

Appendix A4

Ontario Line Project

Lakeshore East Joint Corridor Early Works – Heritage Detailed Design Report



Metrolinx

Heritage Detailed Design Report

Ontario Line Lakeshore East Joint Corridor Early Works

Prepared by:

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Executive Summary

ES.1 Ontario Line Lakeshore East Joint Corridor Early Works

The Ontario Line Project (the Project) is being assessed in accordance with Ontario Regulation 341/20: Ontario Line Project under the Environmental Assessment Act. Ontario Regulation 341/20: Ontario Line Project outlines a Project-specific environmental assessment process that includes an Environmental Conditions Report, Environmental Impact Assessment Report, and an opportunity for Early Works Report(s) for assessment of works that are ready to proceed in advance of the Environmental Impact Assessment Report. The Environmental Conditions Report documents the local environmental conditions of the Ontario Line Study Area and provides a preliminary description of the potential environmental impacts from the Project. Information outlined in the Environmental Conditions Report is used to inform the Early Works Report(s) and Environmental Impact Assessment Report, which study environmental impacts in further detail and confirm and refine preliminary mitigation measures identified in the Environmental Conditions Report.

Ontario Line early works are components of the Project that are proposed to proceed before the completion of the Ontario Line environmental impact assessment process. An overview of the Project is provided in **Section 1.2**. Early works are defined in Ontario Regulation 341/20: Ontario Line Project under the Environmental Assessment Act as follows:

"any components of the Ontario Line Project that Metrolinx proposes to proceed with before the completion of the Ontario Line assessment process, such as station construction, rail corridor expansion, utility relocation or bridge replacement or expansion."

The Lakeshore East Joint Corridor early works are considered to be of strategic importance in enabling the timely implementation of the Project. These early works are being advanced where the Project interfaces with GO Expansion and the East Harbor Station (East Harbour Station is situated immediately to the west of the Lakeshore East Joint Corridor early works). Advancing early works and supporting environmental and technical studies in this area provides planning and design efficiencies for the Project, GO Expansion and the East Harbour Station, and facilitates the timely implementation of these projects.

These early works will set the groundwork for other major construction for the Project, reducing risk of construction delays to the main contracts by completing the joint corridor work in advance of the main contracts.

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Ontario Line Lakeshore East Joint Corridor Early Works - Heritage Detailed Design Report

AECOM Canada Limited (AECOM) was retained by Metrolinx and Infrastructure Ontario to complete the Ontario Line Lakeshore East Joint Corridor Early Works Report for the Project. This Heritage Detailed Design Report supports the Ontario Line Final Lakeshore East Joint Corridor Early Works Report prepared for the Project to document the built heritage resources/cultural heritage landscapes impact assessment of Lakeshore East Joint Corridor early works (**Figure ES-1**).

For the purpose of this Heritage Detailed Design Report, 'project components' and 'project activities' as defined in the Ontario Line Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (AECOM, 2020a) are referred to as 'early works components' and 'construction activities' respectively.

The Ontario Line is being completed in accordance with Ontario Regulation 341/20: Ontario Line Project under the Environmental Assessment Act. Ontario Regulation 341/20: Ontario Line Project includes provisions for consultation with the public, agencies and Indigenous communities in addition to reporting requirements for environmental conditions, early works, and environmental impact assessment. As part of the Ontario Line Final Environmental Conditions Report (AECOM, 2020b)¹, AECOM completed the Ontario Line Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (AECOM, 2020a) (hereafter the 'Ontario Line Cultural Heritage Report') that characterizes known and potential built heritage resources and cultural heritage landscapes within the Ontario Line Study Area.

Purpose of the Heritage Detailed Design Report

The purpose of the Heritage Detailed Design Report is to confirm impacts and mitigation measures as described in the Ontario Line Cultural Heritage Report (or identify those not anticipated or described in the Ontario Line Cultural Heritage Report), identify any changes, and refine the range of mitigation options and measures for each property based on the Lakeshore East Joint Corridor early works where applicable.

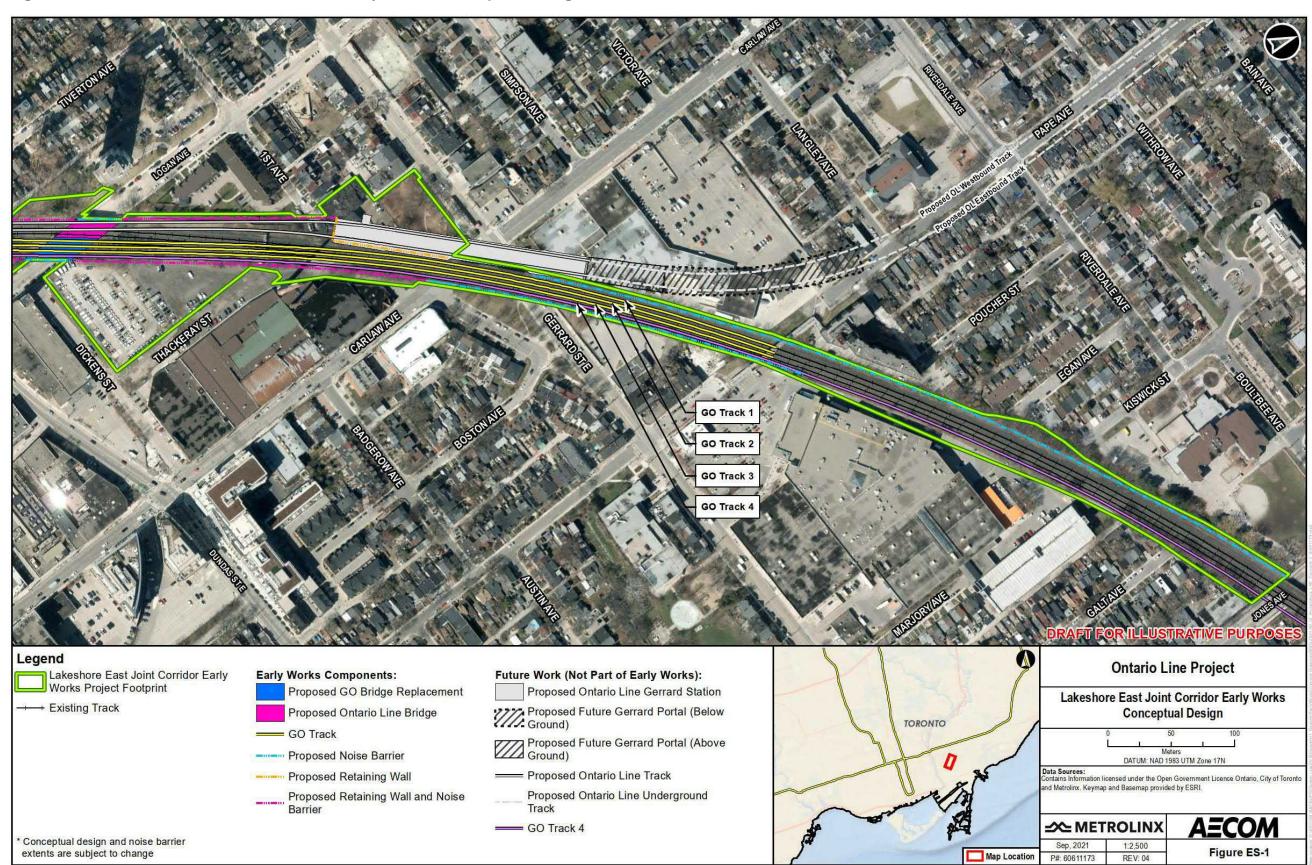
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^{1.} The Ontario Line Final Environmental Conditions Report (AECOM, 2020b) was published on November 30, 2020 in accordance with Ontario Regulation 341/20: Ontario Line Project.

Figure ES-1: Lakeshore East Joint Corridor Early Works Conceptual Design



Figure ES-1: Lakeshore East Joint Corridor Early Works Conceptual Design



The key tasks of this Heritage Detailed Design Report are to:

- Review the existing baseline conditions of known, previously identified and potential built heritage resources/cultural heritage landscapes within the Lakeshore East Joint Corridor Study Area as documented in the Ontario Line Cultural Heritage Report (AECOM, 2020a) (where the Lakeshore East Joint Corridor Study Area includes the Lakeshore East Joint Corridor Early Works Project Footprint, plus adjacent properties to account for potential indirect impacts and properties within 11.1 metres of the Lakeshore East Joint Corridor Early Works Project Footprint to account for potential vibration impacts)²;
- Conduct a field review within the Lakeshore East Joint Corridor Study Area to confirm the presence and/or changes to any known and previously identified built heritage resources/cultural heritage landscapes that were documented in the Ontario Line Cultural Heritage Report (AECOM, 2020a), and to identify potential built heritage resources/cultural heritage landscapes that were not identified in the Ontario Line Cultural Heritage Report (AECOM, 2020a):
- Review the early works components and built heritage resources/cultural heritage landscapes as captured in the preliminary impact assessment of the Ontario Line Cultural Heritage Report (AECOM, 2020a); confirm impacts and mitigation measures, identify any changes, and, where required, refine the range of mitigation options and measures for each property based on the Lakeshore East Joint Corridor early works. If required, identify any monitoring recommendations and describe how any conditions attached to the Minister's Consent will be met;
- Assess potential early works-specific impacts to potential cultural heritage resources/cultural heritage landscapes identified in the field review for this Heritage Detailed Design Report that were not described in the Ontario Line Cultural Heritage Report (AECOM, 2020a) and recommend mitigation measures and monitoring activities to avoid or minimize those impacts;
- Identify any required permits and approvals (i.e., federal, provincial, municipal, other); and

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^{2.} The 250 metre buffer from the Ontario Line Cultural Heritage Report was refined using analysis from the Ontario Line Lakeshore East Joint Corridor Early Works – Noise and Vibration Report (AECOM, 2021). The refined buffer was calculated based on the Project-specific anticipated impacts of early works using a conservative approach (where construction equipment was assumed to operate at the edge of the Lakeshore East Joint Corridor Early Works Project Footprint, closest to nearby buildings/structures) and accounts for potential vibration impacts to buildings extremely susceptible to vibration damage (including heritage buildings and their foundations). The resulting buffer is 11.1 metres from the Lakeshore East Joint Corridor Early Works Project Footprint.

Apply any input/feedback applicable to this Heritage Detailed Design Report that was received from interested parties during the Ontario Line Draft Cultural Heritage Report public review period (September 17, 2020 to October 17, 2020).

This Heritage Detailed Design Report supports the Ontario Line Lakeshore East Joint Corridor Early Works Report prepared in accordance with Ontario Regulation 341/20: Ontario Line Project.

Refer to **Section 1** of this Heritage Detailed Design Report for more information related to the Project and a detailed early works description.

ES.2 Early Works Description

The Lakeshore East Joint Corridor early works are planned along the Lakeshore East rail corridor between approximately Eastern Avenue and Pape Avenue and will include:

- Reconfiguration of existing GO tracks to support future Ontario Line infrastructure:
- Replacement of the existing rail bridges at Queen Street East, Dundas Street East and Logan Avenue;
- Construction of new bridges at Dundas Street East and Logan Avenue to support future Ontario Line tracks;
- Construction of the foundations for GO Overhead Catenary System (OCS) poles and supporting infrastructure to accommodate future fourth GO track;
- Construction of retaining walls; and
- Construction of noise barriers, including east of Pape Avenue.

The Lakeshore East Joint Corridor early works components and construction activities are further described in detail in **Section 2**.

For the purpose of this Heritage Detailed Design Report, the Lakeshore East Joint Corridor Study Area, also shown in **Figure 2-1**, includes the Lakeshore East Joint Corridor Early Works Project Footprint, plus adjacent properties to account for potential indirect impacts and properties within 11.1 metres of the Lakeshore East Joint Corridor Early Works Project Footprint to account for potential vibration impacts.

ES.3 Local Environmental Conditions

A total of 11 built heritage resources/cultural heritage landscapes are located within the Lakeshore East Joint Corridor Study Area, including ten that were included in the Ontario Line Cultural Heritage Report and one additional Listed built heritage resource/cultural heritage landscape that was identified in the preparation of this Heritage Detailed Design Report.

Table ES-1 presents a summary of known, previously identified and potential built heritage resources/cultural heritage landscapes within the Lakeshore East Joint Corridor Study Area. Local environmental conditions are further described in **Section 3**.

ES.4 Summary of Community Engagement

A draft of the Heritage Detailed Design Report was distributed to agencies including the Ministry of Heritage, Sport, Tourism and Culture Industries and the City of Toronto for review in June 2020. This Heritage Detailed Design Report has been updated based on the input/feedback received from agencies.

The Ontario Line Draft Lakeshore East Joint Corridor Early Works Report, including the Draft Heritage Detailed Design Report, was made available for public review on the Project website when the Notice of Publication of Draft Lakeshore East Joint Corridor Early Works Report was issued on September 23, 2021. Comments received during the Ontario Line Draft Lakeshore East Joint Corridor Early Works Report public review period have been incorporated into the Ontario Line Final Lakeshore East Joint Corridor Early Works Report and this Final Heritage Detailed Design Report, as required. A summary of community engagement is provided in **Section 4**.

ES.5 Potential Impacts, Mitigation Measures and Monitoring Activities

In accordance with Sections 8(2)6, 8(2)7 and 8(2)8 of Ontario Regulation 341/20: Ontario Line Project, this Heritage Detailed Design Report describes the potential impacts, mitigation measures, and monitoring activities to verify the effectiveness of mitigation measures associated with the Lakeshore East Joint Corridor early works. This impact assessment builds upon the methodology established in the Ontario Line Cultural Heritage Report (AECOM, 2020a). Impacts associated with Project operations will be addressed as part of the Environmental Impact Assessment Report under a separate cover.

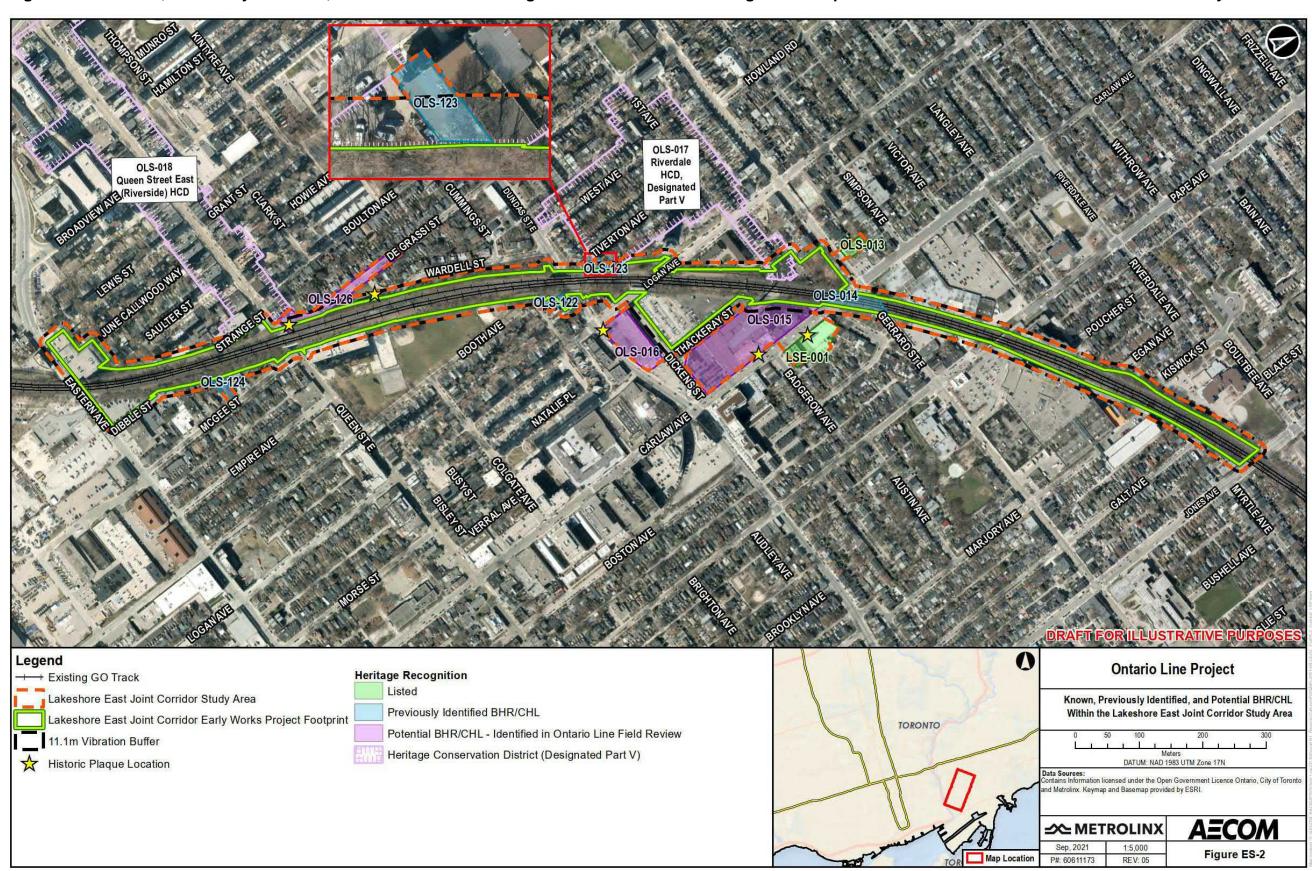
This early works impact assessment and development of mitigation measures and monitoring activities considered the following:

- a) Lakeshore East Joint Corridor early works components as described in Section 2.1;
- The Lakeshore East Joint Corridor Early Works Project Footprint and Study Area as described in **Section 2.2**;
- c) Lakeshore East Joint Corridor construction activities as described in Section 2.3; and
- d) Local environmental conditions within the Lakeshore East Joint Corridor Study Area as described in **Section 3**.

Table ES-1: Built Heritage Resources/Cultural Heritage Landscapes Within the Lakeshore East Joint Corridor Study Area

Cultural Heritage Report Reference #	Type of Property	Location /Address	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance
OLS-013	Civic	840 Gerrard Street East - Fire Station #324	■ Listed on the Municipal Heritage Register (April 1, 1982)	No
OLS-014	Bridge	Carlaw Avenue and Gerard Street East Subway	 Previously identified built heritage resource/cultural heritage landscape Metrolinx Provincial Heritage Property 	No
OLS-015	Industrial	400 Carlaw Avenue – Jefferson Glass Co. Factory	■ Potential built heritage resource/cultural heritage landscape identified in the Ontario Line Cultural Heritage Report (AECOM, 2020a)	No
OLS-016	Industrial	1 Dickens Street – Woods Manufacturing Company	■ Potential built heritage resource/cultural heritage landscape identified in the Ontario Line Cultural Heritage Report (AECOM, 2020a)	No
OLS-017	Cultural Heritage Landscape	Riverdale Heritage Conservation District	■ Designated Part V of the Ontario Heritage Act (By-law #951-2008)	No
OLS-018	Cultural Heritage Landscape	Queen Street East Riverside Heritage Conservation District	■ Heritage Conservation District, Under Study	No
OLS-122	Residential	6,8,10 Paisley Avenue	■ Previously identified built heritage resource/cultural heritage landscape (Metrolinx Cultural Heritage Evaluation Recommendations Report)	No
OLS-123	Residential	15-17 Tiverton Avenue	 Previously identified built heritage resource/cultural heritage landscape (Metrolinx Cultural Heritage Evaluation Recommendations Report) Contributing property in the Riverdale Heritage Conservation District, Designated Part V of the Ontario Heritage Act 	No
OLS-124	Residential	60-62 McGee Street	■ Previously identified built heritage resource/cultural heritage landscape (Metrolinx Cultural Heritage Evaluation Recommendations Report)	No
OLS-126	Streetscape	DeGrassi Street – Streetscape De Grassi Street from Queen Street East to Wardell Street	■ Potential built heritage resource/cultural heritage landscape identified in the Ontario Line Cultural Heritage Report (AECOM, 2020a)	No
LSE-001	Industrial	369 Carlaw Avenue – Toronto Hydroelectric Substation #8	■ Listed on City of Toronto Heritage Register (May 6 & 7, 1991) ■ Identified in this Heritage Detailed Design Report	No

Figure ES-2: Known, Previously Identified, and Potential Built Heritage Resources/Cultural Heritage Landscapes Within the Lakeshore East Joint Corridor Study Area



The purpose of the impact assessment contained in this Heritage Detailed Design Report is to:

- Review the Lakeshore East Joint Corridor early works components and built heritage resources/cultural heritage landscapes as captured in the preliminary impact assessment of the Ontario Line Cultural Heritage Report (AECOM, 2020a); confirm impacts and mitigation measures, identify any changes, and, where required, refine the range of mitigation options and measures for each property based on the Lakeshore East Joint Corridor early works. If required, identify any monitoring recommendations; and
- Identify potential Lakeshore East Joint Corridor early works-specific impacts to potential cultural heritage resources/cultural heritage landscapes identified in the field review for this Heritage Detailed Design Report that were not described in the Ontario Line Cultural Heritage Report (AECOM, 2020a) and recommend mitigation measures and/or monitoring activities to avoid or minimize those impacts.

Section 5 includes information related to potential impacts, mitigation measures, and monitoring activities for the Lakeshore East Joint Corridor early works. Mitigation measures and monitoring activities are recommended to minimize the potential impacts during construction.

Table ES-2 presents the anticipated impacts from the Lakeshore East Joint Corridor early works, refined from the range of impacts and mitigation measures that were developed in consultation with the Ministry of Heritage, Sport, Tourism and Culture Industries for the Ontario Line Cultural Heritage Report (AECOM, 2020a) to built heritage resources/cultural heritage landscapes within the Lakeshore East Joint Corridor Study Area. The table also includes the proposed mitigation measures in order to mitigate and minimize any potential negative impacts to these resources that may result from the Lakeshore East Joint Corridor early works.

ES.6 Permits and Approvals

Section 7 notes that the following permits may be required for the Lakeshore East Joint Corridor early works construction activities.

Federal

The Lakeshore East Joint Corridor early works will not directly or indirectly impact any National Historic Site or federal heritage building. Therefore, no permits/approvals from Parks Canada are required.

Ontario Line Lakeshore East Joint Corridor Early Works – Heritage Detailed Design Report

Table ES-2: Potential Impacts, Mitigation Measures and Monitoring Activities for the Lakeshore East Joint Corridor Early Works

Ontario Line Cultural Heritage Report Ref. No.	Location/ Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLS-013	840 Gerrard Street East Fire Station #324	■ Listed on the Municipal Heritage Register (April 1, 1982)	No	 No direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). OLS-013 can be considered adjacent to the Lakeshore East Joint Corridor Early Works Project Footprint. OLS-013 is approximately 29.4 metres north of the Lakeshore East Joint Corridor Early Works Project Footprint, separated by Gerrard Street East. Therefore, the property will not experience direct physical impacts based on the location of early works. 	■ No mitigation measures required. Continue to avoid the property (OLS-013).	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLS-013	840 Gerrard Street East Fire Station #324	■ Listed on the Municipal Heritage Register (April 1, 1982)		2. No indirect adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). The building at OLS-013 is approximately 18 metres north of the Lakeshore East Joint Corridor Early Works Project Footprint, beyond the 11.1 metre vibration buffer. Therefore, vibration impacts to the building within OLS-013 will be avoided.		■ Lakeshore East Joint Corridor early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.
OLS-014	Carlaw Avenue Subway and Gerrard Street East Subway	 ■ Previously identified built heritage resource/ cultural heritage landscape ■ Metrolinx Provincial Heritage Property 	No	Heritage Report). Both structures at OLS-014 are located entirely within the Lakeshore East Joint Corridor Project Footprint. The structures will be imposted by the addition of paice beginning as a shown in Figure 2.	 Mitigation measures documented in Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measure for the alteration of the structures are required: Consult with City of Toronto's Heritage Planning as planning and design progresses regarding any physical impact to the structures in order to determine and obtain any approval or permits required. Recognizing that the Gerrard Street East and Carlaw Avenue subways are over 80 years old, bridge condition and technical feasibility assessments will be carried out during early works detailed design as it relates to noise barrier design and installation. Should these assessments show that noise barrier installation is not possible without a physical impact to a heritage attribute, Metrolinx will consult with City of Toronto's Heritage Planning regarding any physical impacts to the bridges and complete detailed documentation of the structure that includes identification of salvageable materials and/or heritage attributes prior to alteration, in order to inform what structure components should be retained and conserved and/or restored. 	

Ontario Line Known or Potential Location/ Cultural **Provincial Heritage** Address and **Heritage Recognition** Type and Description of Potential Impact **Mitigation Measures Monitoring Activities** Property of Provincial Heritage Report **Property Name** Ref. No. Significance OLS-014 Carlaw Avenue ■ Previously identified No 2. No indirect adverse impacts from Lakeshore East Joint ■ No mitigation measures required. ■ Lakeshore East Joint Corridor early works Subway and built heritage Corridor early works will have no indirect impacts that require Gerrard Street resource/ cultural (Impact Type 1 – no anticipated impact, from Appendix H: monitoring prior, during or post-East Subway heritage landscape Preliminary Potential Project-Specific pacts and Proposed construction of early works. ■ Metrolinx Provincial Mitigation Measures - Ontario Line South Study Area, in the Heritage Property Ontario Line Cultural Heritage Report). The entire bridge is within the 11.1 metre vibration buffer, however. as a railway structure, OLS-014 was built to withstand vibration and therefore will not experience adverse vibration impact from early works. For this reason, vibration was not included as a potential impact in the Ontario Line Cultural Heritage Report. No direct adverse impacts from Lakeshore East Joint Corridor ■ No mitigation measures required. OLS-015 400 Carlaw ■ Potential built No ■ Lakeshore East Joint Corridor early works Avenue heritage resource/ early works Continue to avoid the property (OLS-015) will have no direct impacts that require cultural heritage (Impact Type 1 – no anticipated impact, from Appendix H: monitoring prior, during or post-Jefferson Glass landscape identified Preliminary Potential Project-Specific Impacts and Proposed construction of early works. Co. Factory in the Ontario Line Mitigation Measures - Ontario Line South Study Area, in the Cultural Heritage Ontario Line Cultural Heritage Report). Report (AECOM, OLS-015 is adjacent to the Lakeshore East Joint Corridor Early 2020c) Works Project Footprint. Therefore, the property will not experience direct physical impacts based on the location of early works. OLS-015 400 Carlaw ■ Potential built No 2. Indirect adverse impact from Lakeshore East Joint Corridor ■ Mitigation measures documented in ■ Lakeshore East Joint Corridor early works Avenue Appendix H of the Ontario Line Cultural heritage resource/ early works have the potential to incur vibration cultural heritage (Impact Type 3A – Vibration impacts to the building related to the Heritage Report have been refined based impacts on the building within OLS-015. Jefferson Glass landscape identified Project on or adjacent to the property, from Appendix H: on the early works impact assessment. The following monitoring activities are in the Ontario Line Preliminary Potential Project-Specific Impacts and Proposed Co. Factory The following mitigation measures for required for vibration impacts: Cultural Heritage Mitigation Measures – Ontario Line South Study Area, in the vibration impacts are required: - Monitor vibration during construction Report (AECOM, Ontario Line Cultural Heritage Report). - Documentation (Review and establish) using seismographs, with notification by 2020c) of the structural condition of the affected audible and/or visual alarms when limits The 11.1 metre vibration buffer overlaps the building within OLSbuildings to determine if they are are approached or exceeded; and 015. As a result, the potential exists for vibration impacts on the vulnerable to vibration impacts from building during construction of early works. Conduct regular condition surveys and early works. reviews during construction to evaluate - Establish vibration limits based on efficacy of protective measures. Implement additional mitigation as structural conditions, founding soil conditions and type of construction required. vibration. - Implement vibration mitigating measures on the construction site and/or at the building. OLS-016 1 Dickens Street ■ Potential built No 1. No direct adverse impacts from Lakeshore East Joint Corridor ■ No mitigation measures required. ■ Lakeshore East Joint Corridor early works heritage resource/ Continue to avoid the property (OLS-016) will have no direct impacts that require cultural heritage Woods (Impact Type 1 – no anticipated impact, from Appendix H: monitoring prior, during or post-Manufacturing landscape identified Preliminary Potential Project-Specific Impacts and Proposed construction of early works. Company in the Ontario Line Mitigation Measures - Ontario Line South Study Area, in the Cultural Heritage Ontario Line Cultural Heritage Report). Report (AECOM, The property of OLS-016 is adjacent to the Lakeshore East Joint 2020c) Corridor Early Works Project Footprint. Therefore, the property will not experience direct physical impacts from early works based on the location of early works.

Ontario Line Cultural Heritage Report Ref. No.	Location/ Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLS-016	1 Dickens Street Woods Manufacturing Company	■ Potential built heritage resource/cultural heritage landscape identified in the Ontario Line Cultural Heritage Report (AECOM, 2020c)	No	2. No indirect adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). The building at OLS-016 is approximately 19.9 metres south of the Lakeshore East Joint Corridor Early Works Project Footprint, and beyond the 11.1 metre vibration buffer. Therefore, vibration impacts to the building within OLS-016 will be avoided.	■ No mitigation measures required.	■ Lakeshore East Joint Corridor early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.
OLS-017	Riverdale Heritage Conservation District	■ Designated Part V of the Ontario Heritage Act (By-law 951-2008)	No		Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures for direct impacts are required in accordance with the Riverdale Heritage Conservation District Plan Phase 1:	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLS-017	Riverdale Heritage Conservation District	■ Designated Part V of the Ontario Heritage Act (By-law 951- 2008)	No	2. Indirect adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 3A – Vibration impacts to the building related to the Project on or adjacent to the property, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). Contributing properties at 238 and 236 First Avenue and noncontributing properties at 240 and 242 First Avenue within the Heritage Conservation District are within the 11.1 metre vibration buffer. As such, the potential exists for vibration impacts during construction of early works.	■ Mitigation measures documented in Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures for vibration impacts are required: - Documentation (Review and establish) of the structural condition of the affected buildings to determine if they are vulnerable to vibration impacts from early works.	■ Lakeshore East Joint Corridor early works have the potential to incur vibration impacts on buildings within the Heritage Conservation District (OLS-017). The following monitoring activities are required for vibration impacts: - Monitor vibration during construction using seismographs, with notification by audible and/or visual alarms when limits are approached or exceeded; and - Conduct regular condition surveys and reviews during construction to evaluate

Ontario Line Cultural Heritage Report Ref. No.	Location/ Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
					 Establish vibration limits based on structural conditions, founding soil conditions and type of construction vibration. Implement vibration mitigating measures on the construction site and/or at the building. 	efficacy of protective measures. Implement additional mitigation as required.
OLS-018	Queen Street East – Riverside Heritage Conservation District	■ Heritage Conservation District, under study	No	1. No Direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). OLS-018, the Queen Street East Riverside Heritage Conservation District, is adjacent to the Lakeshore East Joint Corridor Early Works Project Footprint. The Heritage Conservation District will not experience direct physical impacts based on the location of early works.	■ No mitigation measures required. Continue to avoid the Heritage Conservation District.	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLS-018	Queen Street East – Riverside Heritage Conservation District	■ Heritage Conservation District, under study	No	2. Indirect adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 3A – Vibration impacts to the building related to the Project on or adjacent to the property, from Appendix H: Preliminary Potential Project-Specific pacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). The only building within the Heritage Conservation District that is within the 11.1 metre vibration buffer is the Sisters of St. Joseph building (no legal address in Teranet data). The building is within 9.1 metres of the Lakeshore East Joint Corridor Early Works Project Footprint and therefore, there is potential for vibration impacts during construction of early works.	 Mitigation measures documented in Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures for vibration impacts are required: Documentation (Review and establish) of the structural condition of the affected building to determine if they are vulnerable to vibration impacts from early works. Establish vibration limits based on structural conditions, founding soil conditions and type of construction vibration. Implement vibration mitigating measures on the construction site and/or at the building. 	Conservation District (OLS-018). The following monitoring activities are required for vibration impacts: – Monitor vibration during construction
OLS-122	6, 8 and 10 Paisley Avenue	■ Previously identified built heritage resource/cultural heritage landscape (AECOM, 2017b)	No	1. Direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 2A – Encroachment onto a property causing a physical impact to a property, while avoiding physical impact to a building and/or the heritage attributes identified in Appendix C – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). The buildings within 6, 8, and 10 Paisley Avenue are in close proximity (4 to 5 metres) to the Lakeshore East Joint Corridor Early Works Project Footprint. The rear yards of all the properties are within the Lakeshore East Joint Corridor Early Works Project Footprint and are proposed to be used to support construction access on a temporary basis. This temporary encroachment will result in a physical impact to the properties but will not cause a direct adverse impact to the buildings on the properties.	 Mitigation measures documented in Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures for direct impacts related to encroachment are required: Consult with City of Toronto's Heritage Planning as planning progresses 	construction of early works.

Ontario Line Cultural Heritage Report Ref. No.	Location/ Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLS-122	6, 8 and 10 Paisley Avenue	■ Previously identified built heritage resource/ cultural heritage landscape (AECOM, 2017b)		2. Indirect adverse impact from Lakeshore East Joint Corridor early works (Impact Type 3A – Vibration impacts to the building related to the Project on or adjacent to the property, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report) The residences within OLS-122, 6, 8 and 10 Paisley Avenue, are in close proximity (between 4 to 5 metres) to the Lakeshore East Joint Corridor Early Works Project Footprint and are located within the 11.1 metre vibration buffer. As such, there is potential for vibration impacts during the construction of early works.	■ Mitigation measures documented in Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures for vibration impacts are required: - Documentation (Review and establish) of the structural condition of the affected building to determine if they are vulnerable to vibration impacts from early works - Establish vibration limits based on structural conditions, founding soil conditions and type of construction vibration - Implement vibration mitigating measures on the construction site and/or at the building	property (OLS-122). The following monitoring activities are required for vibration impacts: - Monitor vibration during construction using seismographs, with notification by audible and/or visual alarms when limits are approached or exceeded; and - Conduct regular condition surveys and reviews during construction to evaluate efficacy of protective measures. Implement additional mitigation as required
OLS-123	15 and 17 Tiverton Avenue	 Previously identified built heritage resource/cultural heritage landscape (AECOM, 2017c) Contributing property in the Riverdale Heritage Conservation District, Designated Part V of the Ontario Heritage Act 	No	 No direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report) OLS-123 is adjacent to the Lakeshore East Joint Corridor Early Works Project Footprint. The properties will not experience direct physical impacts based on the location of early works. 	■ No mitigation measures required. Continue to avoid the properties (OLS-123).	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLS-123	15 and 17 Tiverton Avenue	 Previously identified built heritage resource/cultural heritage landscape (AECOM, 2017c) Contributing property in the Riverdale Heritage Conservation District, Designated Part V of the Ontario Heritage Act 	No	2. Indirect adverse impact from Lakeshore East Joint Corridor early works (Impact Type 3A – Vibration impacts to the building related to the Project on or adjacent to the property, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) The two residences within OLS-123, 15 and 17 Tiverton Avenue, are located adjacent to the Lakeshore East Joint Corridor Early Works Project Footprint and the buildings are both located within the 11.1 metre vibration buffer. As a result, there is potential for vibration impacts during the construction of early works.	■ Mitigation measures documented in Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures for vibration impacts are required: - Documentation (Review and establish) of the structural condition of the affected building to determine if they are vulnerable to vibration impacts from early works - Establish vibration limits based on structural conditions, founding soil conditions and type of construction vibration - Implement vibration mitigating measures on the construction site and/or at the building	potential District (OLS-123). The following monitoring activities are required for vibration impacts: - Monitor vibration during construction

Ontario Line Cultural Heritage Report Ref. No.	Location/ Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLS-124	60 and 62 McGee Street	■ Previously identified built heritage resource/cultural heritage landscape (AECOM, 2017d)	No	No direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report)	■ No mitigation measures required. Continue to avoid the properties (OLS-124).	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
				Two residences within OLS-124, 60 and 62 McGee Street, are adjacent to the Lakeshore East Joint Corridor Early Works Project Footprint. The properties will not experience direct physical impacts based on the location of early works.		
OLS-124	60 and 62 McGee Street	■ Previously identified built heritage resource/cultural heritage landscape (AECOM, 2017d)	No	1. No indirect adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report) The rear of portion of the properties at OLS-124 are within the 11.1 metre vibration buffer, however the buildings are approximately 4.6 metres beyond the 11.1 metre vibration buffer. As a result, there is no potential for vibration impacts to the buildings during construction of early works.	■ No mitigation measures required.	■ Lakeshore East Joint Corridor early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.
OLS-126	De Grassi Street from Queen Street East to Wardell Street	■ Potential built heritage resource/ cultural heritage landscape identified in the Ontario Line Cultural Heritage Report (AECOM, 2020c)	No	1. Direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 2C - Introduction of new elements and/or alterations that results in a physical impact to a heritage attribute identified in Appendix C, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures — Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report) OLS-126 is within the Lakeshore East Joint Corridor Early Works Project Footprint. Removal and replacement of the existing Queen Street East GO rail bridge may result in a direct impact to the Heritage Toronto Plaque located on the sidewalk on the north side of the as shown in Figure ES-2. Although the bridge itself does not retain cultural heritage value or interest, plaques, including the historical plaque near the bridge, are heritage attributes of the public realm of the De Grassi Street streetscape.	Planning as planning progresses for any physical impact to the streetscape and its heritage attributes (i.e. the Heritage Toronto plaque) in order to determine and obtain any approval or permits required.	undertaken throughout construction to ensure integrity of the plaque/plaque protective enclosure. - Post construction, the enclosure will be removed and the condition of the plaque will be confirmed to ensure it meets pre-construction conditions.

Ontario Line Cultural Heritage Report Ref. No.	Location/ Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLS-126	De Grassi Street from Queen Street East to Wardell Street	■ Potential built heritage resource/ cultural heritage landscape identified in the Ontario Line Cultural Heritage Report (AECOM, 2020c)	No	No indirect adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report) There are no buildings associated with the streetscape of OLS-126 that are located within the 11.1 metres vibration buffer. As a result,	■ No mitigation measures required.	■ Lakeshore East Joint Corridor early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.
				no vibration impacts to buildings within the streetscape is anticipated during the construction of early works.		
LSE-001	369 Carlaw Avenue Toronto Hydroelectric Substation #8	■ Listed on City of Toronto Heritage Register (May 6 & 7, 1991) identified in this Heritage Detailed Design Report	No	No direct adverse impacts from Lakeshore East Joint Corridor early works LSE-001 is approximately 18.2 metres east of the Lakeshore East Joint Corridor Early Works Project Footprint., separated from the footprint by Carlaw Avenue. Therefore, the property will not experience direct physical impacts based on the location of early works.	■ No mitigation measures required. Continue to avoid the property (LSE-001).	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
LSE-001	369 Carlaw Avenue Toronto Hydroelectric Substation #8	■ Listed on City of Toronto Heritage Register (May 6 & 7, 1991) identified in this Heritage Detailed Design Report	No	No indirect adverse impacts from Lakeshore East Joint Corridor early works Vibration Impacts: The building at LSE-001 is approximately 18.2 metres east of the Lakeshore East Joint Corridor Early Works Project Footprint, beyond the 11.1 metre vibration buffer. Therefore, vibration impacts to the building within LSE-001 will be avoided.	■ No mitigation measures required.	■ Lakeshore East Joint Corridor early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.

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Ontario Line Lakeshore East Joint Corridor Early Works - Heritage Detailed Design Report

Provincial

The Lakeshore East Joint Corridor early works will not directly or indirectly impact any Provincial Heritage Properties of Provincial Significance. Therefore, no provincial permits/approvals are required.

Municipal

Based on the location of Lakeshore East Joint Corridor early works components shown in Figure ES-2, Lakeshore East Joint Corridor early works may result in direct impacts to one potential built heritage resources/cultural heritage landscapes: the De Grassi Street streetscape from Queen Street East to Wardell Avenue (OLS-126), identified in the Ontario Line Cultural Heritage Report. In addition, Lakeshore East Joint Corridor early works may result in direct impacts to one previously identified built heritage resource/cultural heritage landscape: 6, 8 and 10 Paisley Avenue (OLS-122). Neither of these built heritage resources/cultural heritage landscapes have existing heritage recognition. Furthermore, it is anticipated that the Riverdale Heritage Conservation District, designated Part V of the Ontario Heritage Act, will be directly impacted by early works (OLS-017). Lakeshore East Joint Corridor early works will result in impacts to one previously identified built heritage resource/cultural heritage landscape: the Carlaw Avenue Subway and Gerrard Street East Subway (OLS-014), through the addition of noise barriers; however, the heritage attributes of the structures are not anticipated to be adversely impacted. OLS-014 is a Metrolinx-owned Provincial Heritage Property. Metrolinx will consult with City of Toronto Heritage Planning regarding any physical impact to these resources as planning progresses for early works.

As a Crown Agency of the Province of Ontario (as a public body prescribed under Ontario Regulation 157/10), Metrolinx is exempt from certain municipal processes and requirements. In these instances, Metrolinx will engage with the municipalities to incorporate municipal requirements as a best practice, where practical, and may obtain associated permits and approvals.

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Appendices

Appendix A. Key Personnel and Qualifications

1. Introduction

1.1 Purpose of the Ontario Line Early Works

The Ontario Line Project (the Project) is being assessed in accordance with Ontario Regulation 341/20: Ontario Line Project under the Environmental Assessment Act. Ontario Regulation 341/20: Ontario Line Project outlines a Project-specific environmental assessment process that includes an Environmental Conditions Report, Environmental Impact Assessment Report, and an opportunity for Early Works Report(s) for assessment of works that are ready to proceed in advance of the Environmental Impact Assessment Report. The Environmental Conditions Report documents the local environmental conditions of the Ontario Line Study Area and provides a preliminary description of the potential environmental impacts from the Project. Information outlined in the Environmental Conditions Report is used to inform the Early Works Report(s) and Environmental Impact Assessment Report, which study environmental impacts in further detail and confirm and refine preliminary mitigation measures identified in the Environmental Conditions Report.

The Ontario Line early works are components of the Project that are proposed to proceed before the completion of the Ontario Line environmental impact assessment process. An overview of the Project is provided in **Section 1.2**. Early works are defined in Ontario Regulation 341/20: Ontario Line Project under the Environmental Assessment Act as follows:

"any components of the Ontario Line Project that Metrolinx proposes to proceed with before the completion of the Ontario Line assessment process, such as station construction, rail corridor expansion, utility relocation or bridge replacement or expansion."

Lakeshore East Joint Corridor early works are considered to be of strategic importance to enabling the timely implementation of the Project. The early works are being advanced where the Project interfaces with GO Expansion and the East Harbor Station. Advancing early works and supporting environmental and technical studies in this area provides planning and design efficiencies for the Project and GO Expansion and facilitates the timely implementation of both. Lakeshore East Joint Corridor early works are described in detail in **Section 2**.

1.1.1 Purpose of this Heritage Detailed Design Report

AECOM Canada Limited (AECOM) was retained by Metrolinx and Infrastructure Ontario to complete the Ontario Line Lakeshore East Joint Corridor Early Works Report for the Project. This Heritage Detailed Design Report supports the Ontario Line Lakeshore East

Joint Corridor Early Works Report and has been prepared for the Project to document the assessment of Lakeshore East Joint Corridor early works (**Figure 1-1**). This Heritage Detailed Design Report builds on the Ontario Line Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (hereafter the 'Ontario Line Cultural Heritage Report'; AECOM 2020a) that documents and describes known and potential built heritage resources and cultural heritage landscapes within the Ontario Line Study Area. The purpose of the Heritage Detailed Design Report is to confirm impacts as described in the Ontario Line Cultural Heritage Report (or identify those not anticipated or described in the Ontario Line Cultural Heritage Report) and mitigation measures, identify any changes, and refine the range of mitigation options and measures for each property based on the Lakeshore East Joint Corridor early works where applicable. The early works components and construction activities at Lakeshore East Joint Corridor are described in **Section 2.3**.

For the purpose of this Heritage Detailed Design Report, 'project components' and 'project activities' as defined in the Ontario Line Cultural Heritage Report (AECOM, 2020a) are referred to as 'early works components' and 'construction activities' respectively.

The key tasks of this Heritage Detailed Design Report are to:

- Review the existing baseline conditions of known, previously identified and potential built heritage resources/cultural heritage landscapes within the Lakeshore East Joint Corridor Study Area as documented in the Ontario Line Cultural Heritage Report (AECOM, 2020a) (where the Lakeshore East Joint Corridor Study Area includes the Lakeshore East Joint Corridor Early Works Project Footprint, plus adjacent properties to account for potential indirect impacts and properties within 11.1 metres of the Lakeshore East Joint Corridor Early Works Project Footprint to account for potential vibration impacts)³;
- Conduct a field review within the Lakeshore East Joint Corridor Study Area to confirm the presence and/or changes to any known and previously identified built heritage resources/cultural heritage landscapes that were documented in the Ontario Line Cultural Heritage Report (AECOM, 2020a), and to identify potential built heritage resources/cultural heritage landscapes that were not identified in the Ontario Line Cultural Heritage Report (AECOM, 2020a);

^{3.} The 250 metre buffer from the Ontario Line Cultural Heritage Report was refined using analysis from the Ontario Line Lakeshore East Joint Corridor – Noise and Vibration Report (AECOM, 2021). The refined buffer was calculated based on the Project-specific anticipated impacts of early works using a conservative approach (where construction equipment was assumed to operate at the edge of the Lakeshore East Joint Corridor Early Works Project Footprint, closest to nearby buildings/structures) and accounts for potential vibration impacts to buildings extremely susceptible to vibration damage (including heritage buildings and their foundations). The resulting buffer is 11.1 metres from the Lakeshore East Joint Corridor Early Works Project Footprint.

- Review the early works components and built heritage resources/cultural heritage landscapes as captured in the preliminary impact assessment of the Ontario Line Cultural Heritage Report (AECOM, 2020a); confirm impacts and mitigation measures, identify any changes, and, where required, refine the range of mitigation options and measures for each property based on the Lakeshore East Joint Corridor early works. If required, identify any monitoring recommendations;
- Assess potential early works-specific impacts to potential cultural heritage resources/cultural heritage landscapes identified in the field review for this Heritage Detailed Design Report that were not described in the Ontario Line Cultural Heritage Report (AECOM, 2020a) and recommend mitigation measures and/or monitoring to avoid or minimize those impacts;
- Identify any required permits and approvals (i.e., federal, provincial, municipal, other); and
- Apply any input/feedback applicable to this Heritage Detailed Design Report that was received from interested parties during the Ontario Line Draft Cultural Heritage Report public review period (September 17, 2020 to October 17, 2020).

This Heritage Detailed Design Report has been prepared in accordance with Ontario Regulation 341/20: Ontario Line Project and contains the information outlined in **Table 1-1**.

Table 1-1: Report Contents in Accordance with Ontario Regulation 341/20: Ontario Line Project

Reg. Section	Requirement	Report Section
Section 8(2)2	The rationale for proceeding with the early works.	Section 1.1
Section 8(2)4	A description of the local environmental conditions at the site of the early works.	Section 3
Section 8(2)6	Metrolinx's assessment and evaluation of the impacts that the preferred method of carrying out the early works and other methods might have on the environment, and Metrolinx's criteria for assessment and evaluation of those impacts.	Section 5
Section 8(2)7	A description of any measures proposed by Metrolinx for mitigating any negative impacts that the preferred method of carrying out the early works might have on the environment.	Section 5
Section 8(2)8	A description of the means Metrolinx proposes to use to monitor or verify the effectiveness of mitigation measures proposed.	Section 5
Section 8(2)9	A description of any municipal, provincial, federal or other approvals or permits that may be required for the early works.	Section 7

Figure 1-1: Lakeshore East Joint Corridor Early Works Conceptual Design

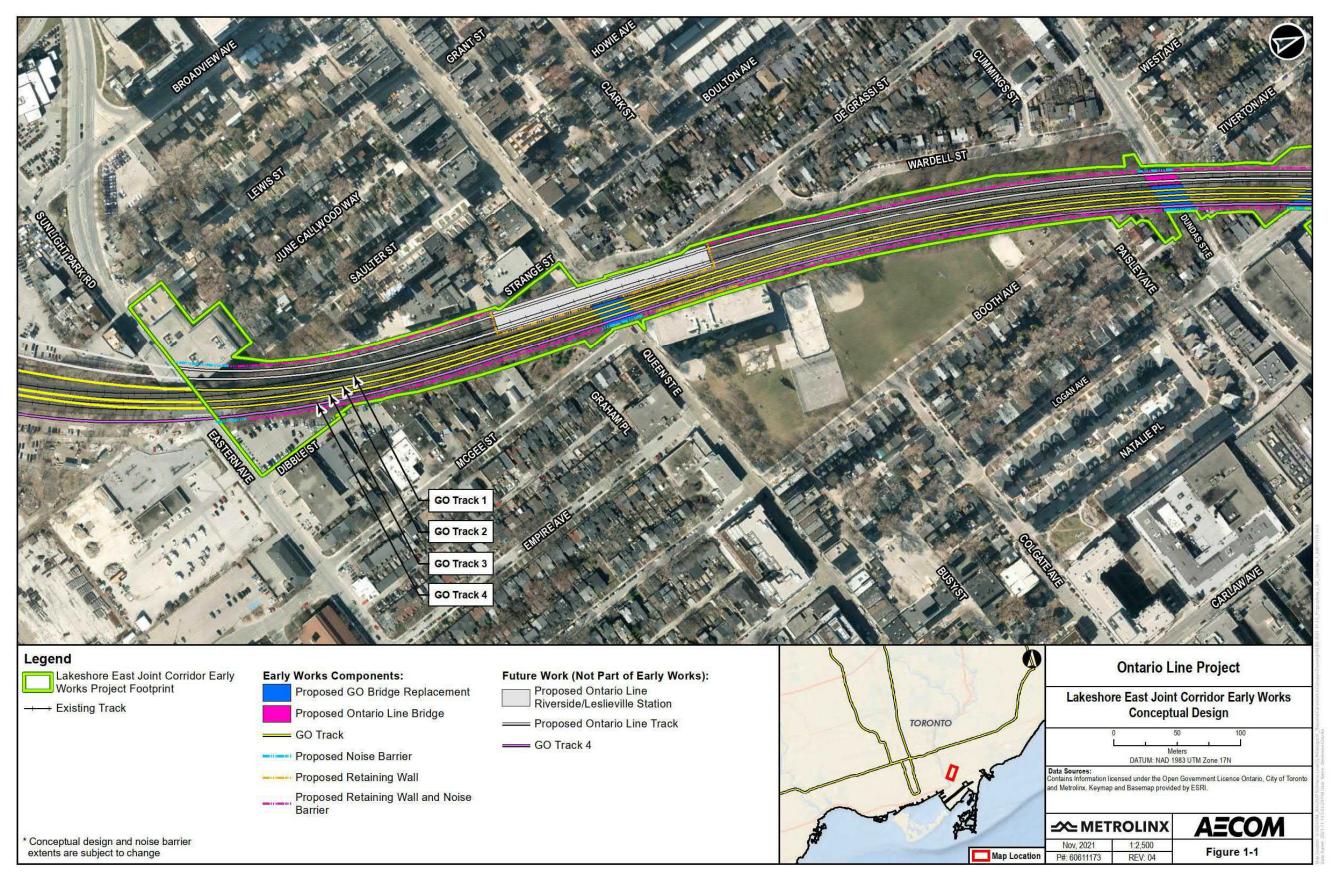


Figure 1-1: Lakeshore East Joint Corridor Early Works Conceptual Design



1.2 Ontario Line Project Overview

Metrolinx, an agency of the Province of Ontario, is proceeding with the planning and development of the Ontario Line, extending from Exhibition/Ontario Place to the Ontario Science Centre in the City of Toronto.

The Project is a new approximately 15.6-kilometre subway line with connections to Line 1 (Yonge-University) subway service at Osgoode and Queen Stations, Line 2 (Bloor-Danforth) subway service at Pape Station, and Line 5 (Eglinton Crosstown) light rail transit service at the future Science Centre Station. Fifteen stations are proposed, with additional connections to three GO Transit lines (Lakeshore East, Lakeshore West and Stouffville), and the Queen, King, Bathurst, Spadina, Harbourfront, and Gerrard/Carlton streetcar routes. The Project will reduce crowding on Line 1 and provide connections to new high-order rapid transit neighbourhoods. The Project will be constructed in a dedicated right-of-way with a combination of elevated (i.e., above existing rail corridor), tunnelled (i.e., underground), and at-grade (i.e., at grade with existing rail corridor) segments at various locations.

2. Early Works Description

2.1 Project Description

The Lakeshore East Joint Corridor early works are planned along the Lakeshore East rail corridor between approximately Eastern Avenue and Pape Avenue and will include:

- Reconfiguration of existing GO tracks to support future Ontario Line infrastructure,
- Replacement of the existing rail bridges at Queen Street East, Dundas Street East and Logan Avenue.
- Construction of two new bridges at Dundas Street East and Logan Avenue to support future Ontario Line tracks,
- Construction of the foundations for GO Overhead Catenary System (OCS) poles and supporting infrastructure to accommodate future fourth GO track;
- Construction of retaining walls; and
- Construction of noise barriers, including east of Pape Avenue.

The Lakeshore East Joint Corridor early works will support the future Ontario Line infrastructure located between Eastern Avenue and Pape Avenue (e.g., Leslieville and Gerrard stations, and Ontario Line tracks). These early works will also streamline implementation of GO Expansion through the construction supporting infrastructure for the future fourth track for the Lakeshore East GO corridor and the foundations for GO Overhead Catenary System (OCS). The noise barriers constructed as part of these early works will mitigate noise impacts from both Ontario Line and GO operations.

The Lakeshore East Joint Corridor early works components are shown in Figure 1-1.

2.2 Early Works Project Footprint and Study Area

The Lakeshore East Joint Corridor Early Works Project Footprint, shown in **Figure 2-1**, is defined as the area of direct disturbance associated with the early works construction activities, including anticipated required construction staging and laydown areas and construction access. Construction is anticipated to occur primarily within the existing Metrolinx right-of-way (Metrolinx-owned rail corridor/properties). The extent of lands anticipated to be temporarily impacted by construction staging/laydown and access will continue to be refined and reduced to the extent feasible as project planning progresses.

The Lakeshore East Joint Corridor Early Works Project Footprint extends from approximately 325 metres east of the Lower Don River in the west, follows the

Lakeshore East rail corridor northeast from Eastern Avenue in the south to Jones Avenue in the north. For the purpose of this Heritage Detailed Design Report, the Lakeshore East Joint Corridor Study Area, also shown in **Figure 2-1**, includes the Lakeshore East Joint Corridor Early Works Project Footprint, plus adjacent properties to account for potential indirect impacts and properties within 11.1 metres of the Lakeshore East Joint Corridor Early Works Project Footprint to account for potential vibration impacts.

The definition of "adjacency" in the City of Toronto Official Plan has been used for the purposes of identifying properties adjacent to the Lakeshore East Joint Corridor Early Works Project Footprint. The following definition is included in Section 3.1.5 (Heritage Conservation) of the City of Toronto's Official Plan:

Adjacent: means those lands adjoining a property of the heritage register or lands that are directly across from and near to a property on the heritage register and separated by land used as a private or public road, highway, street, lane, trail, right-of-way, walkway, green space, park and/or easement, or an intersection of any of these; whose location has the potential to have an impact on a property on the heritage register; or as otherwise defined in a Heritage Conservation District Plan adopted by by-law.

The 250 metre vibration buffer from the Ontario Line Cultural Heritage Report was refined using analysis from the Ontario Line Lakeshore East Joint Corridor Early Works – Noise and Vibration Report (AECOM, 2021). The refined buffer was calculated based on the Project-specific anticipated impacts of early works using a conservative approach (where construction equipment was assumed to operate at the edge of the project footprint, closest to nearby buildings/structures) and accounts for potential vibration impacts to buildings extremely susceptible to vibration damage (including heritage buildings and their foundations). The resulting buffer is 11.1 metres from the Lakeshore East Joint Corridor Early Works Project Footprint.

The Lakeshore East Joint Corridor Study Area assessed in this Heritage Detailed Design Report is specific to the built heritage resources and cultural heritage landscapes impact assessment. The study areas for other environmental disciplines are outlined in the Ontario Line Lakeshore East Joint Corridor Early Works Report.

2.3 Construction Activities

Table 2-1 provides a description of the anticipated construction activities for the Lakeshore East Joint Corridor early works. These typical activities serve as the basis for the assessment of construction-related potential environmental effects. These activities may be expanded, further refined, or found to be unnecessary as the Project progresses through detailed design and construction.

Figure 2-1: Lakeshore East Joint Corridor Early Works Project Footprint and Lakeshore East Joint Corridor Study Area

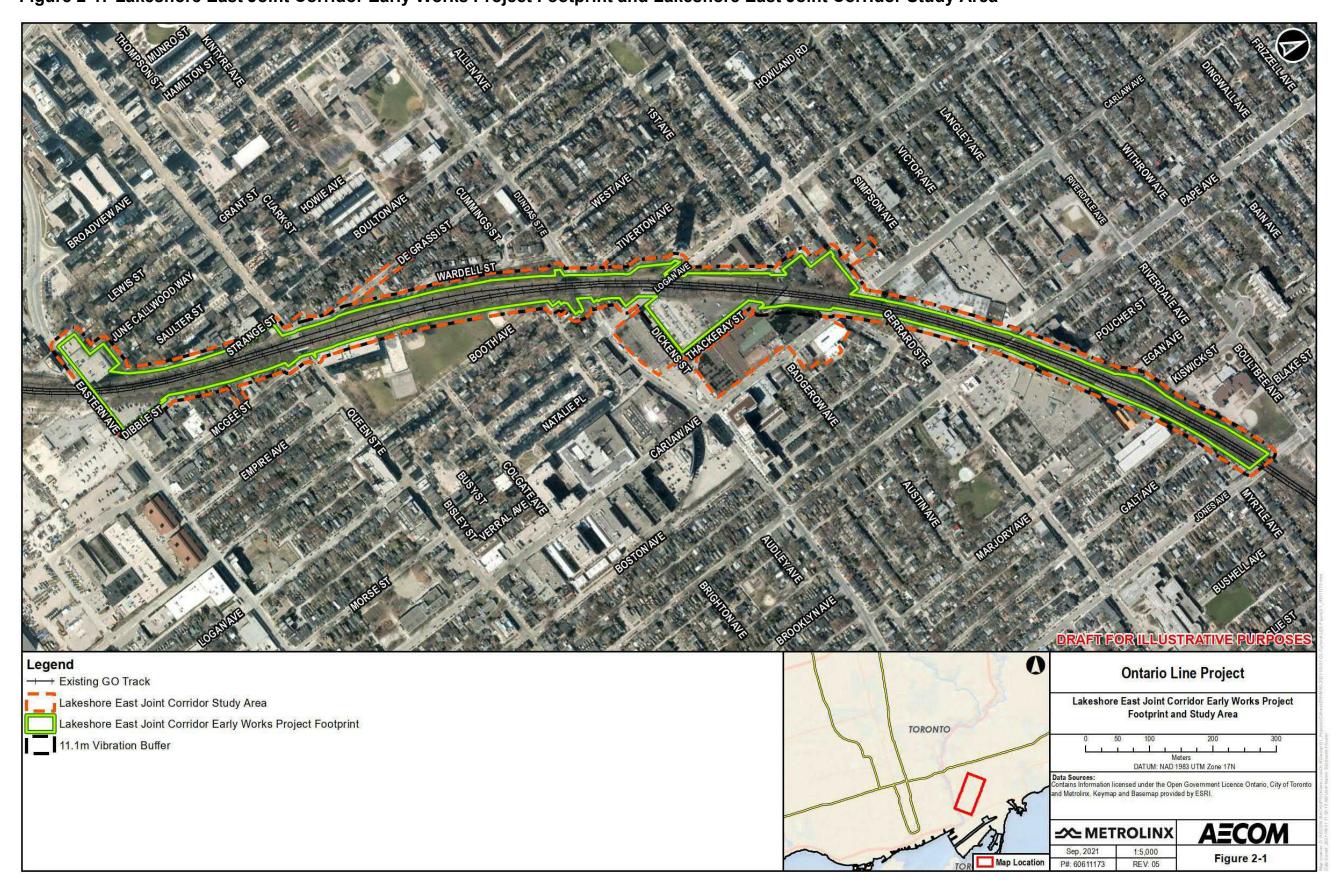


Table 2-1: Anticipated Construction Activities for Ontario Line Lakeshore East Joint Corridor Early Works

Activity	Description	Associated Equipment
Site Preparation	 Mobilization of equipment and temporary facilities to the site. Clearing and grubbing of vegetation, tree removal and protection. Protection of trees & sensitive environmental features. Erection of temporary and permanent fences. Installation of environmental management features (e.g., erosion and sediment controls). Dewatering works. Preparation of temporary laydown areas including access roads, fencing and lighting. Preparation of temporary access roads to construction sites including temporary shoring, access roads, fencing, signage, gate and lighting. Temporary closure of road curb lanes. Removal of roadway, sidewalks, buildings and retaining walls impacted by temporary or permanent conditions. 	 ■ Site compaction equipment and grading equipment. ■ Vegetation removal equipment. ■ Excavation equipment. ■ Haulage/dump trucks.
Site Servicing/ Removals/ Demolition	 Relocation and/or extension of services and utilities on the site; which may include both underground and aerial services and utilities (e.g., sewers, water, electrical, communications, gas). This may also involve installation of utilities within the site. Includes utilities on the rail corridor and off the rail corridor. Demolition and/or alteration of existing buildings and/or structures such as retaining walls and existing bridges. Removal and reinstatement of railway track. Locates and daylighting of underground utilities. 	 Excavation equipment including backhoe, dump trucks, spoil removal equipment, jackhammers, vacuum truck and high rail equipment. Track stabilizer. Hand tools. Mobile crane. Flatbed trucks. Boom truck. Spreader for track work.
Construction of Structures	 All structures will be constructed using standard civil construction techniques. Includes noise walls, pre-cast and cast-in-place retaining walls including stormwater management, grounding, bonding and backfill using selected material. 	 Foundation placement equipment. Augured piles or rammed aggregate piers. Drill rigs. Mobile cranes and hoists. Concrete trucks, pumps and vibrators.
Construction of Bridges	 Will be constructed using standard civil construction techniques. Dewatering is anticipated. Includes stormwater management grounding and bonding. 	 Augured piles or rammed aggregate piers. Drill rigs. Mobile cranes and hoists. Concrete trucks, pumps and vibrators. Flatbed trucks, crane, excavators, and light equipment. Back hoe. Jack hammers.
Temporary Road / Sidewalk Closures	■ All road / sidewalk closures will follow standard traffic control management guidelines.	■ Temporary traffic control devices such as signs, signals, barriers, traffic barrels.
Site Grading and Earthworks	 Removal of topsoil and excavation of unsuitable material and disposal off site Borrow additional material for fill Grading and compaction of track bed including subdrain Installation of sub ballast and pre-ballasting 	 Excavator. Dozer. Motor grader. Compactor. Water truck. Dump trucks.
Management of Stormwater	■ All precipitation falling within the site will be managed as stormwater within a designed system of collection, conveyance, retention and discharge features, as required. The system will be designed and operated in compliance with applicable standards and regulatory requirements. Surface flows within the site will be managed within the site to ensure discharge to off-site receivers (i.e., municipal storm sewers) is appropriate in terms of water quantity and quality.	 Site compaction equipment and general grading equipment. Groundwater pumping equipment.

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Activity	Description	Associated Equipment
Track construction	 Staged realignment of existing tracks (rail on timber ties). Installation of 4 tracks in final position including ballast utilizing new rail and new concrete ties. 	■ High rail excavators, Track laying machine, ballast regulator, stabilizer.
Signaling infrastructure alteration/ installation	 Staged upgrade of track signals to reflect temporary staged realignment of tracks and installation of four tracks in a final position. Relocation of existing bridge and bungalow including temporary track crossings, bridge foundations, aspects, bungalow, power supply, conduits and cables. Removal from site of existing signal bridge and bungalow. 	 Backhoe. Vacuum truck. High rail crane. Drill rig. Concrete pump and concrete trucks.
Fiber Optic Cable (FOC) relocation	■ Staged relocation of multiple Fiber Optic Cable (FOC) to reflect temporary staged realignment of tracks and installation of four tracks in a final position, including multiple conduits, hand wells, split steel casings and splicing.	■ Backhoe. ■ Vacuum truck.

3. Local Environmental Conditions

The assessment of existing conditions in this Heritage Detailed Design Report is based on the results of the Ontario Line Cultural Heritage Report (AECOM, 2020a) prepared to support the Ontario Line Final Environmental Conditions Report (AECOM, 2020b). Excerpts from the Ontario Line Cultural Heritage Report, as they relate to the Lakeshore East Joint Corridor Early Works, have been reproduced for this Heritage Detailed Design Report.

3.1 Background Information Review

Background information and documentation relevant to the Lakeshore East Joint Corridor Study Area is contained within the Ontario Line Final Environmental Conditions Report (AECOM, 2020b)⁴ prepared for the Project and was reviewed prior to commencing the assessment of built heritage resources and cultural heritage landscapes within this Heritage Detailed Design Report.

The Ontario Line Cultural Heritage Report (AECOM, 2020a) was used as a primary source of background information for the following:

■ Existing cultural heritage conditions within the Lakeshore East Joint Corridor Study Area, including a historical summary of the development of neighbourhoods, and provides the locations of known, previously identified and potential built heritage resources/cultural heritage landscapes within the Lakeshore East Joint Corridor Study Area.

3.2 Field Review

Following the background information review, utilizing the 40-year-old threshold⁵, Criteria for Evaluating Potential for built heritage resources and cultural heritage landscapes, a Checklist for the Non-Specialist (hereafter Criteria Checklist; Ministry of Heritage, Sport, Tourism and Culture Industries, 2016), and professional judgement, a

^{4.} The Ontario Line Final Environmental Conditions Report (AECOM, 2020b) was published on November 20, 2020 in accordance with Ontario Regulation 341/20: Ontario Line Project.

^{5.} The 40-year-old threshold may be used an indicator that a property may be of cultural heritage value or interest. While identification of a built heritage resources/cultural heritage landscapes that is 40 years old or older does not confer outright heritage significance, the 40-year-old threshold provides a means to collect information about resources that may retain cultural heritage value or interest. Similarly, if a built heritage resource/cultural heritage landscape is less than 40 years old, this does not preclude the resource from retaining cultural heritage value or interest.

field review was conducted to document the existing conditions of the properties within the Lakeshore East Joint Corridor Study Area. The results of the field review were used to confirm the presence and/or changes to any known and previously identified built heritage resources/cultural heritage landscapes that were documented in the Ontario Line Cultural Heritage Report (AECOM, 2020a), and to identify potential built heritage resources/cultural heritage landscapes and interpretative and commemorative features such as plagues, that were not identified in the Ontario Line Cultural Heritage Report (AECOM, 2020a). The field reviews for the Lakeshore East Joint Corridor early works were conducted on May 12, 2020, December 17, 2020, and June 24, 2021 from the public right-of-way. The investigation was conducted by Liam Smythe, Heritage Researcher, with the results reviewed by Tara Jenkins, Cultural Heritage Specialist, both with AECOM. Full property descriptions of the inventory of built heritage resources/cultural heritage landscapes within the Lakeshore East Joint Corridor Study Area are found in **Section 3** of this Heritage Detailed Design Report. Lakeshore East Joint Corridor Study Area overview photographs of the field review are provided in Image 1 to Image 4 below and are mapped on Figure 3-1.

Image 1: View looking northeast on DeGrassi Street showing Bruce
Mackey Park at right (Photograph taken by AECOM in 2020)



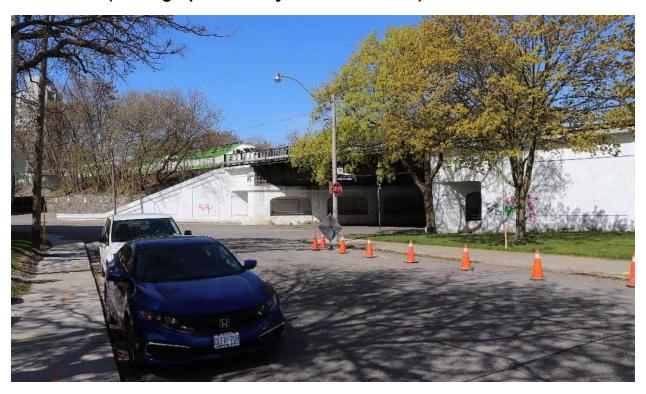
Image 2: View looking south on Carlaw Avenue from Gerrard Street East (Photograph taken by AECOM in 2020)



Image 3: Properties on north side of First Avenue, west of the Lakeshore East Rail Corridor (Photograph taken by AECOM in 2020)



Image 4: Looking west on Gerrard Street East to Carlaw Avenue showing Carlaw Avenue Subway and railway embankment at left (Photograph taken by AECOM in 2021)



3.3 Current Land Uses in the Lakeshore East Joint Corridor Study Area

The Lakeshore East Joint Corridor Early Works Project Footprint is shown in **Figure 1-1**. It is defined as the area of direct disturbance associated with the early works construction activities, including anticipated required construction and laydown areas. The Lakeshore East Joint Corridor Early Works Project Footprint largely overlaps with the existing Lakeshore East Rail Corridor from Eastern Avenue in the south towards Jones Avenue at the northeast. The Lakeshore East Joint Corridor Early Works Project Footprint is primarily surrounded by residential dwellings. The Jimmie Simpson Recreation Centre and Jimmie Simpson Park are also adjacent to the Lakeshore East Joint Corridor on the east side, with the Bruce Mackey Park on the west side. The Lakeshore East Joint Corridor Early Works Project Footprint near the intersection of Carlaw Avenue and Gerrard Street East is near several commercial shops, one designated and one makeshift parking lot, the Gerrard Carlaw Parkette Dog Park, as well as several single and multi-unit residential dwellings.

3.4 Identification of Known, Previously Identified and Potential Built Heritage Resources/Cultural Heritage Landscapes – Lakeshore East Joint Corridor Study Area

Based on data collection, including a review of the Ontario Line Cultural Heritage Report (AECOM, 2020a), the 40-year rule, the Criteria Checklist (Ministry of Heritage, Sport, Tourism and Culture Industries, 2016), and the field reviews conducted for early works by a qualified cultural heritage professional on February 25, 2021, a list of known, previously identified and potential built heritage resources/cultural heritage landscapes in the Lakeshore East Joint Corridor Study Area was compiled, as documented in **Table 3-1**. The built heritage resources/cultural heritage landscapes are mapped in **Figure 3-1**.

In summary, a total of 11 built heritage resources/cultural heritage landscapes are within the Lakeshore East Joint Corridor Study Area consisting of:

- One previously identified Metrolinx Provincial Heritage Property (OLS-014);
- One previously identified built heritage resource/cultural heritage landscape, which are also contributing properties in the Riverdale Heritage Conservation District, Designated Part V of the Ontario Heritage Act (OLS-123);
- Two previously identified built heritage resources/cultural heritage landscapes identified in previous heritage studies (OLS-122, OLS-124);
- Three potential built heritage resources/cultural heritage landscapes identified in the Ontario Line Cultural Heritage Report (OLS-015, OLS-016, OLS-126) (AECOM, 2020a);
- Two Listed properties on the City of Toronto's Heritage Register; one that was included in the Ontario Line Cultural Heritage Report (OLS-013) (AECOM, 2020a), and one that was identified in this Heritage Detailed Design Report (LSE-001);
- One Heritage Conservation District, Designated Part V of the Ontario Heritage Act (OLS-017); and,
- One Heritage Conservation District currently under study (OLS-018).

Table 3-1: Description of Known, Previously Identified and Potential Built Heritage Resources/Cultural Heritage Landscapes – Lakeshore East Joint Corridor Study Area

Cultural Heritage Report Ref. No. ⁶	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
OLS-013	Civic	840 Gerrard Street East	■ Listed on the Municipal Heritage Register (April 1, 1982)	Fire Station #324- 840 Gerrard Street East Design or Physical Value: ■ Two storey buff brick firehall with Art Deco design features including decorative stone frontispiece with fire and lightning bolt detail Historical or Associative Value: ■ Built in 1931 (1934) ■ J.J. Woolnough, City architect; K.S. Gillies, assistant; S.T.J. Fryer, designer ■ Originally known as Station 12 ■ Only Toronto fire station built in the Art Deco style Contextual Value: ■ Located on the north side of Gerrard Street East ■ Important feature in Riverdale neighbourhood Potential to Meet Ontario Regulation 10/06: No Heritage Attributes: ■ Location on Gerard Street East Avenue	Photograph taken of OLS-013 by AECOM in 2021
				Art Deco design details, symmetrical with three bays, carved stone detail in stone frontispiece above central bay which shows a fire and lightning bolt, flat-headed eight-over-four sash windows on second storey, three vehicle entrance on ground floor, flat roof	
OLS-014	Bridge	Carlaw Avenue Subway and Gerrard Street East Subway	 ■ Previously Identified built heritage resource/cultural heritage landscape ■ Metrolinx Provincial Heritage Property 	Lakeshore East Railway Corridor - subways of Gerrard Street East and Carlaw Avenue Design or Physical Value: Designed as a linked three span subway structure that carries three tracks over Carlaw Avenue and Gerrard Street East. Steel plate girder structures that forms the main spans of the subways, and railway embankment that carries the rail corridor with reinforced concrete abutments with pedestrian spans Historical or Associative Value: Constructed 1930-1931 as a grade separation project in response to an increasing number of accidents at the former grade crossings Constructed by the Canadian Bridge Company Limited (superstructure) Constructed by Richardson Construction Company (substructure) Contextual Value: Located at Gerrard Street East and Carlaw Avenue The two main spans, the Carlaw Ave. subway and Gerrard Street East. subway were separated into two Cultural Heritage Evaluation Recommendations Reports (CHERRs) completed by AECOM, August 2016. Both spans were determined to meet Ontario Regulation 9/06 but not Ontario Regulation 10/06. Potential to Meet Ontario Regulation 10/06: No Heritage Attributes: Scale and mass of the structures Concrete abutments with pedestrian spans/walkways constructed into an earthen embankment Concrete arcaded piers separating pedestrian traffic from vehicular traffic Concrete panelling and decorative details that are represented in similar subway structures along the corridor Steel plate girders Community murals on bridge abutments and wind-walls Aluminum sculpture installation: Blue Fire (1996) by Dereck Rivington	Photograph of Gerrard Street East Subway, taken by AECOM in 2020 Photograph taken by Carlaw Avenue Subway by AECOM in 2020

^{6.} For consistency and ease, the built heritage resources/cultural heritage landscape reference numbers were retained from those resources excerpted from the existing conditions tables in the Cultural Heritage Report (AECOM, 2020a)

Cultural Heritage Report Ref. No. ⁶	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
OLS-015	Industrial	400 Carlaw Avenue	■ Potential built heritage resource/cultural heritage landscape – identified in the Ontario Line Cultural Heritage Report (AECOM, 2020a)	 400 Carlaw Avenue – Jefferson Glass Co. Factory (Location of a commemorative installation a part of the Made in Toronto, A Digital Walking Tour) Design or Physical Value: Two and three-storey brick clad former industrial complex with a large industrial chimney at the rear. Central sections of building display have brick and stone detailing, north and south sections likely later additions Historical or Associative Value:	2020
				Contextual Value:	R village producer of Novem and pressed glass to Orbitate opened here-pur the early 1940s. The Iellershi (Orbitate, overalled in Illeut wholes
				 Property occupies the entire street frontage on the west side of Carlaw Avenue between Dickens Street and the railway Building has a very shallow set-back with a small front lawn Located in the Leslieville neighbourhood 	and distributed ages and by 1918 it was also making alous 1550 (high bulls) and to making alous 1550 (high bulls) and to making alous 1550 (high bulls) and to make 1550 (high bulls) and to make 1550 (high bulls) and to have 1550 (high bulls) and have 1550 (high bu
				Potential to Meet Ontario Regulation 10/06: No	underflow manufacture are present and the pres
				Potential Heritage Attributes: Two and three-storey brick clad commercial building constructed in phases during the 20 th century.	190 COMMING WAS USED TORONTO STAN
				 Central section of Carlaw Avenue façade with paired, voussoir arched window separated by brick pilasters with chamfered stone capitals Large industrial chimney at rear 	Heritage Toronto Plaque. Photograph taken by AEC in 2020.





Cultural Heritage Report Ref. No. ⁶	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
OLS-016	Industrial	1 Dickens Street	resource/cultural heritage landscape – identified in the Ontario Line Cultural Heritage Report (AECOM, 2020a)	Woods Manufacturing Company - 1 Dickens Street (Location of Heritage Toronto Plaque) Design or Physical Value: ■ Three-storey commercial building with a five-storey rectangular tower at northwest corner Historical or Associative Value: ■ Constructed 1907 ■ Designed by architect James Layrock Havill ■ Occupied by the Woods Manufacturing Co., makers of cotton-fibre products such as tents, bags, and canvas Historical Plaque Transcription: ■ WOODS MANUFACTURING CO. FACTORY This landmark factory was designed in 1907 by James Layrock Havill for the Smart Bag Company of Montreal, which made cotton and jute ropes, twines, bags, and sacs, for the transportation of flour, cereals, and cement. Renamed Smart-Woods after a merger, then Woods Manufacturing in 1918, it became one of the largest producers of fibre products in Canada, with factories in Ontario, Quebec, and Manitoba. The company also became known for its tents, sleeping bags, and outdoor clothing. At the time this area was quickly industrializing. Many manufacturing plants opened on Carlaw and Logan Avenues in part due to the access to the nearby Grand Trunk Railway Line. During the World Wars, Woods made products vital to the war effort, including tents, hammocks, summer uniforms, and gas mask covers. Its civilian products continued to be popular with outdoor enthusiasts. The Woods complex was split by the extension of Dundas Street East through this area in 1954. The company continued to operate here until the 1980s. Remodelled and expanded, the building now houses multiple commercial enterprises. Contextual Value: ■ Located on north side of Dundas Street at the corner of Jones Avenue ■ Tower with "Woods Plant No. 2" painted signage is a local landmark Potential to Meet Ontario Regulation 10/06: No Potential Heritage Attributes: ■ Three-storey brick commercial/industrial building with flat roof. Dickens Street Façade with large voussoir arched window openings separated by brick pilasters with chamfered stone capitals. Recessed bays on Jones Avenue	Photograph of OLS-016, taken by AECOM in 2020 WOODS MANUFACTURING CO. FACTORY I all being large with plant of the part of th

Court Cutural Heritage Canservation Everation Conservation District Coastion of Heritage Torrorto Plaque)		Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
I TAECOM IN 2020	Her Lan Her Con	ritage ndscape- ritage nservation	Heritage Conservation	the Ontario Heritage Act (By-law 951-2008)	Riverdale Heritage Conservation District boundary: The Heritage Conservation District boundaries are established to capture all properties east of De Grassi Street on First Avenue (except St. Ann's Roman Catholic Church and rectory (see below), and all properties fronting on Tiverton and West Avenues, which are part of two adjacent plans of subdivision, some of the first to occur after annexation of this area in 1884. Even though there are several non-contributing properties on the west side of West Avenue, it is important to include both sides of the street in order to allow for restoration of lost heritage attributes over time. The history and identity of the Riverdale Heritage Conservation District result from: The large number of original buildings, with the majority of heritage attributes present or capable of being restored Mixture of architectural styles including Bay-n-Gable, Second Empire, and scaled-down Edwardian Four Square The relative completeness of the original fabric and its relatively early period of development Heritage Character Statement: The significance of these streets lies in the large number of original buildings, with the majority of their heritage attributes present or capable of being restored. The streets were some of the earliest developed on the east side of the Don River, and reflect the period of development which stretched from the mid 1880s to the First World War. The houses are a mixture of the "Bay-n-Gable" style, Second Empire Row houses and examples of modest scaled Edwardian Four Square. The houses were built for working class residents and are generally and odes in scale and detail. It is the relative completeness of the "sests," and the relatively early period of development in a generally later community, that warrants protection under Part V of the Ontario Heritage Act. It is the continuity of the heritage fabric that is most important to protect, preserve and restore. Potential to Meet Ontario Regulation 10/06: No Heritage Attribute Categories (Section 6 of	Heritage Conservation District Plan By-Law #951-2008: https://www.toronto.ca/legdocs/bylaws/2008/law0951.pdf Heritage Conservation District Plan: https://www.toronto.ca/legdocs/mmis/2008/te/bgrd/backgroundfile-14121.pdf

Cultural Heritage Report Ref. No. ⁶	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
OLS-018	Cultural Heritage Landscape- Heritage Conservation District		■ Heritage Conservation District, under study	 The Queen Street East – Riverside heritage conservation district is currently under study by the City of Toronto. At the time of this report, little accessible information on the proposed heritage conservation district is available. The proposed heritage conservation district extends along Queen Street East from East Don Roadway to De Grassi Street. Eight properties within the Queen Street East - Riverside heritage conservation district boundaries are designated under Part IV of the Ontario Heritage Act, 10 are listed on the City of Toronto's Heritage Inventory. Currently there is no Study or Plan for the heritage conservation district available online or map illustrating contributing properties within the proposed heritage conservation district boundaries. 	Plan photo not available.
OLS-122	Residential	6, 8 and 10 Paisley Avenue	built heritage resource/cultural heritage landscape ■ (Metrolinx Cultural Heritage Evaluation Recommendations Report)	6, 8, 10 Paisley Avenue Design or Physical Value: ■ The triplex consists of two-and-a-half storey brick veneer bay-and-gable houses. Includes stained glass, decorative brickwork in the form of fielded panels and a string course. The steep roof is influenced by Gothic Revival Historical or Associative Value: ■ Constructed between 1903 and 1908 ■ Part of the earliest streets developed in Toronto ■ Associated with working-class area Contextual Value: ■ West of the rail corridor on a railway embankment that extends eastwards from Union Station ■ East side of the Don River ■ Streetscape has remained relatively unchanged since the development in the early 20 th century ■ A Cultural Heritage Evaluation Recommendations Report was completed by AECOM, Jan. 2017. The properties were determined in the Cultural Heritage Evaluation Recommendations Report to meet Ontario Regulation 9/06 but not Ontario Regulation 10/06. Potential to Meet Ontario Regulation 10/06: No Heritage Attributes: ■ Scale and mass of the structure; ■ The prominent projecting bay with a steeply pitched gable; ■ Unifying features, such as the continuous brick string courses across all three houses; ■ The field panels; ■ Stained glass, and	Photograph of OLS-122 taken by AECOM in 2020
OLS-123	Residential	15 and 17 Tiverton Avenue	 Previously identified built heritage resource/cultural heritage landscape (Metrolinx Cultural Heritage Evaluation Recommendations Report) Contributing property in the Riverdale Heritage Conservation District, Designated Part V of the Ontario Heritage Act (By-law 951-2008) 	■ Fenestration 15 and 17 Tiverton Avenue Design or Physical Value: ■ A pair of one-and-a-half storey worker's cottages constructed of brick Historical or Associative Value: ■ Built in 1905 ■ Designed by E.J. Lennox for lawyer and businessman David Fasken as income properties Contextual Value: ■ West of the Metrolinx Lakeshore East rail corridor ■ Contributing property within the Riverdale Heritage Conservation District ■ East side of the Don River ■ A Cultural Heritage Evaluations Recommendations Report (CHERR) was completed by AECOM, January 2017. The properties were determined in the Cultural Heritage Evaluation Recommendations Report to meet Ontario Regulation 9/06 but not Ontario Regulation 10/06. Potential to Meet Ontario Regulation 10/06: No Heritage Attributes: ■ Scale and mass of the structure as part of a cohesive cultural landscape of small workers' homes, particularly the similar duplex at 19-21 Tiverton, probably also by Lennox; ■ The location within the Riverdale Heritage Conservation District; ■ The symmetrical façade with polygonal dormers; ■ Original materials, including the brick and any other details that are extant	Photograph of OLS-123 taken by AECOM in 2020

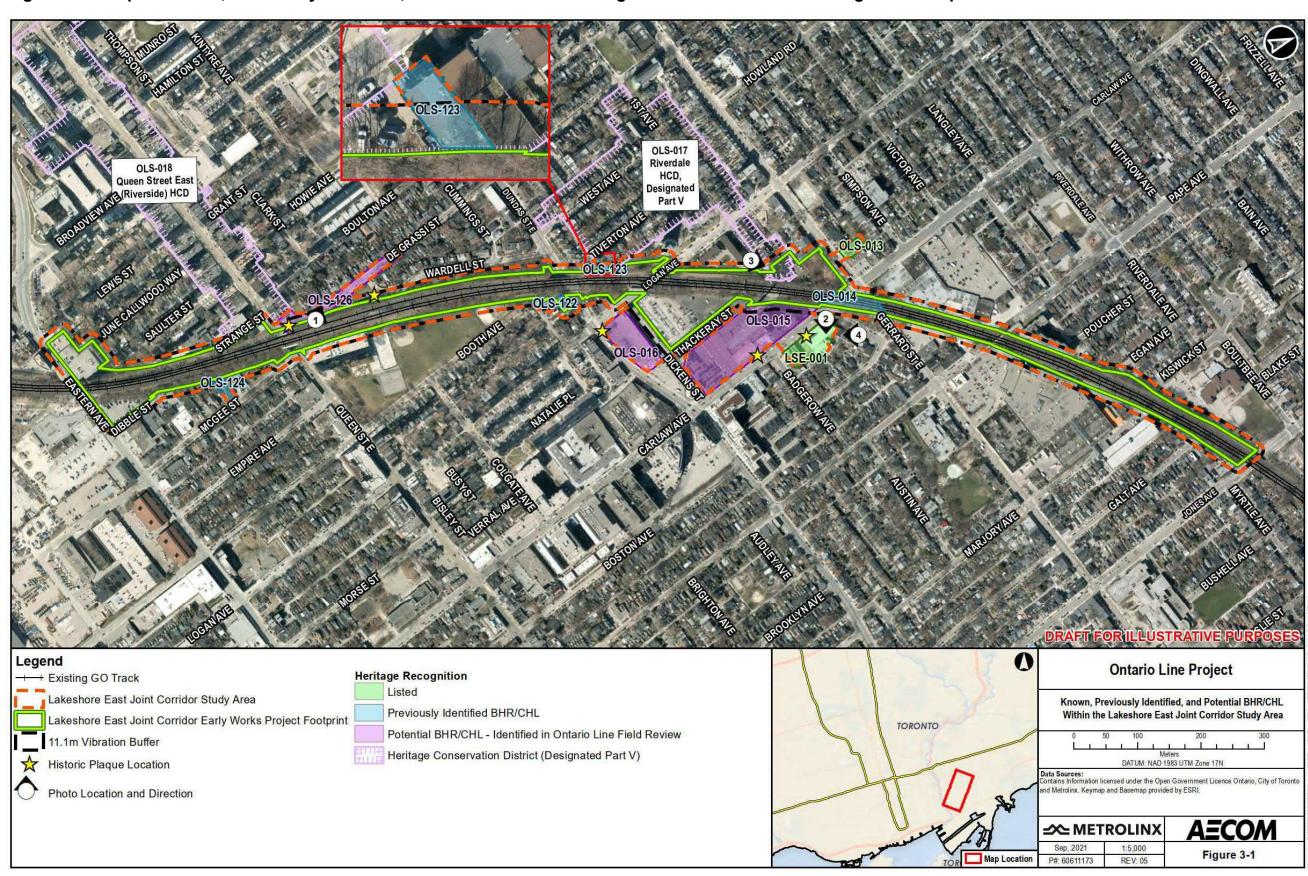
Cultural Heritage Report Ref. No. ⁶	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
OLS-124	Residential	60 and 62 McGee Street	■ Previously identified built heritage resource/cultural heritage landscape ■ (Metrolinx Cultural Heritage Evaluation Recommendations Report)	 60 and 62 McGee Street Design or Physical Value: A six-bay, two-storey double frame house with polychromatic brick veneer and a medium pitched side gable roof with end chimneys. The symmetrical main façade of the house features a central porch with a bellcast roof. The segmentally arched window openings have polychromatic brick hood mouldings incorporating decorative pressed brick. Rare style of house within the City of Toronto Historical or Associative Value: Constructed between 1875 and 1881 Contextual Value: West side of McGee Street between Queen Street East and Eastern Avenue Don River and Don Valley Parkway are located approximately 1.5 kilometers west of the McGee Street Houses Located in a mixed area of commercial, residential, and recreational properties Streetscape has remained relatively unchanged since the early 20th century Developed into a working-class area A Cultural Heritage Evaluations Recommendations Report (CHERR) was completed by AECOM, January 2017. The property was determined in the Cultural Heritage Evaluation Recommendations Report to meet Ontario Regulation 9/06 but not Ontario Regulation 10/06. Potential to Meet Ontario Regulation 10/06: No 	Photograph of OLS-124 taken by AECOM in 2020
				Heritage Attributes: ■ Scale and mass of the structure; ■ The symmetry of the street façade; ■ The polychromatic treatment of the veneer; ■ Extant window(s), door surrounds with transom lights; ■ Original materials, including the brick and any other details that are extant; and ■ Pitch of the roof	

Cultural Heritage Report Ref. No. ⁶	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
OLS-126 Str Cu He	ultural eritage	De Grassi Street from Queen Street East to Wardell Street	■ Potential built heritage resource/cultural heritage landscape — identified in the Ontario Line Cultural Heritage Report (AECOM, 2020a)	■ Located in south Riverdale neighbourhood, runs one-way northbound from Queen Street East to Gerrard Street Potential to Meet Ontario Regulation 10/06: No Potential Heritage Attributes: ■ Historical plaque for the Riverdale Railway Station affixed to the sidewalk, adjacent to the northwest wingwall of the Queen Street East subway ■ 19th century row of two storey semi-detached houses on the west side of the street, including workers cottages ■ Group of plaques in the Bruce Mackey Park, adjacent to the west side of the Lakeshore East railway tracks	Photograph taken of De Grassi Street streetscape by AECOM in 2020 RIVERDALE RAILWAY STATION RIVERDAL

Report Ref. No. ⁶ Property /Address Heritage Recognition Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
This two-storey substation was built by the Toronto Hydro-Electric System (THES) to provide electricity for homes, factories, and other businesses in this fast-growing part of the city. Under the supervision of THES architect Albert Salisbury, the company built an Edwardian Classical structure that was big enough to lide large electrical transformers and switches within its walls. The red brick and Terra Cotta façade is decorated with pilasters and large windows with round tops. During its first 10 years, the substation included a storefront at its northwest corner where customers could pay bills, and buy electrical appliances such as cookers, irons, and fans. The building was greatly expanded in 1924 and 1929 and remains an active substation. Contextual Value: Located on the east side of Carlaw Avenue, south of the railway subway at Gerrard Street East Potential to Meet Ontario Regulation 10/06: No Heritage Attributes: Two-storey massing of structure Edwardian-Classical Design Red brick façade with pilasters	hotograph of LSE-001 taken by AECOM in 2020. TORONTO HYDRO-ELECTRIC SUBSTATION #8 1916 (with additions) This way every exhaular may ball by the Toronto Hybro-Teeris Prince (THES) to provide density in the many Kontine and volta because in the firm regional grant of the chy. Under the providing of THES and how Albert Sulfibert, the company bull fair Exhausting Clarical and the providing of THES and the Author Sulfibert, the company bull fair Exhausting Clarical and the prince of the chy. Under the providing of THES and the Author Sulfibert, the company bull fair Exhausting Clarical and the prince of the chy. Under t

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Figure 3-1: Map of Known, Previously Identified, and Potential Built Heritage Resources/Cultural Heritage Landscapes Within the Lakeshore East Joint Corridor Study Area



4. Summary of Community Engagement

4.1 Ontario Line Environmental Conditions Report and Ontario Line Cultural Heritage Report

Consultation with agencies was undertaken as part of and documented in the Ontario Line Cultural Heritage Report (AECOM, 2020a).

The Ontario Line Draft Environmental Conditions Report and Ontario Line Draft Cultural Heritage Report were made available for public review on the Project website when the Notice Publication of the Draft Environmental Conditions Report was issued on September 17, 2020. The 30-day public review period ended on October 17, 2020. Of the community and agency input/feedback received during the public review period, no comments were applicable to the Lakeshore East Joint Corridor Early Works Study Area. The Ontario Line Final Environmental Conditions Report (AECOM, 2020b) and Ontario Line Cultural Heritage Report (AECOM, 2020a) were posted to the Project website when the Notice of Publication of the Final Environmental Conditions Report was issued on November 30, 2020.

4.2 Ontario Line Lakeshore East Joint Corridor Early Works Report and Heritage Detailed Design Report

A draft of the Early Works Report was distributed to agencies including the Ministry of Heritage, Sport, Tourism and Culture Industries and the City of Toronto for review in June 2020. Comments received were applied to this Heritage Detailed Design Report.

The Ontario Line Draft Lakeshore East Joint Corridor Early Works Report, including the Draft Heritage Detailed Design Report, was made available for public review on the Project website when the Notice of Publication of Draft Lakeshore East Joint Corridor Early Works Report was issued on September 23, 2021. Comments received during the Ontario Line Draft Lakeshore East Joint Corridor Early Works Report public review period have been incorporated into the Ontario Line Final Lakeshore East Joint Corridor Early Works Report and this Final Heritage Detailed Design Report, as required.

5. Potential Impacts, Mitigation Measures and Monitoring Activities

In accordance with Sections 8(2)6, 8(2)7 and 8(2)8 of Ontario Regulation 341/20: Ontario Line Project, this Heritage Detailed Design Report describes the potential impacts, mitigation measures, and monitoring activities to verify the effectiveness of mitigation measures associated with the Lakeshore East Joint Corridor early works. This impact assessment builds upon the methodology established in the Ontario Line Cultural Heritage Report (AECOM, 2020a). Impacts associated with Project operations and construction of components other than Lakeshore East Joint Corridor early works will be addressed under a separate cover (i.e., Environmental Impact Assessment Report and/or other Early Works Reports).

This early works impact assessment and development of mitigation measures and monitoring activities considered the following:

- a) Lakeshore East Joint Corridor early works components as described in Section 2.1;
- b) The Lakeshore East Joint Corridor Early Works Project Footprint and Lakeshore East Joint Corridor Study Area as described in **Section 2.2**;
- c) Lakeshore East Joint Corridor early works construction activities as described in **Section 2.3**; and
- d) Local environmental conditions within the Lakeshore East Joint Corridor Study Area as described in **Section 3**.

The proposed impacts of early works have been evaluated according to the Ministry of Heritage, Sport, Tourism and Culture Industries Information Bulletin 3: Heritage Impact Assessments for Provincial Heritage Properties. The Ministry of Heritage, Sport, Tourism and Culture Industries document defines "impact" as a change, either positive or adverse, in an identified cultural heritage resource resulting from a particular activity. The document identifies direct adverse impacts, indirect adverse impacts, and/or positive impacts an activity may have on a heritage resource as defined below.

The purpose of the impact assessment contained in this Heritage Detailed Design Report is to:

 Review the Lakeshore East Joint Corridor early works components and built heritage resources/cultural heritage landscapes as captured in the preliminary

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Ontario Line Lakeshore East Joint Corridor Early Works - Heritage Detailed Design Report

- impact assessment of the Ontario Line Cultural Heritage Report (AECOM, 2020a); confirm impacts and mitigation measures, identify any changes, and, where required, refine the range of mitigation options and measures for each property based on the Lakeshore East Joint Corridor early works; and
- Identify potential Lakeshore East Joint Corridor early works-specific impacts to potential cultural heritage resources/cultural heritage landscapes identified in the field review for this Heritage Detailed Design Report that were not described in the Ontario Line Cultural Heritage Report (AECOM, 2020a) and recommend mitigation measures and monitoring activities to avoid or minimize those impacts.

Table 5-1 presents the anticipated impacts from the Lakeshore East Joint Corridor early works, refined from the range of impacts and mitigation measures that were developed in consultation with the Ministry of Heritage, Sport, Tourism and Culture Industries for the Ontario Line Cultural Heritage Report (AECOM, 2020a) to built heritage resources/cultural heritage landscapes within the Lakeshore East Joint Corridor Study Area. The table also includes the proposed mitigation measures in order to mitigate and minimize any potential negative impacts to these resources that may result from the Lakeshore East Joint Corridor early works.

Heritage related monitoring is recommended for five built heritage resources/cultural heritage landscapes (OLS-015, OLS-017, OLS-018, OLS-122, and OLS-123) prior, during and immediately following construction completion.

Table 5-1: Potential Impacts, Mitigation Measures and Monitoring Activities for the Lakeshore East Joint Corridor Early Works

Ontario Line Cultural Heritage Report Ref. No.	Property Name		Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLS-013	Street East Fire Station #324	■ Listed on the Municipal Heritage Register (April 1, 1982)	No	 No direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). OLS-013 can be considered adjacent to the Lakeshore East Joint Corridor Early Works Project Footprint. OLS-013 is approximately 29.4 metres north of the Lakeshore East Joint Corridor Early Works Project Footprint, separated by Gerrard Street East. Therefore, the property will not experience direct physical impacts based on the location of early works. 	No mitigation measures required. Continue to avoid the property (OLS-013).	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLS-013	Street East Fire Station #324	■ Listed on the Municipal Heritage Register (April 1, 1982)		Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). The building at OLS-013 is approximately 18 metres north of the Lakeshore East Joint Corridor Early Works Project Footprint, beyond the 11.1 metre vibration buffer. Therefore, vibration impacts to the building within OLS-013 will be avoided.	, ,	■ Lakeshore East Joint Corridor early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.
OLS-014	Subway and Gerrard Street East Subway	 ■ Previously identified built heritage resource/ cultural heritage landscape ■ Metrolinx Provincial Heritage Property 	No	 No direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 2A – Introduction of new physical elements and/or alterations to the structure without impacting the heritage attributes identified in Appendix C, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). Both structures at OLS-014 are located entirely within the Lakeshore East Joint Corridor Project Footprint. The structures will be impacted by the addition of noise barriers as shown in Figures 1-1. As the noise barriers are proposed to be added along the outer edges of the Gerrard Street East and Carlaw Avenue Subways, the heritage attributes of the structures will not be adversely impacted as listed in Table 3-1. 	Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measure for the alteration of the structures are required: Consult with City of Toronto's Heritage Planning as planning and design progresses regarding any physical impact to the structures in order to determine and	

Ontario Line Cultural Heritage Report Ref. No.	Location/ Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLS-014	Carlaw Avenue Subway and Gerrard Street East Subway	 Previously identified built heritage resource/ cultural heritage landscape Metrolinx Provincial Heritage Property 	No	Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific pacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report).	■ No mitigation measures required.	■ Lakeshore East Joint Corridor early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.
				The entire bridge is within the 11.1 metre vibration buffer, however, as a railway structure, OLS-014 was built to withstand vibration and therefore will not experience adverse vibration impact from early works. For this reason, vibration was not included as a potential impact in the Ontario Line Cultural Heritage Report.		
OLS-015	400 Carlaw Avenue Jefferson Glass Co. Factory	■ Potential built heritage resource/ cultural heritage landscape identified in the Ontario Line Cultural Heritage Report (AECOM, 2020c)	No	 No direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). OLS-015 is adjacent to the Lakeshore East Joint Corridor Early Works Project Footprint. Therefore, the property will not experience direct physical impacts based on the location of early works. 	■ No mitigation measures required. Continue to avoid the property (OLS-015)	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLS-015	400 Carlaw Avenue Jefferson Glass Co. Factory	■ Potential built heritage resource/ cultural heritage landscape identified in the Ontario Line Cultural Heritage Report (AECOM, 2020c)	No	2. Indirect adverse impact from Lakeshore East Joint Corridor early works (Impact Type 3A – Vibration impacts to the building related to the Project on or adjacent to the property, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). The 11.1 metre vibration buffer overlaps the building within OLS-015. As a result, the potential exists for vibration impacts on the building during construction of early works.	 Mitigation measures documented in Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures for vibration impacts are required: Documentation (Review and establish) of the structural condition of the affected buildings to determine if they are vulnerable to vibration impacts from early works. Establish vibration limits based on structural conditions, founding soil conditions and type of construction vibration. Implement vibration mitigating measures on the construction site and/or at the building. 	■ Lakeshore East Joint Corridor early works have the potential to incur vibration impacts on the building within OLS-015. The following monitoring activities are required for vibration impacts: - Monitor vibration during construction using seismographs, with notification by audible and/or visual alarms when limits are approached or exceeded; and - Conduct regular condition surveys and reviews during construction to evaluate efficacy of protective measures. Implement additional mitigation as required.
OLS-016	1 Dickens Street Woods Manufacturing Company	Potential built heritage resource/ cultural heritage landscape identified in the Ontario Line Cultural Heritage	No	 No direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). 	■ No mitigation measures required. Continue to avoid the property (OLS-016)	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
		Report (AECOM, 2020c)		The property of OLS-016 is adjacent to the Lakeshore East Joint Corridor Early Works Project Footprint. Therefore, the property will not experience direct physical impacts from early works based on the location of early works.		

Ontario Line Cultural Heritage Report Ref. No.	Location/ Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLS-016	1 Dickens Street Woods Manufacturing Company	■ Potential built heritage resource/cultural heritage landscape identified in the Ontario Line Cultural Heritage Report (AECOM, 2020c)	No	2. No indirect adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). The building at OLS-016 is approximately 19.9 metres south of the Lakeshore East Joint Corridor Early Works Project Footprint, and beyond the 11.1 metre vibration buffer. Therefore, vibration impacts to the building within OLS-016 will be avoided.	■ No mitigation measures required.	■ Lakeshore East Joint Corridor early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.
OLS-017	Riverdale Heritage Conservation District	■ Designated Part V of the Ontario Heritage Act (By-law 951-2008)	No	1. Direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 2A – Encroachment into the Heritage Conservation District causing a physical impact, including introduction of new elements to the Heritage Conservation District, alterations to a contributing property or diminishment in integrity of the Heritage Conservation District due to the introduction of new elements, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). The boundaries of OLS-017 (The Riverdale Heritage Conservation District) overlap with the Lakeshore East Joint Corridor Early Works Project Footprint. A portion of the Heritage Conservation District will accommodate the construction of retaining walls and noise barriers along the northern boundary of the Lakeshore East Rail Corridor as part of Early Works. There is potential to impact vegetation including trees that is located within portions of the early works Project Footprint that overlap with the Heritage Conservation District. Trees as features of the public realm are included in the Heritage Conservation District. In addition, a non-contributing property, a car repair shop at 240 and 242 First Avenue, is within the Lakeshore East Joint Corridor Early Works Project Footprint and will be demolished to facilitate early works construction. It is anticipated that this area at the eastern end of First Avenue will be used to accommodate retaining walls, noise barriers and the future Ontario Line Gerrard Station. Policy 9.6 of the Heritage Conservation District Plan states that demolition of a non-contributing property within the Heritage Conservation District is permitted with approval from the City of Toronto.	Planning as planning progresses regarding any physical impact to the Heritage Conservation District, including, if required, the demolition of the noncontributing building of 240 and 242 First Avenue, in order to determine and obtain any approval or permits required, and collaborate with the City on the restoration of vegetative elements impacted by early works.	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.

Ontario Line Cultural Heritage Report Ref. No.	Location/ Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLS-017	Riverdale Heritage Conservation District	■ Designated Part V of the Ontario Heritage Act (By-law 951-2008)		2. Indirect adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 3A – Vibration impacts to the building related to the Project on or adjacent to the property, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). Contributing properties at 238 and 236 First Avenue and noncontributing properties at 240 and 242 First Avenue within the Heritage Conservation District are within the 11.1 metre vibration buffer. As such, the potential exists for vibration impacts during construction of early works.	Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures for vibration impacts are required: - Documentation (Review and establish) of the structural condition of the affected buildings to determine if they are vulnerable to vibration impacts from early works. - Establish vibration limits based on structural conditions, founding soil conditions and type of construction vibration. - Implement vibration mitigating measures on the construction site and/or at the building.	■ Lakeshore East Joint Corridor early works have the potential to incur vibration impacts on buildings within the Heritage Conservation District (OLS-017). The following monitoring activities are required for vibration impacts: - Monitor vibration during construction using seismographs, with notification by audible and/or visual alarms when limits are approached or exceeded; and - Conduct regular condition surveys and reviews during construction to evaluate efficacy of protective measures. Implement additional mitigation as required.
OLS-018	East – Riverside Heritage Conservation District	■ Heritage Conservation District, under study	No	1. No Direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). OLS-018, the Queen Street East Riverside Heritage Conservation District, is adjacent to the Lakeshore East Joint Corridor Early Works Project Footprint. The Heritage Conservation District will not experience direct physical impacts based on the location of early works.	Continue to avoid the Heritage Conservation District.	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLS-018	Queen Street East – Riverside Heritage Conservation District	■ Heritage Conservation District, under study	No	2. Indirect adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 3A – Vibration impacts to the building related to the Project on or adjacent to the property, from Appendix H: Preliminary Potential Project-Specific pacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). The only building within the Heritage Conservation District that is within the 11.1 metre vibration buffer is the Sisters of St. Joseph building (no legal address in Teranet data). The building is within 9.1 metres of the Lakeshore East Joint Corridor Early Works Project Footprint and therefore, there is potential for vibration impacts during construction of early works.	 Mitigation measures documented in Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures for vibration impacts are required: Documentation (Review and establish) of the structural condition of the affected building to determine if they are vulnerable to vibration impacts from early works. Establish vibration limits based on structural conditions, founding soil conditions and type of construction vibration. Implement vibration mitigating measures on the construction site and/or at the building. 	Conservation District (OLS-018). The following monitoring activities are required for vibration impacts: – Monitor vibration during construction

Ontario Line Cultural Heritage Report Ref. No.	Location/ Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLS-122	6, 8 and 10 Paisley Avenue	■ Previously identified built heritage resource/cultural heritage landscape (AECOM, 2017b)	No	 Direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 2A – Encroachment onto a property causing a physical impact to a property, while avoiding physical impact to a building and/or the heritage attributes identified in Appendix C – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report). The buildings within 6, 8, and 10 Paisley Avenue are in close proximity (4 to 5 metres) to the Lakeshore East Joint Corridor Early Works Project Footprint. The rear yards of all the properties are within the Lakeshore East Joint Corridor Early Works Project Footprint and are proposed to be used to support construction access on a temporary basis. This temporary encroachment will result in a physical impact to the properties but will not cause a direct adverse impact to the buildings on the properties. 	 Mitigation measures documented in Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures for direct impacts related to encroachment are required: Consult with City of Toronto's Heritage Planning as planning progresses regarding any physical impact to the properties in order to determine and obtain any approval or permits required. 	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLS-122	6, 8 and 10 Paisley Avenue	■ Previously identified built heritage resource/ cultural heritage landscape (AECOM, 2017b)	No		 Mitigation measures documented in Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures for vibration impacts are required: Documentation (Review and establish) of the structural condition of the affected building to determine if they are vulnerable to vibration impacts from early works Establish vibration limits based on structural conditions, founding soil conditions and type of construction vibration Implement vibration mitigating measures on the construction site and/or at the building 	 Lakeshore East Joint Corridor early works have the potential to incur vibration impacts on the buildings within the property (OLS-122). The following monitoring activities are required for vibration impacts: Monitor vibration during construction using seismographs, with notification by audible and/or visual alarms when limits are approached or exceeded; and Conduct regular condition surveys and reviews during construction to evaluate efficacy of protective measures. Implement additional mitigation as required
OLS-123	15 and 17 Tiverton Avenue	 Previously identified built heritage resource/cultural heritage landscape (AECOM, 2017c) Contributing property in the Riverdale Heritage Conservation District, Designated Part V of the Ontario Heritage Act 	No	No direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report) OLS-123 is adjacent to the Lakeshore East Joint Corridor Early Works Project Footprint. The properties will not experience direct physical impacts based on the location of early works.	■ No mitigation measures required. Continue to avoid the properties (OLS-123).	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.

Ontario Line Cultural Heritage Report Ref. No.	Location/ Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance		Mitigation Measures	Monitoring Activities
OLS-123	15 and 17 Tiverton Avenue	 Previously identified built heritage resource/cultural heritage landscape (AECOM, 2017c) Contributing property in the Riverdale Heritage Conservation District, Designated Part V of the Ontario Heritage Act 	No	2. Indirect adverse impact from Lakeshore East Joint Corridor early works (Impact Type 3A – Vibration impacts to the building related to the Project on or adjacent to the property, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) The two residences within OLS-123, 15 and 17 Tiverton Avenue, are located adjacent to the Lakeshore East Joint Corridor Early Works Project Footprint and the buildings are both located within the 11.1 metre vibration buffer. As a result, there is potential for vibration impacts during the construction of early works.	 Mitigation measures documented in Appendix H of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures for vibration impacts are required: Documentation (Review and establish) of the structural condition of the affected building to determine if they are vulnerable to vibration impacts from early works Establish vibration limits based on structural conditions, founding soil conditions and type of construction vibration Implement vibration mitigating measures on the construction site and/or at the building 	 Lakeshore East Joint Corridor early works have the potential to incur vibration impacts on the building within the potential District (OLS-123). The following monitoring activities are required for vibration impacts: Monitor vibration during construction using seismographs, with notification by audible and/or visual alarms when limits are approached or exceeded; and Conduct regular condition surveys and reviews during construction to evaluate efficacy of protective measures. Implement additional mitigation as required
OLS-124	60 and 62 McGee Street	■ Previously identified built heritage resource/cultural heritage landscape (AECOM, 2017d)	No	 No direct adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report) Two residences within OLS-124, 60 and 62 McGee Street, are adjacent to the Lakeshore East Joint Corridor Early Works Project Footprint. The properties will not experience direct physical impacts based on the location of early works. 	■ No mitigation measures required. Continue to avoid the properties (OLS-124).	■ Lakeshore East Joint Corridor early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLS-124	60 and 62 McGee Street	■ Previously identified built heritage resource/cultural heritage landscape (AECOM, 2017d)	No	,		■ Lakeshore East Joint Corridor early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.

Ontario Line Cultural Heritage Report Ref. No.	Property Name		Known or Potential Provincial Heritage Property of Provincial Significance		Mitigation Measures	Monitoring Activities
OLS-126	De Grassi Street from Queen Street East to Wardell Street	■ Potential built heritage resource/ cultural heritage landscape identified in the Ontario Line Cultural Heritage Report (AECOM, 2020c)	No	early works (Impact Type 2C - Introduction of new elements and/or alterations that results in a physical impact to a heritage attribute identified in Appendix C, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures — Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report) OLS-126 is within the Lakeshore East Joint Corridor Early Works Project Footprint. Removal and replacement of the existing Queen Street East GO rail bridge may result in a direct impact to the Heritage Toronto Plaque located on the sidewalk on the north side of the as shown in Figure ES-2. Although the bridge itself does not retain cultural heritage value or interest, plaques, including the historical plaque near the bridge, are heritage attributes of the public realm of the De Grassi Street streetscape.	Planning as planning progresses for any physical impact to the streetscape and its heritage attributes (i.e. the Heritage Toronto plaque) in order to determine and obtain any approval or permits	 Early works may impact this resource and construction and post-construction monitoring may be required. If the Heritage Toronto Plaque is to remain in-situ during early works construction the following monitoring may be required: Regular monitoring of the plaque/plaque protective enclosure condition will be undertaken throughout construction to ensure integrity of the plaque/plaque protective enclosure. Post construction, the enclosure will be removed and the condition of the plaque will be confirmed to ensure it meets pre-construction conditions.
OLS-126	De Grassi Street from Queen Street East to Wardell Street	■ Potential built heritage resource/ cultural heritage landscape identified in the Ontario Line Cultural Heritage Report (AECOM, 2020c)	No	2. No indirect adverse impacts from Lakeshore East Joint Corridor early works (Impact Type 1 – no anticipated impact, from Appendix H: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line South Study Area, in the Ontario Line Cultural Heritage Report) There are no buildings associated with the streetscape of OLS-126 that are located within the 11.1 metres vibration buffer. As a result, no vibration impacts to buildings within the streetscape is anticipated during the construction of early works.	■ No mitigation measures required.	■ Lakeshore East Joint Corridor early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.

Ontario Line Cultural Heritage Report Ref. No.	Location/ Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
LSE-001	369 Carlaw Avenue	■ Listed on City of Toronto Heritage	No	1. No direct adverse impacts from Lakeshore East Joint Corridor early works	■ No mitigation measures required. Continue to avoid the property (LSE-001).	■ Lakeshore East Joint Corridor early works will have no direct impacts that require
	Toronto Hydroelectric Substation #8	Register (May 6 & 7, 1991) identified in this Heritage Detailed Design Report		LSE-001 is approximately 18.2 metres east of the Lakeshore East Joint Corridor Early Works Project Footprint., separated from the footprint by Carlaw Avenue. Therefore, the property will not experience direct physical impacts based on the location of early works.		monitoring prior, during or post- construction of early works.
LSE-001	369 Carlaw Avenue	■ Listed on City of Toronto Heritage	No	No indirect adverse impacts from Lakeshore East Joint Corridor early works	■ No mitigation measures required.	■ Lakeshore East Joint Corridor early works will have no indirect impacts that require
	Toronto	Register (May 6 & 7, 1991) identified in		Vibration Impacts:		monitoring prior, during or post- construction of early works.
	Hydroelectric Substation #8	this Heritage Detailed Design Report		The building at LSE-001 is approximately 18.2 metres east of the Lakeshore East Joint Corridor Early Works Project Footprint, beyond the 11.1 metre vibration buffer. Therefore, vibration impacts to the building within LSE-001 will be avoided.		

6. Summary and Conclusions

In summary, a total of 11 built heritage resources/cultural heritage landscapes are located within the Lakeshore East Joint Corridor Study Area, including ten that were included in the Ontario Line Cultural Heritage Report and one additional built heritage resource/cultural heritage landscape was identified in development of this Heritage Detailed Design Report.

Based on the location of Lakeshore East Joint Corridor early works components shown in **Figure 1-1**, Lakeshore East Joint Corridor early works may result in direct impacts to one potential built heritage resource/cultural heritage landscape: the De Grassi Street streetscape from Queen Street East to Wardell Avenue (OLS-126), identified in the Ontario Line Cultural Heritage Report. This potential built heritage resource/cultural heritage landscape has no existing heritage recognition. In addition, Lakeshore East Joint Corridor early works may result in direct impacts to one previously identified built heritage resource/cultural heritage landscape: 8 and 10 Paisley Avenue (OLS-122) with no existing heritage recognition. Furthermore, it is anticipated that the Riverdale Heritage Conservation District, designated Part V of the Ontario Heritage Act, will be directly impacted by early works (OLS-017). Lakeshore East Joint Corridor early works will also result in impacts to one previously identified built heritage resource/cultural heritage landscape: the Carlaw Avenue Subway and Gerrard Street East Subway (OLS-014), through the addition of noise barriers; however, the heritage attributes of the structures are not anticipated to be adversely impacted. OLS-014 is a Metrolinx-owned Provincial Heritage Property.. Impacts, mitigation measures and monitoring activities outlined in **Table 5-1** should be implemented.

If future changes at Lakeshore East Joint Corridor early works related to scope and/or project footprint result in any impacts to any built heritage resources/cultural heritage landscapes not contained within this Heritage Detailed Design Report, then a further Heritage Detailed Design Report may be required.

7. Permits and Approvals

This section notes that the following permits may be required for the Lakeshore East Joint Corridor early works construction activities.

Federal

The Lakeshore East Joint Corridor early works will not directly or indirectly impact any National Historic Site or federal heritage building. Therefore, no permits/approvals from Parks Canada are required.

Provincial

Lakeshore East Joint Corridor early works will not directly or indirectly impact any Provincial Heritage Properties of Provincial Significance. Therefore, no provincial permits/approvals are required.

Municipal

Based on the location of Lakeshore East Joint Corridor early works components shown in Figure 2-1, Lakeshore East Joint Corridor early works may result in direct impacts to one potential built heritage resources/cultural heritage landscapes: the De Grassi Street streetscape from Queen Street East to Wardell Avenue (OLS-126), identified in the Ontario Line Cultural Heritage Report. In addition, Lakeshore East Joint Corridor early works may result in direct impacts to one previously identified built heritage resource/cultural heritage landscape: 6, 8 and 10 Paisley Avenue (OLS-122). Neither of these built heritage resources/cultural heritage landscapes have existing heritage recognition. Furthermore, it is anticipated that the Riverdale Heritage Conservation District, designated Part V of the Ontario Heritage Act, will be directly impacted by early works (OLS-017). Lakeshore East Joint Corridor early works will result in impacts to one previously identified built heritage resource/cultural heritage landscape: the Carlaw Avenue Subway and Gerrard Street East Subway (OLS-014), through the addition of noise barriers; however, the heritage attributes of the structures are not anticipated to be adversely impacted. OLS-014 is a Metrolinx-owned Provincial Heritage Property. Metrolinx will consult with City of Toronto Heritage Planning regarding any physical impact to these resources as planning progresses for early works.

As a Crown Agency of the Province of Ontario (as a public body prescribed under Ontario Regulation 157/10), Metrolinx is exempt from certain municipal processes and requirements. In these instances, Metrolinx will engage with the municipalities to incorporate municipal requirements as a best practice, where practical, and may obtain associated permits and approvals.

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Appendix A

Key Project Personnel and Qualifications

Early Works Heritage Detailed Design Report
Appendix A. Key Project Personnel and Qualifications

Key Personnel Role	Senior Technical Specialist
Name:	Adria Grant
Years of Experience in the Role:	20
Education:	 2016 M.A. Applied Archaeology University of Western Ontario 2000 Honours B.A. University of Western Ontario, Anthropology & English
Designation(s):	CAHP, APA
Summary of Qualifications	Adria Grant holds a M.A. in Anthropology and has been active in the field of cultural resource management since 1999.
and Experience:	Adria provides senior oversight and technical reviews for the archaeology and heritage components on several Metrolinx projects, including this Cultural Heritage Report, to ensure compliance with Ministry of Heritage, Sport, Tourism and Culture Industries Sample Tables and Language for "Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment" and Environmental Project Reports (EPR) under Transit Project Assessment Process (TPAP) for Proponents and their Consultants for preparing cultural heritage existing conditions and preliminary impact assessment under TPAP (Ministry of Heritage, Sport, Tourism and Culture Industries 2019), as well as the Memorandum of Understanding between Metrolinx and the Ministry of Heritage, Sport, Tourism and Culture Industries.

Key Personnel Role	Cultural Heritage Specialist- Project Lead	
Name:	Tara Jenkins	
Years of Experience in the Role:	08	
Education:	2016 Graduate Professional Certificate in Cultural Heritage Studies (GPCertCHS) – Heritage Planning Option University of Victoria 2011 M.A. McMaster University, Anthropology 2007 Honours B.A. McMaster University, Anthropology B.A. McMaster University, Anthropology	
Designation(s):	CAHP	
Summary of Qualifications and Experience:	Tara Jenkins holds a M.A. in Anthropology and a Graduate Professional Certificate in Cultural Heritage Studies. She has over 20 years of experience working in the field of cultural resource management (CRM) and is a member of the Canadian Association of Heritage Professionals (CAHP). She has gained practical experience as a Cultural Heritage Specialist and has been the acting Project Manager for various projects including Cultural Heritage Evaluation Reports, Heritage Impact Assessments, and Cultural Heritage Resource Assessments. In her role as a Project Manager, Tara provides specialized advice and expertise to clients and stakeholders on heritage	

Key Personnel Role	Cultural Heritage Specialist- Project Lead
	matters. She is also a voting member on London's Advisory Committee on Heritage. Tara has published articles and chapters in peer-reviewed and other recognized journals and books. She has taught at the university level in lecture and seminar environments and has been a guest speaker for academic conferences. Project work includes the application of legislation, policy framework, and tools such as the Ontario Heritage Act, Provincial Policy Statement, the Ontario Heritage Tool Kit, the Standards and Guidelines for the Conservation of Historic Places in Canada, various Class Environmental Assessment processes and other policies and processes outlined by the Ontario Ministry of Heritage, Sport, Tourism, and Culture Industries.

Key Personnel Role:	Junior Cultural Heritage Specialist
Name:	Liam Smythe
Years of Experience in the Role:	04
Education:	B. URPI / Ryerson University/ 2014 Certificate in Cultural and Heritage Site Management/Centennial College/2015
Designation(s):	
Summary of Qualifications and Experience:	Liam Smythe is a Junior Cultural Heritage Specialist in the Cultural Resource Management Department at AECOM. He completed his Bachelor of Urban and Regional Planning at Ryerson University, and a Postgraduate Certificate in Cultural and Heritage Site Management at Centennial College. Liam has previously worked as a policy and program assistant with the Ministry of Tourism Culture and Sport, assisting in the development and implementation of the Standards and Guidelines for the Conservation of Provincial Heritage Properties. With MTCS he helped develop a compliance survey to assess the level at which ministries and prescribed public bodies were complying with the regulations, as well as updating the heritage bridge list and identifying a series of best practices in heritage conservation at the provincial level. Working with other Ryerson University students, he conducted a comprehensive study of heritage resources in Toronto's Corktown neighbourhood on behalf of the Corktown Business and Residents Association. He has formerly volunteered with Heritage Toronto, and completed a collections management internship with the Ontario Heritage Trust. Liam's responsibilities at AECOM include: Conducting archival and other historic research, field reviews, photography, preparing documents and reports.