Class Environmental Assessment Project File Report

Schedule ‘B’ Class EA for the Sanitary Sewer on Elia Avenue, City of Mississauga

PROJECT 23-2126

Prepared for Region of Peel
by Arcadis Professional Services (Canada) Inc.
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1 Introduction

1.1 Background

To enhance wastewater servicing capacity and support the proposed intensification within the Hurontario and Eglinton sanitary sewer drainage area, the Region of Peel (Region) intends to install a new sanitary sewer along Kingsbridge Garden Circle and Elia Avenue.

The Region retained Arcadis Professional Services (Canada) Inc. (Arcadis) to undertake a Schedule "B" Municipal Class Environmental Assessment (Class EA) to evaluate potential alternatives for sanitary sewer development and identify the most suitable solution for this infrastructure need.

2 Planning and Policy Context

2.1 Region of Peel Official Plan

The Region of Peel Official Plan (RPOP) was adopted by Regional Council on April 28, 2022 (By-law 20-2022) and approved with 44 modifications on November 4, 2022. The RPOP provides a long-term policy framework for growth, environmental protection, and regional infrastructure planning to 2051.

Effective July 1, 2024, Peel was designated an upper-tier municipality without planning responsibilities under the Planning Act. Land-use planning and development approvals are now exercised by the Cities of Brampton and Mississauga and the Town of Caledon (with certain Official Plan matters subject to provincial approval). The RPOP remains the regional policy context that local official plans implement.

For this Class EA, the RPOP continues to direct the planning, optimization and coordination of municipal water and wastewater servicing to support growth while protecting natural heritage and water resources. Based on current mapping, the study area lies within the Urban System (RPOP Schedule E-1). Portions of the corridor overlap Primary/Secondary Major Transit Station Area boundaries and an Intensification Corridor (RPOP Schedule E-2). The corridor is outside the Greenlands System Overlay (RPOP Schedule C-1) and the Core Areas of the Greenlands System (RPOP Schedule C-2). A portion of the study area is within a Highly Vulnerable Aquifer (RPOP Schedule A-2). These schedules should be reconfirmed at detailed design against the latest published mapping.

Conclusion: The proposed sanitary servicing improvements are consistent with RPOP infrastructure policies and support efficient, orderly intensification within the serviced urban area.

2.1.1 Growth Management Strategy

Peel's integrated approach to growth management (RPOP to 2051) ties together Official Plan policy, transportation and servicing master planning, and development charges. In this context, the proposed sanitary sewer along Kingsbridge and Elia Avenue improves wastewater capacity and operations in the Hurontario–Eglinton drainage area by optimizing existing systems and supporting planned intensification (redirecting flows from constrained local sewers and accommodating anticipated development; the growth management looks at servicing development needs to 2051). This approach aligns with PPS 2024 direction to optimize existing infrastructure and coordinate servicing with land use.

2.2 Greenbelt Plan

Ontario's Greenbelt Plan (2017) remains in force. In December 2023, the Greenbelt Statute Law Amendment Act, 2023 (Bill 136) restored all 15 areas removed or redesignated in 2022 and requires that any future Greenbelt boundary changes occur only through legislation.

Review of Schedule 1 (Greenbelt Plan mapping) and municipal mapping indicates the study area is within the built-up urban area and outside the Niagara Escarpment Plan and Oak Ridges Moraine Conservation Plan areas; no overlap with Protected Countryside is anticipated. This finding will be reconfirmed at detailed design using the latest layers available (including conservation authority screening).

2.3 Provincial Policy Statement (2024)

The Provincial Planning Statement, 2024 (PPS 2024) came into effect on October 20, 2024, under section 3 of the Planning Act. PPS 2024 replaces the PPS 2020 and the Growth Plan (revoked the same day), and all planning decisions shall be consistent with PPS 2024.

Key PPS 2024 directions relevant to this Class EA:

- Integrated servicing + land use. Municipal infrastructure planning is to be coordinated with land-use planning at all stages to support complete communities and strategic growth areas.
- Servicing hierarchy. Within settlement areas, municipal sewage and water services are the priority form of servicing. Where municipal systems are not available or feasible, PPS maintains a clear hierarchy for communal and on-site systems; the intent is to optimize existing and planned municipal capacity and protect human health and the environment.
- Efficient use of infrastructure. Decisions should optimize existing infrastructure, coordinate infrastructure with phasing of growth, and support intensification in identified areas (e.g., MTSAs, intensification corridors).
- Asset management + financial viability. Infrastructure planning should align with asset-management practices and long-term financial sustainability.
- Water resources + environmental protection. Servicing must be planned and operated to protect water quality and quantity, avoid negative impacts, and support conservation and efficiency.

Application to this study:

This Class EA study evaluates proposed sanitary trunk sewer improvements in a serviced urban area to address capacity and operational needs and to support planned intensification. The study is being conducted to be consistent with PPS 2024, by prioritizing municipal sewage services, integrating servicing with land-use planning, and optimizing existing system capacity while protecting water resources and public health.

3 Class EA Process and Public Consultation

3.1 Municipal Engineers Association's Municipal Class EA Planning Process

This Class EA planning process, which follows the Municipal Engineers Association's (MEA) Municipal Class Environmental Assessment, March 2023 document, amended February 22, 2024, which remains in effect until any new provincial regulation replaces it., takes into consideration the protection of all aspects of the natural, social, and economic environment as well as long-term planning for the mitigation of any adverse effects during both construction and commissioning. The Class EA process also includes consultation with the Public, Indigenous communities, Government Agencies, local interest groups and review bodies to obtain input and feedback and to ultimately attain general acceptance for the preferred alternative.

There are five (5) phases depicted in the Municipal Class EA Planning and Design Process, which include:

- **Phase 1 - Identify the problem(s) or opportunity:** Identify the problem or opportunity that the Class EA is intended to address.
- **Phase 2 - Identification of alternative solutions and selection of a preferred solution:** Conduct a screening-level inventory sufficient to compare alternative solutions; consult with the public/agencies/Indigenous communities; identify a preferred solution. Design-level investigations/mitigation are carried forward to Phase 3 for Schedule C projects.
- **Phase 3 - Alternative Design Concepts (Schedule C only):** For the preferred solution, develop and compare design concepts (e.g., alignment/profile, construction method, staging); a second public consultation event is typically held before selecting the preferred design.
- **Phase 4 - Documentation & Filing:** Document the study in a Project File (Schedule B) or an Environmental Study Report (Schedule C) and issue a Notice of Completion initiating a minimum 30-day public review period.
- **Phase 5 - Implementation:** Proceed to detailed design, permits/approvals, and construction. If there are material changes, changed conditions, or if a substantial period has elapsed (commonly ~10 years) since filing, complete an Addendum and post it for a 30-day review before implementation.

The complete Municipal Class EA Planning and Design Process is shown in **Figure 3-1.**

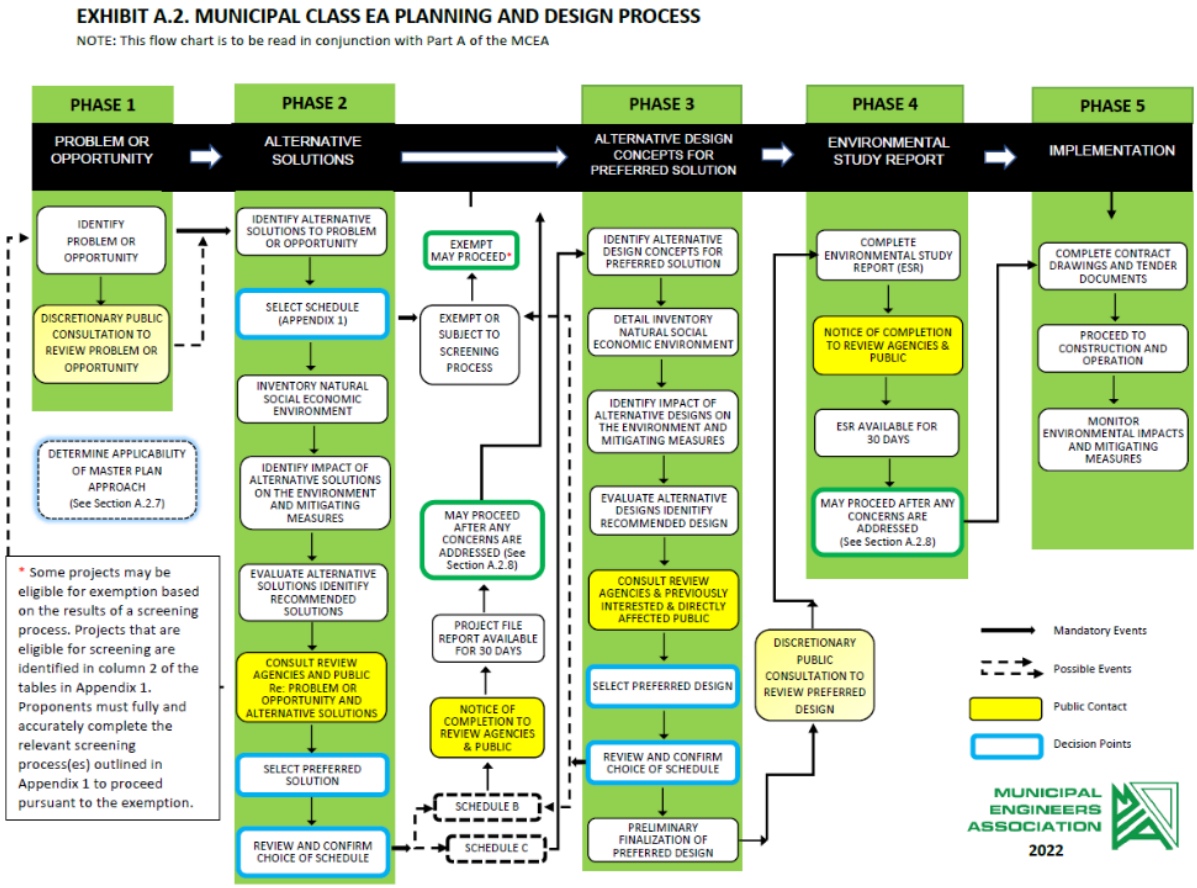

Figure 3-1 Municipal Class EA Planning and Design Process

3.2 Municipal Class EA Schedules

The Class EA document categorizes projects into one (1) of four (4) possible schedules depending on the project's complexity and the nature and significance of potential adverse effects on the environment. The schedule under which a particular project falls determines the specific planning and design phases that must be adhered to. A proponent may voluntarily apply a more rigorous process than required (e.g., follow Schedule C practices for a Schedule B undertaking) where warranted. The four (4) schedules are:

- **Exempt Projects (formerly classified as Schedule A and A+ projects)** are generally limited in scale and usually consist of minor operational/upgrade works. These projects usually have minimal adverse impacts on the environment and may proceed to implementation without further assessment since they are no longer required to meet the requirements of the EA Act.
- **Schedule B Projects** have the potential for some adverse environmental effects and must accordingly proceed through Phase 1 and Phase 2 of the planning and design process. Alternative solutions to the problem must be identified, all impacts to the natural, social-cultural and/or economic environment must be inventoried, and a preferred solution selected through consultation with the Public and government review agencies. The project file must be completed and put on public record for a minimum 30-day public comment period.

- **Schedule C Projects** are the most complex and require a more detailed study, public and agency consultation, and documentation. These projects have the potential for significant environmental effects. A Schedule C project must complete all five (5) Phases of the planning and design process. An ESR must be completed and put on public record for a minimum 30-day public comment period.

3.2.1 Public and Indigenous Consultation

Public and agency consultation are integral to the Class EA planning process, with minimum consultation requirements varying depending on the project's Class EA Schedule. Consultation occurs throughout the study and is scaled to the project category and context. Typical measures include:

- Issuing study notices, such as the Notice of Commencement, Public Information Centre notices, Notice of Completion, and Notice of Addendum if required.
- Providing opportunities for input through webpage/email updates, questionnaires, and virtual or in-person Public Information Centres.
- Engaging with agencies and Indigenous communities early and continuously, with documentation of how their input informed decisions.
- Maintaining a clear decision trail in the Project File/Environmental Study Report (ESR) to ensure transparency and accountability.

The Class EA process provides an appeal mechanism to change the project status. Under the provisions of Section 16 of the amended EA Act, there is an opportunity under the Class EA planning process for the Minister to review the status of a project. Members of the public, interest groups, and review agencies may request the Minister to require a Proponent to comply with Section 16 of the EA Act before proceeding with a proposed undertaking. For Schedule B and C projects the public can request additional investigations by filing a Section 16 Order Request to the Ministry of the Environment, Conservation and Parks. The Minister determines whether this is necessary, with the Minister's decision being final. The procedure for dealing with concerns, which may result in the Minister, by order, requiring the Proponent to comply with Section 16 of the Act is outlined in the MEA document (MEA 2024). Revisions to the Act found in the *More Homes, More Choice Act, 2019* resulted in a change to Section 16 Order requests. This change removed the opportunity for anyone to request a Section 16 Order (formerly a Part II Order) for any project unless the order may prevent, mitigate or remedy adverse impacts on existing Aboriginal and treaty rights.

Section 5.1 outlines the preferred Schedule for this project.

4 Existing Site Conditions

4.1 Site Description

The project area lies within the G.E. Booth Wastewater Treatment Plant Catchment Area that terminates near Lake Ontario at the G.E. Booth Wastewater Treatment Facility (WWTF). The approximate divide between the east and west trunk sanitary sewer systems is the watershed boundary between the Etobicoke Creek and the Credit River.

The site for the proposed sanitary sewer is in the City of Mississauga, Ontario along Kingsbridge Garden Circle and Elia Avenue. The study area is predominantly zoned residential, with a segment crossing a community park (Huron Heights Park). The Zoning Map can be found in **Appendix A.**

4.2 Natural Environment

4.2.1 Topography and Drainage

The Study area encompassing Kingsbridge Garden Circle, Elia Avenue, and Huron Heights Park, in Mississauga, falls within the Lake Ontario West Watershed, which is part of the greater Credit River watershed system. The Credit River is one of the primary watercourses that discharges into Lake Ontario, and it influences the drainage patterns across Mississauga, including areas near Central Parkway East and surrounding parks.

The Study area covers a diverse landscape that includes residential neighborhoods along Kingsbridge Garden Circle, and Elia Avenue, extending through Huron Heights Park, and connecting at Central Parkway East. The topography is characterized by gentle undulations and varied elevations typical of suburban development. The area includes both natural and man-made drainage features, such as storm sewers, retention basins, and natural watercourses within parklands. Drainage patterns generally flow southwest toward the Credit River watershed, influenced by slight inclines and local green spaces, which play a role in surface water management.

The study area ranges in topographic elevation from approximately 150 metres above sea level (masl) to approximately 167 masl. The topography is considered to be relatively flat along Elia Avenue, with a slope in the eastern direction towards Huron Heights Park, and Central Parkway East.

4.2.2 Designated Natural Areas

A Natural Sciences Report (**Appendix B**) was prepared by LGL Limited (September 2024) for the study area of the preferred alternative, which confirmed that no Designated Natural Areas (such as Provincially Significant Wetlands, Areas of Natural and Scientific Interest, Environmentally Significant Areas, or Significant Valley Lands) are located within 120 meters of the project area.

The report also found no aquatic species at risk in Cooksville Creek. Therefore, the proposed works will not have any permanent impacts on fish or fish habitat, as the construction adjacent to the watercourse will use trenchless technology, and the shaft locations are outside the watercourse. Additionally, no plant species considered regionally or locally rare were identified within the study area. The removal of vegetation for the sanitary sewer placement will only affect manicured lands, with no naturalized vegetation being removed.

Kentucky coffee trees were observed within the project area, but these are not regulated under Ontario Regulation 230/08 within the City of Mississauga. To mitigate impacts on birds, tree and vegetation clearing will comply with the Migratory Bird Convention Act, avoiding the April 1 to August 31 nesting period. Tree clearing

must also occur outside the bat roosting period of May 1 to November 15. With these mitigation measures in place, the construction of the sewer along Elia Avenue is not expected to negatively impact the natural environment in the study area.

4.3 Socio-Cultural Environment

4.3.1 Archaeological Assessment

A Stage 1 Archaeological Assessment (**Appendix C**) was completed by Archaeological Services Inc. (ASI) for the study area of the preferred alternative along Kingsbridge Garden Circle and Elia Avenue, from east of Cooksville Creek to Huron Heights Drive, continuing through Huron Heights Park to Central Parkway East. Results of the study identified four (4) previously registered archaeological sites within one kilometer of the study area, but none within 50 meters. A property inspection determined that the entire study area does not retain any archaeological potential and will not require further assessment. Due to deep land disturbances, no archaeological potential remains in the study area. However, should the proposed work extend beyond this area, further archaeological assessment will be required.

4.3.2 Cultural Heritage

A Cultural Heritage Report (**Appendix D**) was completed by ASI for the study area of the preferred alternative along Kingsbridge Garden Circle and Elia Avenue, from east of Cooksville Creek to Huron Heights Drive, continuing through Huron Heights Park to Central Parkway East. Based on the background research and field review, no known built heritage resources (BHRs) or cultural heritage landscapes (CHLs) were identified within the study area.

If future work requires expanding the study area, a qualified heritage consultant should be contacted to assess potential impacts on any BHRs or CHLs.

4.4 Local Geology and Hydrogeology

Generally, the underlying surficial geology of the study area consists of fine-textured glaciolacustrine deposits of silty to clayey till, with ice-contact stratified deposits in the vicinity of Acorn Place and Sorento Drive.

Ontario Soil Surveys Report ON18, Soils of Peel County includes some mapping of the Study Area. Available soil mapping indicates the nearby area consists of clay loam, corresponding with Hydrologic soil type C and D which indicates higher to highest runoff potential and slow to slowest infiltration rates even when thoroughly wetted.

4.4.1 Geotechnical Investigation

A geotechnical investigation was completed for the proposed alignment along Kingsbridge Garden Circle, Elia Avenue, and Huron Heights Park.

The geotechnical investigation aimed to determine the subsurface conditions and included the advancement of 15 boreholes to approximate depths of 6.1 mbgs to 18.3 mbgs. Bedrock was encountered in all of the boreholes and rock coring was conducted to obtain additional data on the bedrock conditions.

Four (4) of the boreholes were completed with monitoring well installation. Groundwater measurements were conducted during and upon completion of boreholes drilling as well as in the installed monitoring well.

Soil samples recovered during this investigation were preserved and transported for laboratory analyses. Completed testing included the following:

- Moisture Content on all collected soil samples
- Grain Size Analyses on nine (9) samples
- Atterberg Limits Test on nine (9) samples
- Corrosivity Parameters on four (4) samples (ie. pH, Redox Potential and Sulphide concentration)
- Standard Penetration Resistance Test (SPT N)

Additionally, the following rock testing was conducted on retrieved core samples:

- Brazilian Disc tensile strength on 14 samples
- Point Load test on 25 samples
- Slake Durability on 13 samples
- CERCHAR Abrasivity on 15 samples
- Punch Penetration test on 15 samples
- Swell tests on six (6) samples

4.4.1.1 Pavement Structure and Fill

All of the boreholes were advanced within flexible pavement areas. The thickness of asphaltic concrete encountered ranged between 100 mm and 125 mm, while the granular base/subbase was found to range in thickness from 200 mm to 250 mm.

Generally, the boreholes encountered cohesionless fill materials consisting of silty clay to silty sand.

4.4.1.2 Overburden Soils

Underneath the fill, the soil was described as a silty clay to sandy clay till, which was generally described as stiff to hard. This material was underlain by a sandy silt to silty sand unit, along Elia Avenue.

4.4.1.3 Bedrock

The bedrock underlying the study area was identified as Georgian Bay Formation typically consisting of fresh to moderately weathered, grey, fine to very fine-grained shale with occasional to frequent, fresh, light grey fine-grained limestone and siltstone layers. The assumed top of bedrock elevation ranged from Elev. 161.2masl to 162.6 masl with an accuracy of ±0.5m.

4.4.1.4 Groundwater Monitoring

Four (4) groundwater monitoring wells were installed in the geotechnical / hydrogeological investigation. The monitoring wells were installed within the bedrock and groundwater levels in the monitoring wells were measured upon borehole completion and again between January 22, 2025, and March 31, 2025. The observed groundwater level in monitoring wells across the site ranged between 153.05masl and 162.42masl during the March monitoring event.

4.5 Traffic

Traffic considerations within the study area of the preferred alternative encompass Kingsbridge Garden Circle, Elia Avenue, James Austin Drive, Huron Heights Drive and Hurontario Street.

Elia Avenue is a minor collector road under the jurisdiction of the City of Mississauga, featuring a two-lane cross-section and exclusive left-turning lanes at major intersections. The roadway adopts an urban cross-section, with a posted speed limit of 40 km/h with dedicated east and westbound sidewalks and on street parking.

The surrounding area primarily consists of residential neighborhoods, open area and parks, as well as access to commercial plazas.

4.5.1 Roadways

The key roadways within the study area are Kingsbridge Garden Circle, Elia Avenue, James Austin Drive, Huron Heights Drive and Hurontario Street. A brief description of each road is provided in **Table 4-1**.

Table 4-1 Key Roads within the Study Area

Road	Description
Elia Ave	Elia Ave is a minor collector road under the jurisdiction of the City of Mississauga, featuring a two-lane cross-section and exclusive left-turning lanes at major intersections. The roadway adopts an urban cross-section, with a posted speed limit of 40 km/h with dedicated east and westbound sidewalks and on street parking.
Kingsbridge Garden Cir	Kingsbridge Garden Cir is a minor collector road under the jurisdiction of the City of Mississauga, featuring a two-lane cross-section and exclusive right and left-turning lanes at major intersections. The roadway adopts an urban cross-section, with a posted speed limit of 40 km/h and intermittent dedicated sidewalks. Parking and idling are prohibited.
Hurontario St	Hurontario St is a north-south major arterial road under the jurisdiction of the City of Mississauga with a four (4) lane cross-section with exclusive left and right turning lanes at major intersections. The roadway has an urban cross-section, and the posted speed limit is 40km/h in the vicinity of the study area. Parking and idling are prohibited on either side of the roadway. There is a sidewalk on both sides of the road. There is no dedicated bike lane on Hurontario St. Bikes and Cars share the Roadway. There is currently ongoing construction along Hurontario St near the vicinity of the study area.
James Austin Dr	James Austin Dr is a two (2) lane local residential street within the study area, under the jurisdiction of the City of Mississauga. The roadway has a speed limit of 40 km/hr, a dedicated sidewalk and on street parking.
Huron Heights Dr	Huron Heights Dr is a two (2) lane local residential street within the study area, under the jurisdiction of the City of Mississauga. The roadway has a speed limit of 30 km/hr, a dedicated sidewalk and on street parking. A community safety zone is posted along Huron Heights Dr, between Elia Ave and James Austin Dr.
Central Parkway E	Central Parkway E is a four (4) lane major road under the jurisdiction of the City of Mississauga, with an exclusive right and left-turning lanes at major intersections. The roadway adopts an urban cross-section, with a posted speed limit of 50 km/h and intermittent dedicated sidewalks. Parking and idling are generally prohibited, except near MiWay Central Parkway Station.

4.5.2 Transit Routes

Transit services in the study area are operated through "MiWay" Mississauga and are listed in **Table 4-2** Existing Transit Service.

Table 4-2 Existing Transit Service

Rd	Section
Elia Ave	Route 7
Kingsbridge Garden Cir	Rout 68
Hurontario St	Route 103
Central Parkway E	Route 7

4.6 Existing Utilities

SUE Quality Level D through B investigations were completed for the study area of the preferred alternative, to obtain utility records of the existing dry infrastructure within the study limits and determine the alignments of the infrastructure. Based on this investigation, the major dry infrastructures identified within the study area are as follows:

Kingsbridge Garden Circle

- Alectra underground conductors – from south of Tucana Court to Hurontario Road.
- Bell underground conduit and cable – from south of Tucana Court to Hurontario Road.
- Rogers underground fibre optic cable and coaxial cable – from south of Tucana Court to Hurontario Road.
- Enbridge gasmain (intermediate pressure) – from south of Tucana Court to Hurontario Road.

Elia Avenue

- Alectra underground conductors – from Hurontario Road to Huron Heights Drive.
- Bell underground conduit – on Acorn Place crossing Elia Avenue.
- Bell underground conduit – from James Austin Drive to Huron Heights Drive.
- Rogers underground fibre optic cable – on Hurontario Road crossing Elia Avenue.
- Rogers underground fibre optic cable and coaxial cable – on Acorn Place crossing Elia Avenue.
- Rogers underground fibre optic cable and coaxial cable – from James Austin Drive to Huron Heights Drive.
- Enbridge gasmain (intermediate pressure) – from Hurontario Road to Huron Heights Drive.

5 Problem/ Opportunity Statement

Phase 1 of the Municipal Class EA process defines the starting point for any Class EA as the "Problem/Opportunity Statement." The Problem/Opportunity Statement for the Sanitary Sewer on Elia Avenue Municipal Class EA is defined as follows:

"To enhance wastewater servicing capacity to facilitate proposed intensification growth within the Hurontario and Eglinton sanitary sewer drainage area. There is an opportunity to accomplish this by installing a new sanitary sewer along Kingsbridge and Elia Avenue to redirect flows from the current local sewer and accommodating the flows from the anticipated developments."

In accordance with the requirements of the Municipal Class EA planning process, the Region of Peel initiated this Municipal Class EA to identify and evaluate alternative solutions to address this Problem/Opportunity Statement.

5.1 Schedule B Class EA

To enhance wastewater servicing capacity to facilitate proposed intensification growth within the Hurontario and Eglinton sanitary sewer drainage area. There is an opportunity to accomplish this by installing a new sanitary sewer along Kingsbridge and Elia Avenue to redirect flows from the current local sewer and accommodating the flows from the anticipated developments.

As a result, a Schedule 'B' Class Environmental Assessment (EA) was undertaken to identify a preferred solution for this infrastructure need. The project falls under Schedule B, Class EA project as per the MEA's Municipal Class Environmental Assessment document. Per Appendix 1 – Project Schedules of the document, this is characterized as:

- **22c Establish, extend or enlarge a sewage collection system and all works necessary to connect the system to an existing sewage outlet where such facilities are not located in an existing road allowance, or existing utility corridor**

While the majority of the proposed sanitary sewer is expected to be constructed within an existing road allowance or an existing utility corridor, it is necessary to construct some segments of the proposed sanitary sewer outside of these areas.

As such, this study is being conducted in accordance with the approved requirements for a Schedule B Municipal Class EA, which requires the completion of Phase 1 and Phase 2 of the planning and design process.

Consultation between the proponent and affected or interested stakeholders, members of the public or Indigenous communities early on and throughout the process is a key feature of EA planning, as it provides opportunities for the exchange of information by which decision-making may be influenced. In addition, one of the primary goals in effectively consulting with stakeholders, the public, and Indigenous communities, is to resolve issues proactively to avoid controversy.

In a Schedule B Class EA there exists two mandatory points of contact with the public and review agencies. The first point of contact follows the proponent's identification of the recommended alternative solution. It is at this point, through invitation for public comment and input that an opportunity for stakeholders, the public and Indigenous communities to assist in the selection of a preferred solution exists. The second point of contact consists of the Notice of Completion of the planning process, with issuance of the final Project File Report and

made available for the mandatory 30-day public comment period by affected or interested stakeholders, the public, Indigenous communities, and agency groups.

6 Alternative Solutions

6.1 Identification of Alternatives

Three alternative solutions have been developed to address the problem statement, taking into consideration design considerations, technical feasibility, and storage capacity. These alternatives have been evaluated to determine a preferred solution. The following alternative solutions are available:

- **Alternative 1:** Construct a new 1200 mm sanitary sewer via tunneling from Kingsbridge Garden Circle, eastward along Elia Avenue and Huron Heights Park, and connecting with a 600 mm sanitary sewer at Central Parkway East. A segment of pipe crossing Huron Heights Park, connecting to the existing 600 mm concrete sewer on Central Parkway East to be installed via open cut.
- **Alternative 2:** Construct a 600 mm/900 mm sanitary sewer via tunneling and open cut construction methodology from Kingsbridge Garden Circle, eastward along Elia Avenue, crossing the subdivision and connecting with a 600 mm sanitary sewer at Central Parkway East. This sewer will travel east along Elia Avenue, James Austin Drive, and Laurentian Avenue.
- **Alternative 3:** Maintain the current sanitary system without any proposed infrastructure upgrades. This option is equivalent to the "Do Nothing" approach.

6.1.1 Alternative 1 (Preferred Option)

Alternative 1 proposes the construction of a new 1200 mm sanitary sewer, starting from Kingsbridge Garden Circle and extending eastward along Elia Avenue and Huron Heights Park, connecting at Central Parkway East. The majority of this segment will be constructed using trenchless technologies (tunneling), with the installation of four (4) launching and receiving shafts at strategic intervals. A segment of pipe crossing Huron Heights Park, connecting to the existing 600 mm concrete sewer on Central Parkway East, will be installed via open cut due to the considerations below:

- Significant ground elevation fluctuations (Ground Elevation from 166m to 150m within 300m)
- Existing twin 2700 mm and 2100 mm culverts on Central Parkway East
- Constraints by existing sanitary sewer invert at the connection point

The alignment will also include 100 meters of open-cut construction for local connections to lateral sewers.

Although this option is in proximity to the CVC-regulated Cooksville Creek watercourse, it does not cross the watercourse. A permit from CVC may be required due to proximity to the regulated area.

Figure 6-1 presents a schematic drawing of the proposed upgrades for Alternative 1.

Figure 6-1 Alternative 1

6.1.2 Alternative 2

Alternative 2 proposes the installation of a 600 mm /900 mm sanitary sewer, starting from Kingsbridge Garden Circle and extending east along Elia Avenue before cutting across the subdivision along James Austin Drive. The alignment will include a mix of open-cut construction and tunneling, with tunneling segments located under Hurontario Street and the easement across the subdivision along James Austin Drive.

Open-cut construction will be employed for the majority of the alignment; however, challenges are anticipated due to the required depth and the complexity of working through the narrow easement between private properties. The new sewer will connect to the existing 600 mm concrete sewer on Central Parkway East from Laurentian Avenue at an existing maintenance hole. Additionally, the two (2) tunnelling sections of this alternative will include the installation of four (4) launching and receiving shafts at strategic intervals.

Although this option is in proximity to the CVC-regulated Cooksville Creek watercourse, it does not cross the watercourse. A permit from CVC may be required due to proximity to the regulated area. This is required to be assessed once the exact location of alignment is determined over the implementation phase.

Figure 6-2 presents a schematic drawing of the proposed upgrades for Alternative 2.

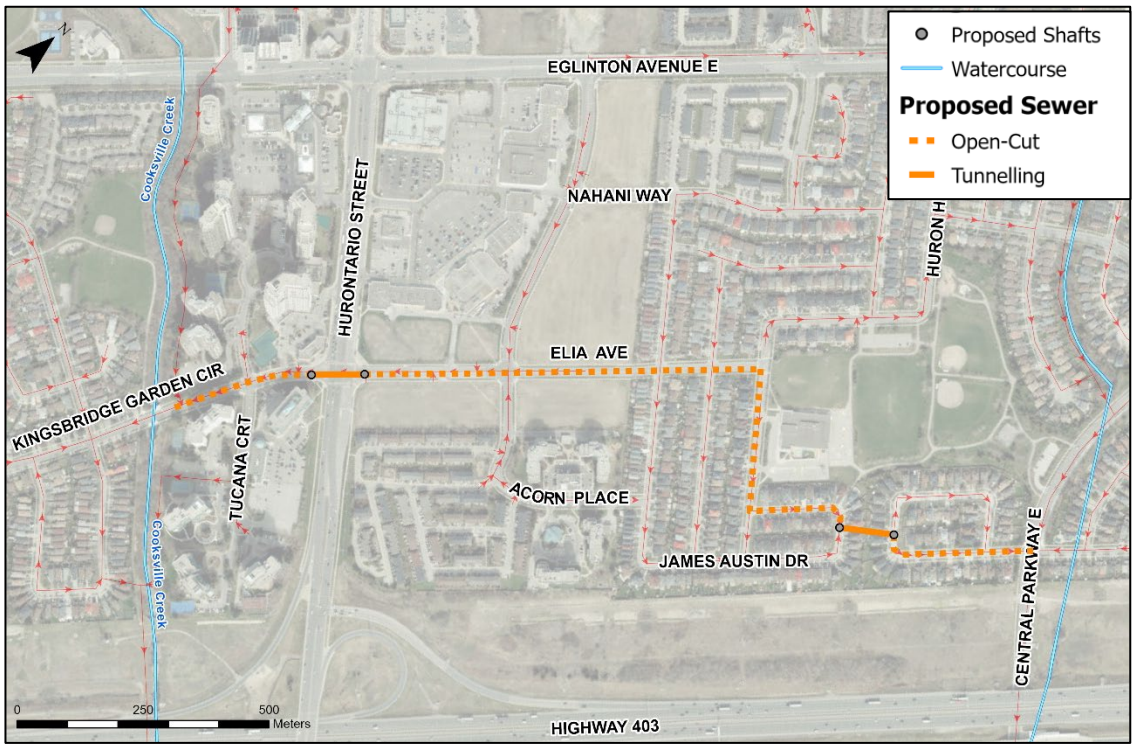

Figure 6-2 Alternative 2

6.1.3 Alternative 3 – "Do Nothing"

The "Do Nothing" Alternative suggests maintaining the current sanitary system without any proposed infrastructure upgrades. This option contrasts with the other alternatives, as it does not involve any diversion of flows. This alternative will increase the risk of sewer system surcharging and overland flooding due to capacity issues currently present within the existing network.

7 Evaluation of Alternative Solutions

This section presents the evaluation of alternatives discussed in **Section 6**. Taking the existing environment into consideration, the alternative solutions were comparatively evaluated using a descriptive or qualitative assessment based on criteria developed within the following categories (representing the broad definition of the environment as described in the *EA Act*):

- **Natural Environment** – having regard for protecting the natural and physical components of the environment (e.g., air, land, water and biota) including natural and/or ESAs.
- **Social-Cultural Environment** – having regard for residents, neighbourhoods, businesses, community character, social cohesion, community features, historical/archaeological remains, and heritage features.
- **Technical Environment** – having regard for the technical suitability/longevity and other engineering aspects associated with the alternative solutions.
- **Financial Environment** – having regard for the cost implicating items associated with the alternative solutions.

7.1 Evaluation Criteria

Evaluation criteria were developed to comparatively assess the alternatives, to identify the potential environmental effects and distinguish the advantages and disadvantages between alternatives. The criteria reflect all components of the environment in the study area, the alternative solutions being considered, the problem/opportunity being addressed, and the Class EA requirements. The criteria include the social, cultural, and natural environments, and technical and financial considerations and are described below in **Table 7-1**.

Table 7-1 Evaluation Criteria

CRITERIA	MEASURES
Natural Environment	
Surface Water Impacts	Potential for impacts (e.g., erosion) during construction to surface water (Cooksville Creek) and proximity to regulated areas.
Natural Heritage Area Impacts	Provincially, regionally, or locally significant natural areas (e.g., wetlands, areas of natural and scientific interest, environmentally significant areas) located adjacent to or directly intersected by the route.
Groundwater / Subsurface Impacts	Potential for water taking during construction.
Vegetation / Greenspace Impacts	Loss of vegetation (including impacts to trees and tree canopy).

Social and Cultural Environment	
Traffic Disruption/Impacts to Private Property/Existing Land Uses (e.g., Businesses)	Potential for temporary disruption to traffic as well as nearby public and private properties (e.g., businesses) including access considerations.
Nuisance Impacts	Potential for vibration, dust and noise issues stemming from construction activities within close proximity to nearby residences, businesses and schools.
Cultural /Heritage /Known Archaeological Resource Impacts	Potential impact to cultural / built heritage areas and known archaeological resources.
Technical Considerations	
Ease of Construction (e.g., Construction Constraints)	Potential for encountering problems during construction (e.g., soil stability, geotechnical considerations, ease of excavation).
Operational Flexibility	Potential for operational flexibility and amount of additional capacity provided.
Impacts on Region's Hydraulic Level of Service	Ability to enhance wastewater servicing capacity and support the proposed intensification within the Hurontario and Eglinton sanitary sewer drainage area.
Locations/Impacts on Other Existing Utilities	Number of and complexity of utilities present on the property (e.g., gas, hydro, telephone, cable, municipal services).
Economic Considerations	
Capital Costs	Estimate of total capital costs based on preliminary costing.
Operating and Maintenance Costs	Estimate of level of operating and maintenance costs.
Land Acquisition / Easement Requirements	Potential for land acquisition or the need for temporary and permanent easements for access.

7.2 Evaluation Methodology

Evaluation criteria were developed to evaluate the alternatives based on the natural, social and cultural environment, and technical and financial considerations. This allows for the alternatives to be comparatively assessed in a qualitative manner. A numerical or weighted ranking system was not used; instead, the evaluation focused on the strengths and weaknesses of each alternative to identify the best possible solution.

Although set weightings of criteria were not specifically assigned, all evaluation criteria are not necessarily created equal and professional judgement and knowledge of the area and issues was used to understand preferences. The process requires considering trade-offs to select the preferred alternative which needs to take into consideration whether potential impacts can be mitigated or not. Reasonable mitigation measures were then identified to avoid or minimize any potential negative effects. The selection of the preferred alternative is based on the relative advantages and disadvantages of each alternative within the natural environment, social environment, technical and economic evaluation criteria and include consideration of mitigation measures.

The ranking of each alternative solution relative to the specific evaluation criterion was conducted (refer to **Table 7-2**) using a colour coded system comprised of green, yellow, and red and designed to be indicative of most (green) to least (red) preferred. The comparison of each criterion was made horizontally (within a category such as natural environment) between the alternatives and then vertically (between categories such as natural, technical environments) to derive the recommended solution. A summary row (Table 7-2)

is provided where the alternatives are compared against each other within the four categories of natural, social-cultural, technical, and financial environments. The summary rows are then compared to determine the preferred alternative solution based on all aspects of the environment. The alternative solution which demonstrated the greatest number of "most" preferred boxes and/or the fewest "least" preferred boxes relative to their potential environmental effects would likely be the preferred alternative. However, this was dependent on the extent of potential effects and whether they could be mitigated. The comparative evaluations for each set of alternatives are provided in **Table 7-2**.

Table 7-2 Evaluation Criteria

Criteria		Alternative 1	Alternative 2	Alternative 3 "Do Nothing Option"
Natural Environment	**Surface Water Impacts**	• Decreases the possibility of surcharging and surface flooding due to future population growth.	• Decreases the possibility of surcharging and surface flooding due to future population growth.	• Increases the possibility of surcharging and surface flooding due to future population growth.
	Natural Heritage Area Impacts	• There are **no** ANSI within 120 m of the study area	• There are **no** ANSI within 120 m of the study area	• N/A
	Groundwater / Subsurface Impacts	• Water taking anticipated during construction.	• Water taking anticipated during construction.	• None
	Vegetation / Greenspace Impacts	• The removal of vegetation for the sanitary sewer placement will only affect manicured lands, with no naturalized vegetation being removed.	• The removal of vegetation for the sanitary sewer placement will only affect manicured lands, with no naturalized vegetation being removed.	• None
Social and Cultural Environment	**Disruption/Impacts to Private Property / Existing Land Uses (e.g., Traffic impact)**	• Access to residents and businesses will be minimally impacted due to increased road traffic along Elia Ave, Kingsbridge Garden Cir, and Central Parkway E, due to construction methodology. • Possible temporary road/lane closures are required. • Sidewalk closures are required. • Temporary pedestrian pathways/detours will be constructed/developed around shafts as required, to accommodate pedestrian flow in long duration. • Detour and Traffic Management plans will be developed to accommodate traffic flow. • Pipe crosses beneath school property using trenchless, eliminating surface excavation on school lands. • No direct interference with school pick-up / drop-off zone; normal pedestrian and bus access maintained.	• Access to residents and businesses will be impacted due to increased road traffic along Kingsbridge Garden Cir, Elia Ave, James Austin Dr, and Central Parkway E, due to open cut construction methodology. • Disruption to resident access of James Austin Dr. • Temporary pedestrian pathways will be constructed around shafts to accommodate pedestrian flow in long duration. • Possible temporary road/lane closures are required. • Sidewalk and trailway closures are required. • Detour and Traffic Management plans will be developed to accommodate traffic flow. • Open-cut excavation along the street frontage directly adjacent to the school entrance, within the pick-up / drop-off zone.	• None
	Nuisance Impacts	• Noise, dust, and other nuisance impacts during construction.	• Noise, dust, and other nuisance impacts during construction.	• None

	Criteria	Alternative 1	Alternative 2	Alternative 3 "Do Nothing Option"
	Cultural Heritage / Archaeological Impacts	• No known built heritage resources (BHRs) or cultural heritage landscapes (CHLs) were identified within the study area. • No cultural heritage areas or known archaeological resources will be impacted.	• No known built heritage resources (BHRs) or cultural heritage landscapes (CHLs) were identified within the study area. • No cultural heritage areas or known archaeological resources will be impacted.	• No cultural heritage areas or known archaeological resources will be impacted.
Technical Considerations	**Ease of Construction (e.g., Construction Constraints)**	• Potential risk to Existing Utilities due to Open Cut and Tunneling.	• Potential risk to Existing Utilities due to Open Cut and Tunneling. • Greater construction risks associated with the narrow easement between private properties.	• No construction required.
	Operational Flexibility	• Ensures the Region has sufficient servicing capacity to accommodate future population growth.	• Ensures the Region has sufficient servicing capacity to accommodate future population growth.	• Alternative will not increase operational flexibility.
	Impacts on Region's Hydraulic Level of Service	• Increases wastewater (sanitary sewer) servicing capacity to accommodate future growth and new developments. • Prevent future surcharges and flooding.	• Increases wastewater (sanitary sewer) servicing capacity to accommodate future growth and new developments. • Prevent future surcharges and flooding.	• No improvement on the system's ability to meet the Region's hydraulic level of service. • Possible surcharging and basement flooding.
	Locations / Impacts on Other Existing Utilities	• Nearby gas, hydro, and telecommunication utilities along Kingsbridge Garden Circ and Elia Ave will have to be considered and mitigated during construction.	• Nearby gas, hydro, and telecommunication utilities along Kingsbridge Garden Circ, Elia Ave, Huron Heights Dr, James Austin Dr, and Laurentian Ave will have to be considered and mitigated during construction.	• None
Economic Considerations	**Capital Costs**	• Typical Tunneling and Open Cut Construction Costs. • Higher Construction Costs due to Tunneling construction methodologies.	• Typical Tunneling and Open Cut Construction Costs • Lower Construction Cost, but potential constructability Issues due to the required depth and the complexity of working through the narrow easement between private properties.	• None
	Operating and Maintenance Costs	• Typical operating and maintenance requirements.	• Typical operating and maintenance requirements.	• Potential costs related to basement and surface flooding.
	Land Acquisition / Easement Requirements	• Easement(s)/ Permit to Enter(s) will be potentially required from City of Mississauga to access Huron Hights Park.	• Easement(s)/ Permit to Enter(s) will be potentially required to access James Austin Dr easement.	• None

Criteria	Alternative 1	Alternative 2	Alternative 3 "Do Nothing Option"
SUMMARY			
Natural Environment	• The proposed works will not have any permanent impacts on fish or fish habitat. Construction activities will not cross any watercourse, will utilize trenchless technology, and shaft locations are outside the watercourse. • No plant species considered regionally or locally rare were identified within the study area.	• The proposed works will not have permanent impacts on fish or fish habitat. • No plant species considered regionally or locally rare were identified within the study area.	• Increased possibility of surcharging and flooding due to future population growth.
Social and Cultural Environment	• Access to residents and businesses will be minimally impacted due to increased road traffic along Elia Ave, Kingsbridge Garden Cir, Hurontario St, Huron Heights Dr and Central Parkway E. • Temporary pedestrian pathways/detours will be constructed/developed around shafts as required, to accommodate pedestrian flow in long duration. • Possible sidewalk closures.	• Access to residents and businesses will be impacted due to increased road traffic along Kingsbridge Garden Cir, Elia Ave, James Austin Dr, and Central Parkway E, due to open cut construction methodology. • Disruption to resident access of James Austin Dr. • Temporary pedestrian pathways/detours will be constructed/developed around shafts as required, to accommodate pedestrian flow in long duration. • Possible sidewalk closures, trailway closure required.	• None
Technical Considerations	• Provides additional volume which will reduce peak flow and prevent future surcharges and flooding. • Enhances wastewater (sanitary sewer) servicing capacity to accommodate future growth in the area.	• Provides additional volume which will reduce peak flow and prevent future surcharges and flooding. • Enhances wastewater (sanitary sewer) servicing capacity to accommodate future growth in the area. • Greater construction risks associated with depth and narrow easement between private properties	• No improvement on the system's ability to meet the Region's hydraulic level of service for future growth.
Economic Considerations	• Higher Construction costs. • Easement(s)/ Permit to Enter(s) will be potentially required from City of Mississauga to access Huron Hights Park.	• Lower Construction Cost, but potential constructability Issues. • Easement(s)/ Permit to Enter(s) will be potentially required to access James Austin Dr easement.	• Does not provide any additional serving capacity for future growth of the area.
OVERALL RANKING	**RECOMMENDED** • Increases wastewater (sanitary sewer) servicing capacity to accommodate future growth and new developments. • Prevents future surcharges and possible flooding.	**LESS RECOMMENDED** • Greater construction risks associated with the narrow easement between private properties. • Increases wastewater (sanitary sewer) servicing capacity to accommodate future growth and new developments. • Prevents future surcharges and possible flooding.	**NOT RECOMMENDED** • Does not meet the problem statement. • Increased possibility of surcharging and flooding due to future population growth. • Does not increase operational flexibility. • Does not increase wastewater (sanitary sewer) servicing capacity to accommodate future growth and new developments. • Does not meet the sanitary service demands from a growing population.

8 Preferred Alternative

Section 7 summarizes the potential impacts of each alternative. Alternative 1 has been identified as the preferred solution due to reduced constructability challenges compared to Alternative 2. Alternative 2 is anticipated to encounter challenges related to the required depth and the complexity of working within the narrow easement between private properties. By avoiding these obstacles, Alternative 1 minimizes construction complications.

The impacts on the natural environment will be short-term and limited to the construction phase. Construction-related risks, such as soil conditions and site location, will be managed during this period. A Natural Sciences Report (**Appendix A**) was completed for the study area, providing an inventory of natural features, assessing potential construction disturbances, and recommending mitigation measures.

Socio-cultural impacts, including noise, dust, and disruptions, are expected to be minimal, with limited effects on access for residents and businesses. These short-term impacts will be confined to the construction period, particularly along Kingsbridge Garden Circle, Hurontario Street, Elia Avenue, and Huron Heights Drive. The design phase will thoroughly address construction-related factors such as dust, noise, and vibration, determining if monitoring and mitigation are necessary. Additionally, the Archaeological Assessment (**Appendix C**) and Cultural Heritage Report (**Appendix D**) found no built heritage resources (BHRs), cultural heritage landscapes (CHLs), or archaeological sites within the study area. Due to deep and extensive land disturbances, the area near the preferred alignment holds no archaeological potential, and no archaeological sites are located within 50 meters of the study area.

The proposed sanitary sewer will primarily be constructed within the existing road right-of-way (ROW), except for the connection through Huron Heights Park to the existing sewer along Centennial Parkway East.

8.1 Construction Method

The preferred alternative involves installation of 1200 mm sanitary sewer, starting from Kingsbridge Garden Circle and extending eastward along Elia Avenue and Huron Heights Park, connecting at Central Parkway East.

Due to the existing ground conditions and the nature of the proposed works, the preferred construction method for installation of the new 1200 mm sewer from Kingsbridge Garden Cir and extending eastward along Elia Avenue and Huron Heights Drive will employ tunneling methods. Trenchless pipe installation, suitable for deeper installation, environmentally sensitive area, and locations with utility congestion will be utilized.

A segment of pipe crossing Huron Heights Park, connecting to the existing 600 mm concrete sewer on Central Parkway East, will be installed via open cut due to several considerations. These include significant ground elevation fluctuations, with ground elevation ranging from 166m to 150m within 300m, the presence of existing twin 2700 mm and 2100 mm culverts on Central Parkway East, and constraints posed by the existing sanitary sewer invert at the connection point. The alignment will also include 100 meters of open-cut construction for local connections to lateral sewers.

9 Permits and Approvals

The following permits and approvals have been identified as required or potentially required to be obtained over the design stage, for the construction works:

- Ontario Water Resources Act R.S.O. 1990 – Environmental Compliance Approval ("ECA") - Regional Municipality of Peel Wastewater Collection System, ECA Number: 009-W601.
- Public Utilities Coordinating Committee ("PUCC").
- City of Mississauga tree removal and/or protection permit/requirements; and,
- Permit to Take Water ("PTTW") from the MECP, or registration as an Environmental Activity and Sector Registry ("EASR").

9.1 Approvals – Conservation Authority

9.1.1 O. Reg. 160/06: Credit Valley Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses

The study area is located within a CVC regulated area in accordance with Ontario Regulation 160/06 of the Conservation Authorities Act.

The portion of the preferred alignment may be constructed in or adjacent to a CVC regulated area and therefore, a permit under the CVC may be required.

9.1.2 Source Water Protection – Clean Water Act (2006)

An assessment of source water protection in the study area identified portions of the study area lying within a mapped highly vulnerable aquifer (HVA). The site is also located in a Significant Groundwater Recharge Area (SGRA). Applicable policies regarding an HVA and SGRA under the Credit Valley, Toronto and Region, and Central Lake Ontario (CTC) Source Protection Plan were reviewed for applicability to the project.

9.2 Approvals – Provincial

9.2.1 Ontario's Endangered Species Act, 2007

Due to the proximity of the work to Cooksville Creek, a review of secondary sources of information including MNRF Make a Map: Natural Heritage Information Centre database, Land Information Ontario (LIO) database, and Aquatic Species at Risk maps (DFO website), was completed. No species at risk appear to be found within the study area.

9.2.2 Permit to Take Water / Environmental Activity and Sector Registry

Based on recent amendments to the Water Taking Act, or construction dewatering, water takings of more than 50,000 L/day may be registered on the Environmental Activity and Sector Registry ("EASR"). The registration will require supporting hydrogeology studies to be uploaded during submission, for MECP review at their discretion.

Based on the presence of a moderate number of coarse-grained sediments that were encountered in several boreholes, it is anticipated that a water taking permit will be required for the project. A hydrogeological investigation was conducted, and the dewatering rate suggests that an EASR registration is required for the project.

9.2.3 Ontario Water Resources Act R.S.O. 1990 – Environmental Compliance Approval ("ECA")

MECP recently issued the Consolidated Linear Infrastructure Environmental Compliance Approval (CLI ECA) to the Region. This is a pre-authorized system allowing Municipal Sewage Collection System projects to proceed under their respective CLI ECA (009-W601).

"Pursuant to the Environmental Protection Act, R.S.O 1990, c. E. 19 (EPA), and the regulations made thereunder and subject to the limitations thereof, this environmental compliance approval is issued under section 20.3 of Part II.1 of the EPA to the **Regional Municipality of Peel**."

Arcadis will discuss with the Region's Compliance Department to assess and fulfill the necessary requirements to proceed under the respective CLI ECA.

9.2.4 Excess Soil Management (O.Reg. 406/19)

Excess soil will need to be managed during construction; registration of the project on the Resource Productivity and Recovery Authority (RPRA) Excess Soil Registry will be required. This will include the draft registration with the excess soil planning documents completed during design, as well as the final registration upon the completion of soil movement during construction.

9.3 Approvals – Municipal

9.3.1 Public Utilities Coordinating Committee ("PUCC") - City of Mississauga

The City of Mississauga has a coordination and planning process that reviews infrastructure projects to minimize any conflicts with existing and proposed utilities and reduce the impact of construction. A PUCC approval is required for this project.

9.3.2 Tree Protection By-law and Tree Removal Permit - City of Mississauga

A tree permit is required where any individual tree with a diameter of 15cm (6in) or greater, is to be injured or removed (destroyed) on a private (Private Tree Protection By-law 0021-2022) or public (Public Tree Protection By-law 0020-2022) property/lot.

An arborist report is required to be completed in accordance with the New Special Provision for the City of Mississauga Public Tree Protection Bylaw, to support the design and selection of mitigation measures and to determine whether or not the conditions for requiring this permit are met.

One replacement tree is required for every 15cm (6in) of diameter of the tree removed. For example, when a tree with a diameter of 45cm (18in) is removed, three (3) replacement trees are required. Replacement trees (no matter the size) cannot be injured or removed without a permit.

9.4 Approvals – Federal

9.4.1 Fisheries Act Authorization

To ensure compliance under the Fisheries Act and the Species at Risk Act, the Fish and Fish Habitat Protection Program provided by the Fisheries and Oceans Canada (DFO) should be followed. As outlined by the DFO, any project that can potentially cause the death of fish and the harmful alteration, disruption or destruction of fish habitat requires a project review.

No in-water works are required for the preferred alternative; therefore, an Authorization or Letter of Advice will not be required.

10 Land Acquisition Requirements

To facilitate construction for a portion of the preferred alternative, it has been identified that Permission to Enters (PTEs)/ Easements will be required. The PTEs/ Easements are required to access the working area during the construction of the sewer. In addition, permanent easements might be needed for operation and maintenance of the sewer.

Potential Property Impact Plans are provided in **Appendix E**. The following properties might be impacted:

- PIN 131770540
- PIN 131770541
- PIN 131770081
- PIN 131770147

The remainder of the proposed sewer is located within the road right-of-way and therefore will be constructed with a road occupancy permit.

11 Identification of Mitigation Measures

11.1 Utilities

The exact number and locations requiring utility re-location and/or support will be determined during detailed design with continuous communication and cooperation with utilities' owner.

11.2 Social-Cultural Environment Impacts

11.2.1 Traffic

To facilitate the construction of the sanitary sewer, traffic management plans and detour plans will be prepared during the detailed design stage. All traffic control plans and measures will be provided in accordance with the Ontario Traffic Manual, Book 7. Planned and ongoing projects within the vicinity of the study area will be considered while developing traffic management plans.

The preferred alternative will be delivered and constructed primarily by trenchless tunnelling methods (e.g., microtunnelling/pipe-jacking) to avoid open-cut work within the roadway wherever feasible. Surface activity is

therefore limited to discrete shaft compounds (launch/receiver/access) and tie-ins. All staging, temporary traffic control and detours will be designed and implemented under a project-specific Traffic Management Plan (TMP) and Detour Plan in accordance with Ontario Traffic Manual (OTM) Book 7 – Temporary Conditions and municipal requirements.

Work within the public right-of-way will comply with the City of Mississauga Road Occupancy Permit (ROP) terms and conditions (and Region of Peel ROP where applicable), including maintaining emergency access at all times, preserving driveway access, clear sightlines at intersections/entrances, and full conformance with OTM Book 7 devices and Traffic Control Persons (TCPs). Paid-duty police officers may be deployed where warranted for safety and throughput. MiWay will be engaged for any temporary stop relocations or route detours.

Business and Local Access

Access to all fronting residential driveways, businesses, and community facilities will be maintained at all times. In cases where short, unavoidable restrictions occur at a shaft frontage, mitigation measures will include steel-plate bridging, active flagging or traffic control personnel (TCPs), on-site coordination for deliveries, waste collection, and emergency services, as well as temporary relocation of loading or short-stay areas if necessary. Road Occupancy Permit conditions mandate that emergency access and driveway access must be maintained.

Lane and Road Closures (Elia Ave / Kingsbridge Gardens Cir)

Localized lane closures and, if required, short side-road closures may be implemented to accommodate shaft construction and address utility conflicts at Elia Avenue and Kingsbridge Gardens Circle. Should a lane reduction be anticipated to significantly impact capacity or operations, the Contractor will implement the approved TMP and Detour Plan during the implementation phase. These measures will include staged tapers, advanced warning and detour signing per OTM Book 7, jersey barriers for positive protection, and deployment of TCPs and/or Peel Police paid-duty officers at peak times or complex transitions. Any full closure will be temporary, carefully staged and subject to prior approval by the City, with emergency access maintained at all times.

Regarding posted speeds, no permanent changes to posted speed limits are proposed. However, temporary advisory speed limits and work-zone controls will be applied in accordance with OTM Book 7, where required by specific staging conditions.

Shaft Compounds - Street and Park Interface

Shaft compounds within the roadway and Huron Heights Park will be comprehensively secured using solid hoarding, lockable gates, and precast concrete (jersey) barriers along street frontages to provide positive separation from traffic and pedestrians. Internal logistics will be meticulously managed to prevent truck queuing in live lanes, with gate operations overseen by spotters or Traffic Control Personnel (TCPs) to ensure safe and efficient access. Continuous pedestrian circulation will be maintained via protected, AODA-compliant bypasses and/or same-side detours whenever feasible. In cases where a temporary opposite-side crossing is required, crossing points will be strategically established at the nearest controlled locations to ensure pedestrian safety and accessibility.

Park Interface - Huron Heights Park

Two shaft compounds are anticipated within Huron Heights Park. Park paths will either be maintained or re-routed, ensuring they are clearly separated with hoarding and accompanied by clear wayfinding signage for ease of navigation. Where a haul route intersects a path, crossings will be equipped with STOP/LOOK signage, delineators, and will enforce low operating speeds for haul vehicles to ensure pedestrian safety. The construction activities will be closely coordinated with City Parks to minimize disruption, avoiding scheduled events whenever feasible and preserving access to park amenities for visitors.

School Interface - Adjacent to Huron Heights Park

One shaft compound is anticipated adjacent to the school frontage at the Huron Heights Park. Given the proximity to the school, additional measures will be implemented:

- Advance notifications will be distributed to the school board, and school administration, detailing construction staging, duration and access arrangements.
- No direct interference is anticipated with school pick-up/drop-off zones or internal circulation as tunnelling construction methods will ensure surface operations remain confined to hoarded compounds.
- Continuous, safe pedestrian corridors will be provided along the school edge, protected by hoarding and barriers. Walking routes will remain AODA-compliant.
- Peak-period controls will be enacted as necessary, with TCPs and/or Peel Police paid-duty officers present during school arrival and dismissal times.

Pedestrians and Accessibility

Sidewalks will remain accessible on at least one side of the street at all times, except at shaft frontages where a temporary short detour may be required. All pedestrian routes will be designed to fully comply with AODA requirements. Where existing lighting is insufficient, night-time illumination will be provided to maintain safety and visibility. AODA compliance for detours is a clear expectation set by the City and will be adhered to throughout the project.

Transit, Emergency Services and Operations

MiWay will be promptly notified in advance of any temporary bus stop relocations or route detours, ensuring clear communication with transit users. Temporary signage will be installed at affected locations, and updates will be published through the City's service-updates channel to keep the public informed. Additionally, Mississauga Fire & Emergency Services and Peel Paramedics will be actively notified prior to every staging change to ensure seamless coordination. Emergency access will be maintained at all times without exception, prioritizing the safety and accessibility of emergency response services.

11.2.2 Utilities and Roadside Safety

In areas where construction activities are in close proximity to utilities, such as hydro poles, temporary barrier protection will be installed to ensure safety and prevent damage. The coordination of temporary supports and clearances will be managed through utility locates and the acquisition of Municipal Consent, ensuring that all protective measures are in compliance with regulatory standards. Additionally, ROP conditions mandate the maintenance of clear sightlines and unobstructed driveway access at all times, which will be strictly adhered to throughout the project to ensure minimal disruption to the local community and preserve safety.

11.2.3 Public Notification

The Region of Peel will notify the public in advance of any construction stage that could affect traffic, pedestrians, cyclists, or access to parks and the adjacent school. Notices will be issued ahead of any construction activities.

Multiple communication channels will be used to ensure clear, timely notification to the public and stakeholders. These include hand-delivered or direct notices to adjacent residents, businesses, and the school, along with on-site signage and updates on the Region of Peel's dedicated project webpage for this study and construction.

If changes occur to construction activities due to unforeseen circumstances (e.g., weather, safety, or utility conflicts), updated notification will be issued promptly and on-site signage refreshed accordingly.

Each notice will clearly state what is changing, where and when it will occur, the expected duration (and any changes to duration), and any required detours for traffic, pedestrians, and cyclists. Notices will also describe how AODA accessibility will be maintained, identify any changes to public transit (MiWay), and provide Region's and construction contact for questions or concerns.

11.2.4 Noise and Vibration Control

A Construction Vibration and Noise Monitoring Plan has been developed by RWDI (**Appendix F**) for the preferred alternative. This report provides estimated zones of influence for both noise and vibration. Baseline monitoring shall be completed immediately prior to the beginning of construction such that baseline measurements can be referred to as needed. Noise and vibration monitoring shall also occur for the entire duration of construction to limit the adverse effects on the adjacent communities by flagging exceedances before they occur.

When noise levels exceed the limits, steps will be taken to reduce the levels, if possible, by either altering the construction methodology, reducing the sound at the source (e.g. contractor shall provide efficient intake and exhaust mufflers on internal combustion engines), or by intercepting the sound between the source and receiver (e.g. temporary noise barrier or enclosure).

Similarly, if vibration limits are exceeded, steps shall be taken to reduce the levels. However, if the building damage vibration limit is exceeded, then work must be stopped until a solution is implemented to reduce the vibration. Most often, the best approach to reducing the vibration is through alternative construction methodology.

11.2.5 Dust Control

A Dust Best Management Practices Plan (**Appendix G**) has been developed by RWDI, for the preferred alternative, which identifies the potential sources of air quality emissions and the recommended mitigation measures. The report defined two types of air quality emissions, dust (consisting of calcium carbonate, magnesium carbonate, iron, magnesium, aluminum, and silicon) and gaseous contaminants (consisting of emissions found from vehicle and heavy equipment exhaust). Control measures are recommended for the various construction activities including excavation/demolition, bulk material handling, fabrication, and vehicle movement. These control measures include but are not limited to covering disturbed surfaces with vegetation, stones, or geotextiles as soon as possible, application of water to disturbed surfaces or stockpiles, use of wind fencing around stockpiles or excavation areas, secure loads on haul trucks, restricting deliveries and handling under dry, windy conditions, use of prefabricated concrete structures where possible, use of fume extraction systems, establish truck-staging zones, limit the idling time for vehicles on the site, and limit the number of vehicles and heavy equipment operating on-site.

Over the course of construction, inspection and monitoring of dust shall be conducted. Public roadways near the site will be inspected at least three times a day to ensure silt is not tracked out to public roads. A visual inspection of the site shall be undertaken twice each day to document dust conditions. Records of all dust control measures are to be kept, and any complaints received need to be recorded and addressed within reason (taking into account site activities and weather conditions).

11.2.6 Generation of Excess Materials

The preferred alternative will require excavation and filling operations. Various types of materials, including soil, may be generated during these activities which will require appropriate management. An Excess Materials Management Strategy shall be developed to establish a suitable characterization, handling, and disposal protocol. All excess and unsuitable materials generated during construction shall be managed in accordance with this plan.

11.2.7 Archaeological Resource

The Stage 1 archaeological assessment results (**Appendix C**) revealed four previously registered archaeological sites within one kilometer of the study area, but none within 50 meters.

A property inspection determined that the entire study area does not retain any archaeological potential and does not require further assessment. Due to significant land disturbances, no archaeological potential remains in the study area. However, should the proposed work extend beyond this area, further archaeological assessment will be required.

11.2.8 Cultural Heritage Resource

No known built heritage resources (BHRs) or cultural heritage landscapes (CHLs) were identified within the study area.

If future work requires expanding the study area, a qualified heritage consultant should be contacted to assess potential impacts on any BHRs or CHLs.

11.3 Natural Environment Impacts

The preferred alternative will be delivered by trenchless installation, with all shafts and surface activity outside Cooksville Creek and outside the top of bank. There are no watercourse crossings and no in-water works. Work limits are confined to manicured areas; no naturalized vegetation will be removed.

- Designated features / SAR: No designated natural areas within 120 m; no aquatic species at risk recorded in Cooksville Creek.
- Timing windows: Conduct tree/vegetation removals outside April 1 – August 31 (Migratory Birds) and outside May 1 – November 15 (bat roosting). If unavoidable, complete a qualified biologist sweep and buffer any active nests/roosts.
- Adjacent-to-creek controls (Kingsbridge Garden Circle): If any work occurs adjacent to Cooksville Creek, implement a complete Erosion and Sediment Control (ESC) Plan (perimeter controls, inlet protection, stabilized access, covered stockpiles), to be reviewed and coordinated with Credit Valley Conservation (CVC) in accordance with the applicable ESC guideline; maintain until full stabilization.
- Restoration: Reinstate disturbed manicured areas with topsoil and sod; replace any removed trees per City policy.

With these measures, and given the study findings, no permanent natural-environment impacts are expected.

11.3.1 Spill Prevention and Contingency

A Spill Prevention and Contingency Plan is designed to equip on-site personnel with the necessary procedures to minimize the risk of pollutant spills and to manage any adverse effects that may arise from such incidents. This plan includes clear guidelines for notifying relevant authorities promptly. By ensuring that responses come from qualified and trained personnel, the potential adverse impacts of spills can be significantly reduced.

The plan can be incorporated into the contractor's health, safety and environmental manual specific to the project. The Spill Prevention and Contingency Plans will at minimum include:

Spill Prevention

- Established location and methods for material storage and use during project-related activities such as proper containment, inspections and personnel training on the storage and use of materials and prevention of spills;
- Requirement for all containers to be identified using the WHIMS standards with appropriate spill response materials (shovels, absorbents, etc.) in a designated area on-site; and
- A monitoring program to document the condition of materials and compliance with use and storage standards.

Spill Response

- Provision for the appropriate delegation of responsibility to specific on-site staff;
- Spill response procedures for each material that may be spilled with appropriate responses for the potential risk associated with that release;
- Contact information for emergency services;
- Requirements for internal and external agencies reporting, and assessment, including time stamped photographs of the spill incident and follow-up reporting after the response; and
- Requirements for the documentation of remediation of the spill area and disposal of spill clean-up materials in accordance with Ontario Regulation 347 under EPA.

During construction, an Environmental Consultant will be dedicated to ensuring spill prevention and response measures are in place by the Contractor and will inspect all spill prevention controls regularly.

11.3.2 Tree Protection

An Arborist Report, which includes a tree inventory was completed by LGL Limited (**Appendix H**) for the preferred alternative, to identify trees within the study area and summarize the impacts from the proposed construction works and mitigation measures. A total of 287 trees were identified under the tree inventory, ranging in size from 4cm to 43cm DBH. Two hundred fifty-one trees 251 of the 287 are to be retained and protected.

Thirty-six (36) trees are identified for removal and based on Mississauga's tree replacement policy; it has been determined that twenty-seven (27) trees are to be planted to replace the 36 trees removed. However, the Region is committed to maintaining ecological balance and enhancing the natural environment. In collaboration with the City of Mississauga Parks & Forestry, the Region will pursue the highest feasible replacement ratio, subject to

space, utilities, and long-term survivability, and will identify alternative or nearby planting locations where on-site space is limited, to help maintain ecological balance and enhance the natural environment.

Any tree removals, pruning, or root cutting are to be conducted by a qualified arborist.

For trees that are not identified for removal, the following mitigation measures to limit impacts are proposed:

- Installation of tree protection barriers (complying with the City of Mississauga's specifications) around each tree designated for protection prior to any construction works.
- Within the Tree Protection Zones:
    - No fill, machinery, chemicals, fuel, or materials to be placed/stored.
    - No heavy machinery to be operated.
    - No re-grading, filling, or excavation unless permitted by the City.
- Soil compaction mitigation including the application of wood chips and overlaying steel or plywood to dissipate the weight of machinery driven overtop.
- Prune any exposed roots with a diameter of less than 5cm to promote regeneration and prevent infection.
- No signs or objects shall be affixed to any trees identified as to be protected.
- Signs shall be affixed to the TPZ fence to inform workers that entry is not permitted.
- Backfilling should occur as soon as possible and should use clear native uncontaminated topsoil.
- Tree clearing shall ensure compliance with the Migratory Bird Convention Act (MBCA). The study area is within Environment and Climate Change Canada's Nesting Zone C2 (Nesting Period: April 1 –August 31). Should this not be possible, a nesting bird survey will be undertaken by a qualified avian biologist no more than 48 hours before any vegetation clearing.

11.3.3 Dewatering

As part of the hydrogeological investigation, four (4) monitoring wells were installed across the site and a groundwater monitoring program was conducted. Water levels were observed to range between 153.05masl and 162.42masl during the March 31, 2025, monitoring event.

Based on this investigation, significant dewatering is not anticipated, however, dewatering rates in excess of 50,000L/day were calculated for the construction of Shafts 1 to 3. A dewatering EASR will be required to facilitate water takings during construction.

11.3.4 Restoration

A Restoration Plan will be developed to implement vegetation replacement, facilitate the restoration, remediation, and enhancements to existing natural features. Restoration plans will take into consideration space requirements for future and ongoing maintenance access to the proposed infrastructure.

12 Public, Agency, and Indigenous Community Consultation

A key feature of the Class EA process is ensuring effective communication with the public, Indigenous communities, agencies and other stakeholders throughout the project. To meet the Class EA consultation requirements for this Schedule B study, steps were taken to ensure effective communication throughout the project with the public, Indigenous communities, agencies, and other stakeholders. The overall strategy has been to provide various opportunities to communicate and receive input from the public, government, agencies, Indigenous communities, and other stakeholders and to review, consider, integrate (as appropriate), file, and respond in a reasonable timeframe. A table listing regulatory agencies, Indigenous communities and project stakeholders contacted is provided in **Appendix I**. Correspondence between the project team, stakeholders and Indigenous communities concerning the project, is provided in **Appendix K.**

12.1 Notices and Online Public Engagement

12.1.1 Notices of Study Commencement and Online Public Engagement

Initial communication with stakeholders and the public began with the issuance of the Notice of Study Commencement and Notice of Online Public Engagement on June 3rd, 2025. The notice provided information on the study background along with project contacts and a map showing the Study Area.

On the issuance date, notices were mailed to the surrounding residents and businesses and emailed out to Agencies, Ministries, Indigenous communities, and other stakeholders. A copy of the email sent out to the Project Contact List is included in **Appendix I**.

For broader dissemination, the notices were also posted to the Region's website, ensuring accessibility to the public, stakeholders and Indigenous communities. The notice also provided information on the project and included a "How to Get Involved" section which provided a link to the Online Public Engagement display boards.

12.1.2 Online Public Engagement

In lieu of an in-person Public Information Centre, an Online Public Engagement was created to communicate and receive comments on the details of the proposed project with the public, Indigenous communities, and stakeholders. The Online Public Engagement ran from June 3rd, 2025, until June 24th 2025. The display boards were made available through a link provided in the Notice of Online Public Engagement. The boards identified the three alternatives along with an evaluation matrix which summarized the different potential impacts that the alternatives would have. The recommended alternative was displayed such that any comments on the alignment could be brought to the attention of the Region and Arcadis to consider and address. A copy of the display boards is provided in **Appendix K**.

12.1.3 Notice of Study Completion

The Notice of Study Completion will be sent out to stakeholders (include all agencies, ministries, Indigenous communities, and previously identified stakeholders), the residents that provided comments and businesses located within the Study Area. The Notice provides a minimum 30-day comment period and outlines the MECP's revised Section 16 Order Request process. To also provide a more general distribution the Notice will be posted on the Region's website.

12.2 Public and Agency Comments

Following the distribution of the Notice of Commencement and Notice of Online Public Engagement, comments were received from various agencies (Telus Canada, Hydro One Networks Services, Credit Valley Conservation Authority (CVC), Ministry of Citizenship and Multiculturalism (MCM), and Ministry of the Environment, Conservation and Parks (MECP)). These comments were reviewed, considered, and incorporated into the Project's Class EA process as appropriate. The feedback has been documented in the Project File Report.

A communications log, showing all stakeholders, summary of comments, and responses, is included in **Appendix J**.

One local resident did contact the Region following the Notice of Study Commencement (June 2026) to express concern about potential construction-related noise and possible disruptions to power. The Region responded that, should construction occur near the resident's property, trenchless construction methods would be employed to minimize surface-level disturbance and reduce impacts to utilities such as power and internet.

The received comments did not result in any changes to the recommended alignment. As such, the alignment has been confirmed and carried forward as the preferred alternative.

12.3 Indigenous Communities Consultation

Indigenous community consultation was undertaken to ensure effective engagement and communication with those potentially interested in the study. All consultation activities, comments, and responses have been logged in a table, which includes the Indigenous communities' summary of comments and response provided and can be found in **Appendix J.**

The following initiatives were undertaken to notify Indigenous communities of this Class EA study:

- **Email Notifications**: Each potentially affected Indigenous community on the project contact list was emailed notices to keep them informed of the project's progress and methods for providing input.
- **Follow-up Contacts:** In addition to email notifications, communities were contacted through **follow-up emails** and **phone calls** to provide an opportunity for follow-up.

The following Indigenous communities were provided with a copy of all project notices and will also receive the Notice of Completion:

- Alderville First Nation
- Beausoleil First Nation
- Chippewas of Rama First Nation
- Haudenosaunee Confederacy Development Institute
- Huron Wendat (Contacted By Region)
- Métis Nation of Ontario Head Office
- Mississaugas of the Credit First Nation
- Six Nations of the Grand River First Nation

A summary of correspondences with Indigenous communities is as follows:

- **Mississaugas of the Credit First Nation (Payton Mitchell)** submitted a letter requesting review of archaeological, environmental, and cultural heritage materials related to the project, including the Stage 1 Archaeological Assessment, Natural Sciences Investigation, Cultural Heritage Report, and any other related notices, assessments, or reports. Arcadis responded on June 23, 2025, by providing a link to all requested documents. Payton Mitchell provided comments on July 18, 2025, and August 7, 2025, as part of their review. On August 27, 2025, Arcadis provided responses, along with the updated Cultural Heritage Assessment and Stage 1 Archaeological Assessment addressing MCFN comments, and reiterated its commitment to early, ongoing, and meaningful engagement with MCFN through the remainder of the Class EA and into implementation, confirming that any refinements or field conditions requiring additional archaeological work will be communicated in advance to MCFN-DOCA to coordinate Field Liaison Representative (FLR) participation, and that MCFN will continue to be notified of any future updates or project changes.

- **Six Nations of the Grand River First Nation (Peter Graham)** requested all relevant project studies, with particular interest in the Natural Sciences Investigation. On June 20, 2025, Arcadis provided a link to all requested documents (including the Natural Sciences Investigation); June 25, 2025, receipt was confirmed, with follow-up inquiries on July 31, 2025, about the Hurontario–Eglinton Intensification Area. In a follow-up call (with confirmatory email), it was explained and clarified that the Elia Avenue / Kingsbridge Garden Circle / Hurontario Street undertaking is a municipal sanitary capacity enhancement sized to support area-wide growth to 2051 within the Hurontario–Eglinton drainage area and is not tied to any single development application. The Region further confirmed that, should any site-specific development be proposed that would affect this study, it will promptly notify the City of Mississauga (approval authority) so that appropriate engagement and consultation with Six Nations can commence immediately. The Region appreciates Six Nations' engagement and will continue early, ongoing, and meaningful engagement with Six Nations through the remaining Class EA steps and into implementation.

The Notice of Completion, with a link to the Project File Report, will be provided to the Indigenous communities by email.