



Environmental Project Report List of Volumes

New **SmartTrack** Stations

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- Glossary of Terms and Acronyms
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- Introduction

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- Appendix B - Natural Environment Report
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New **SmartTrack** Stations




Environmental Project Report

Volume X - Commitments to Future Studies, Permits and Approvals

July 2018 Revision 0



New SmartTrack Stations – Environmental Project Report: Volume X - Commitments to Future Studies, Permits and Approvals

Issue and Revision Record					
Rev	Date	Originator	Checker	Approver	Description
0	July 2018	Scott Borden Wendy Ng	David Hopper James Jarrett	Karl van Kessel	Final
	Signatures:				

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1. Introduction

This Volume of the Environmental Project Report (EPR) presents the commitments to future studies, permits and approvals associated with each of the proposed SmartTrack Stations. The commitments presented in this Volume are also presented in Section 5 of each of Volumes 2 through 7. As the Transit Project evolves, it may be necessary to refine or develop new commitments based on future design refinements and the clarification of specific construction methods and techniques. As applicable, the appropriate regulatory agencies and other stakeholders will be consulted on refined or new commitments.

2. Permits and Approvals

2.1 Federal

2.1.1 *Canadian Environmental Assessment Act, 2012*

Under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012), the Regulations Designating Physical Activities identify the types of projects that may require a Federal EA. The Transit Project does not constitute a designated project under CEAA 2012.

2.1.2 *Species at Risk Act*

The federal *Species at Risk Act, 2002* (SARA 2002) provides a framework to ensure the survival of wildlife species and the protection of natural heritage in Canada. Under SARA, the federal government has responsibility for wildlife on federal lands. On private lands, SARA protection applies to: aquatic species listed as endangered, threatened or extirpated in Schedule 1 of SARA; migratory birds protected under the *Migratory Birds Convention Act* (MBCA); and species in certain cases where provincial/territorial measures do not adequately protect a species.

No federal lands, aquatic SAR or migratory birds protected under the MBCA are anticipated to be impacted by the Project, and as such no permits are required under SARA.

2.1.3 *Fisheries Act*

As there are no anticipated effects to water bodies within any of the Project study areas, Federal *Fisheries Act* Authorization is not required.

2.2 Provincial

2.2.1 *Conservation Authorities Act*

The East Harbour study area and small portions of the Lawrence-Kennedy and Finch-Kennedy study areas are regulated by the Toronto and Region Conservation Authority (TRCA) under *Ontario Regulation 166/06 - Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*. To ensure that development has regard for natural hazard features and the natural environment, while conforming to watershed development policies, the TRCA is authorized under Section 28 of the *Conservation Authorities Act* to implement and enforce their own regulation. Under the regulation, no person shall undertake development or permit another person to undertake development in, or on, the areas within the jurisdiction of a Conservation Authority.

Metrolinx, as a Provincial Crown agency, is not generally subject to the *Conservation Authorities Act*, regardless, Metrolinx endeavours to minimize impacts to natural features protected by the TRCA. Metrolinx will follow the *Voluntary Review Process per the Proponents and Projects Exempt from the TRCA Regulatory Approval Process* and request that the TRCA reviews and comments on detailed design activities associated with Project construction, maintenance or emergency activities. Once TRCA concerns are satisfied, a Voluntary Project Review Letter is provided by TRCA staff.

2.2.1.1 *East Harbour SmartTrack Station*

For the East Harbour SmartTrack Station, Metrolinx will undertake detailed design and associated hydraulic modelling studies as necessary to meet the requirements of the Lower Don Special Policy Area. The station will be designed, implemented and operated in a manner that meets the flood protection requirements of the Living City Policies. This will include flood proofing to meet applicable guidelines, developing warning and emergency measures, and demonstrating (through modelling) that the development of the station will not result in an increase in flood hazard risk upstream and downstream of the site. This work will be reviewed as part of the Voluntary Project Review process.

For any works within existing flood hazard areas, Metrolinx will demonstrate through a cut and fill balance analysis that there will be no increases in flood depths and no adverse upstream or downstream hydraulic or fluvial impacts.

Metrolinx will design the station amenities (pedestrian connections) within the existing railway berm such that they do not serve as a hydraulic connection between the areas north and south of the station; and Metrolinx will undertake the necessary studies to demonstrate that the proposed station will not negatively impact the proposed TRCA flood protection features on the south and north sides of the station berm.

Metrolinx will demonstrate through the necessary studies that the proposed new bridges will not create new flooding hazards to adjacent or other properties and that there will be no negative upstream and downstream hydraulic impacts, and potential risks to public safety will be addressed by Metrolinx during design of the new accesses.

2.2.2 *Endangered Species Act, 2007*

The *Endangered Species Act, 2007* (ESA) provides specific protection to Endangered and Threatened species and their habitat. Observations of Threatened or Endangered SAR were confirmed in study areas of the following stations:

- Finch-Kennedy SmartTrack Station: Barn Swallow;
- Lawrence-Kennedy SmartTrack Station: Barn Swallow; and
- East Harbour SmartTrack Station: Barn Swallow, Chimney Swift, and Butternut.

A notice of activity registration under the ESA is not anticipated to be required for Barn Swallow at Finch-Kennedy or Lawrence-Kennedy SmartTrack Stations, as no effects to its protected habitat (e.g., breeding habitat) are anticipated. Although not observed, Barn Swallow may nest on the railway bridge that is anticipated to be altered to accommodate St. Clair-Old Weston SmartTrack Station. Prior to construction, the area (i.e., bridge deck) should be inspected for Barn Swallow nests to ensure none exist. If nests are discovered, the activity must be registered with the MNRF as part of ESA O. Reg. 242/08 prior to commencement of

work. Installation of compensation habitat will likely be required, such as a nesting “kiosk”. Barn Swallows reuse nests from year to year, and their nests are protected year-round under the ESA.

Barn Swallows were confirmed present in the East Harbour study area and behaviour suggested nesting in the area, particularly beneath the rail bridge over the Don River. Work on the bridge is not anticipated based on the IPD; however, if work on the bridge is required, the bridge should be inspected for Barn Swallow nests. In the event nests are discovered, the Project must register the activity with the MNRF as part of ESA O. Reg. 242/08 prior to commencement of work.

Construction of a bridge adjacent to the existing bridge over the Don River has the potential to disturb Barn Swallow nests depending on the time of construction. In the event Barn Swallow nests occur on the Don River Bridge and a new bridge is proposed to be built adjacent to the Don River bridge during the nesting season, MNRF should be further consulted on whether the activity should be registered as part of the ESA O. Reg. 242/08 with the MNRF. Otherwise it is recommended for the new bridge to either be built outside of the nesting season for Barn Swallow (April 1 to August 31), or pre-netted prior to May 1 to dissuade Barn Swallows from nesting on the structure.

Chimney Swift may be encountered incidentally within the King-Liberty, St. Clair-Old Weston and East Harbour study areas and/or they may nest in the areas between the finalization of this report and commencement of construction. Targeted roost surveys for Chimney Swift should be completed in appropriate chimneys if buildings (with chimneys) are proposed for removal within these study areas. Repair, maintenance, or demolition of Chimney Swift roost/nesting structure may constitute destruction of critical habitat and, if these activities are foreseen, the activity will be registered with the MNRF as part of O. Reg. 242/08 under the ESA.

Naturally-occurring Butternut trees of any size and age are protected under the ESA and affecting or removing Butternut is prohibited without an authorization from the MNRF. One Butternut tree was identified within the East Harbour project footprint and may be affected or removed as a result of the work. Work occurring within 25 m of a Butternut is prohibited without an authorization from the MNRF. Each Butternut tree that will be removed or impacted must be assessed by a qualified Butternut Health Assessor prior to impacting or removing the tree(s). The Butternut Health Assessment should be undertaken in accordance with MNRF guidelines and results submitted to MNRF for review. The results of the Butternut Health Assessment will determine the next course of action, which may include no further requirement, submission of a Notice of Activity, or compensation and monitoring.

2.2.3 Environmental Protection Act

Dewatering during construction may be required to facilitate creation of an isolated dry work area and may require registration on the Environmental Activity and Sector Registry (EASR) system (if dewatering is over 50,000 L/day but under 400,000 L/day) or a Permit to Take Water (if dewatering exceeds 400,000 L/day).

To improve general air quality around the station during maintenance and operation, Ministry of the Environment and Climate Change (MOECC) EASR recommendations for exempt

equipment (O. Reg. 524/98) that has minimal air quality impacts, as well as application to the EASR for equipment that qualifies (O. Reg. 1/17 and O. Reg.419/05) will be adhered to.

2.2.4 Ontario Water Resources Act

A Permit to Take Water may be required if dewatering during construction exceeds 400,000 L/day.

Approvals for discharge of pumped water will be required, which could include one or a combination of MOECC Environmental Compliance Approval (ECA) (*Ontario Water Resources Act* (OWRA), Section 53), Municipal Discharge Permits, and/or Conservation Authority Approval (through the Voluntary Project Review process). The need for these permits will be determined during detailed design.

2.3 Municipal

Metrolinx, as a Provincial Crown Agency, is not generally subject to municipal permitting and approval requirements; regardless, Metrolinx works in co-operation with local municipalities to adhere to the intent of the relevant permit/approval requirements to the extent possible. Metrolinx is in the process of establishing a Vegetation Compensation Protocol for RER projects; vegetation that is removed for the Project will be compensated for in accordance with the provisions of this protocol.

Removal and/or damage of woody vegetation located in adjacent lands, beyond the rail corridors, may require municipal tree removal permits. To support the permit applications, an Arborist Report will be completed during detailed design to supplement the Tree Inventory Plan. Metrolinx will work in co-operation with the City of Toronto in the spirit of meeting by-law requirements, specifically the Private Tree By-law and Trees on City Streets By-law.

Municipal Discharge Permits may also be required for the discharge of pumped water associated with construction dewatering activities.

Construction should adhere to the City of Toronto noise by-laws (Noise Control By-Law, Municipal Code Chapter 591, By-law 1400-2007), to the extent possible. It is recommended that the vibration limits in the City of Toronto bylaw not be exceeded. This may entail monitoring of vibration levels during construction. Anticipated vibration levels will be confirmed during detailed design.

3. Commitments to Future Work

This section documents station-specific commitments to future work.

3.1 Finch-Kennedy SmartTrack Station

Table 3-1 presents the commitments to future work for Finch-Kennedy SmartTrack Station.

Table 3-1: Commitments to Future Work for Finch-Kennedy SmartTrack Station

Discipline	Commitments
Detailed Design	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume II of this EPR related to detailed design will be implemented.
Natural Environment	<ul style="list-style-type: none"> Metrolinx, as a Provincial Crown agency, is not generally subject to the <i>Conservation Authorities Act</i>; regardless, Metrolinx endeavours to minimize impacts to natural features protected by the TRCA. Metrolinx will follow the Voluntary Project Review Process per the Proponents and Projects Exempt from the TRCA Regulatory Approval Process and request that the TRCA reviews and comments on detailed design activities associated with Project construction, maintenance or emergency activities. Once TRCA concerns are satisfied, a Voluntary Project Review Letter is provided by TRCA staff. The ESA provides specific protection to Endangered and Threatened species and their habitat. Only one Threatened or Endangered SAR was confirmed in the study area: Barn Swallow. A notice of activity registration under the ESA is not anticipated to be required for this species as no effects to its protected habitat (e.g., breeding habitat) are anticipated. Metrolinx, as a Provincial Crown Agency, is not generally subject to municipal permitting and approval requirements; regardless, Metrolinx works in co-operation with local municipalities to adhere to the intent of the relevant permit/approval requirements to the extent possible. Metrolinx is in the process of establishing a Vegetation Compensation Protocol for RER projects and vegetation that is removed for the Project will be compensated for in accordance with the provisions of this protocol. Opportunities for natural heritage enhancement will be explored through the Vegetation Compensation Protocol in consultation with TRCA. Engagement with the TRCA on natural heritage enhancement opportunities will continue through detailed design. Efforts will be made to coordinate with Toronto Hydro, Toronto Water and other utility companies that may be affected by utility relocations to help minimize the overall impacts of the Project on the natural heritage system. Infrastructure and utility works will either be completed by Metrolinx as part of this Project, or by utility companies. Metrolinx and its Contractors will follow TRCA regulatory requirements. A Soil Management Plan will be developed by a Qualified Professional as defined in O. Reg. 153/04 for managing soil materials on site (includes excavation, location of stockpiles, reuse and off-site disposal). During detailed design and prior to construction, a Stormwater Management Report will be completed to determine potential effects and mitigation measures. The report will be completed in consultation with the TRCA and the MOECC. Stormwater management design will consider guidance provided by the MOECC Stormwater Management Planning and Design Manual (2003) and MTO (Ministry of Transportation) Drainage Management Manual (2008), as well as the TRCA Stormwater Management Criteria (2012) and Low Impact Development Stormwater Management Planning and Design Guide (2010). The approach to stormwater management will aim to prevent temperature spikes in watercourses. Measures to mitigate a potential loss of green space and reduce storm runoff will be identified in detailed design. Suitable human-made structures within the study area should be inspected for evidence of active bird nests during the breeding bird season prior to the onset of construction activities in order to determine appropriate nesting preventative measures (e.g., netting). Cultural woodland and cultural thicket communities will be examined closely for the presence of Butternut within 25 m of the Project. A Flood Contingency Plan will be developed during detailed design and prior to construction. Required natural environment surveys will be completed in the northeast corner of the Finch-Kennedy Project footprint once access permissions are obtained. The TRCA will be engaged regarding outcomes of the field work and identification of any wetland pockets.

Discipline	Commitments
Geology and Groundwater	<ul style="list-style-type: none"> • Soil and bedrock conditions, as well as bedrock elevations, will be confirmed through future geotechnical investigations to be undertaken in support of detailed design. • The TRCA's Geotechnical Engineering Design and Submission Plan Guidelines will be referenced during the detailed design phase. • Hydrogeological and geo-environmental studies will be carried out, which may identify recommendations for groundwater mitigation measures and monitoring. Hydrogeological and geo-environmental studies will be provided to TRCA for review. • Ongoing engagement will occur with the CTC (Credit Valley, Toronto and Region, and Central Lake Ontario) source protection authority during detailed design.
Trees	<ul style="list-style-type: none"> • Removal and/or damage of woody vegetation located in adjacent lands, beyond the Stouffville rail corridor, may require municipal tree removal permits. To support the permit applications, an Arborist Report will be completed during detailed design to supplement the Tree Inventory Plan. Metrolinx will work in co operation with the City of Toronto in the spirit of meeting by-law requirements, specifically the Private Tree By-law and Trees on City Streets By-law. • An update of the tree removal count of the Project will be completed. This should be based upon a more detailed level of design, with available access permissions and more detailed survey information, to the extent possible. • An update of the tree inventory will be completed to account for detailed grading, work zones and proposed clearing, to illustrate Tree Protection Zone (TPZ) and their protection measures (types and locations), and tree removal zones, in accordance with the completion of an Arborist Report. The Arborist Report will be completed during detailed design and will contain at a minimum the following information in addition to details of tree location, size, species, conditions and category: <ol style="list-style-type: none"> 1. Recommendations for tree/vegetation protection and preservation measures for all trees/vegetation that are to be retained; 2. Details of tree pruning; 3. Details of all trees/vegetation recommended for removal, including removal measures; 4. Mitigation and monitoring measures to ensure success of preservation and removal measures; 5. Should vegetation compensation be required, it will be in accordance with the Metrolinx Vegetation Compensation Protocol; and 6. Mapping. • Assessment of trees will be completed within or adjacent to the work zones, as defined by the detailed design, as part of the completion of an Arborist Report to determine if trees will be impacted. • Preparation of detailed tree removal, restoration, and compensation plans in coordination with a Certified Arborist and/or Landscape Architect (licensed to practice in the Province of Ontario) to assist with species selection, planting locations and measures to promote establishment success.
Archaeology	<ul style="list-style-type: none"> • Archaeological recommendations are based on a Stage 1 AA undertaken for this Project. Archaeological recommendations have been made based on the background historic research, locations of known or registered archaeological sites, previous AAs, and indicators of archaeological potential as outlined in the 2011 S&G. The recommendations for detailed design include: <ul style="list-style-type: none"> • Areas determined to be undisturbed will be subjected to a Stage 2 AA test pit survey at 5-meter intervals, in accordance with Section 2.1.2 of the 2011 S&G prior to construction activities to ensure no cultural heritage resources will be impacted; • Areas determined to be disturbed do not require further assessment; • Should deeply buried archaeological materials be encountered during construction, all work will cease and a professionally licenced archaeologist will be consulted to assess the cultural heritage value and significance of the archaeological deposits; and • If final limits of the Project are altered and fall outside the current study area, an additional Stage 1 AA is required to assess the new footprint. • Figure 3-3, in Section 3.4.2 of this EPR Volume, indicates areas of archaeological potential requiring Stage 2 AA. Metrolinx will:

Discipline	Commitments
	<ul style="list-style-type: none"> • Complete all required AA (Stage 2 and Stage 3 if recommended by the Stage 2AA) as early as possible, prior to the completion of detail design, and well in advance of any ground disturbance; • Undertake future work in a manner that protects archaeological sites by conserving them in their original location or through archaeological fieldwork, and endeavour to conserve significant archaeological resources in their original location through documentation, protection, and avoidance of impacts. Where activities could disturb significant archaeological resources or areas of archaeological potential, Metrolinx will take appropriate measures to mitigate impacts; and • Include provisions in contract as recommended by archaeological assessment(s) (e.g. in case archaeological resources are discovered, protection of sites). All future Stage 2 AA findings will be shared with all First Nations communities that were engaged during the Stage 1 AA process.
Socio-Economic and Land Use Characteristics	<ul style="list-style-type: none"> • Confirm effects on utilities. Additional subsurface utility engineering (SUE) investigations may be conducted, as required, to confirm existing utilities. A review of existing and proposed future utilities plans, in addition to on-going consultation with utility companies and the City of Toronto, will be conducted during the detailed design stage. • Any relocations, service interruptions, or utility protection projects will be identified as early as possible to allow for project coordination and construction management plans to be created with consideration of utility needs. • Specific property requirements will be determined during detailed design. Ongoing consultation with affected property owners will help identify appropriate site-specific mitigation measures. Where access to property is required, ongoing consultation with affected landowners will help identify appropriate site-specific mitigation measures. • A lighting plan will be developed where the quality of light produced, and type of light sources used on the exterior of buildings, signs, pedestrian walkways, and other areas of the site, are compatible with, and appropriate to the overall design and use of the site.
Air Quality	<ul style="list-style-type: none"> • To improve air quality around the station during maintenance and operation, MOECC EASR recommendations for exempt equipment (O. Reg. 524/98) that has minimal air quality impacts, as well as application to the EASR for equipment that qualifies (O. Reg. 1/17 and O. Reg. 419/05) will be adhered to during detailed design.
Noise and Vibration	<ul style="list-style-type: none"> • A more detailed noise assessment of construction will be completed when the specifics of construction equipment are finalized, prior to construction start. This assessment should consider minimizing construction-related noise levels, while balancing construction schedules and expediting construction activity. • A more detailed vibration assessment of construction will be completed when the specifics of construction equipment are finalized, prior to construction start. This assessment should consider minimizing construction-related vibration levels, while balancing construction schedules and expediting construction activity. • A vibration monitoring plan will be completed during detailed design. • During detailed design, the predicted Zone of Influence (ZOI) will be updated to confirm which structures fall within it. If a structure falls within the updated ZOI, the following is recommended: <ul style="list-style-type: none"> • Pre-construction consultations with owners/occupants; • Pre-construction measurements of background vibration levels; and • Pre-construction survey by means of a photographic record of potentially affected structure façades and all surfaces, including visible sections of building foundations, building cladding, doors, windows, interior wall finishes, surface pavement, sidewalks, signs and trees. Each of the elements should be rated on their general condition (new, good, fair, poor, severe), and visible defects should be photographed.

Discipline	Commitments
Traffic and Transportation	<ul style="list-style-type: none"> City of Toronto staff should be requested to include, in their 2-year review of the Ten-Year Cycling Network Plan scheduled in 2018, a review of the cycling infrastructure and routes in the vicinity of the Project in order to identify possible improvements to the cycling network (both on-street and on trails) to enhance convenience and safety for cyclists accessing this station.
Construction¹	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume II of this EPR related to the construction phase will be implemented. An Environmental Mitigation and Monitoring Plan (EMMP) will be developed prior to construction to outline the responsibilities for carrying out monitoring and reporting activities, including timing and frequency of monitoring activities, as well as the compliance process. The EMMP will include all mitigation measures, categorized by Project phase, and will identify the party responsible for implementation.
Natural Environment	<ul style="list-style-type: none"> Develop an ESC Plan prior to construction for implementation throughout construction. The ESC Plan will include consideration of the Greater Golden Horseshoe Area Conservation Authorities' Erosion and Sediment Control Guideline for Urban Construction and OPSS 805 (Erosion and Sediment Control Measures) (Ministry of Transportation, 2015) This plan will encompass all areas of soils disturbance, particularly in the vicinity of the Markham Branch of Highland Creek.
Geology and Groundwater	<ul style="list-style-type: none"> Dewatering during construction may be required to facilitate creation of an isolated dry work area and may require registration on the EASR system (if dewatering is over 50,000 L/day but under 400,000 L/day). A Permit to Take Water may be required if dewatering during construction exceeds 400,000 L/day. Approvals for discharge of pumped water will be required, which could include one or a combination of MOECC Environmental Compliance Approval (ECA) (under the <i>Ontario Water Resources Act</i> (OWRA), Section 53), Municipal Discharge Permits, and/or Conservation Authority Approval (through the Voluntary Project Review process). The need for these permits will be determined during detailed design. Municipal Discharge Permits may also be required for the discharge of pumped water associated with construction dewatering activities.
Archaeology	<ul style="list-style-type: none"> If human remains are encountered during project work, all activities must cease immediately and the local police as well as the Cemeteries Regulation Unit of the Ministry of Government and Consumer Services must be contacted. In situations where human remains are associated with archaeological resources, the Ministry of Tourism, Culture and Sport (MTCS) should also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act (OHA).
Socio-Economic and Land Use Characteristics	<ul style="list-style-type: none"> Site-Specific Construction Traffic Control and Management Plans will be prepared and implemented prior to Project construction to maintain reasonable access through work zones, to the extent possible.
Air Quality	<ul style="list-style-type: none"> An Air Quality Management Plan will be developed for implementation during construction to address construction equipment and vehicle exhaust, fugitive dust and odour.
Noise and Vibration	<ul style="list-style-type: none"> Construction should adhere to the City of Toronto noise by-laws (Noise Control By-Law, Municipal Code Chapter 591, By-law 1400-2007), to the extent possible. It is recommended that the vibration limits in the City of Toronto bylaw not be exceeded. This may entail monitoring of vibration levels during construction. Anticipated vibration levels will be confirmed during detailed design. A Noise and Vibration Control Plan will be developed prior to construction. The plan will include a complaint response protocol and will indicate that surrounding property owners and tenants will be informed of anticipated upcoming construction works, including any work at night.
Operations	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume II of this EPR related to operations will be implemented.

¹ Construction phase commitments include pre-construction commitments, completed following detailed design but prior to ground disturbance.

3.2 Lawrence-Kennedy SmartTrack Station

Table 3-2 presents the commitments to future work for Lawrence-Kennedy SmartTrack Station.

Table 3-2: Commitments to Future Work for Lawrence-Kennedy SmartTrack Station

Discipline	Commitments
Detailed Design	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume III of this EPR related to detailed design will be implemented.
Natural Environment	<ul style="list-style-type: none"> Metrolinx, as a Provincial Crown agency, is not generally subject to the <i>Conservation Authorities Act</i>, regardless, Metrolinx endeavours to minimize impacts to natural features protected by the TRCA. Metrolinx will follow the Voluntary Project Review Process per the Proponents and Projects Exempt from the TRCA Regulatory Approval Process and request that the TRCA reviews and comments on detailed design activities associated with Project construction, maintenance or emergency activities. Once TRCA concerns are satisfied, a Voluntary Project Review Letter is provided by TRCA staff. The ESA provides specific protection to Endangered and Threatened species and their habitat. Only one Threatened or Endangered SAR was confirmed in the study area: Barn Swallow. A notice of activity registration under the ESA is not anticipated to be required for this species as no effects to its protected habitat (e.g., breeding habitat) are anticipated. Metrolinx, as a Provincial Crown Agency, is not generally subject to municipal permitting and approval requirements; regardless, Metrolinx works in co-operation with local municipalities to adhere to the intent of the relevant permit/approval requirements to the extent possible. Metrolinx is in the process of establishing a Vegetation Compensation Protocol for RER projects and vegetation that is removed for the Project will be compensated for in accordance with the provisions of this protocol. Opportunities for natural heritage enhancement will be explored through the Vegetation Compensation Protocol in consultation with TRCA. Engagement with the TRCA on natural heritage enhancement opportunities will continue through detailed design. Efforts will be made to coordinate with Toronto Hydro, Toronto Water and other utility companies that may be affected by utility relocations to help minimize the overall impacts of the Project on the natural heritage system. Infrastructure and utility works will either be completed by Metrolinx as part of this Project, or by utility companies. Metrolinx and its Contractors will follow TRCA regulatory requirements. A Soil Management Plan will be developed by a Qualified Professional as defined in O. Reg. 153/04 for managing soil materials on site (includes excavation, location of stockpiles, reuse and off-site disposal). During detailed design and prior to construction, a Stormwater Management Report will be completed to determine potential effects and mitigation measures. The report will be completed in consultation with the TRCA and the MOECC. Stormwater management design will consider guidance provided by the MOECC Stormwater Management Planning and Design Manual (2003) and MTO Drainage Management Manual (2008), as well as the TRCA Stormwater Management Criteria (2012) and Low Impact Development Stormwater Management Planning and Design Guide (2010). The approach to stormwater management will aim to prevent temperature spikes in watercourses. Measures to mitigate a potential loss of green space and reduce storm runoff will be identified in detailed design. Suitable human-made structures within the study area should be inspected for evidence of active bird nests during the breeding bird season prior to the onset of construction activities in order to determine appropriate nesting preventative measures (e.g., netting). A Flood Contingency Plan will be developed during detailed design and prior to construction.

Discipline	Commitments
Geology and Groundwater	<ul style="list-style-type: none"> • Soil and bedrock conditions, as well as bedrock elevations, will be confirmed through future geotechnical investigations to be undertaken in support of detailed design. • The TRCA's Geotechnical Engineering Design and Submission Plan Guidelines will be referenced during the detailed design phase. • Hydrogeological and geo-environmental studies will be carried out, which may identify recommendations for groundwater mitigation measures and monitoring. Hydrogeological and geo-environmental studies will be provided to TRCA for review. • Ongoing engagement will occur with the CTC source protection authority during detailed design.
Trees	<ul style="list-style-type: none"> • Removal and/or damage of woody vegetation located in adjacent lands, beyond the Stouffville rail corridor, may require municipal tree removal permits. To support the permit applications, an Arborist Report will be completed during detailed design to supplement the Tree Inventory Plan. Metrolinx will work in co operation with the City of Toronto in the spirit of meeting by-law requirements, specifically the Private Tree By-law and Trees on City Streets By-law. • An update of the tree removal count of the Project will be completed. This should be based upon a more detailed level of design, with available access permissions and more detailed survey information, to the extent possible. • An update of the tree inventory will be completed to account for detailed grading, work zones and proposed clearing, to illustrate TPZ and their protection measures (types and locations), and tree removal zones, in accordance with the completion of an Arborist Report. The Arborist Report will be completed during detailed design and will contain at a minimum the following information in addition to details of tree location, size, species, conditions and category: <ol style="list-style-type: none"> 1. Recommendations for tree/vegetation protection and preservation measures for all trees/vegetation that are to be retained; 2. Details of tree pruning; 3. Details of all trees/vegetation recommended for removal, including removal measures; 4. Mitigation and monitoring measures to ensure success of preservation and removal measures; 5. Should vegetation compensation be required, it will be in accordance with the Metrolinx Vegetation Compensation Protocol; and 6. Mapping. • Assessment of trees will be completed within or adjacent to the work zones, as defined by the detailed design, as part of the completion of an Arborist Report to determine if trees will be impacted. • Preparation of detailed tree removal, restoration, and compensation plans in coordination with a Certified Arborist and/or Landscape Architect (licensed to practice in the Province of Ontario) to assist with species selection, planting locations and measures to promote establishment success.
Archaeology	<ul style="list-style-type: none"> • Archaeological recommendations are based on a Stage 1 AA undertaken for this Project. Archaeological recommendations have been made based on the background historic research, locations of known or registered archaeological sites, previous AAs, and indicators of archaeological potential as outlined in the 2011 S&G. The recommendations for detailed design include: <ul style="list-style-type: none"> • Areas determined to be undisturbed will be subjected to a Stage 2 AA Test Pit Survey at 5-metre intervals, in accordance with Section 2.1.2 of the 2011 S&G, prior to construction activities to ensure no cultural heritage resources will be impacted; • Areas determined to be disturbed do not require further assessment; and • If final limits of the Project are altered and fall outside the current study area, an additional Stage 1 AA is required to assess the new footprint. • Figure 3-3, in Section 3.4.2 - Volume III of this EPR, indicates areas of archaeological potential requiring Stage 2 AA. Metrolinx will: <ul style="list-style-type: none"> • Complete all required AA (Stage 2 and Stage 3 if recommended by the Stage

Discipline	Commitments
	<p>2AA) as early as possible, prior to the completion of detail design, and well in advance of any ground disturbance;</p> <ul style="list-style-type: none"> • Undertake future work in a manner that protects archaeological sites by conserving them in their original location or through archaeological fieldwork, and endeavour to conserve significant archaeological resources in their original location through documentation, protection, and avoidance of impacts. Where activities could disturb significant archaeological resources or areas of archaeological potential, Metrolinx will take appropriate measures to mitigate impacts; • Include provisions in contract as recommended by archaeological assessment(s) (e.g. in case archaeological resources are discovered, protection of sites); and • All future Stage 2 AA findings will be shared with all First Nations communities that were engaged during the Stage 1 AA process.
Socio-Economic and Land Use Characteristics	<ul style="list-style-type: none"> • Confirm effects on utilities. Additional subsurface utility engineering (SUE) investigations may be conducted, as required, to confirm existing utilities. A review of existing and proposed future utilities plans, in addition to on-going consultation with utility companies and the City of Toronto, will be conducted during the detailed design stage. • Any relocations, service interruptions, or utility protection projects will be identified as early as possible to allow for project coordination and construction management plans to be created with consideration of utility needs. • Specific property requirements will be determined during detailed design. Ongoing consultation with affected property owners will help identify appropriate site-specific mitigation measures. Where access to property is required, ongoing consultation with affected landowners will help identify appropriate site-specific mitigation measures. • A lighting plan will be developed where the quality of light produced, and type of light sources used on the exterior of buildings, signs, pedestrian walkways, and other areas of the site, are compatible with, and appropriate to, the overall design and use of the site.
Air Quality	<ul style="list-style-type: none"> • To improve air quality around the station during maintenance and operation, MOECC EASR recommendations for exempt equipment (O. Reg. 524/98) that has minimal air quality impacts, as well as application to the EASR for equipment that qualifies (O. Reg. 1/17 and O. Reg. 419/05) will be adhered to during detailed design.
Noise and Vibration	<ul style="list-style-type: none"> • A more detailed noise assessment of construction will be completed when the specifics of construction equipment are finalized, prior to construction start. This assessment should consider minimizing construction-related noise levels, while balancing construction schedules and expediting construction activity. • A more detailed vibration assessment of construction will be completed when the specifics of construction equipment are finalized, prior to construction start. This assessment should consider minimizing construction-related vibration levels, while balancing construction schedules and expediting construction activity. • A vibration monitoring plan will be completed during detailed design. • During detailed design, the predicted ZOI will be updated to confirm which structures fall within it. If a structure falls within the updated ZOI, the following is recommended: <ul style="list-style-type: none"> • Pre-construction consultations with owners/occupants; • Pre-construction measurements of background vibration levels; and • Pre-construction survey by means of a photographic record of potentially affected structure façades and all surfaces, including visible sections of building foundations, building cladding, doors, windows, interior wall finishes, surface pavement, sidewalks, signs and trees. Each of the elements should be rated on their general condition (new, good, fair, poor, severe), and visible defects should be photographed.

Discipline	Commitments
Traffic and Transportation	<ul style="list-style-type: none"> City of Toronto staff should be requested to include, in their 2-year review of the 10-Year Cycling Network Plan scheduled in 2018, a review of the cycling infrastructure and routes in the vicinity of the Project in order to identify possible improvements to the cycling network (both on-street and on trails) to enhance convenience and safety for cyclists accessing this station.
Construction²	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume III of this EPR related to the construction phase will be implemented. An Environmental Mitigation and Monitoring Plan (EMMP) will be developed prior to construction to outline the responsibilities for carrying out monitoring and reporting activities, including timing and frequency of monitoring activities, as well as the compliance process. The EMMP will include all mitigation measures, categorized by Project phase, and will identify the party responsible for implementation.
Natural Environment	<ul style="list-style-type: none"> Develop an ESC Plan prior to construction for implementation throughout construction. The ESC Plan will include consideration of the Greater Golden Horseshoe Area Conservation Authorities' Erosion and Sediment Control Guideline for Urban Construction and OPSS 805 (Erosion and Sediment Control Measures) (Ministry of Transportation, 2015) This plan will encompass all areas of soils disturbance, particularly in the vicinity of the Dorset Park Branch of Highland Creek.
Geology and Groundwater	<ul style="list-style-type: none"> Dewatering during construction may be required to facilitate creation of an isolated dry work area and may require registration on the EASR system (if dewatering is over 50,000 L/day but under 400,000 L/day). A Permit to Take Water may be required if dewatering during construction exceeds 400,000 L/day. Approvals for discharge of pumped water will be required, which could include one or a combination of MOECC ECA (under the OWRA, Section 53), Municipal Discharge Permits, and/or Conservation Authority Approval (through the Voluntary Project Review process). The need for these permits will be determined during detailed design. Municipal Discharge Permits may also be required for the discharge of pumped water associated with construction dewatering activities.
Archaeology	<ul style="list-style-type: none"> If human remains are encountered during project work, all activities must cease immediately and the local police as well as the Cemeteries Regulation Unit of the Ministry of Government and Consumer Services must be contacted. In situations where human remains are associated with archaeological resources, MTCS should also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the OHA.
Socio-Economic and Land Use Characteristics	<ul style="list-style-type: none"> Site-Specific Construction Traffic Control and Management Plans will be prepared and implemented prior to Project construction to maintain reasonable access through work zones, to the extent possible.
Air Quality	<ul style="list-style-type: none"> An Air Quality Management Plan will be developed for implementation during construction to address construction equipment and vehicle exhaust, fugitive dust and odour.
Noise and Vibration	<ul style="list-style-type: none"> Construction should adhere to the City of Toronto noise by-laws (Noise Control By-Law, Municipal Code Chapter 591, By-law 1400-2007), to the extent possible. It is recommended that the vibration limits in the City of Toronto bylaw not be exceeded. This may entail monitoring of vibration levels during construction. Anticipated vibration levels will be confirmed during detailed design. A Noise and Vibration Control Plan will be developed prior to construction. The plan will include a complaint response protocol and will indicate that surrounding property owners and tenants will be informed of anticipated upcoming construction works, including any work at night.
Operations	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume III of this EPR related to operations will be implemented.

² Construction phase commitments include pre-construction commitments, completed following detailed design but prior to ground disturbance.

3.3 Gerrard-Carlaw SmartTrack Station

Table 3-3 presents the commitments to future work for Gerrard-Carlaw SmartTrack Station.

Table 3-3: Commitments to Future Work for Gerrard-Carlaw SmartTrack Station

Discipline	Commitments
Detailed Design	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume IV of this EPR related to detailed design will be implemented.
Natural Environment	<ul style="list-style-type: none"> Metrolinx, as a Provincial Crown agency, is not generally subject to the Conservation Authorities Act; regardless, Metrolinx endeavours to minimize impacts to natural features protected by the TRCA. Metrolinx will follow the Voluntary Project Review Process per the Proponents and Projects Exempt from the TRCA Regulatory Approval Process and request that the TRCA reviews and comments on detailed design activities associated with Project construction, maintenance or emergency activities. Once TRCA concerns are satisfied, a Voluntary Project Review Letter is provided by TRCA staff. The ESA, 2007 provides specific protection to Endangered and Threatened species and their habitat. There were no Threatened or Endangered SAR observed in the study area. As such, a permit under the <i>ESA, 2007</i> is not anticipated to be required. Metrolinx, as a Provincial Crown Agency, is not generally subject to municipal permitting and approval requirements; regardless, Metrolinx works in co-operation with local municipalities to adhere to the intent of the relevant permit/approval requirements to the extent possible. Metrolinx is in the process of establishing a Vegetation Compensation Protocol for RER projects and vegetation that is removed for the Project will be compensated for in accordance with the provisions of this protocol. Opportunities for natural heritage enhancement will be explored through the Vegetation Compensation Protocol in consultation with TRCA. Engagement with the TRCA on natural heritage enhancement opportunities will continue through detailed design. Efforts will be made to coordinate with Toronto Hydro, Toronto Water and other utility companies that may be affected by utility relocations to help minimize the overall impacts of the Project on the natural heritage system. Infrastructure and utility works will either be completed by Metrolinx as part of this project, or by utility companies. Metrolinx and its Contractors will follow TRCA regulatory requirements. A Soil Management Plan will be developed by a Qualified Professional as defined in O.Reg. 153/04 for managing soil materials on-site (includes excavation, location of stockpiles, reuse and off-site disposal). During detailed design and prior to construction, a Stormwater Management Report will be completed to determine potential effects and mitigation measures. The report will be completed in consultation with TRCA and the MOECC. Stormwater management design will consider guidance provided by the MOECC Stormwater Management Planning and Design Manual (2003) and Ministry of Transportation (MTO) Drainage Management Manual (2008), as well as the TRCA Stormwater Management Criteria (2012) and Low Impact Development Stormwater Management Planning and Design Guide (2010). Measures to mitigate a potential loss of green space and reduce storm runoff will be identified in detailed design. Suitable human-made structures within the study area should be inspected for

Discipline	Commitments
	<p>evidence of active bird nests during the breeding bird season prior to the onset of construction activities in order to determine appropriate nesting preventative measures (e.g., netting).</p> <ul style="list-style-type: none"> A Flood Contingency Plan will be developed during detailed design and prior to construction.
Geology and Groundwater	<ul style="list-style-type: none"> Soil and bedrock conditions, as well as bedrock elevations, will be confirmed through future geotechnical investigations to be undertaken in support of detailed design. The TRCA's Geotechnical Engineering Design and Submission Plan Guidelines will be referenced during the detailed design phase. Hydrogeological and geo-environmental studies will be carried out, which may identify recommendations for groundwater mitigation measures and monitoring. Hydrogeological and geo-environmental studies will be provided to TRCA for review, once complete. Ongoing engagement will occur with the CTC source protection authority during detailed design.
Trees	<ul style="list-style-type: none"> Removal and/or damage of woody vegetation located in adjacent lands, beyond the Lakeshore East/Stouffville rail corridor, may require municipal tree removal permits. To support the permit applications, an Arborist Report will be completed during detailed design to supplement the Tree Inventory Plan. Metrolinx will work in co operation with the City of Toronto in the spirit of meeting by-law requirements, specifically the Private Tree By-law and Trees on City Streets By-law. An update of the tree removal count of the Project will be completed. This should be based upon a more detailed level of design, with available access permissions and more detailed survey information, to the extent possible. An update of the tree inventory will be completed to account for detailed grading, work zones and proposed clearing, to illustrate TPZ and their protection measures (types and locations), and tree removal zones, in accordance with the completion of an Arborist Report. The Arborist Report will be completed during detailed design and will contain at a minimum the following information in addition to details of tree location, size, species, conditions and category: <ol style="list-style-type: none"> Recommendations for tree/vegetation protection and preservation measures for all trees/vegetation that are to be retained; Details of tree pruning; Details of all trees/vegetation recommended for removal, including removal measures; Mitigation and monitoring measures to ensure success of preservation and removal measures; Should vegetation compensation be required, it will be in accordance with the Metrolinx Vegetation Compensation Protocol; and Mapping. Assessment of trees within or adjacent to the work zones, as defined by the detailed design, as part of the completion of an Arborist Report to determine if trees will be impacted. Preparation of detailed tree removal, restoration, and compensation plans in coordination with a Certified Arborist and/or Landscape Architect (licensed to practice in the Province of Ontario) to assist with species selection, planting locations and measures to promote establishment success.
Cultural Heritage	<ul style="list-style-type: none"> Mitigation measures to avoid or reduce potential effects on heritage attributes

Discipline	Commitments
	<p>have been identified, for the following properties:</p> <ul style="list-style-type: none"> • GC-3 - 344 Pape Avenue • GC-4 - 388 Carlaw Avenue • GC-5 - 936 Gerrard Street East • GC-6 - Riverdale HCD • GC-8 - 352 Pape Avenue • GC-9 - 350 Pape Avenue • GC-10 - 348 Pape Avenue • GC-11 - 346 Pape Avenue <ul style="list-style-type: none"> • For the above-noted properties, the following will be completed: <ul style="list-style-type: none"> • Pre-construction consultations between the applicant and owners/occupants; • Pre-construction measurements of background vibration levels; • Pre-condition survey by means of a photographic record of potentially affected structure façades and all surfaces, including visible sections of building foundations, building cladding, doors, windows, interior wall finishes, surface pavement, sidewalks, signs and trees. Each of the elements should be rated on their general condition (new, good, fair, poor, severe), and visible defects will be photographed. • Any additional measures outlined in the Noise and Vibration Control Plan will be implemented for the properties of known and potential Cultural Heritage Value or Interest (CHVI) that fall within the ZOI. • A Cultural Heritage Evaluation Report (CHER) and, if required, Heritage Impact Assessment (HIA) will be prepared during Detailed Design, to assess additional impacts related to the design of the station, for the following properties within which the Project footprint is located: <ul style="list-style-type: none"> • GC-4 - 388 Carlaw Avenue • GC-8 - 352 Pape Avenue • GC-9 - 350 Pape Avenue • GC-10 - 348 Pape Avenue • GC-11 - 346 Pape Avenue • The Pape Avenue properties (GC-8, GC-9, GC-10, and GC-11) will be evaluated in a single CHER as a streetscape. • A CHER and HIA, as required, have been recommended to assess potential impacts related to the design of the station, during Detailed Design, for properties along First Avenue, east of Logan Avenue, in the Riverdale Heritage Conservation District (HCD). These properties will be evaluated as a streetscape in a single CHER. • These studies will be conducted. <p>Metrolinx will:</p> <ul style="list-style-type: none"> • Complete CHERs, where recommended, as early as possible during the detailed design phase of the Project and prior to completion of detailed design. • Complete HIAs, where required, in accordance with the <i>Standards and Guidelines for Conservation of Provincial Heritage Properties</i> and as early as possible during the detailed design phase and prior to completion of detailed design. The HIA will discuss the alternatives considered, and that all other alternatives to removal and/or demolition have been considered and the best alternative has been adopted. The HIA will also make recommendations to minimize or mitigate adverse effects on the property.

Discipline	Commitments
Archaeology	<ul style="list-style-type: none"> • Archaeological recommendations are based on a Stage 1 AA undertaken for this Project. Archaeological recommendations have been made based on the background historic research, locations of known or registered archaeological sites, previous AAs, and indicators of archaeological potential as outlined in the 2011 S&G. The recommendations for detailed design and pre-construction include: <ul style="list-style-type: none"> • Areas determined to be undisturbed will be subjected to a Stage 2 AA in accordance with Section 2.1.2 of the 2011 S&G prior to construction activities to ensure no CHRs will be impacted; • Areas determined to be disturbed do not require further assessment; • Should deeply buried archaeological materials be encountered during construction, all work will cease and a professionally licenced archaeologist will be consulted to assess the cultural heritage value and significance of the archaeological deposits; • Areas identified to contain deeply buried archaeological potential must be subjected to a Stage 2 AA in accordance with Section 2.1.7, Standard 3 or 4 and Guideline 2 of the 2011 S&G prior to construction activities; <ul style="list-style-type: none"> • Areas identified to hold deeply buried potential in relation to historical structures must be subjected to a Stage 2 AA in accordance with Section 2.1.7 Standard 3. Trenches shall be placed at a maximum of 10m intervals across the area to be investigated. The exact location of the trenches shall be determined during the detailed design for the Project. • Areas identified to hold deeply buried potential without a historical structure to focus trenching investigations shall be subjected to construction monitoring as per Section 2.1.7 Standard 4a. • The study area includes lands that contains a historic cemetery, the Holy Blossom Cemetery. As such, lands within 10 metres of known cemeteries require completion of a Cemetery Investigation prior to any proposed ground disturbance. A Stage 2 AA of these lands is required with additional archival research; • If final limits of the Gerrard-Carlaw SmartTrack Station are altered and fall outside the current study area, an additional Stage 1 AA is required to assess the new footprint. • Figure 3-3, in Section 3.4.2 of this EPR Volume, indicates areas of archaeological potential requiring Stage 2 AA. Metrolinx will: <ul style="list-style-type: none"> • Complete all required AA (Stage 2 and Stage 3 if recommended by the Stage 2AA) as early as possible, prior to the completion of detail design, and well in advance of any ground disturbance; • Undertake future work in a manner that protects archaeological sites by conserving them in their original location or through archaeological fieldwork, and endeavour to conserve significant archaeological resources in their original location through documentation, protection, and avoidance of impacts. Where activities could disturb significant archaeological resources or areas of archaeological potential, Metrolinx will take appropriate measures to mitigate impacts; and • Include provisions in contract as recommended by archaeological assessment(s) (e.g. in case archaeological resources are discovered, protection of sites). • All future Stage 2 AA findings will be shared with the First Nations communities that were engaged during the Stage 1 AA process.
Socio-Economic and Land Use Characteristics	<ul style="list-style-type: none"> • Confirmation of effects on utilities. Additional subsurface utility engineering (SUE) investigations may be conducted, as required, to confirm existing utilities. A review of existing and proposed future utilities plans, in addition to on-going consultation with utility companies and the City of Toronto, will be conducted during the detailed design stage.

Discipline	Commitments
	<ul style="list-style-type: none"> • Any relocations, service interruptions, or utility protection projects will be identified as early as possible to allow for project coordination and construction management plans to be created with consideration of utility needs. • Specific property requirements will be determined during detailed design. Ongoing consultation with affected property owners will help identify appropriate site-specific mitigation measures. Where access to property is required, ongoing consultation with affected landowners will help identify appropriate site-specific mitigation measures. • A lighting plan will be developed where the quality of light produced, and type of light sources used on the exterior of buildings, signs, pedestrian walkways, and other areas of the site, are compatible with, and appropriate to the overall design and use of the site. • Potential effects to the development proposed at 354-358 Pape Avenue will be confirmed as design progresses.
Air Quality	<ul style="list-style-type: none"> • To improve air quality around the station during maintenance and operation, MOECC EASR recommendations for exempt equipment (O. Reg. 524/98) that has minimal air quality impacts, as well as application to the EASR for equipment that qualifies (O. Reg. 1/17 and O. Reg. 419/05) will be adhered to.
Noise and Vibration	<ul style="list-style-type: none"> • A more detailed noise assessment of construction will be completed when the specifics of construction equipment are finalized, prior to construction start. This assessment should consider minimizing construction-related noise levels, while balancing construction schedules and expediting construction activity. • A more detailed vibration assessment of construction will be completed when the specifics of construction equipment are finalized, prior to construction start. This assessment should consider minimizing construction-related vibration levels, while balancing construction schedules and expediting construction activity. • A vibration monitoring plan will be completed during detailed design. • During detailed design, the predicted ZOI will be updated to confirm which structures fall within it. If a structure falls within the updated ZOI, the following is recommended: <ul style="list-style-type: none"> • Pre-construction consultations with owners/occupants; • Pre-construction measurements of background vibration levels; and • Pre-construction survey by means of a photographic record of potentially affected structure façades and all surfaces, including visible sections of building foundations, building cladding, doors, windows, interior wall finishes, surface pavement, sidewalks, signs and trees. Each of the elements should be rated on their general condition (new, good, fair, poor, severe), and visible defects should be photographed.
Traffic and Transportation	<ul style="list-style-type: none"> • City of Toronto staff should be requested to include, in their 2-year review of the Ten-Year Cycling Network Plan scheduled in 2018, a review of the cycling infrastructure and routes in the vicinity of the Project in order to identify possible improvements to the cycling network, such as on Pape Avenue and Carlaw Avenue, to enhance convenience and safety for cyclists accessing this station.

Discipline	Commitments
Construction³	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume IV of this EPR related to the construction phase will be implemented. An Environmental Mitigation and Monitoring Plan (EMMP) will be developed prior to construction to outline the responsibilities for carrying out monitoring and reporting activities, including timing and frequency of monitoring activities, as well as the compliance process. The EMMP will include all mitigation measures, categorized by Project phase, and will identify the party responsible for implementation.
Natural Environment	<ul style="list-style-type: none"> Develop an Erosion and Sediment Control (ESC) Plan prior to construction for implementation throughout construction. The ESC Plan will include consideration of the Greater Golden Horseshoe Area Conservation Authorities' ESC Guideline for Urban Construction and OPSS 805 (ESC Measures) (Ministry of Transportation, 2015).
Geology and Groundwater	<ul style="list-style-type: none"> Dewatering during construction may be required to facilitate creation of an isolated dry work area and may require registration on the EASR system (if dewatering is over 50,000 L/day but under 400,000 L/day). A Permit to Take Water may be required if dewatering during construction exceeds 400,000 L/day. Approvals for discharge of pumped water will be required, which could include one or a combination of MOECC ECA (under the <i>Ontario Water Resources Act</i> (OWRA), Section 53), Municipal Discharge Permits, and/or Conservation Authority Approval (through the Voluntary Project Review process). The need for these permits will be determined during detailed design. Municipal Discharge Permits may also be required for the discharge of pumped water associated with construction dewatering activities.
Archaeology	<ul style="list-style-type: none"> If human remains are encountered during project work, all activities must cease immediately and the local police as well as the Cemeteries Regulation Unit of the Ministry of Government and Consumer Services must be contacted. In situations where human remains are associated with archaeological resources, MTCS should also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act.
Socio-Economic and Land Use Characteristics	<ul style="list-style-type: none"> Site-Specific Construction Traffic Control and Management Plans will be prepared and implemented prior to Project construction to maintain reasonable access through work zones, to the extent possible.
Air Quality	<ul style="list-style-type: none"> An Air Quality Management Plan will be developed for implementation during construction to address construction equipment and vehicle exhaust, fugitive dust and odour.
Noise and Vibration	<ul style="list-style-type: none"> Construction should adhere to the City of Toronto noise by-laws (Noise Control By-Law, Municipal Code Chapter 591, By-law 1400-2007), to the extent possible. It is recommended that the vibration limits in the City of Toronto bylaw not be exceeded. This may entail monitoring of vibration levels during construction. Anticipated vibration levels will be confirmed during detailed design. A Noise and Vibration Control Plan will be developed prior to construction. The plan will include a complaint response protocol and will indicate that surrounding property owners and tenants will be informed of anticipated upcoming

³ Construction phase commitments include pre-construction commitments, completed following detailed design but prior to ground disturbance.

Discipline	Commitments
	construction works, including any work at night.
Operations	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume IV this EPR related to operations will be implemented.

3.4 East Harbour SmartTrack Station

Table 3-4 presents the commitments to future work for East Harbour SmartTrack Station.

Table 3-4: Commitments to Future Work for East Harbour SmartTrack Station

Discipline	Commitments
Detailed Design	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume V of the EPR related to detailed design will be implemented. Metrolinx will consult with Hydro One during detail design in the event that the Project will affect Hydro One infrastructure. Design drawings will be provided to Hydro One for review.
Natural Environment	<ul style="list-style-type: none"> Metrolinx will undertake detailed design and associated hydraulic modelling studies as necessary to meet the requirements of the Lower Don Special Policy Area. The station will be designed, implemented and operated in a manner that meets the flood protection requirements of the Living City Policies. This will include flood proofing to meet applicable guidelines, developing warning and emergency measures, and demonstrating (through modelling) that the development of the station will not result in an increase in flood hazard risk upstream and downstream of the site. This work will be reviewed as part of the Voluntary Project Review process. For any works within existing flood hazard areas, Metrolinx will demonstrate through a cut and fill balance analysis that there will be no increases in flood depths and no adverse upstream or downstream hydraulic or fluvial impacts; Metrolinx will design the station amenities (pedestrian connections) within the existing railway berm such that they do not serve as a hydraulic connection between the areas north and south of the station; and Metrolinx will undertake the necessary studies to demonstrate that the proposed station will not negatively impact the proposed TRCA flood protection features on the south and north sides of the station berm. Metrolinx will demonstrate through the necessary studies that the proposed new bridges will not create new flooding hazards to adjacent or other properties and that there will be no negative upstream and downstream hydraulic impacts, and potential risks to public safety will be addressed by Metrolinx during design of the new accesses. Metrolinx, as a Provincial Crown agency, is not generally subject to the <i>Conservation Authorities Act</i>. Metrolinx endeavours to minimize effects to natural features protected by the TRCA. Metrolinx will follow the <i>Voluntary Project Review Process per the Proponents and Projects Exempt from the TRCA Regulatory Approval Process</i> and request that the TRCA reviews and comments on detailed design activities associated with Project construction, maintenance or emergency activities. Once TRCA concerns are satisfied, a Voluntary Project Review Letter is provided by TRCA staff. Metrolinx, as a Provincial Crown Agency, is not generally subject to municipal permitting and approval requirements; regardless, Metrolinx works in co-operation with local municipalities to adhere to the intent of the relevant permit/approval

Discipline	Commitments
	<p>requirements to the extent possible. Metrolinx is in the process of establishing a Vegetation Compensation Protocol for RER projects; vegetation that is removed for the Project will be compensated for in accordance with the provisions of this protocol. Opportunities for natural heritage enhancement will be explored through the Vegetation Compensation Protocol in consultation with TRCA.</p> <ul style="list-style-type: none"> • Engagement with the TRCA on natural heritage enhancement opportunities will continue through detailed design. • Efforts will be made to coordinate with Toronto Hydro, Toronto Water and other utility companies that may be affected by utility relocations to help minimize the overall impacts of the Project on the natural heritage system. • Infrastructure and utility works will either be completed by Metrolinx as part of this Project, or by utility companies. Metrolinx and its Contractors will follow TRCA regulatory requirements. • A Soil Management Plan will be developed by a Qualified Professional as defined in O. Reg. 153/04 for managing soil materials on-site (includes excavation, location of stockpiles, reuse and off-site disposal). • A Stormwater Management Report will be completed to determine potential effects and mitigation measures. The report will be completed in consultation with TRCA and the MOECC. Stormwater management design will consider guidance provided by the MOECC Stormwater Management Planning and Design Manual (2003), Ministry of Transportation Ontario (MTO) Drainage Management Manual (2008), TRCA Storm Water Management Criteria (2012), and the Low Impact Development Stormwater Management Planning and Design Guide (TRCA/Credit Valley Conservation, 2010). • Measures to mitigate a potential loss of green space and reduce storm runoff will be identified in detailed design. • No in-water works are anticipated at this time; in the event in-water works are identified to be required during detailed design, the project team will consult with TRCA, MNRF and DFO to identify restricted activity timing windows. • A Flood Contingency Plan will be developed during detailed design and prior to construction. • Potential impacts will be assessed against updated floodplain mapping from TRCA during detailed design.
Geology and Groundwater	<ul style="list-style-type: none"> • Hydrogeological and geo-environmental studies will be carried out, which may identify recommendations for groundwater mitigation measures and monitoring. These future studies will be circulated to TRCA for review. • TRCA Geotechnical Engineering Design and Submission Requirements guidelines will be referenced during detailed design. • Soil and bedrock conditions, as well as bedrock elevations, will be confirmed through future geotechnical investigations to be undertaken in support of detailed design. • Ongoing engagement with the CTC source protection authority will be maintained.
Trees	<ul style="list-style-type: none"> • Removal and/or damage of woody vegetation located in adjacent lands, beyond the rail corridor, may require municipal tree removal permits. To support the permit applications, an Arborist Report will be completed during detailed design to supplement the Tree Inventory Plan. Metrolinx will work in co-operation with the City of Toronto in the spirit of meeting by-law requirements, specifically the Private Tree By-law and Trees on City Streets By-law. • An update of the tree removal count of the Project will be completed. This will be based upon a more detailed level of design, with available access permissions and

Discipline	Commitments
	<p>more detailed survey information, to the extent possible.</p> <ul style="list-style-type: none"> • An update of the tree inventory will be completed to account for detailed grading, work zones and proposed clearing, to illustrate TPZ and their protection measures (types and locations), and tree removal zones, in accordance with the completion of an Arborist Report. The Arborist Report will be completed during detailed design and will contain at a minimum the following information in addition to details of tree location, size, species, conditions and category: <ul style="list-style-type: none"> • Recommendations for tree/vegetation protection and preservation measures for all trees/vegetation that are to be retained; • Details of tree pruning; • Details of all trees/vegetation recommended for removal, including removal measures; • Appraised values of trees/vegetation to be removed; • Mitigation and monitoring measures recommended to ensure success of preservation and removal measures; • Should vegetation compensation be required, it will be in accordance with the Metrolinx Vegetation Compensation Protocol; and • Mapping. • An assessment of trees within or adjacent to the work zones, as defined by the detailed design, will be completed as part of an Arborist Report to determine if trees will be affected. • Preparation of detailed tree removal, restoration, and compensation plans will be completed in coordination with a Certified Arborist and/or Landscape Architect (licensed to practice in the Province of Ontario) to assist with species selection, planting locations and measures to promote establishment success. • Work occurring within 25 m of a Butternut is prohibited without an authorization from the MNRF. Each Butternut tree that will be removed or impacted must be assessed by a qualified Butternut Health Assessor prior to impacting or removing the tree(s). • A Butternut Health Assessment should be undertaken in accordance with MNRF guidelines and results submitted to MNRF for review. The results of the Butternut Health Assessment will determine the next course of action, which may include no further requirement, submission of a Notice of Activity, or compensation and monitoring.
Built Heritage Resources and Cultural Heritage Landscapes Archaeology	<ul style="list-style-type: none"> • Recommendations for BHRs and CHLs are based on the CHSR and CHAR undertaken for this Project. Based on these reports, no further work is recommended. • Archaeological recommendations are based on a Stage 1 AA undertaken for this Project. Archaeological recommendations have been made based on the background historic research, locations of known or registered archaeological sites, previous AAs, and indicators of archaeological potential as outlined in the 2011 S&G. • These recommendations for detailed design include: <ul style="list-style-type: none"> • Areas determined to be undisturbed will be subjected to a Stage 2 AA in accordance with the 2011 S&G prior to construction activities to ensure no cultural heritage resources will be impacted; • Areas determined to be disturbed do not require further assessment • Should deeply buried archaeological materials be encountered during construction, all work will cease and a professionally licenced archaeologist will be consulted to assess the cultural heritage value and significance of the archaeological deposits; • Areas identified to contain archaeological potential for deeply buried archaeological resources must be subjected to a Stage 2 AA in accordance

Discipline	Commitments
	<p>with Section 2.1.7, Standard 3 or 4 and Guideline 2 of the 2011 S&G prior to construction activities; and</p> <ul style="list-style-type: none"> • If final limits of the Project are altered and fall outside the current study area, an additional Stage 1 AA is required to assess the new footprint. • If human remains are encountered during project work, all activities must cease immediately and the local police as well as the Cemeteries Regulation Unit of the Ministry of Government and Consumer Services must be contacted. In situations where human remains are associated with archaeological resources, MTCS should also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act. • Figure 3-3, in Section 3.4.2 of Volume V of the EPR, indicates areas of archaeological potential requiring Stage 2 AA. Metrolinx will: <ul style="list-style-type: none"> • Complete all required AA (Stage 2 and Stage 3 if recommended by the Stage 2AA) as early as possible, prior to the completion of detail design, and well in advance of any ground disturbance; • Undertake future work in a manner that protects archaeological sites by conserving them in their original location or through archaeological fieldwork, and endeavour to conserve significant archaeological resources in their original location through documentation, protection, and avoidance of impacts. Where activities could disturb significant archaeological resources or areas of archaeological potential, Metrolinx will take appropriate measures to mitigate impacts; and • Include provisions in contract as recommended by archaeological assessment(s) (e.g. in case archaeological resources are discovered, protection of sites). • All future Stage 2 AA findings will be shared with all First Nations communities that were consulted during the Stage 1 AA process.
Socio-Economic and Land Use Characteristics	<ul style="list-style-type: none"> • Confirm effects on utilities. Additional subsurface utility engineering (SUE) investigations may be conducted, as required, to confirm existing utilities. A review of existing and proposed future utilities plans, in addition to on-going consultation with utility companies and the City of Toronto, will be conducted during the detailed design stage. • Any relocations, service interruptions, or utility protection projects will be identified as early as possible to allow for project coordination and construction management plans to be created with consideration of utility needs. • Specific property requirements will be determined during detailed design. Ongoing consultation with affected property owners will help identify appropriate site-specific mitigation measures. Where access to property is required, ongoing consultation with affected landowners will help identify appropriate site-specific mitigation measures. • A lighting plan will be developed where the quality of light produced, and type of light sources used on the exterior of buildings, signs, pedestrian walkways, and other areas of the site, are compatible with, and appropriate to the overall design and use of the site. • Metrolinx will work with Hydro One during detail design to avoid impacts and/or develop mitigation.
Air Quality	<ul style="list-style-type: none"> • To improve air quality around the station during maintenance and operation, MOECC EASR recommendations for exempt equipment (O. Reg. 524/98) that has minimal air quality impacts, as well as application to the EASR for equipment that qualifies (O. Reg. 1/17 and O. Reg. 419/05) will be adhered to during detailed design.
Noise and Vibration	<ul style="list-style-type: none"> • A more detailed noise assessment of construction will be completed when the specifics of construction equipment are finalized, prior to construction start. This assessment should consider minimizing construction-related noise levels, while

Discipline	Commitments
	<p>balancing construction schedules and expediting construction activity.</p> <ul style="list-style-type: none"> • During detailed design, the station public address system, ancillary systems, and any other stationary noise sources will be designed so that the one-hour equivalent sound level does not exceed the higher of the applicable exclusion limit value given in NPC-300, or the background sound level. • A more detailed vibration assessment of construction will be completed when the specifics of construction equipment are finalized, prior to construction start. This assessment will consider minimizing construction-related vibration levels, while balancing construction schedules and expediting construction activity. • A vibration monitoring plan will be completed during detailed design. • During detailed design, the predicted ZOI will be updated to confirm which structures fall within it. If a structure falls within the updated ZOI, the following is recommended: <ul style="list-style-type: none"> • Pre-construction consultations with owners/occupants; • Pre-construction measurements of background vibration levels; and • Pre-construction survey by means of a photographic record of potentially affected structure façades and all surfaces, including visible sections of building foundations, building cladding, doors, windows, interior wall finishes, surface pavement, sidewalks, signs and trees. Each of the elements should be rated on their general condition (new, good, fair, poor, severe), and visible defects should be photographed.
Traffic and Transportation	<ul style="list-style-type: none"> • City of Toronto staff will be requested to include, in their 2-year review of the 10-Year Cycling Network Plan scheduled in 2018, a review of the cycling infrastructure and routes in the vicinity of the Project in order to identify possible improvements to the cycling network (both on-street and on trails) to enhance convenience and safety for cyclists accessing this station.
Construction⁴	
General	<ul style="list-style-type: none"> • Mitigation measures and monitoring requirements documented in Section 4 - Volume V of the EPR related to construction will be implemented. • An Environmental Mitigation and Monitoring Plan (EMMP) will be developed prior to construction to outline the responsibilities for carrying out monitoring and reporting activities, including timing and frequency of monitoring activities, as well as the compliance process. The EMMP will include all mitigation measures, categorized by Project phase, and will identify the party responsible for implementation.
Natural Environment	<ul style="list-style-type: none"> • An ESC Plan will be developed prior to construction for implementation throughout construction. The ESC Plan will include consideration of the Greater Golden Horseshoe Area Conservation Authorities' Erosion and Sediment Control Guideline for Urban Construction and OPSS 805 (Erosion and Sediment Control Measures, Ministry of Transportation, 2015). This plan will encompass all areas of soils disturbance, particularly in the vicinity of the Don River.
Geology and Groundwater	<ul style="list-style-type: none"> • Dewatering during construction may be required to facilitate creation of an isolated dry work area and may require registration on the Environmental Approval Sector Registry (EASR) system (if dewatering is over 50,000 L/day but under 400,000 L/day) or a Permit to Take Water (if dewatering exceeds 400,000 L/day). • Approvals for discharge of pumped water will be required, which could include one or a combination of MOECC Environmental Compliance Approval (ECA) (OWRA, Section 53), Municipal Discharge Permits, and/or Conservation Authority Approval (through the Voluntary Project Review process). The need for these permits will be

⁴ Construction phase commitments include pre-construction commitments, completed following detailed design but prior to ground disturbance.

Discipline	Commitments
	<p>determined during detailed design.</p> <ul style="list-style-type: none"> Municipal Discharge Permits may also be required for the discharge of pumped water associated with construction dewatering activities.
<p>Trees</p> <p>Archaeology</p>	<ul style="list-style-type: none"> Naturally-occurring Butternut trees of any size and age are protected under the ESA and impacting or removing Butternut is prohibited without an authorization from the MNRF. One Butternut tree was identified within the project footprint and may be affected or removed as a result of the work. Each Butternut tree that will be removed or affected must be assessed by a qualified Butternut Health Assessor prior to removal or affecting the trees. The Butternut Health Assessment will be undertaken in accordance with MNRF guidelines and results submitted to MNRF for review. The results of the Butternut Health Assessment will determine the next course of action, which may include no further requirement, submission of a Notice of Activity, or compensation and monitoring. Should deeply buried archaeological materials be encountered during construction, all work will cease and a professionally licenced archaeologist will be consulted to assess the cultural heritage value and significance of the archaeological deposits; Areas identified to contain deeply buried archaeological potential will be subjected to a Stage 2 AA in accordance with Section 2.1.7, Standard 3 or 4 and Guideline 2 of the 2011 S&G, prior to construction activities; MTCS will be notified if archaeological resources are encountered or impacted during the course of the EA project work. All activities impacting archaeological resources will cease immediately, and a licensed archaeologist will carry out an archaeological assessment in accordance with the <i>Ontario Heritage Act</i> and the Standards and Guidelines for Consultant Archaeologists. If human remains are encountered during project work, all activities will cease immediately and the local police as well as the Cemeteries Regulation Unit of the Ministry of Government and Consumer Services will be contacted. In situations where human remains are associated with archaeological resources, MTCS will also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act. No construction activities will take place within the study area prior to the MTCS confirming in writing that all archaeological requirements have been met.
<p>Socio-Economic and Land Use Characteristics</p>	<ul style="list-style-type: none"> A Construction Traffic Management Plan will be prepared and implemented prior to Project construction to maintain reasonable access through work zones, to the extent possible.
<p>Air Quality</p>	<ul style="list-style-type: none"> An Air Quality Management Plan will be developed for implementation during construction to address construction equipment and vehicle exhaust, fugitive dust and odour.
<p>Noise and Vibration</p>	<ul style="list-style-type: none"> Construction will adhere to City of Toronto noise by-laws (Noise Control By-Law, Municipal Code Chapter 591, By-law 1400-2007), to the extent possible. It is recommended that the vibration limits in the City of Toronto bylaw not be exceeded. This may entail monitoring of vibration levels during construction. Anticipated vibration levels will be confirmed during detailed design. A Noise and Vibration Control Plan will be developed prior to construction. The plan will include a complaint response protocol and will indicate that surrounding property owners and tenants will be informed of anticipated upcoming construction works, including any work at night.

Discipline	Commitments
Traffic and Transportation	<ul style="list-style-type: none"> A Construction Traffic Management Plan will be developed prior to construction which will include providing pedestrian and cyclist access through work zones, alerting local transit of potential travel delays/service disruptions in advance of Project construction including road closures; and identification of best detour routes for transit vehicles that minimizes travel time and service disruptions.
Operations and Maintenance	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume V of the EPR related to operations will be implemented.

3.5 King-Liberty SmartTrack Station

Table 3-5 presents the commitments to future work for King-Liberty SmartTrack Station

Table 3-5: Commitments to Future Work for King-Liberty SmartTrack Station

Discipline	Commitments
Detailed Design	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume VI of the EPR related to detailed design will be implemented.
Natural Environment	<ul style="list-style-type: none"> Metrolinx, as a Provincial Crown Agency, is not generally subject to municipal permitting and approval requirements; regardless, Metrolinx works in co-operation with local municipalities to adhere to the intent of the relevant permit/approval requirements to the extent possible. Metrolinx is in the process of establishing a Vegetation Compensation Protocol for RER projects; vegetation that is removed for the Project will be compensated for in accordance with the provisions of this protocol. Opportunities for natural heritage enhancement will be explored through the Vegetation Compensation Protocol in consultation with TRCA. Engagement with the TRCA on natural heritage enhancement opportunities will continue through detailed design. Efforts will be made to coordinate with Toronto Hydro, Toronto Water and other utility companies that may be affected by utility relocations to help minimize the overall impacts of the Project on the natural heritage system. Infrastructure and utility works will either be completed by Metrolinx as part of this Project, or by utility companies. Metrolinx and its Contractors will follow TRCA regulatory requirements. Targeted roost surveys for Chimney Swift should be completed in appropriate chimneys if buildings (with chimneys) are proposed for removal within the study area. A Soil Management Plan will be developed by a Qualified Professional as defined in O. Reg. 153/04 for managing soil materials on-site (includes excavation, location of stockpiles, reuse and off-site disposal). A Stormwater Management Report will be completed to determine potential effects and mitigation measures. The report will be completed in consultation with TRCA and the MOECC. Stormwater management design will consider guidance provided by the MOECC Stormwater Management Planning and Design Manual (2003), Ministry of Transportation Ontario (MTO) Drainage Management Manual (2008), TRCA Storm Water Management Criteria (2012), and the Low Impact Development Stormwater Management Planning And Design Guide (TRCA/Credit Valley Conservation, 2010). Measures to mitigate a potential loss of green space and reduce storm runoff will be identified in detailed design. A Flood Contingency Plan will be developed during detailed design and prior to

Discipline	Commitments
	<p>construction.</p>
Geology and Groundwater	<ul style="list-style-type: none"> • Hydrogeological and geo-environmental studies will be carried out, which may identify recommendations for groundwater mitigation measures and monitoring. These future studies will be circulated to TRCA for review. • TRCA Geotechnical Engineering Design and Submission Requirements guidelines will be referenced during the detail design phase. • Soil and bedrock conditions, as well as bedrock elevations, will be confirmed through future geotechnical investigations to be undertaken in support of detailed design. • Ongoing engagement with the CTC source protection authority will be maintained.
Trees	<ul style="list-style-type: none"> • An update of the tree removal count of the Project. This should be based upon a more detailed level of design, with available access permissions and more detailed survey information, to the extent possible. • An update of the tree inventory to account for detailed grading, work zones and proposed clearing, to illustrate TPZ and their protection measures (types and locations), and tree removal zones, in accordance with the completion of an Arborist Report. The Arborist Report will be completed during detailed design and will contain at a minimum the following information in addition to details of tree location, size, species, conditions and category: <ol style="list-style-type: none"> 1. Recommendations for tree/vegetation protection and preservation measures for all trees/vegetation that are to be retained; 2. Details of tree pruning; 3. Details of all trees/vegetation recommended for removal, including removal measures; 4. Appraised values of trees/vegetation to be removed; 5. Mitigation and monitoring measures recommended to ensure success of preservation and removal measures; 6. Should vegetation compensation be required, it will be in accordance with the Metrolinx Vegetation Compensation Protocol; and 7. Mapping. • Assessment of trees within or adjacent to the work zones, as defined by the detailed design, as part of the completion of an Arborist Report to determine if trees will be impacted. • Preparation of detailed tree removal, restoration, and compensation plans in coordination with a Certified Arborist and/or Landscape Architect (licensed to practice in the Province of Ontario) to assist with species selection, planting locations and measures to promote establishment success.
Built Heritage Resources and Cultural Heritage Landscapes	<p>Recommendations for BHRs and CHLs are based on the CHSR, CHAR, and CHERs undertaken for this Project. The following mitigation measures will be undertaken:</p> <ul style="list-style-type: none"> • Heritage Impact Assessments must be completed for KL-1 - 55 Sudbury Street, KL-10 - 99 Sudbury Street, and KL-2 - the King Street West Subway. • The following mitigation measures will be implemented for KL-3 - 109 Atlantic Avenue: <ul style="list-style-type: none"> • Pre-construction consultations between the applicant and owners/occupants; • Pre-construction measurements of background vibration levels; • Pre-condition survey by means of a photographic record of potentially affected structure façades and all surfaces, including visible sections of building foundations, building cladding, doors, windows, interior wall finishes, surface pavement, sidewalks, signs and trees. Each of the elements should be rated on their general condition (new, good, fair, poor, severe), and visible defects will be photographed • Any additional measures outlined in the Noise and Vibration Control Plan should be

Discipline	Commitments
	<p>implemented for the properties of known and potential CHVI that fall within the ZOI.</p> <ul style="list-style-type: none"> • A CHER and, if required, HIA will be prepared during Detailed Design, to assess additional impacts related to the design of the station, for the KL-3 - Atlantic Avenue, within which the Project footprint is located. • Complete CHERs, where recommended, as early as possible during the detailed design phase of the Project and prior to completion of detailed design. • Complete HIAs, where required, in accordance with the Standards and Guidelines for Conservation of Provincial Heritage Properties and as early as possible during the detailed design phase and prior to completion of detailed design. The HIA will discuss the alternatives considered, and that all other alternatives to removal and/or demolition have been considered and the best alternative has been adopted. The HIA will also make recommendations to minimize or mitigate adverse effects on the property. • If during detailed design the final limits of the Project are anticipated to fall outside the current Project footprint, further assessment may be necessary.
Archaeology	<ul style="list-style-type: none"> • Archaeological recommendations are based on a Stage 1 AA undertaken for this Project. Archaeological recommendations have been made based on the background historic research, locations of known or registered archaeological sites, previous AAs, and indicators of archaeological potential as outlined in the 2011 S&G. These recommendations are: • Areas determined to be undisturbed will be subjected to a Stage 2 AA in accordance with section 2.1.2 of the 2011 S&G prior to construction activities to ensure no cultural heritage resources will be impacted; • Areas determined to be disturbed do not require further assessment; • Areas identified to contain deeply buried archaeological potential must be subjected to a Stage 2 AA in accordance with Section 2.1.7, Standard 3 or 4 and Guideline 2 of the 2011 S&G, prior to construction activities; • If final limits of the Project are altered and fall outside the current study area, an additional Stage 1 AA is required to assess the new footprint. • Figure 3-3, in Section 3.4.2 of Volume VI of the EPR, indicates areas of archaeological potential requiring Stage 2 AA. Complete all required AA (Stage 2 and Stage 3 if recommended by the Stage 2 AA) as early as possible, prior to the completion of detail design, and well in advance of any ground disturbance; • Undertake future work in a manner that protects archaeological sites by conserving them in their original location or through archaeological fieldwork, and endeavour to conserve significant archaeological resources in their original location through documentation, protection, and avoidance of impacts. Where activities could disturb significant archaeological resources or areas of archaeological potential, Metrolinx will take appropriate measures to mitigate impacts; and • Include provisions in procurement documents as recommended by archaeological assessment(s) (e.g. in case archaeological resources are discovered, protection of sites).
Socio-Economic and Land Use Characteristics	<ul style="list-style-type: none"> • Confirm effects on utilities. Additional subsurface utility engineering (SUE) investigations may be conducted, as required, to confirm existing utilities. A review of existing and proposed future utilities plans, in addition to on-going consultation with utility companies and the City of Toronto, will be conducted during the detailed design stage. • Any relocations, service interruptions, or utility protection projects will be identified as early as possible to allow for project coordination and construction management plans to be created with consideration of utility needs. • Specific property requirements will be determined during detailed design. Ongoing consultation with affected property owners will help identify appropriate site-specific mitigation measures. Where access to property is required, ongoing consultation with affected landowners will help identify appropriate site-specific mitigation measures.

Discipline	Commitments
	<ul style="list-style-type: none"> A lighting plan will be developed where the quality of light produced, and type of light sources used on the exterior of buildings, signs, pedestrian walkways, and other areas of the site, are compatible with, and appropriate to the overall design and use of the site. Ongoing consultation with utility companies will be conducted during detailed design. Metrolinx will continue to work with CP through detailed design to minimize potential effects on CP operations.
Air Quality	<ul style="list-style-type: none"> To improve air quality around the station during maintenance and operation, MOECC EASR recommendations for exempt equipment (O. Reg. 524/98) that has minimal air quality impacts, as well as application to the EASR for equipment that qualifies (O. Reg. 1/17 and O. Reg. 419/05) will be adhered to during detailed design.
Noise and Vibration	<ul style="list-style-type: none"> A more detailed noise assessment of construction should be completed when the specifics of construction equipment are finalized, prior to construction start. This assessment should consider minimizing construction-related noise levels, while balancing construction schedules and expediting construction activity. During detailed design, the station public address system, ancillary systems, and any other stationary noise sources shall be designed so that the one-hour equivalent sound level does not exceed the higher of the applicable exclusion limit value given in NPC-300, or the background sound level. A more detailed vibration assessment of construction should be completed when the specifics of construction equipment are finalized, prior to construction start. This assessment should consider minimizing construction-related vibration levels, while balancing construction schedules and expediting construction activity. A vibration monitoring plan should be completed during detailed design. During detailed design, the predicted ZOI should be updated to confirm which structures fall within it. If a structure falls within the updated ZOI, the following is recommended: <ul style="list-style-type: none"> Pre-construction consultations with owners/occupants; Pre-construction measurements of background vibration levels; and Pre-construction survey by means of a photographic record of potentially affected structure façades and all surfaces, including visible sections of building foundations, building cladding, doors, windows, interior wall finishes, surface pavement, sidewalks, signs and trees. Each of the elements should be rated on their general condition (new, good, fair, poor, severe), and visible defects should be photographed.
Traffic and Transportation	<ul style="list-style-type: none"> City of Toronto staff will be requested to include, in their 2-year review of the 10-Year Cycling Network Plan scheduled in 2018, a review of the cycling infrastructure and routes in the vicinity of the Project in order to identify possible improvements to the cycling network (both on-street and on trails) to enhance convenience and safety for cyclists accessing this station.
Construction⁵	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume VI of the EPR related to construction will be implemented. An Environmental Mitigation and Monitoring Plan (EMMP) will be developed prior to construction to outline the responsibilities for carrying out monitoring and reporting activities, including timing and frequency of monitoring activities, as well as the compliance process. The EMMP will include all mitigation measures, categorized by Project phase, and will identify the party responsible for implementation. CP will be notified in advance of any potential service disruptions and will be consulted

⁵ Construction phase commitments include pre-construction commitments, completed following detailed design but prior to ground disturbance.

Discipline	Commitments
	with to establish a suitable mitigation strategy to be implemented.
Natural Environment	<ul style="list-style-type: none"> Develop an ESC Plan prior to construction for implementation throughout construction. The ESC Plan will include consideration of the Greater Golden Horseshoe Area Conservation Authorities' Erosion and Sediment Control Guideline for Urban Construction and OPSS 805 (Erosion and Sediment Control Measures, Ministry of Transportation, 2015). This plan will encompass all areas of soils disturbance.
Geology and Groundwater	<ul style="list-style-type: none"> Dewatering during construction may be required to facilitate creation of an isolated dry work area and may require registration on the EASR system (if dewatering is over 50,000 L/day but under 400,000 L/day). A Permit to Take Water may be required if dewatering during construction exceeds 400,000 L/day. Approvals for discharge of pumped water will be required, which could include one or a combination of MOECC Environmental Compliance Approval (ECA) (under the <i>Ontario Water Resources Act</i> (OWRA), Section 53), Municipal Discharge Permits, and/or Conservation Authority Approval (through the Voluntary Project Review process). The need for these permits will be determined during detailed design. Municipal Discharge Permits may also be required for the discharge of pumped water associated with construction dewatering activities.
Archaeology	<ul style="list-style-type: none"> Should deeply buried archaeological materials be encountered during construction, all work will cease and a professionally licenced archaeologist will be consulted to assess the cultural heritage value and significance of the archaeological deposits; Areas identified to contain deeply buried archaeological potential must be subjected to a Stage 2 AA in accordance with Section 2.1.7, Standard 3 or 4 and Guideline 2 of the 2011 S&G, prior to construction activities; MTCS should be notified if archaeological resources are encountered or impacted during the course of the EA project work. All activities affecting archaeological resources must cease immediately, and a licensed archaeologist is required to carry out an archaeological assessment in accordance with the Ontario Heritage Act and the Standards and Guidelines for Consultant Archaeologists. If human remains are encountered during project work, all activities must cease immediately and the local police as well as the Cemeteries Regulation Unit of the Ministry of Government and Consumer Services must be contacted. In situations where human remains are associated with archaeological resources, MTCS should also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act. No construction activities shall take place within the study area prior to the MTCS confirming in writing that all archaeological requirements have been met.
Socio-Economic and Land Use Characteristics	<ul style="list-style-type: none"> Site-Specific Construction Traffic Control and Management Plans will be prepared and implemented prior to Project construction to maintain access through work zones, to the extent possible.
Air Quality	<ul style="list-style-type: none"> An Air Quality Management Plan will be developed for implementation during construction to address construction equipment and vehicle exhaust, fugitive dust and odour.
Noise and Vibration	<ul style="list-style-type: none"> Construction will adhere to the City of Toronto noise by-laws (Noise Control By-Law, Municipal Code Chapter 591, By-law 1400-2007), to the extent possible. It is recommended that the vibration limits in the City of Toronto bylaw not be exceeded. This may entail monitoring of vibration levels during construction. Anticipated vibration levels will be confirmed during detailed design. A Noise and Vibration Control Plan will be developed prior to construction. The plan will include a complaint response protocol and will indicate that surrounding property owners

Discipline	Commitments
	and tenants will be informed of anticipated upcoming construction works, including any work at night.
Traffic and Transportation	<ul style="list-style-type: none"> A Construction Traffic Management Plan (CTMP) will be developed prior to construction which will include providing pedestrian and cyclist access through work zones, alerting local transit of potential travel delays/service disruptions in advance of Project construction including road closures; identification of best detour routes for transit vehicles that minimizes travel time and service disruptions should be identified.
Operations and Maintenance	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume VI of the EPR related to operations will be implemented.

3.6 St. Clair-Old Weston SmartTrack Station

Table 3-6 presents the commitments to future work for St. Clair-Old Weston SmartTrack Station.

Table 3-6: Commitments to Future Work for St. Clair-Old Weston SmartTrack Station

Discipline	Commitments
Detailed Design	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume VII of the EPR related to detailed design will be implemented. Metrolinx will consult with Hydro One during detail design. Design drawings will be provided for review. CP will be notified in advance of any potential service disruptions and will be consulted with to establish a suitable mitigation strategy to be implemented.
Natural Environment	<ul style="list-style-type: none"> Metrolinx, as a Provincial Crown Agency, is not generally subject to municipal permitting and approval requirements; regardless, Metrolinx works in co-operation with local municipalities to adhere to the intent of the relevant permit/approval requirements to the extent possible. Metrolinx is in the process of establishing a Vegetation Compensation Protocol for RER projects; vegetation that is removed for the Project will be compensated for in accordance with the provisions of this protocol. Opportunities for natural heritage enhancement will be explored through the Vegetation Compensation Protocol in consultation with TRCA. Engagement with the TRCA on natural heritage enhancement opportunities will continue through detailed design. Efforts will be made to coordinate with Toronto Hydro, Toronto Water and other utility companies that may be affected by utility relocations to help minimize the overall impacts of the Project on the natural heritage system. Infrastructure and utility works will either be completed by Metrolinx as part of this Project, or by utility companies. Metrolinx and its Contractors will follow TRCA regulatory requirements. A Soil Management Plan will be developed by a Qualified Professional as defined in O. Reg. 153/04 for managing soil materials on-site (includes excavation, location of stockpiles, reuse and off-site disposal). A Stormwater Management Report will be completed to determine potential effects and mitigation measures. The report will be completed in consultation with TRCA and the MOECC. Stormwater management design will consider guidance provided by the MOECC Stormwater Management Planning and Design Manual (2003), Ministry of Transportation Ontario (MTO) Drainage Management Manual (2008), TRCA Storm Water Management Criteria (2012), and the Low Impact Development Stormwater Management Planning and Design Guide (TRCA/Credit Valley Conservation, 2010). No in-water works are anticipated at this time; in the event in-water works are identified to be required during detailed design, the project team will consult with TRCA, MNR and

Discipline	Commitments
	<p>DFO to identify restricted activity timing windows.</p> <ul style="list-style-type: none"> Measures to mitigate a potential loss of green space and reduce storm runoff will be identified in detailed design. Flood Contingency Plan will be developed to identify the need for flood contingency measures where flood plain areas exist.
Geology and Groundwater	<ul style="list-style-type: none"> Hydrogeological and geo-environmental studies will be carried out, which may identify recommendations for groundwater mitigation measures and monitoring. These future studies will be circulated to TRCA for review. TRCA Geotechnical Engineering Design and Submission Requirements guidelines will be referenced during detail design phase. Soil and bedrock conditions, as well as bedrock elevations, will be confirmed through future geotechnical investigations to be undertaken in support of detailed design. Ongoing engagement with the CTC source protection authority will be maintained.
Trees	<ul style="list-style-type: none"> Removal and/or damage of woody vegetation located in adjacent lands, beyond the Kitchener rail corridor, may require municipal tree removal permits. To support the permit applications, an Arborist Report will be completed during detailed design to supplement the Tree Inventory Plan. Metrolinx will work in co operation with the City of Toronto in the spirit of meeting by-law requirements, specifically the Private Tree By-law and Trees on City Streets By-law. An update of the tree removal count of the Project will be undertaken. This should be based upon a more detailed level of design, with available access permissions and more detailed survey information, to the extent possible. An update of the tree inventory to account for detailed grading, work zones and proposed clearing, to illustrate TPZ and their protection measures (types and locations), and tree removal zones, in accordance with the completion of an Arborist Report. The Arborist Report will be completed during detailed design and will contain at a minimum the following information in addition to details of tree location, size, species, conditions and category: <ul style="list-style-type: none"> Recommendations for tree/vegetation protection and preservation measures for all trees/vegetation that are to be retained; Details of tree pruning; Details of all trees/vegetation recommended for removal, including removal measures; Appraised values of trees/vegetation to be removed; Mitigation and monitoring measures recommended to ensure success of preservation and removal measures; Should vegetation compensation be required, it will be in accordance with the Metrolinx Vegetation Compensation Protocol; and Mapping. Assessment of trees within or adjacent to the work zones will be completed, as defined by the detailed design, as part of an Arborist Report to determine if trees will be affected. Preparation of detailed tree removal, restoration, and compensation plans will be undertaken in coordination with a Certified Arborist and/or Landscape Architect (licensed to practice in the Province of Ontario) to assist with species selection, planting locations and measures to promote establishment success.
Built Heritage Resources and Cultural Heritage Landscapes	<ul style="list-style-type: none"> Recommendations for BHRs and CHLs are based on the CHSR, CHAR, and CHERs undertaken for this Project. The following mitigation measures will be undertaken: <ul style="list-style-type: none"> Heritage Impact Assessments must be completed for SW-1 - the St. Clair Avenue West Subway. The following mitigation measures will be implemented for SW-3 - 1900 St. Clair Avenue West: <ul style="list-style-type: none"> Pre-construction consultations between the applicant and owners/occupants; Pre-construction measurements of background vibration levels; Pre-condition survey by means of a photographic record of potentially affected structure façades and all surfaces, including visible sections of building foundations, building cladding, doors, windows, interior wall finishes, surface pavement,

Discipline	Commitments
	<p>sidewalks, signs and trees. Each of the elements should be rated on their general condition (new, good, fair, poor, severe), and visible defects will be photographed</p> <ul style="list-style-type: none"> • Any additional measures outlined in the Noise and Vibration Control Plan should be implemented for the properties of known and potential CHVI that fall within the ZOI. • A CHER and, if required, HIA will be prepared during Detailed Design, to assess additional potential impacts related to the design of the station, for the ABC Lumber property at 153 Weston Road SW-9, within which the Project footprint is located. • If during detailed design the final limits of the St. Clair-Old Weston Station are altered and fall outside the Project footprint, further assessment may be necessary. • Metrolinx will: <ul style="list-style-type: none"> • Complete CHERs, where recommended, as early as possible during the detailed design phase of the Project and prior to completion of detailed design. • Complete HIAs, where required, in accordance with the Standards and Guidelines for Conservation of Provincial Heritage Properties and as early as possible during the detailed design phase and prior to completion of detailed design. The HIA will discuss the alternatives considered, and that all other alternatives to removal and/or demolition have been considered and the best alternative has been adopted. The HIA will also make recommendations to minimize or mitigate adverse effects on the property.
Archaeology	<ul style="list-style-type: none"> • Archaeological recommendations are based on a Stage 1 AA undertaken for this Project. Archaeological recommendations have been made based on the background historic research, locations of known or registered archaeological sites, previous AAs, and indicators of archaeological potential as outlined in the 2011 S&G. These recommendations are: <ul style="list-style-type: none"> • Areas determined to be undisturbed will be subjected to a Stage 2 AA Test Pit Survey at 5-metre intervals in accordance with section 2.1.2 of the 2011 S&G prior to construction activities to ensure no cultural heritage resources will be impacted; • Areas determined to be disturbed do not require further assessment; and, • If final limits of the St. Clair-Old Weston Project are altered and fall outside the current study area, an additional Stage 1 AA is required to assess the new footprint. • Figure 3-7, in Section 3.4.2 of Volume VII of the EPR, indicates areas of archaeological potential requiring Stage 2 AA. Metrolinx will: <ul style="list-style-type: none"> • Complete all required AA (Stage 2 and Stage 3 if recommended by the Stage 2 AA) as early as possible, prior to the completion of detail design, and well in advance of any ground disturbance; • Undertake future work in a manner that protects archaeological sites by conserving them in their original location or through archaeological fieldwork, and endeavour to conserve significant archaeological resources in their original location through documentation, protection, and avoidance of impacts. Where activities could disturb significant archaeological resources or areas of archaeological potential, Metrolinx will take appropriate measures to mitigate impacts; and • Include provisions in contract as recommended by archaeological assessment(s) (e.g. in case archaeological resources are discovered, protection of sites).
Socio-Economic and Land Use Characteristics	<ul style="list-style-type: none"> • Confirm effects on utilities. Additional Subsurface Utility Engineering (SUE) investigations may be conducted, as required, to confirm existing utilities. A review of existing and proposed future utilities plans, in addition to on-going consultation with utility companies and the City of Toronto, will be conducted during the detailed design stage. • Any relocations, service interruptions, or utility protection projects will be identified as early as possible to allow for project coordination and construction management plans to be created with consideration of utility needs. • Specific property requirements will be determined during detailed design. Ongoing consultation with affected property owners will help identify appropriate site-specific mitigation measures. Where access to property is required, ongoing consultation with affected landowners will help identify appropriate site-specific mitigation measures. • A lighting plan will be developed where the quality of light produced, and type of light sources used on the exterior of buildings, signs, pedestrian walkways, and other areas of the site, are compatible with, and appropriate to the overall design and use of the site.

Discipline	Commitments
	<ul style="list-style-type: none"> Metrolinx will work with Hydro One during detailed design to avoid impacts and/or develop mitigation. Metrolinx will continue to work with CP through detailed design to minimize potential effects on CP operations.
Air Quality	<ul style="list-style-type: none"> To improve air quality around the station during maintenance and operation, MOECC EASR recommendations for exempt equipment (O. Reg. 524/98) that has minimal air quality impacts, as well as application to the EASR for equipment that qualifies (O. Reg. 1/17 and O. Reg. 419/05) will be adhered to during detailed design.
Noise and Vibration	<ul style="list-style-type: none"> A more detailed noise assessment of construction will be completed when the specifics of construction equipment are finalized, prior to construction start. This assessment will consider minimizing construction-related noise levels, while balancing construction schedules and expediting construction activity. During detailed design, the station public address system, ancillary systems, and any other stationary noise sources will be designed so that the one-hour equivalent sound level does not exceed the higher of the applicable exclusion limit value given in NPC-300, or the background sound level. A more detailed vibration assessment of construction will be completed when the specifics of construction equipment are finalized, prior to construction start. This assessment will consider minimizing construction-related vibration levels, while balancing construction schedules and expediting construction activity. A vibration monitoring plan will be completed during detailed design. During detailed design, the predicted ZOI will be updated to confirm which structures fall within it. If a structure falls within the updated ZOI, the following is recommended: <ul style="list-style-type: none"> Pre-construction consultations with owners/occupants; Pre-construction measurements of background vibration levels; and Pre-construction survey by means of a photographic record of potentially affected structure façades and all surfaces, including visible sections of building foundations, building cladding, doors, windows, interior wall finishes, surface pavement, sidewalks, signs and trees. Each of the elements will be rated on their general condition (new, good, fair, poor, severe), and visible defects should be photographed.
Construction⁶	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume VII of the EPR related to construction will be implemented. An Environmental Mitigation and Monitoring Plan (EMMP) will be developed prior to construction to outline the responsibilities for carrying out monitoring and reporting activities, including timing and frequency of monitoring activities, as well as the compliance process. The EMMP will include all mitigation measures, categorized by Project phase, and will identify the party responsible for implementation.
Natural Environment	<ul style="list-style-type: none"> An ESC Plan prior to construction for implementation throughout construction will be developed. The ESC Plan will include consideration of the Greater Golden Horseshoe Area Conservation Authorities' Erosion and Sediment Control Guideline for Urban Construction and OPSS 805 (Erosion and Sediment Control Measures, Ministry of Transportation, 2015). This plan will encompass all areas of soils disturbance, particularly in the vicinity of the Lavender Creek.
Geology and Groundwater	<ul style="list-style-type: none"> Dewatering during construction may be required to facilitate creation of an isolated dry work area and may require registration on the Environmental Approval Sector Registry (EASR) system (if dewatering is over 50,000 L/day but under 400,000 L/day) or a Permit to Take Water (if dewatering exceeds 400,000 L/day). Approvals for discharge of pumped water will be required, which could include one or a combination of MOECC Environmental Compliance Approval (ECA) (under the <i>Ontario Water Resources Act</i> (OWRA), Section 53)), Municipal Discharge Permits, and/or Conservation Authority Approval (through the Voluntary Project Review process). The

⁶ Construction phase commitments include pre-construction commitments, completed following detailed design but prior to ground disturbance.

Discipline	Commitments
	<p>need for these permits will be determined during detailed design.</p> <ul style="list-style-type: none"> Municipal Discharge Permits may also be required for the discharge of pumped water associated with construction dewatering activities.
Archaeology	<ul style="list-style-type: none"> Should deeply buried archaeological materials be encountered during construction, all work will cease and a professionally licenced archaeologist will be consulted to assess the cultural heritage value and significance of the archaeological deposits; Areas identified to contain deeply buried archaeological potential will be subjected to a Stage 2 AA in accordance with Section 2.1.7, Standard 3 of the 2011 S&G, prior to construction activities. Trenches should be excavated at a maximum 10 m intervals to obtain clear sedimentary profiles to assess deeply buried potential. Trench placement should be determined to be an effective response to the detailed design of the Project (Figure 3-7 in Volume VII of the EPR); Areas identified to contain deeply buried archaeological potential without key defining historical elements (i.e. structures) must be subjected to Stage 2 AA construction monitoring in accordance with Section 2.1.7 Standard 4 (Figure 3-7 in Volume VII of the EPR); MTCS will be notified if archaeological resources are encountered or impacted during the course of the EA project work. All activities impacting archaeological resources will cease immediately, and a licensed archaeologist will carry out an archaeological assessment in accordance with the <i>Ontario Heritage Act</i> and the Standards and Guidelines for Consultant Archaeologists. If human remains are encountered during project work, all activities will cease immediately and the local police as well as the Cemeteries Regulation Unit of the Ministry of Government and Consumer Services will be contacted. In situations where human remains are associated with archaeological resources, MTCS will also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the <i>Ontario Heritage Act</i>. No construction activities will take place within the study area prior to the MTCS confirming in writing that all archaeological requirements have been met.
Socio-Economic and Land Use Characteristics	<ul style="list-style-type: none"> Site-Specific Construction Traffic Control and Management Plans will be prepared and implemented prior to Project construction to maintain reasonable access through work zones, to the extent possible.
Air Quality	<ul style="list-style-type: none"> An Air Quality Management Plan will be developed for implementation during construction to address construction equipment and vehicle exhaust, fugitive dust and odour.
Noise and Vibration	<ul style="list-style-type: none"> Construction should adhere to the City of Toronto noise by-laws (Noise Control By-Law, Municipal Code Chapter 591, By-law 1400-2007), to the extent possible. It is recommended that the vibration limits in the City of Toronto bylaw not be exceeded. This may entail monitoring of vibration levels during construction. Anticipated vibration levels will be confirmed during detailed design. A Noise and Vibration Control Plan will be developed prior to construction. The plan will include a complaint response protocol and will indicate that surrounding property owners and tenants will be informed of anticipated upcoming construction works, including any work at night.
Traffic and Transportation	<ul style="list-style-type: none"> A Construction Traffic Management Plan (CTMP) will be developed prior to construction which will include providing pedestrian and cyclist access through work zones, alerting local transit of potential travel delays/service disruptions in advance of Project construction including road closures; identification of best detour routes for transit vehicles that minimizes travel time and service disruptions should be identified.
Operations and Maintenance	
General	<ul style="list-style-type: none"> Mitigation measures and monitoring requirements documented in Section 4 - Volume VII of the EPR related to operations will be implemented.

3.7 Climate Change

Table 3-7 presents the commitments to future work related to climate change mitigation and adaptation.

Table 3-7: Commitments to Future Work Related to Climate Change

Discipline		Commitment
Detailed Design		
Climate Change Mitigation	Change	<p><i>Vegetation Compensation and Revegetation</i></p> <ul style="list-style-type: none"> Vegetation that is removed will be compensated for in accordance with the provisions of the Metrolinx Vegetation Compensation Protocol. Plant materials suitable to the growing environment will be selected for vegetation/revegetation. Species (native or non-native) must be hardy, drought and salt-tolerant, and resistant to the stresses of compacted soils and weather exposure. <p><i>Energy Consumption and Emissions</i></p> <ul style="list-style-type: none"> Station design will consider measures such as: <ul style="list-style-type: none"> Applying passive means of reducing energy where it does not conflict with other customer service and operational design requirements. Maximizing the use of natural light coupled with photocells, motion sensors and controls to activate lighting when necessary (enhanced building automation controls), where it does not conflict with other customer service and operational design requirements. Using LED lighting. Using heat recovery to conserve energy for heating and cooling.
Climate Change Adaptation	Change	<p><i>Air Temperature</i></p> <ul style="list-style-type: none"> Station design will: <ul style="list-style-type: none"> Consider building material selection to limit absorption of solar radiation. Maximize shade along pedestrian routes. Reduce the urban heat island effect through plantings, selection of building materials and proactive shade management. <p><i>Precipitation</i></p> <p>The Stormwater Management design for the Transit Project will consider the drainage and Stormwater Management objectives of the MOECC Stormwater Management Planning and Design Manual (2003), MTO Drainage Management Manual (2008), and TRCA Stormwater Management Criteria (2012), among other guidance. This will be supplemented by current guidance such as the runoff volume control targets for Ontario recommended to MOECC (Aquafor Beech Ltd. and Earthfx Inc., 2016) from local municipalities and Conservation Authorities.</p> <ul style="list-style-type: none"> A detailed Stormwater Management Plan will be developed during detailed design and prior to construction. Future increased rainfall intensities, and consequently increased runoff, will be predicted using precipitation intensity-duration-frequency (IDF) curves. Oil-grit separators and stormwater management features must be sized appropriately to manage predicted future scenario flows and sediment loading (i.e., winter and spring). <p><i>Drought</i></p> <ul style="list-style-type: none"> Station design will include consideration of water conservation measures such as: <ul style="list-style-type: none"> Metering indoor and outdoor water use to better track and manage the impacts of extended droughts on operations and landscape plantings. Using water conserving systems to reduce consumption. Planting drought resistant vegetation.
Construction		
Climate Change Mitigation	Change	<p><i>Vegetation Compensation and Revegetation</i></p> <ul style="list-style-type: none"> Revegetation of disturbed areas will take place as soon as possible.

Climate Change Adaptation	<p><i>Precipitation</i></p> <p>Implement Erosion and Sediment Control (ESC) measures as described in Appendix B in Volumes 2 to 7 of the EPR, including the development of an ESC Plan. The ESC Plan will include consideration of the Greater Golden Horseshoe Area Conservation Authorities' Erosion and Sediment Control Guideline for Urban Construction (Greater Golden Horseshoe Area Conservation Authorities, 2006) and OPSS 805 (Erosion and Sediment Control Measures).</p>
Operations	
Climate Change Mitigation	<p><i>Vegetation Compensation and Revegetation</i></p> <ul style="list-style-type: none"> • Post-planting monitoring of restoration areas will occur for one year after installation. • One site visit will be conducted during the subsequent growing season to confirm survival of plantings and/or seed mix. • Should the plantings and/or seed mix not survive, additional seeding and/or plantings will be undertaken one year thereafter with one additional monitoring visit in the following growing season.

3.8 Consultation and Engagement

Table 3-8 presents commitments to future work related to consultation and engagement. The City of Toronto and Metrolinx are committed to ongoing engagement with regulatory agencies, stakeholders, interested parties, the public, and Indigenous communities and organizations through the detailed design, construction and operations phases of the Transit Project.

Table 3-8: Commitments to Future Consultation and Engagement

Discipline	Commitment
Detailed Design, Construction⁷ and Operations	
Consultation and Engagement	<ul style="list-style-type: none"> • Continued consultation with potentially impacted property owners during detailed design. • Consultation with regulatory agencies to secure any permits or approvals required for the construction and/or operation of the Transit Project. • Provide opportunities for members of the public, stakeholders and Indigenous communities and organizations to meet and discuss the Transit Project. • Continue to provide contact information for the Project Team on the Project websites. • Provide project-specific information via the Project websites. • Implement station-specific consultation and engagement commitments outlined in Volumes 2 through 7 (collated in Volume 10).

⁷ Construction phase commitments include pre-construction commitments, completed following detailed design but prior to ground disturbance.