. Transit options can be especially important for lower income workers for whom automobile ownership may be a significant financial hardship. CUTA (2010) cite a study that reviewed the relationship between public transportation and finding meaningful employment in San Francisco and Los Angeles. The findings suggest that having public transit access to jobs made low-skilled workers 30% more likely to have a job and to have a job that is full-time.

Figure 6.1: York Beltline Trail access to Bowie Avenue

Westview from York Beltline Trail

Housing can also be affected by its proximity to public transit. Where residents may choose to live is often based on a number of factors, including home prices and amenities. Ease of access to commonly visited destinations, such as work, can be an important consideration. As such, housing in close proximity to public transit can be highly desirable. It has been well documented that land values increase significantly in the vicinity of public transit infrastructure. A review by the CUTA (2010) looked at 32,600 ha of land in an 800 m radius of all rapid transit stations across Canada. It was found that the 32,600 ha were among the most valuable real estate in Canada, and furthermore, that the lands would not be nearly as valuable without the presence of public transportation.

In general, public transit hubs can attract new business development; create employment opportunities for a highly-skilled labour force, while also providing open access to jobs for low-income workers. Proximity to a transit hub can also help to increase property values. This, in turn, can spur additional revitalization for a neighbourhood, including a variety of new amenities and services. For the communities surrounding it, the new GO Station has the potential to:

- Become an Interchange Station providing a direct link to the GO service, connecting passengers with other major transportation hubs within the rail corridor, including a more efficient way to reach potential employment, urban and shopping centres within the GTA and surrounding areas;
- Allow easy transfer and accessibility to other centres for those who may have physical limitations, such as senior citizens and people with physical challenges;
- Revitalize the neighbourhoods adjacent to this transportation point by linking its residents to new economic and employment opportunities and bringing goods and services to the area along the rail corridor, thereby bringing employment and business to the area;
- Provide "placemaking" for the neighbourhood and draw attention to the area as a place to visit, shop and own a business; and
- Positively affect housing values by creating demand to live near transit with easy transfer points to reach areas of employment that require transit.

Overall, it is anticipated that the new GO Station will benefit the surrounding community.

6.2 Community Impacts and Safety

6.2.1 Quality of Life

Passenger rail has an important role in delivering a transit network across the regions. Although people living near a railway should expect to see and hear a certain amount of activity from rail operations, unlike highways, roads, and air traffic, the railway is a relatively less disruptive activity. Metrolinx is dedicated to being a good neighbour and to operating in such a way as to avoid negative environmental, health, safety, and economic impacts.

Residents with questions or concerns were given the opportunity to engage Metrolinx during the pre-engagement and TPAP. Metrolinx will continue to engage with its neighbours during the Project. The station will be located in close proximity to residential areas. Some of the common concerns voiced by the public and agencies include: air quality, noise and safety concerns associated with rail corridor crossings and security at, and around, the station. These all make up overall quality of life. Specific areas of concern are outlined below.

Figure 6.2: Croham Road (Looking North)

6.2.2 Noise, Vibration and Air Quality

As part of the TPAP, noise, vibration and air quality studies have been completed. Mitigation measures aid in decreasing and/or eliminating the adverse effects of rail operations on the community. Section 5.0 of this EPR outlines the general mitigation options recommended. Specific mitigation measures will be decided at the detailed design phase of the Project.

Noise is a key concern for people living near the Caledonia GO Station. The corridor currently experiences train traffic; however there is concern that trains decelerating and accelerating at the new station will result in significantly louder effects. Although train noise is already much less intrusive than noise from air and road traffic, Metrolinx is committed to reducing noise impacts related to service increases. A noise and vibration impact assessment has been carried out. . The study found that noise levels are not expected to increase and, in fact, the deceleration and acceleration out of the station; will produce lower noise levels compared to present noise impacts from the high speed train pass-bys at the same location.

In addition, Metrolinx will continue to work with stakeholders, including other government departments and the rail industry, to reduce greenhouse gas and air contaminants emissions from rail transportation sources.

6.2.3 Safety Implementation

GO Transit, a division of Metrolinx, is committed to providing safe, reliable, efficient and convenient public transportation services to the region it serves and to operating in such a way that the risk of injury to workers, passengers and the general public is eliminated. GO complies with all relevant safety acts, regulations, guidelines and industry best practices, including the *Railway Safety Act* (RSA), Transport Canada.

GO strives to continually improve safety by:

- Identifying and assessing safety risks;
- Implementing controls and resources to address those risks;
- Ensuring that employees and contractors are committed to the safety policy and the safety of others; and
- Monitoring and auditing the safety policy.

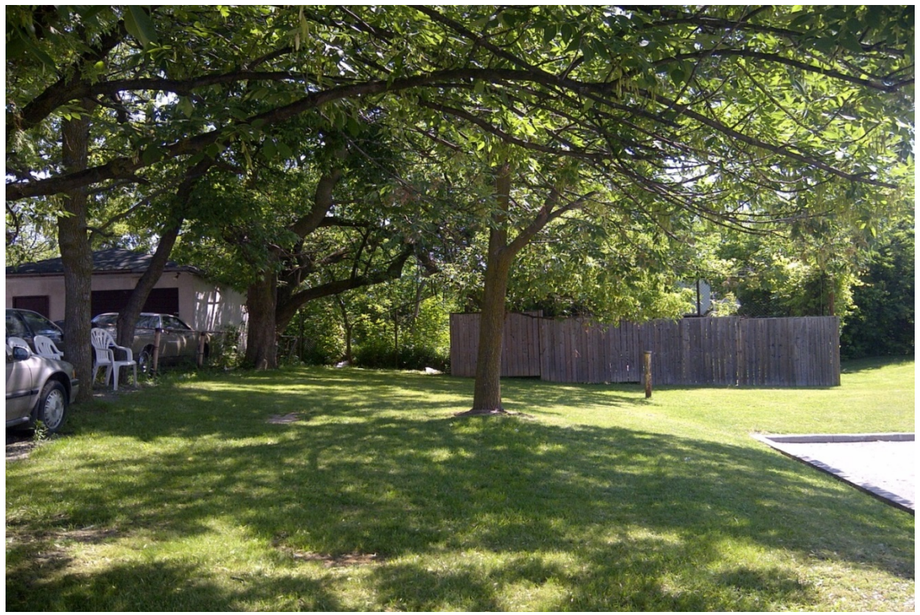
GO is responsible for providing system oversight of safety, security, environmental, business continuity and emergency preparedness programs to ensure a safe and secure environment for GO customers/users, contractors and employees.

If the public observes incidents or unsafe or prohibited activities on the GO system, these should be reported to GO's Transit Safety office for appropriate action. Members of the public can call Transit Safety at the Toll Free number below or speak to a Transit Safety Officer about their concerns.

Toll Free: 1.877.297.0642 - Transit Safety
(24 hours a day, 7 days a week)

To ensure safety for existing communities in the vicinity of the Caledonia GO Station, GO will undertake a detailed Safety Hazard Assessment of the station and its vicinity prior to implementation.

Figure 6.3: Area for Provisional (Future) North Pedestrian Tunnel Access from Carnarvon Street



Eastview from Carnarvon Street

6.3 Regulatory Framework

Requirements for maintaining railway safety and environmental standards at GO fall under both the federal and provincial jurisdiction and include associated legislation, regulations, rules and standards. As a part of the community, GO must also consider municipal by-laws and agreements in its operations and at its facilities. While GO is not currently a federally regulated railway, the requirements of several federal statutes must be met, including the RSA, the *Transportation of Dangerous Goods Act* and Regulations, the *Canadian Transportation Accident Investigation and Safety Board Act*, the Canada Labour Code and the *Canada Transportation Act*. The RSA came into force in 1989 and assigned oversight of railway safety to Transport Canada. Transport Canada's mandate is to protect people, property and the environment by ensuring that the railways operate safely within a national framework.

GO is responsible and accountable for the safe operation and environmental care of their operations. GO is responsible to ensure compliance with provincial regulations, including the *Occupational Health and Safety Act*, *Ontarians with Disabilities Act*, *Environmental Protection Act*, *Environmental Assessment Act* and all associated Regulations. Programs and procedures associated with GO's Safety Management System and Environmental Management System are implemented throughout the organization to identify and meet regulatory requirements, and ensure that care is taken to protect health, safety and the environment.

7.0 Permits and Approvals

There are a number of permits, approvals and agreements that may be required by federal, provincial and conservation authorities', municipal agencies, utilities and transit/rail corporations for all phases of the new GO Station Project in order for implementation to proceed.

From work activities reviewed as part of the Assessment, it is anticipate that the following permits, approvals and agreements are required:

- Compliance to *Migratory Birds Convention Act, 1994* for site clearance;
- Environmental Compliance Approval from the MOECC for noise and air pollutants and for stormwater management works;
- Temporary Environmental Compliance Approval from the MOECC for groundwater an surface water discharge during construction;
- Compliance under the Ontario Water Resources Act (1990) for well abandonment;
- Registration with the MOECC and compliance under the Environmental Protection Act (1990) for hazardous waste activities and off-site disposal;
- Consultation with Ontario Energy Board regulated companies to ensure issues are addressed in accordance with utility crossing agreements (existing Hydro One Network Inc. overhead line on the Barrie rail corridor);
- Connection Applications to Ontario Energy Board regulated companies for hydro and natural gas connection to the new GO Station site and Transmission Connection Agreement for ongoing operations with the providers;
- Municipal Service Application to Toronto Water for the connection of water and sewer service. Subsequent to the connection being installed a Water Turn On request must be submitted to Toronto Water; and
- Other utility service connection applications for telephone and communications.

Metrolinx as a Provincial Agency is not subject to municipal permits and approvals and is exempt from the TRCA's Acts and Regulations. However, Metrolinx's policy is to adhere to the intent of the relevant permits, approvals and requirements to the greatest extent possible, and to submit applications for review and information. In the spirit of cooperation and coordination information will be provided to the TRCA or Municipal authority for their review and comment, however formal permit approval will not be sought:

- Metrolinx will pursue a review under the TRCA Voluntary Project Review as per the service level agreement between Metrolinx and TRCA;
- The Environmental Management Plan will be provided to TRCA for their review and comment on any dewatering activity that may be required and stormwater management plans for the discharge of water and waste water;
- Information relating to building and planning approvals for building structures and facilities will be provided to the City of Toronto for their review and comment;
- The Stormwater Management Plan will be provided to the City of Toronto for their review and comment on the discharge of water and wastewater;

- Information relating to construction within and/ or adjacent to the existing City of Toronto right-of-way or Park land will be submitted to the City of Toronto;
- Information relating to plans for tree protection and removal will be provided to the TRCA and the City of Toronto for their review and comment;
- Information relating to zoning amendments will be provided to the City of Toronto for their review and comment;
- Information relating to development plans for the station infrastructure will be provided to the City of Toronto for their coordination, review and comment; and
- Identify any impacts of the Project that would trigger zoning bylaw amendments or impact land use development.

In addition to the required permits and approvals identified for the new GO Station, the potential effects on utilities within the station site will be investigated as part of the detailed design phase of the Project and mitigation measures identified as appropriate.

Various safety, training and protocols will be established as required, in accordance with the relevant authorities, with respect to the planned integration and connection of existing transit and rail freight services that will continue to operate or are planned to interchange at the new GO Station.

From work activities reviewed as part of the Assessment, it is **not** anticipated the following to be required:

- Canadian Environmental Assessment Agency Project Review;
- Species at Risk Permit from Parks Canada, Department for Fisheries and Oceans or Environment Canada;
- Migratory Bird Permits from Environment Canada;
- Construction Permits from the Ministry of Transportation Ontario;
- Regulatory Exemption Permit application (self-regulated) from the MNRF; and
- Permit from the TRCA for “Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses”.

A number of permits, approvals and agreements that are required for all phases of the new GO Station have been identified in order for the Project to proceed. Metrolinx will continue to monitor conditions associated with the TPAP that may “trigger” requirements for permits or approvals and potential interest in the new GO Station Project. In particular, existing utilities and dewatering requirements will be investigated further during the detailed design phase of the Project.

8.0 Future Commitments

The following list provides a preliminary set of commitments to be undertaken during the detailed design phase of the Project. The potential impacts, mitigation measures and the associated net impacts in these areas have been identified, evaluated and assessed in the earlier sections of this EPR. As part of the normal evolution of a project, the detailed design phase may lead to refinement or modification of the proposed preliminary design as described in this EPR. It is anticipated that any changes to the design will not affect the original intent and commitments; however, these commitments should be reviewed further during the detailed design phase of the Project to ensure completeness.

Natural Environment

- Develop a Landscape Plan to stabilize and revegetate any disturbed areas surrounding buildings and facilities. The Landscape Plan shall include provisions for replacement plantings comprised of high quality non-invasive species.
- Determine if the chimney at 2-4 Croham Road is capped or sealed. If the chimney structure is not sealed or capped, species-specific surveys may need to be completed during the appropriate timing windows[5] (as per Bird Studies Canada survey protocols) and in consultation with the local MNRF District Office SAR Biologist.
- Consult with project arborist to determine if tree numbers 1 and 2 should be removed and establish an appropriate tree removal plan.

Soils, Stormwater and Groundwater

- A detailed stormwater management plan will be prepared.
- An erosion and sediment control plan will be prepared in compliance with TRCA and Toronto Water guidelines and requirements.
- A SMP shall be prepared by a Qualified Professional during the detailed design phase to form part of the Construction Contract for managing soil materials onsite (including excavation, location of stockpiles, reuse, and offsite disposal).
- Develop an emergency response and communications plan to ensure proper mitigation and notification procedures are in place regarding soil quality during Project operation.
- Consult with TRCA regarding stormwater management plans for the Project and coordinate with the planned stormwater works for ECLRT (Caledonia ECLRT Station) and the combined storm/sewer works on Croham Road.
- Further geotechnical investigation will be undertaken including soil and groundwater sampling during the detailed design phase of the Project to determine the extent of any contaminants and for

[5] SwiftWatch Protocol defines the following three monitoring periods to determine the presence of Chimney Swift. If Chimney Swift is observed using a chimney structure during any or all of these periods, the chimney will be considered habitat for a provincially Threatened species.

1. Spring (Migratory) Roosting Period: approximately end of May – June 2;
2. Nesting Period (when adults are feeding young): approximately July 7 - July 23;
3. Fall (Migratory) Roosting Period: approximately 2nd to 3rd week in August to first week of September.

consideration of a waste management strategy for any contaminated waste material identified on the site.
- A groundwater and soil management strategy including emergency response and communication plans will be developed to ensure proper mitigation and notification procedures are in place regarding groundwater quality during Project construction and operation.
- Complete a survey of the Study Area to confirm the presence of domestic water wells. If domestic wells are discovered within the Study Area, add provisions to contract documents to ensure that the contractor provides adequate quality and quantity of water to affected well owners during the construction phase of the Project.
- Investigate potential for localized groundwater impacts and retain services for a detailed hydrogeological study if recommended following geotechnical investigations. Consult TRCA if hydrogeological studies are undertaken.
- Determine dewatering requirements as applicable for the construction works including building/bridge foundations and track lowering and consult with the TRCA on Permits to Take Water for construction work.
- An environmental monitoring plan for mitigating impacts to the natural environment will be prepared if required.
- Coordinate any dewatering requirements with the other Project works that may be ongoing in the Study Area, including Barrie Rail Corridor Expansion Project and ECLRT.

Cultural Heritage

- Perform a resource-specific CHER and/if required a HIA in advance of the detailed design phase of the Project for the Eglinton Avenue West Bridge and the York Beltline Trail.

Socio-Economic

- Discussions and consultation to be held with affected businesses to determine appropriate mitigation to minimize effects.

Air Quality, Noise and Vibration

- Develop a preventative and mitigation protocol for impacts including a complaint response protocol for dust emissions, noise and vibration that may be caused during construction.

Traffic and Safety

- Further review of traffic operations will contribute to recommended intersection treatments for site access.
- Further review of traffic conditions and transit services to determine if any adjustments to the proposed design and recommendations are required.
- Consult with City of Toronto on planned pedestrian and cyclist provision, in particular the provision of a connection to the existing York Beltline Trail to the Study Area.
- Consult with City of Toronto on the amendment to the Croham Road/Eglinton Avenue West intersection and the access to the staff parking and Kiss and Ride.
- Provision will be included in the contract documents for traffic, transit, cyclist and pedestrian management strategies to address potential traffic infiltration, operations and safety concerns.
- Investigate opportunities to ensure sufficient safety measures are in place and explore opportunities for improvement at all pedestrian and cyclist crossing and access points within the Study Area including Kiss and Ride and Staff parking areas.
- Investigate opportunities to ensure sufficient safety measures are in place and explore opportunities for improvement within the station building and platform areas.

Property Acquisition

- Refinement of the design details including structural, stormwater management, natural environment mitigations, traffic operation improvement, topographical and geotechnical investigation to determine the final property impact and acquisition requirements.
- Undertake a review during the early stages of detailed design phase of the Project to identify temporary easements for construction or other purposes, and permanent property acquisition requirements to accommodate the Project work.
- Engage and negotiate with affected owners regarding land acquisition and easements required for the works.
- Acquire the necessary property prior to the construction stage of the Project.

Rail Corridor Improvements and Station Construction

- During the detailed design phase of the Project, Metrolinx will look at opportunities to use low impact construction methodologies, where feasible.
- Topographical and Legal Survey to be obtained and confirmed.
- Detailed structural investigation for any culverts/ structures identified to confirm condition, integrity and any potential modifications that may be required to accommodate the Project works, notably the Eglinton Avenue West Bridge.
- Topographical survey to confirm existing clearance for any structures, notably the Eglinton Avenue West Bridge, if this is not completed in advance of this Project by the Barrie Rail Corridor Expansion Project work.
- Detailed Geotechnical Investigation to be completed.
- Pre-condition and post-condition surveys of building, structures and railway protection and monitoring will be undertaken.
- Designated Substances Survey for any buildings or structures that require demolition will be undertaken and this provision will be included in the Contract documents.
- Procedures will be developed for disposal of excavated materials, including contaminated soils, in accordance with the MOECC requirements.
- Confirm final type, location and height of retaining walls.
- Review road works and improvements proposed for the site access.
- Evaluate and assess construction methods and staging to minimize the impact to the surrounding properties and develop mitigation plans in consultation with technical agencies, emergency service providers and the public.

- Consult and coordinate work with other Metrolinx projects including:
  - Barrie Rail Corridor Expansion;
  - ECLRT; and
  - Other future transit initiatives that are identified by Metrolinx.
- Make recommendations on stray current protection and monitoring for pipelines and other utilities for the potential future electrification of the Barrie rail corridor.
- Review and confirm all future design considerations noted in Section 3.6.
- Refer to the Castlefield-Caledonia Design and Décor District Urban Design Guidelines for additional design considerations.

Utilities/Agency/Municipalities Consultation

- Locates to be completed for the site and utility companies contacted for services that exist to confirm plant locations and discuss relocation and cost sharing strategies as appropriate. Impacts and mitigation requirements will be considered in relation to alternative relocation options.
- Coordinate with all relevant utilities any relocation that is required prior to construction, notably Hydro One Networks Inc. It is expected that utility relocations can be accommodated within the proposed ROW however this will be confirmed with the utility companies during the detailed design of the Project.
- Consultation with ECLRT Project to coordinate tunneling and advanced utility relocations that are planned within the Project Area.
- Continued consultation with the public, property owners, business owners, emergency service providers, local councilors and other stake holders during the Project design.

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Appendix A

Drawings

Appendix B

Natural Heritage Assessment Report

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Appendix C

Tree Inventory Plan

Appendix D

Stage 1 Archaeological Assessment Report

Appendix E1

Cultural Heritage Screening Report

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Appendix E2

Cultural Heritage Evaluation Report (CHER) and CHER Recommendations Report for Eglinton Avenue West Bridge

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Appendix E3

Cultural Heritage Evaluation Report (CHER) and CHER Recommendations Report for York Beltline Trail

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Appendix F

Heritage Impact Assessment for York Beltline Trail

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Appendix G

Socio-Economic and Land Use Characteristics Report

Appendix H

Air Quality Impact Assessment Report

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Appendix I

Noise and Vibration Impact Assessment Report

Appendix J

Traffic Impact Study Report

Appendix K

Stakeholder Consultation Report

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Appendix L

Impact Assessment, Mitigation and Monitoring Report

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Appendix M

Permit and Approval Requirements Report

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Appendix N

Preliminary Cost Estimate

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Appendix O

Caledonia GO Station Reference Concept Design Report (September 27, 2013)