BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix A

Existing Conditions

Traffic Memo	A1
Criteria for Evaluating Archaeological Potential Checklist	A2
Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes Checklist	A3
Natural Heritage Evaluation	A4
Arborist Report	A5
Impact on Utilities Memo	A6
Constructability Report	A7

R.J. Burnside & Associates Limited 1266 South Service Road, Suite C2-1 Stoney Creek ON L8E 5R9 CANADA
telephone (289) 246-7400 **fax** (226) 526-9660 **web** www.rjburnside.com

BURNSIDE
[THE DIFFERENCE IS OUR PEOPLE]

Memorandum

Date: January 28, 2026 **Project No.:**300060172.0000

Project Name: McQuesten Park Active Transportation Pedestrian Bridge - Schedule B MCEA

Client Name: City of Hamilton

Prepared by: Sameem Raheemi

Reviewed by: Ray Bacquie, P.Eng., MBA

The City of Hamilton (City) retained R.J. Burnside & Associates Limited (Burnside) to conduct a Schedule B MCEA for a proposed Active Transportation (AT) bridge over Lincoln Alexander Parkway (LINC) connecting McQuesten Park to Lime Ridge Road East. The proposed bridge will span a busy traffic corridor which makes the safety of pedestrians a critical and paramount priority. The study area is shown in Figure 1.

Figure 1: Study Area



This memo provides a traffic assessment of the proposed AT bridge and summarizes the policy context relevant to the assignment, planned improvements within the study area, existing operational issues, existing and planned transit services, and a summary of the identified problem and opportunity.

1.0 Existing Traffic Condition

1.1 Existing Road Network

The road network in the study area comprises of collectors, arterials and a parkway which are described below:

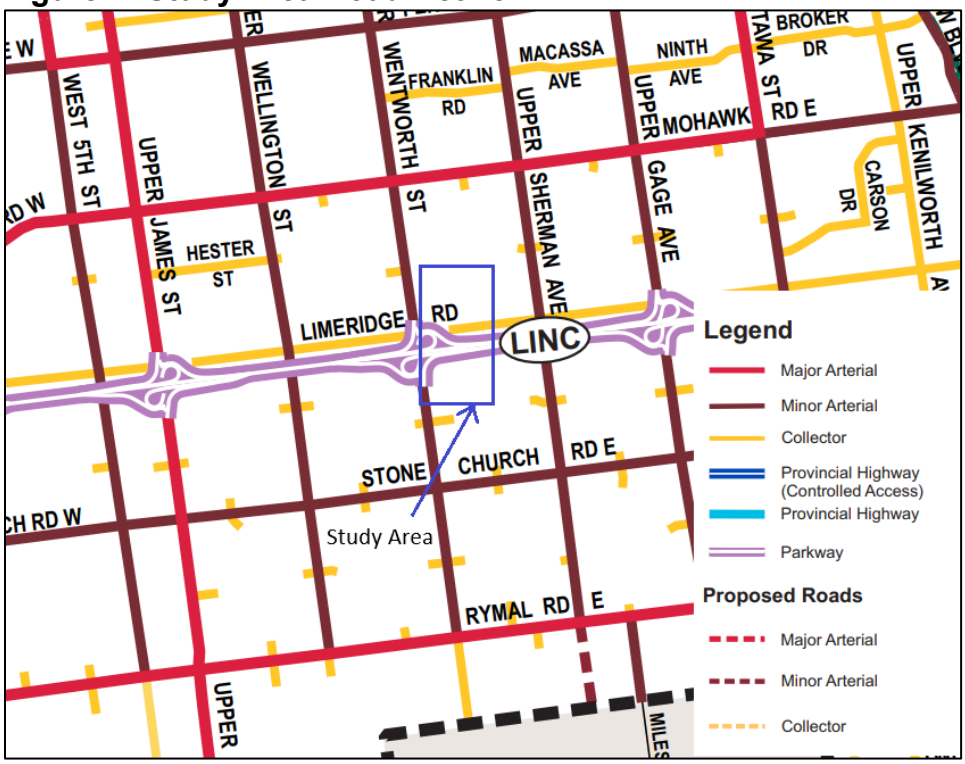
Parkways: The primary function of a parkway is to carry relatively high volumes of intra municipal and inter-regional traffic through the City. Cyclists and pedestrians are not permitted on the parkways.

Arterials: The primary function of a major arterial road shall be to carry moderate to relatively high volumes of intra-municipal and inter-regional traffic through the City in association with other types of roads. Bicycle lanes may be in place to accommodate cyclists and sidewalks shall generally be provided on both sides of the street for pedestrians.

Collector: The function of a collector road is equally shared between providing direct land access and the movement of moderate volumes of traffic within and through designated Employment or Neighbourhood Areas. Wider lanes or separate facilities shall generally be in place to accommodate cyclists and sidewalks shall be provided on both sides of the street.

Figure 2 illustrates the road network and their classification in the study area.

Figure 2: Study Area Road Network



Source: Urban Hamilton Official Plan – Schedule C

1.2 Potential Conflict Points and Operational Constraints

Lincoln Alexander Parkway (LINC) is classified as a parkway by City's official plan. A parkway is a classification of road designed primarily to carry relatively high volumes of intra-municipal and inter-regional traffic through the City. Parkways are distinct because direct land access, pedestrian and cyclists' access is not permitted onto them. They have a basic maximum right-of-way width of 60.960 m.

Lime Ridge Mall and the CF Lime Ridge Terminal are located north of the LINC and they attract traffic from a wide area, including residential neighbourhoods south of the LINC. At present, the only active transportation connection between the mall, terminal and the adjacent residential areas with T.B. McQuesten Community Park and residential areas south of the LINC consists of sidewalks on both sides of Upper Wentworth Street. There are no bike lanes along this road and cyclists are required to travel in mixed traffic when crossing the LINC from south to north, which creates an uncomfortable and challenging environment.

From an operational perspective, Upper Wentworth Street functions as a high-volume arterial with multiple access points, interchange ramps, and turning movements associated with the LINC. Pedestrians using the sidewalks must cross several ramp and intersecting roadways, resulting in multiple conflict points with vehicles entering and exiting the LINC. These conflicts are intensified by high traffic volumes, higher vehicle speeds, and complex driver decision-making near the interchange area. As a result, vulnerable road users experience increased exposure to safety risks and delays, as drivers may be focused on merging, lane changes, or navigating the interchange rather than yielding to pedestrians.

The situation is further complicated by the lack of controlled pedestrian crossings at the interchange on-ramps. Crossings are uncontrolled and lack clear pavement markings or other visual cues to alert drivers. This reduces driver awareness and makes pedestrian movements less predictable, increasing the likelihood of conflicts.

2.0 Policy Context

This section includes a policy review that examines the municipal documents that guide the planning and design of transportation infrastructure. The review focused on the Recreational Trails Master Plan, the Cycling Master Plan (2018), the City-Wide Transportation Master Plan (2018), the Complete Street Design Guidance (2022), the Official Plan (2013), the (Re)envision the HSR plan (2023), and the Vision Zero Action Plan (2019–2025. The purpose of the review is to understand the policy direction and technical guidance that apply to the development of a crossing over a major highway.

The findings from this review provide the basis for the study by outlining required standards, and expectations for safety, connectivity, and network integration. They help confirm how the proposed crossing should support active transportation, link to existing and planned routes, and respond to design principles identified in current policies. The review also clarifies the considerations that must be addressed when planning infrastructure near or across a major highway. Together, these directions guide the study in developing a concept that is consistent with established policy, fits within the broader transportation network, and supports long-term municipal objectives.

2.1 The Recreational Trails Master Plan (2016)

Recreational Trail Master Plan (RTMP) serves as the overarching strategic framework for the City of Hamilton concerning its multi-use recreational trail network. Bridges serve as essential components of the overall trail infrastructure, connecting multi-use trails, including those that pass over highways. Understanding the need for crossing of drainage ditches, creeks, highways or shallow ravines, the RTMP recommends new bridge structures on a site-specific basis. It recommends following the requirements specified in the Canadian Highway Bridge Design Code (CHBDC) for pedestrian bridges. The following are general design considerations for bridge structures:

- Prefabricated steel truss bridges are often practical, cost effective solutions;
- Railings should be required if bridge height exceeds 0.6 m above the surrounding grade, and should be designed with rub rails to prevent entanglement of bicycle pedals and handlebars;
- Site-specific construction of bridges may be suitable for short crossings;
- When considering barrier free bridge accesses, appropriate hardened surfaces should be employed on trail approaches. Also, bridge deck boards should be suitably spaced to allow for ease of passage by mobility-assisted devices;
- It is recommended that deck boards run perpendicular to the travel paths; and
- Signage should be provided for the tails. This includes, but is not limited to trail; style, use, accessibility, degree of difficulty, length, directional information, and interpretive signage. All signage developed in the City must adhere to applicable AODA guidelines.

2.2 Cycling Master Plan (CMP)

City of Hamilton's Cycling Master Plan Review and Update, focuses on identifying revisions to the Cycling Master Plan (CMP) originally approved in 2009. The purpose of this review is to update the existing plan, which is part of a broader effort to create a sustainable and balanced transportation blueprint for the growing City. Key components of the update include expanding and enhancing the cycling network, which is planned to reach nearly 1,000 kilometers and implementing new cycling facilities based on street typology. Expansion of Multi-Use Trails (MUT) to support cycling is one of the

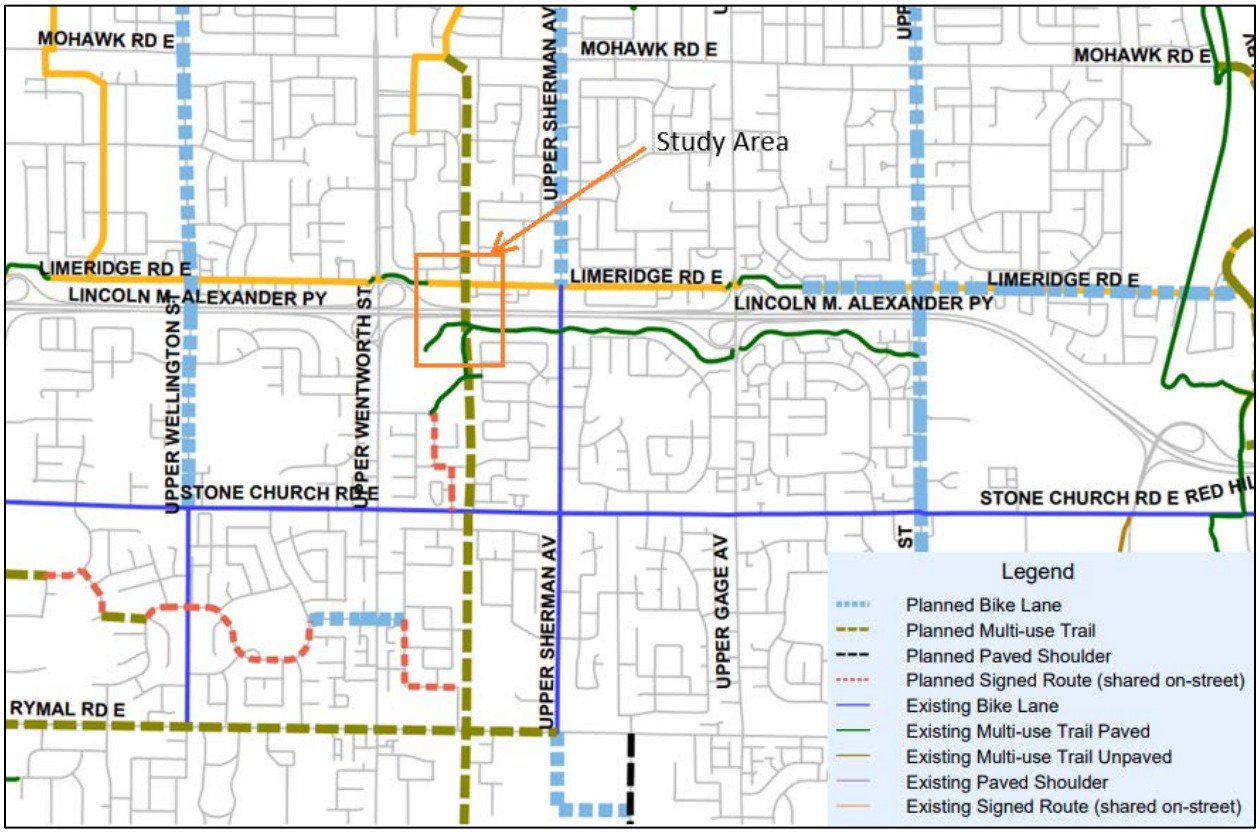
milestones of the CMP, which includes trail crossing over the Lincoln Alexander Parkway (LINC).

The MUT bridge over the Lincoln Alexander Parkway is listed as a special project. The special projects are pedestrian-bicycle specific structures such bridges required to overcome barriers. The CMP has allocated around $7 million for such projects. The CMP has proposed a 4 m wide paved Multi-Use Recreational Trail (MurT) between Mohawk Road E and Rymal Rd E with a length of 3,800 m, which includes a bridge between TB McQuesten Community Park and Limeridge Road East. This project has a priority ranking of 190 and it is located in Ward 7 of City of Hamilton.

2.3 City Wide Transportation Master Plan (2018)

City in Motion is the City of Hamiton Transportation Master Plan (TMP) which was reviewed and updated in 2018. The city-wide TMP acts as a strategic policy framework to guide future transportation projects and decisions through the 2031 planning horizon and beyond. Its main objective is to provide a comprehensive and attainable transportation blueprint that balances all modes of transportation to help the City become healthier. The plan is multi-modal, addressing walking, cycling, transit, automobiles, and goods movement. Figure 3 shows City's planned cycling network. As it is evident from the Figure 3 the planned MurT is crossing over LINC.

Figure 3: Hamilton Planned Cycling Network



Source: City Wide Transportation Master Plan – Planned Cycling Network

The TMP review integrates the RTMP (2016), which provides specific policy direction and network planning for multi-use trails used by pedestrians, cyclists, and other trail users. The city-wide TMP emphasizes integrating and expanding the network of MurT across the City. The policy directions provided by the city-wide TMP are summarized below:

- Integrate cycling infrastructure needs into the 10 Year Capital Budget for all road reconstruction, rehabilitation and new roads as guided by the updated Cycling Master Plan, with an emphasis on achieving physical separation.
- Maintain an annual capital budget for the implementation of the updated Cycling Master Plan and associated facilities.
- As part of the implementation of the cycling network, undertake an evaluation of alternatives in order to select routes which maximize safety for cyclists and promote continuity of the network across the City.
- Maximize the coordination and connectivity of bicycle, pedestrian and transit networks (including public bike share) to improve first and last mile connections to transit.

2.4 Complete Street Design Guidelines (CSDG) 2022

The City’s CSDG outline processes, designs, and best practices for creating "complete streets," which are defined as roadways planned and designed to balance the needs of all road users - including pedestrians, cyclists, transit users, and motorists to allow people to travel safely regardless of their age, ability, or chosen mode of transport. This guide is particularly a source for planning, design and maintenance of Roadways, however, it emphasizes that principles and elements of the guide should still be used when designing for other structures including bridges. The Guideline recommends that separate cycling / pedestrian facilities and MUTs should be preferred. The relevant guidelines from CSDG are provided below:

- Prioritize Safety following Safe Systems and Vision Zero approaches.
- Provide Safe and Accessible Options (All Ages and Abilities).
- Prioritize connectivity by designing the new infrastructure to enhance the City network utilization by cyclists and pedestrians.
- Balance the Needs of All Road Users.
- Use separation when a cycle-track abuts a sidewalk.
- Incorporate principles of universal design, paying close attention to the needs of persons with disabilities.
- Minimize conflict between different modes.
- Account for equity to eliminate structural barriers to mobility.
- Create attractive and vibrant places with an attractive environment built at a pedestrian scale.
- Consider cost effectiveness and aim to reduce the need for costly future retrofits.

2.5 Urban Hamilton Official Plan (2013)

The Urban Hamilton Official Plan (OP) is a guiding, legal document that sets out the goals and policies for managing the City's communities, land use change, and physical development till 2051. Hamilton is expected to reach a population of 820,000 and 360,000 jobs by 2051. To manage the City's growth, the OP provides 10 strategic directions. The OP's strategic direction 7 emphasizes the expansion of transportation options through the development of complete streets that encourage travel by foot, bike and transit, and enhance efficient inter-regional transportation connections.

The overarching objective of the Official Plan is to safely and efficiently move people and goods seamlessly and effectively through an integrated transportation network. Multi-modal connectivity is identified as a key component of complete communities (inclusive of complete streets). Complete communities must develop balanced transportation networks that offer choice, allowing people to walk, cycle, take transit, or drive. These networks create the vital link between activities and land uses throughout the City. The relevant policies from OP are outlined below:

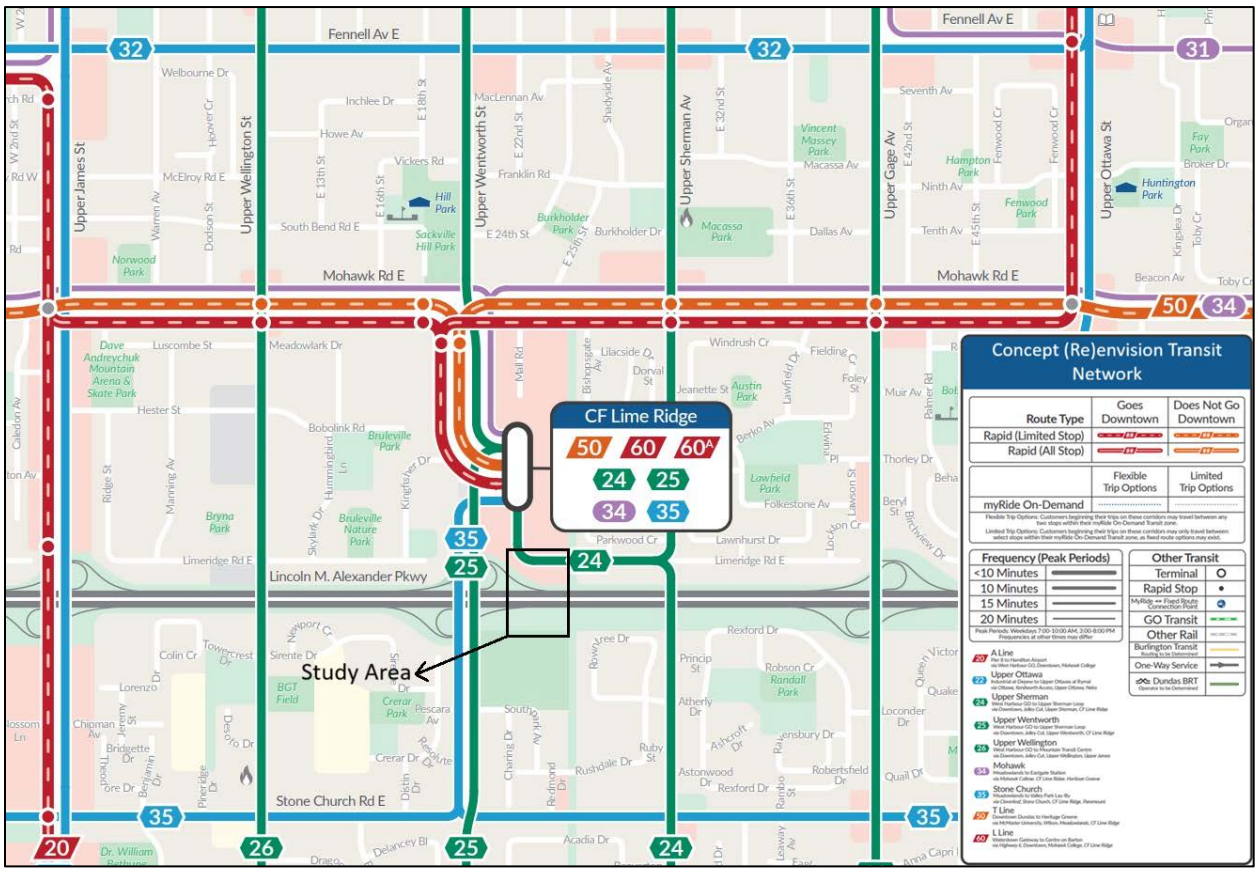
- Active transportation is a key component of the transportation network and must be prioritized and accommodated in complete streets design and operation.
- Infrastructure must be provided and maintained to maximize safe and convenient passage for pedestrians and cyclists along streets.
- The City must continuously improve and expand the existing network of pedestrian and bicycle infrastructure, including multi-use paths and bike lanes, while achieving a high standard of connectivity.
- The creation of mid-block connections for pedestrians, cycling, transit, and other active transportation modes is encouraged in existing and planned development.

2.6 (Re)envision the HSR (2023)

(Re)envision the Hamilton Street Railways (HSR) – the (re) Designed HSR Network is a comprehensive proposal to modernize Hamilton's transit system and ensure it is "rail ready" for the upcoming Light Rail Transit (LRT). Developed through four iterations the plan transitions from a downtown-centric "hub and spoke" model to a hub connectivity model designed to minimize transfers. This new structure classifies routes into a five-tier hierarchy Rapid, Core, Feeder, Local, and On-Demand to improve efficiency and passenger clarity while standardizing minimum operating hours to promote equity. This (re) Designed HSR Network acts as a structural blueprint, realigning the City's transit routes to serve as the efficient arterial system that will feed into the new LRT heart of Hamilton's future transportation network.

Figure 4 illustrates a snip of the (re) Designed HSR Network in the study area. CF Lime Ridge Terminal is a primary transit hub located within a Sub Regional Service Node, and Multi-Modal Hub as identified in the City's Official Plan Schedule E is in the study area.

Figure 4: Hamilton HSR Rail Ready System Map



Source: (Re)envision the Hamilton Street Railways (HSR) – the (re) Designed HSR Network Map

As illustrated in Figure 4, a range of rapid, core, and local transit routes connect Lime Ridge Terminal with other parts of the City, including Downtown Hamilton.

A well-functioning and fully accessible transit network can help in alleviating traffic congestion, increasing citizen mobility choices across multiple modes of transportation, and is directly related to supporting the City's Official Plan and Transportation Master Plan objectives.

Section 5.1.9 of the City of Hamilton Official Plan states that the City supports "the development of Employment Areas which are transit-supportive with reduced surface parking", while Section 5.1.10 of the Official Plan states that these areas "be easily accessible with a high degree of connectivity between all modes of transportation such as transit, active transportation, and automobiles."

2.7 Vision Zero Action Plan (2019–2025)

The City of Hamilton has developed a comprehensive Vision Zero Action Plan to eliminate traffic-related fatalities and serious injuries on its roadways. This initiative adopts a data driven approach, emphasizing that no loss of life is acceptable and that the transportation system must account for human error. The framework is built upon five core pillars: evaluation, engineering, enforcement, education, and engagement.

By focusing on these areas, the City aims to protect vulnerable road users, such as pedestrians and cyclists, while reducing the massive societal costs associated with collisions. The Vision Zero Action Plan introduced key action plans under each of the five pillars and those relevant to this study are provided below:

- Identify and fill in gaps in the cycling and pedestrian networks.
- Develop and initiate a pedestrian and cyclist road safety programs.
- Develop an interactive Vision Zero website to provide information to the community, to provide a means for road users to communicate safety concerns, comments.
- Create an Engagement Program for the community to promote the program, identify concerns and challenges, as well as successes.

2.8 Summary of Needs and Opportunities

There is limited AT connection between Lime Ridge Mall and the CF Lime Ridge Terminal and residential areas south of the LINC and TB McQuesten Community Park. High traffic volumes, multiple interchange ramps, and numerous access points create potential conflict points, particularly for pedestrians crossing ramp terminals and for cyclists sharing the roadway. These challenges are compounded by higher vehicle speeds, complex driver movements, and the lack of controlled or clearly marked pedestrian crossings, resulting in increased safety risks and reduced comfort for vulnerable road users.

The City’s Cycling Master Plan proposes expanding the cycling network and multi-use trails, with a dedicated MUT bridge over the LINC identified as a special project, which has the potential to alleviate the safety and operational challenges for AT users in the study area. The plan allocates about $7 million for pedestrian and cycling structures and includes a proposed 4.0 m wide multi use recreational trail between Mohawk Road East and Rymal Road East, including a bridge near TB McQuesten Community Park, ranked as a priority project in Ward 7.

The City’s TMP also identifies a planned MurT crossing over the LINC as part of the City’s long term cycling network. This planned crossing supports a balanced, multimodal transportation system and reflects the City’s commitment to improving cycling connectivity across major barriers like LINC. To support implementation of the Cycling Master Plan, the City will integrate cycling infrastructure into the 10 year capital budget for all road projects, maintain annual funding for cycling facilities, and evaluate route alternatives to prioritize safety and network continuity. These efforts also focus on improving coordination between cycling, pedestrian, and transit networks to strengthen first and last mile connections.

Further policy support is provided through the Hamilton Complete Streets Design Guidelines, which emphasize safety, accessibility for all ages and abilities, network connectivity, mode separation, and minimizing conflicts between users while balancing the needs of all road users when planning and designing MUT bridges. The guidelines

also promote universal design, equity in mobility, cost effectiveness, and the creation of attractive, pedestrian-scaled environments. Additionally, the City's Vision Zero Action Plan recommends identifying and filling in gaps in the cycling and pedestrian networks.

An active transportation bridge over the LINC would directly achieve the planning and policy recommendations of the City of Hamilton and would help improve operations and safety in the study area. It would provide improved connectivity between Lime Ridge Mall and the CF Lime Ridge Terminal located north of the LINC, and the residential neighbourhoods and T.B. McQuesten Community Park located south of the LINC.

3.0 Safety Evaluation

According to OTM Book 18 grade-separated crossings such as bridges may be implemented to provide connections across physical barriers such as major highways and rail corridors to separate pedestrians and cyclists from motor vehicle traffic. Bridges and other structures for pedestrian and cycling use must be designed in accordance with the MTO Structural Manual and Bridge Office Design Bulletins and Guidelines, and the Canadian Highway Bridge Design Code.

3.1 Topography of the Lands Adjacent to the LINC

The study area features the LINC highway running through a lower-elevation corridor, with the adjacent lands rising approximately 5 to 7 meters above the roadway as per the Lidar data provided by the City. This topography is advantageous for the design and construction of an AT Bridge, as the higher and flat terrain on both sides of the crossing provides stable and level ground for abutments, ramps, and connections to existing AT facilities. The moderate elevation difference allows for a gently sloped bridge approach, which can accommodate all ages and abilities, ensuring accessibility compliance while minimizing the need for extensive grading or retaining structures. Furthermore, the flat lands north and south of LINC simplify construction logistics, reduce earthworks, and lower costs, while the elevation drop over the highway provides sufficient vertical clearance for vehicles. Overall, the existing topography supports a practical, safe, and cost-effective bridge solution that integrates seamlessly into the surrounding road and active transportation network.

3.2 Risk Assessment

LINC is a controlled-access highway with an operating speed of 80 km/h. Introducing an AT structure over a major highway will inherently introduce new risks. Although these risks are considered low in likelihood, any incident could result in severe consequences due to high vehicle speeds and traffic volumes. Potential hazards have been identified, and appropriate mitigation measures are introduced. The key risks associated with the proposed bridge are outlined below, along with recommended measures to reduce their likelihood and potential impact on both motorists and bridge users.

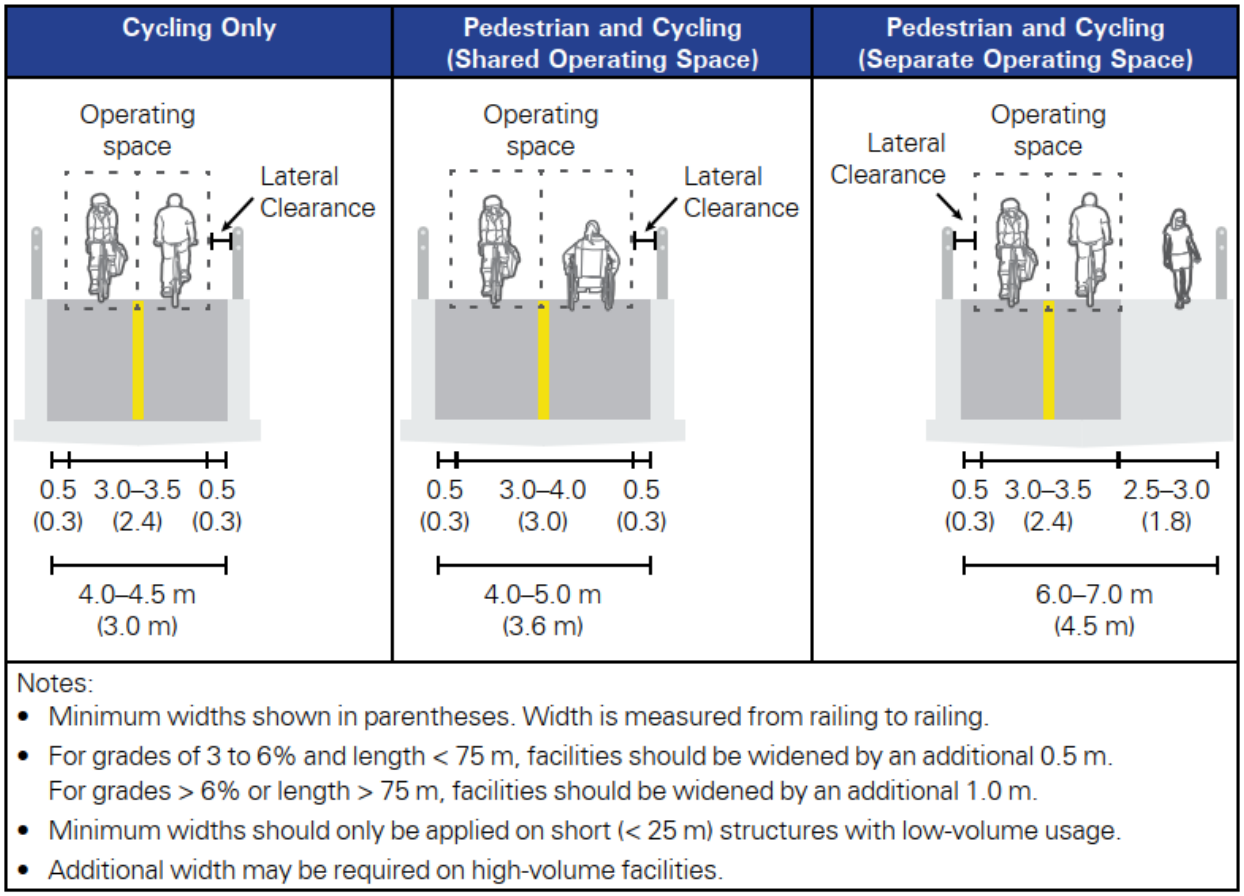
- The construction of bridge piers or abutments introduces fixed objects within or near the LINC right-of-way, which could increase the severity of run-off-road collisions. To address this risk, the design may provide an adequate clear zone or guide-rails in accordance with applicable road safety standards, to reduce the likelihood of vehicle impact with bridge elements. These measures will protect motorists from newly introduced infrastructure and reduce collision severity.
- Users of the bridge may be exposed to safety risks such as falls from height, discomfort due to traffic noise and visual exposure, and conflicts between different user types if not properly accommodated. Continuous, code compliant railings and barriers should be provided in accordance with the City, and province design requirements. There is a need to provide adequate width and physical separation, where appropriate, to safely accommodate both pedestrians and cyclists. Lighting may be installed along the bridge and approaches to improve visibility, user comfort, and personal security during low-light conditions. Additional measures such as non-slip deck surfaces, wind screening if required, and clear way finding signage should be incorporated to further enhance user safety.
- Bridge access points may create opportunities for pedestrians or cyclists to inadvertently or intentionally access the LINC roadway. Mitigating this risk would require appropriate entry treatments, fencing, and barriers at bridge approaches. These features should guide users clearly onto designated paths and eliminate direct or indirect access to the LINC, consistent with controlled-access highway safety requirements.

3.3 Clear Zone Requirements and Cost Effectiveness

Where the volume of users is higher than 100 people per hour, the mixing of pedestrians and cyclists may result in greater conflicts among users, creating uncomfortable conditions. Additional width may be necessary on grade-separated crossings to account for horizontal clearance requirements from railings or walls. When a cycling facility is adjacent to a railing or wall, 0.5 m of horizontal clearance is recommended in addition to the width of the cycling facility. Clearance may be reduced to a minimum of 0.3 m in constrained conditions. Figure 5 illustrates the desired and minimum widths for AT Bridges.

The AT bridge should be designed so that the users experience lower difficulty when riding their bikes. Many people riding bikes will have difficulty sustaining a slope greater than 7.5 % for more than a very short distance of 10 to 20 m. Slopes of less than 2 % do not generally present difficulty. Where the height difference exceeds 5 m, a flat landing may be provided to give people riding bikes an opportunity to regain momentum. Steep slopes also present challenges for downhill cyclists, who may build up significant speed. Sharp corners, intersections and other hazards should be avoided at the bottom of a steep decline. A minimum 20 m of flat surface should be provided between the bottom of the incline and any intersections, crossings or other conflict points.

Figure 5: Desired and Minimum Widths for Active Transportation Bridges



Notes:
- Minimum widths shown in parentheses. Width is measured from railing to railing.
- For grades of 3 to 6% and length < 75 m, facilities should be widened by an additional 0.5 m. For grades > 6% or length > 75 m, facilities should be widened by an additional 1.0 m.
- Minimum widths should only be applied on short (< 25 m) structures with low-volume usage.
- Additional width may be required on high-volume facilities.

Source: OTM Book 18 section 6.12.1

3.4 Security and Safety

At active transportation bridge crossings, safety relates to the physical design features that reduce the risk of collisions and falls, such as adequate width, separation from traffic, railings, lighting, and clear sightlines. Security is different and refers to how safe users feel from crime or harassment, which is influenced by factors such as visibility, passive surveillance, lighting quality, and the presence of other users. To improve the

safety and security of the AT bridge users, attention must be given to the illumination, surface material, guard rails, and other design elements.

The preferred surface material for cycling facilities on bridges is asphalt or concrete. These materials provide superior skid resistance relative to wood or steel bridge decks.

The pedestrian and cyclist experience may be negatively impacted by poor lighting and in order to address this the City's CSDG recommends that proper lighting should be provided to improve security for people using the bridge at night. Lighting is crucial to enable the safe movement of pedestrians and cyclists, at night through the bridge. Lighting contributes to enhancing safety and accessibility. The design of lighting should consider the pedestrian experience while balancing the City's energy and climate goals. For example, light fixtures should be dark sky compliant and focus most of the light towards the ground to minimize light pollution and energy consumption. Careful consideration should be made to minimize blind spots along bridge that can create unsafe conditions for the bridge users.

4.0 Accessibility Requirement

This section identifies the accessibility requirements applicable to the bridge structure, with a focus on clear width, running grade, and approach treatments. The purpose of accessibility requirements is to design safe and equitable access and highlight design considerations necessary to support use by individuals with varying mobility needs.

The following requirements must be met in order for the bridge to comply with Accessibility for Ontarians with Disabilities Act (AODA) standards. Applicable requirements from the Design of Public Spaces Standards section have been highlighted below:

Exterior Paths of Travel

- Exterior path must have a minimum clear width of 1,500 mm, but can be reduced to 1,200 mm to serve as a turning space where the exterior path connects with a curb ramp.
- The surface must be firm, stable and slip resistant.
- The maximum running slope of the exterior path must be no more than 1:20.
- The maximum cross slope of the exterior path must be no more than 1:20.
- The entrance to the exterior path of travel must provide a minimum clear opening of 850 mm, whether the entrance includes a gate, bollard or other entrance design.

Ramps

- The ramp must have a minimum clear width of 900 mm.
- The surface must be firm, stable and slip resistant.
- The ramp must have a running slope of no more than 1:15.
- Landings must have a cross slope that is not steeper than 1:50.
- A ramp must be equipped with handrails on both sides.

The Rick Hansen Foundation (RHF) promotes “going beyond the code” meaning their design guidelines allow for a holistic approach. Examples of going beyond the code include designing exterior paths that offer larger clear widths and ramps with minimal slopes to allow for ease of use by all, not only users with accessibility needs. Although RHF guidelines are not required in the design process, referencing the guidelines will allow for more equitable designs.

5.0 Conclusion and Recommendations

Lime Ridge Mall and the CF Lime Ridge Terminal are located north of the LINC and attract traffic from a wide area, including residential neighbourhoods south of the LINC. LINC is classified as a Parkway and Upper Wentworth Street is classified as a Major Arterial by the City’s Urban OP. They both carry large volumes of intra municipal and inter regional traffic through the City. At present, the only active transportation connection between the mall and terminal and the residential areas and T.B. McQuesten Community Park consists of sidewalks on both sides of Upper Wentworth Street. Pedestrians using the sidewalks must cross several ramps with uncontrolled crossing and intersecting roadways, resulting in multiple conflict points with vehicles entering and exiting the LINC. There are no bike lanes along this road, and cyclists are required to travel in mixed traffic when crossing the LINC. The absence of defined cycling facilities and protected crossings also limits the efficiency and attractiveness of active transportation in this corridor, creating safety and operational challenges for all road users, particularly for pedestrians and cyclists.

The need for an active transportation bridge over the LINC is identified in both the City’s Cycling Master Plan and the City’s Transportation Master Plan. The Cycling Master Plan specifically identifies a dedicated multi use trail bridge over the LINC as a special project, while the Transportation Master Plan also shows a planned multi use recreational trail crossing over the LINC as part of the City’s long term cycling network. Establishing the AT bridge would provide improved connectivity between Lime Ridge Mall and the CF Lime Ridge Terminal located north of the LINC, and the residential neighbourhoods and T.B. McQuesten Community Park located south of the LINC. It would improve safety, accessibility for all ages and abilities, network connectivity, mode separation, and minimizing conflicts between users, while balancing the needs of all road users. This may result in reduced collision and support City’s Vision Zero Action Plan.

The lower elevation of the LINC relative to the higher and generally flat terrain on both sides provides stable and level ground for bridge abutments, approach ramps, and connections to existing active transportation facilities. While the overall topography is favourable for bridge construction, risks associated with introducing an active transportation bridge over a major highway should be addressed during the design phase. Appropriate mitigation measures should include guide rails, sufficient clear zones, continuous railings, nighttime lighting, and fencing or barriers at bridge approaches. The bridge design should also comply with AODA accessibility requirements.

SR

Ontario

Ministry of Tourism, Culture and Sport

Programs & Services Branch
401 Bay Street, Suite 1700
Toronto ON M7A 0A7

Criteria for Evaluating Archaeological Potential

A Checklist for the Non-Specialist

The **purpose of the checklist** is to determine:

- if a property(ies) or project area may contain archaeological resources i.e., have archaeological potential
- it includes all areas that may be impacted by project activities, including – but not limited to:
  - the main project area
  - temporary storage
  - staging and working areas
  - temporary roads and detours

Processes covered under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

Archaeological assessment

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a licensed consultant archaeologist (see page 4 for definitions) to undertake an archaeological assessment.

The assessment will help you:

- identify, evaluate and protect archaeological resources on your property or project area
- reduce potential delays and risks to your project

Note: By law, archaeological assessments **must** be done by a licensed consultant archaeologist. Only a licensed archaeologist can assess – or alter – an archaeological site.

What to do if you:

- **find an archaeological resource**

  If you find something you think may be of archaeological value during project work, you must – by law – stop all activities immediately and contact a licensed consultant archaeologist

  The archaeologist will carry out the fieldwork in compliance with the *Ontario Heritage Act* [s.48(1)].

- **unearth a burial site**

  If you find a burial site containing human remains, you must immediately notify the appropriate authorities (i.e., police, coroner's office, and/or Registrar of Cemeteries) and comply with the *Funeral, Burial and Cremation Services Act*.

Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – separate checklist
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages when completing this form.

 © King's Printer for Ontario, 2022

Project or Property Name

McQuesten Park AT Bridge MCEA

Project or Property Location (upper and lower or single tier municipality)

City of Hamilton

Proponent Name

R.J. Burnside & Associates Limited

Proponent Contact Information

cole.roddick@rjburnside.com

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	☐	☑

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

	Yes	No
2. Has an archaeological assessment been prepared for the property (or project area) and been accepted by MTCS?	☐	☑

If Yes, do **not** complete the rest of the checklist. You are expected to follow the recommendations in the archaeological assessment report(s).

The proponent, property owner and/or approval authority will:

- summarize the previous assessment
- add this checklist to the project file, with the appropriate documents that demonstrate an archaeological assessment was undertaken e.g., MTCS letter stating acceptance of archaeological assessment report

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g., environmental assessment document
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

	Yes	No
3. Are there known archaeological sites on or within 300 metres of the property (or the project area)?	☐	☐
4. Is there Aboriginal or local knowledge of archaeological sites on or within 300 metres of the property (or project area)?	☐	☐
5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 300 metres of the property (or project area)?	☐	☐
6. Is there a known burial site or cemetery on the property or adjacent to the property (or project area)?	☐	☑
7. Has the property (or project area) been recognized for its cultural heritage value?	☐	☑

If Yes to any of the above questions (3 to 7), do **not** complete the checklist. Instead, you need to hire a licensed consultant archaeologist to undertake an archaeological assessment of your property or project area.

If No, continue to question 8.

	Yes	No
8. Has the entire property (or project area) been subjected to recent, extensive and intensive disturbance?	☑	☐

If Yes to the preceding question, do **not** complete the checklist. Instead, please keep and maintain a summary of documentation that provides evidence of the recent disturbance.

An archaeological assessment is not required.

If No, continue to question 9.

	Yes	No
9. Are there present or past water sources within 300 metres of the property (or project area)?	☐	☐

If Yes, an archaeological assessment is required.

If No, continue to question 10.

	Yes	No
10. Is there evidence of two or more of the following on the property (or project area)?	☐	☐

- elevated topography
- pockets of well-drained sandy soil
- distinctive land formations
- resource extraction areas
- early historic settlement
- early historic transportation routes

If Yes, an archaeological assessment is required.

If No, there is low potential for archaeological resources at the property (or project area).

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g., under the *Environmental Assessment Act, Planning Act* processes
- maintained by the property owner, proponent or approval authority

Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
  - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

In this context, the following definitions apply:

- **consultant archaeologist** means, as defined in Ontario regulation as an archaeologist who enters into an agreement with a client to carry out or supervise archaeological fieldwork on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client. In Ontario, these people also are required to hold a valid professional archaeological licence issued by the Ministry of Tourism, Culture and Sport.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may be already in place for identifying archaeological potential, including:

- one prepared and adopted by the municipality e.g., archaeological management plan
- an environmental assessment process e.g., screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport under the Ontario government's Standards & Guidelines for Conservation of Provincial Heritage Properties [s. B.2.]

2. Has an archaeological assessment been prepared for the property (or project area) and been accepted by MTCS?

Respond 'yes' to this question, if all of the following are true:

- an archaeological assessment report has been prepared and is in compliance with MTCS requirements
  - a letter has been sent by MTCS to the licensed archaeologist confirming that MTCS has added the report to the Ontario Public Register of Archaeological Reports (Register)
- the report states that there are no concerns regarding impacts to archaeological sites

Otherwise, if an assessment has been completed and deemed compliant by the MTCS, and the ministry recommends further archaeological assessment work, this work will need to be completed.

For more information about archaeological assessments, contact:

- approval authority
- proponent
- consultant archaeologist
- Ministry of Tourism, Culture and Sport at archaeology@ontario.ca

3. Are there known archaeological sites on or within 300 metres of the property (or project area)?

MTCS maintains a database of archaeological sites reported to the ministry.

For more information, contact MTCS Archaeological Data Coordinator at archaeology@ontario.ca.

4. Is there Aboriginal or local knowledge of archaeological sites on or within 300 metres of the property?

Check with:

- Aboriginal communities in your area
- local municipal staff

They may have information about archaeological sites that are not included in MTCS' database.

Other sources of local knowledge may include:

- property owner
- local heritage organizations and historical societies
- local museums
- municipal heritage committee
- published local histories

5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 300 metres of the property (or property area)?

Check with:

- Aboriginal communities in your area
- local municipal staff

Other sources of local knowledge may include:

- property owner
- local heritage organizations and historical societies
- local museums
- municipal heritage committee
- published local histories

6. Is there a known burial site or cemetery on the property or adjacent to the property (or project area)?

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulation Unit, Ontario Ministry of Consumer Services – for database of registered cemeteries
- Ontario Genealogical Society (OGS) – to locate records of Ontario cemeteries, both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to locate early cemeteries

In this context, 'adjacent' means 'contiguous', or as otherwise defined in a municipal official plan.

7. Has the property (or project area) been recognized for its cultural heritage value?

There is a strong chance there may be archaeological resources on your property (or immediate area) if it has been listed, designated or otherwise identified as being of cultural heritage value by:

- your municipality
- Ontario government
- Canadian government

This includes a property that is:

- designated under *Ontario Heritage Act* (the OHA), including:
  - individual designation (Part IV)
  - part of a heritage conservation district (Part V)
  - an archaeological site (Part VI)
- subject to:
  - an agreement, covenant or easement entered into under the OHA (Parts II or IV)
  - a notice of intention to designate (Part IV)
  - a heritage conservation district study area by-law (Part V) of the OHA
- listed on:
  - a municipal register or inventory of heritage properties
  - Ontario government's list of provincial heritage properties
  - Federal government's list of federal heritage buildings
- part of a:
  - National Historic Site
  - UNESCO World Heritage Site
- designated under:
  - *Heritage Railway Station Protection Act*
  - *Heritage Lighthouse Protection Act*
- subject of a municipal, provincial or federal commemorative or interpretive plaque.

To determine if your property or project area is covered by any of the above, see:

- Part A of the MTCS Criteria for Evaluating Potential for Built Heritage and Cultural Heritage Landscapes

Part VI – Archaeological Sites

Includes five sites designated by the Minister under Regulation 875 of the Revised Regulation of Ontario, 1990 (Archaeological Sites) and 3 marine archaeological sites prescribed under Ontario Regulation 11/06.

For more information, check Regulation 875 and Ontario Regulation 11/06.

8. Has the entire property (or project area) been subjected to recent extensive and intensive ground disturbance?

Recent: after-1960

Extensive: over all or most of the area

Intensive: thorough or complete disturbance

Examples of ground disturbance include:

- quarrying
- major landscaping – involving grading below topsoil
- building footprints and associated construction area
  - where the building has deep foundations or a basement
- infrastructure development such as:
  - sewer lines
  - gas lines
  - underground hydro lines
  - roads
  - any associated trenches, ditches, interchanges. **Note**: this applies only to the excavated part of the right-of-way; the remainder of the right-of-way or corridor may not have been impacted.

A ground disturbance does **not** include:

- agricultural cultivation
- gardening
- landscaping

Site visits

You can typically get this information from a site visit. In that case, please document your visit in the process (e.g., report) with:

- photographs
- maps
- detailed descriptions

If a disturbance isn't clear from a site visit or other research, you need to hire a licensed consultant archaeologist to undertake an archaeological assessment.

9. Are there present or past water bodies within 300 metres of the property (or project area)?

Water bodies are associated with past human occupations and use of the land. About 80-90% of archaeological sites are found within 300 metres of water bodies.

Present

- Water bodies:
  - primary - lakes, rivers, streams, creeks
  - secondary - springs, marshes, swamps and intermittent streams and creeks
- accessible or inaccessible shoreline, for example:
  - high bluffs
  - swamps
  - marsh fields by the edge of a lake
  - sandbars stretching into marsh

Water bodies not included:

- man-made water bodies, for example:
  - temporary channels for surface drainage
  - rock chutes and spillways
  - temporarily ponded areas that are normally farmed
  - dugout ponds
- artificial bodies of water intended for storage, treatment or recirculation of:
  - runoff from farm animal yards
  - manure storage facilities
  - sites and outdoor confinement areas

Past

Features indicating past water bodies:

- raised sand or gravel beach ridges – can indicate glacial lake shorelines
- clear dip in the land – can indicate an old river or stream
- shorelines of drained lakes or marshes
- cobble beaches

You can get information about water bodies through:

- a site visit
- aerial photographs
- 1:10,000 scale Ontario Base Maps - or equally detailed and scaled maps.

10. Is there evidence of two or more of the following on the property (or project area)?

- elevated topography
- pockets of well-drained sandy soil
- distinctive land formations
- resource extraction areas
- early historic settlement
- early historic transportation routes

- **Elevated topography**

  Higher ground and elevated positions - surrounded by low or level topography - often indicate past settlement and land use.

  Features such as eskers, drumlins, sizeable knolls, plateaus next to lowlands, or other such features are a strong indication of archaeological potential.

  Find out if your property or project area has elevated topography, through:

  - site inspection
  - aerial photographs
  - topographical maps

- **Pockets of well-drained sandy soil, especially within areas of heavy soil or rocky ground**

  Sandy, well-drained soil - in areas characterized by heavy soil or rocky ground - may indicate archaeological potential

  Find out if your property or project area has sandy soil through:

  - site inspection
  - soil survey reports

- **Distinctive land formations**

  Distinctive land formations include – but are not limited to:

  - waterfalls
  - rock outcrops
  - rock faces
  - caverns
  - mounds, etc.

  They were often important to past inhabitants as special or sacred places. The following sites may be present – or close to – these formations:

  - burials
  - structures
  - offerings
  - rock paintings or carvings

  Find out if your property or project areas has a distinctive land formation through:

  - a site visit
  - aerial photographs
  - 1:10,000 scale Ontario Base Maps - or equally detailed and scaled maps.

- **Resource extraction areas**

  The following resources were collected in these extraction areas:

  - food or medicinal plants e.g., migratory routes, spawning areas, prairie
  - scarce raw materials e.g., quartz, copper, ochre or outcrops of chert
  - resources associated with early historic industry e.g., fur trade, logging, prospecting, mining

  Aboriginal communities may hold traditional knowledge about their past use or resources in the area.

- **Early historic settlement**

  Early Euro-Canadian settlement include – but are not limited to:

  - early military or pioneer settlement e.g., pioneer homesteads, isolated cabins, farmstead complexes
  - early wharf or dock complexes
  - pioneers churches and early cemeteries

  For more information, see below – under the early historic transportation routes.

- **Early historic transportation routes** - such as trails, passes, roads, railways, portage routes, canals.

  For more information, see:

  - historical maps and/or historical atlases
    - for information on early settlement patterns such as trails (including Aboriginal trails), monuments, structures, fences, mills, historic roads, rail corridors, canals, etc.
    - Archives of Ontario holds a large collection of historical maps and historical atlases
    - digital versions of historic atlases are available on the Canadian County Atlas Digital Project
  - commemorative markers or plaques such as local, provincial or federal agencies
  - municipal heritage committee or other local heritage organizations
    - for information on early historic settlements or landscape features (e.g., fences, mill races, etc.)
    - for information on commemorative markers or plaques

Ontario

Ministry of Tourism, Culture and Sport

Programs & Services Branch
401 Bay Street, Suite 1700
Toronto ON M7A 0A7

Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes

A Checklist for the Non-Specialist

The **purpose of the checklist** is to determine:

- if a property(ies) or project area:
  - is a recognized heritage property
  - may be of cultural heritage value
- it includes all areas that may be impacted by project activities, including – but not limited to:
  - the main project area
  - temporary storage
  - staging and working areas
  - temporary roads and detours

Processes covered under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

Cultural Heritage Evaluation Report (CHER)

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a qualified person(s) (see page 5 for definitions) to undertake a cultural heritage evaluation report (CHER).

The CHER will help you:

- identify, evaluate and protect cultural heritage resources on your property or project area
- reduce potential delays and risks to a project

Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – separate checklist
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages for more detailed information and when completing this form.

 © King's Printer for Ontario, 2022

Project or Property Name

McQuesten Park AT Bridge MCEA

Project or Property Location (upper and lower or single tier municipality)

City of Hamilton

Proponent Name

R.J. Burnside & Associates Limited

Proponent Contact Information

cole.roddick@rjburnside.com

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	☐	☑

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

Part A: Screening for known (or recognized) Cultural Heritage Value

	Yes	No
2. Has the property (or project area) been evaluated before and found **not** to be of cultural heritage value?	☐	☑

If Yes, do **not** complete the rest of the checklist.

The proponent, property owner and/or approval authority will:

- summarize the previous evaluation and
- add this checklist to the project file, with the appropriate documents that demonstrate a cultural heritage evaluation was undertaken

The summary and appropriate documentation may be:

- submitted as part of a report requirement
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

	Yes	No
3. Is the property (or project area):		
a. identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value?	☐	☑
b. a National Historic Site (or part of)?	☐	☑
c. designated under the *Heritage Railway Stations Protection Act*?	☐	☑
d. designated under the *Heritage Lighthouse Protection Act*?	☐	☑
e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?	☐	☑
f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	☐	☑

If Yes to any of the above questions, you need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report, if a Statement of Cultural Heritage Value has not previously been prepared or the statement needs to be updated

If a Statement of Cultural Heritage Value has been prepared previously and if alterations or development are proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No, continue to Question 4.

Part B: Screening for Potential Cultural Heritage Value

	Yes	No
4. Does the property (or project area) contain a parcel of land that:		
a. is the subject of a municipal, provincial or federal commemorative or interpretive plaque?	☐	☑
b. has or is adjacent to a known burial site and/or cemetery?	☐	☑
c. is in a Canadian Heritage River watershed?	☐	☑
d. contains buildings or structures that are 40 or more years old?	☐	☑

Part C: Other Considerations

	Yes	No
5. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):		
a. is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area?	☐	☑
b. has a special association with a community, person or historical event?	☐	☑
c. contains or is part of a cultural heritage landscape?	☐	☑

If Yes to one or more of the above questions (Part B and C), there is potential for cultural heritage resources on the property or within the project area.

You need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report (CHER)

If the property is determined to be of cultural heritage value and alterations or development is proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No to all of the above questions, there is low potential for built heritage or cultural heritage landscape on the property.

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g. under the *Environmental Assessment Act, Planning Act* processes
- maintained by the property owner, proponent or approval authority

Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
  - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

For more information, see the Ministry of Tourism, Culture and Sport's Ontario Heritage Toolkit or Standards and Guidelines for Conservation of Provincial Heritage Properties.

In this context, the following definitions apply:

- **qualified person(s)** means individuals – professional engineers, architects, archaeologists, etc. – having relevant, recent experience in the conservation of cultural heritage resources.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may already be in place for identifying potential cultural heritage resources, including:

- one endorsed by a municipality
- an environmental assessment process e.g. screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport (MTCS) under the Ontario government's Standards & Guidelines for Conservation of Provincial Heritage Properties [s.B.2.]

Part A: Screening for known (or recognized) Cultural Heritage Value

2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?

Respond 'yes' to this question, if all of the following are true:

A property can be considered not to be of cultural heritage value if:

- a Cultural Heritage Evaluation Report (CHER) - or equivalent - has been prepared for the property with the advice of a qualified person and it has been determined not to be of cultural heritage value and/or
- the municipal heritage committee has evaluated the property for its cultural heritage value or interest and determined that the property is not of cultural heritage value or interest

A property may need to be re-evaluated, if:

- there is evidence that its heritage attributes may have changed
- new information is available
- the existing Statement of Cultural Heritage Value does not provide the information necessary to manage the property
- the evaluation took place after 2005 and did not use the criteria in Regulations 9/06 and 10/06

Note: Ontario government ministries and public bodies [prescribed under Regulation 157/10] may continue to use their existing evaluation processes, until the evaluation process required under section B.2 of the Standards & Guidelines for Conservation of Provincial Heritage Properties has been developed and approved by MTCS.

To determine if your property or project area has been evaluated, contact:

- the approval authority
- the proponent
- the Ministry of Tourism, Culture and Sport

3a. Is the property (or project area) identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value e.g.:

i. designated under the *Ontario Heritage Act*

- individual designation (Part IV)
- part of a heritage conservation district (Part V)

Individual Designation – Part IV

A property that is designated:

- by a municipal by-law as being of cultural heritage value or interest [s.29 of the *Ontario Heritage Act*]
- by order of the Minister of Tourism, Culture and Sport as being of cultural heritage value or interest of provincial significance [s.34.5]. **Note**: To date, no properties have been designated by the Minister.

Heritage Conservation District – Part V

A property or project area that is located within an area designated by a municipal by-law as a heritage conservation district [s. 41 of the *Ontario Heritage Act*].

For more information on Parts IV and V, contact:

- municipal clerk
- Ontario Heritage Trust
- local land registry office (for a title search)

---

ii. subject of an agreement, covenant or easement entered into under Parts II or IV of the *Ontario Heritage Act*

An agreement, covenant or easement is usually between the owner of a property and a conservation body or level of government. It is usually registered on title.

The primary purpose of the agreement is to:

- preserve, conserve, and maintain a cultural heritage resource
- prevent its destruction, demolition or loss

For more information, contact:

- Ontario Heritage Trust - for an agreement, covenant or easement [clause 10 (1) (c) of the *Ontario Heritage Act*]
- municipal clerk – for a property that is the subject of an easement or a covenant [s.37 of the *Ontario Heritage Act*]
- local land registry office (for a title search)

---

iii. listed on a register of heritage properties maintained by the municipality

Municipal registers are the official lists - or record - of cultural heritage properties identified as being important to the community.

Registers include:

- all properties that are designated under the *Ontario Heritage Act* (Part IV or V)
- properties that have not been formally designated, but have been identified as having cultural heritage value or interest to the community

For more information, contact:

- municipal clerk
- municipal heritage planning staff
- municipal heritage committee

---

iv. subject to a notice of:

- intention to designate (under Part IV of the *Ontario Heritage Act*)
- a Heritage Conservation District study area bylaw (under Part V of the *Ontario Heritage Act*)

A property that is subject to a **notice of intention to designate** as a property of cultural heritage value or interest and the notice is in accordance with:

- section 29 of the *Ontario Heritage Act*
- section 34.6 of the *Ontario Heritage Act.* **Note**: To date, the only applicable property is Meldrum Bay Inn, Manitoulin Island. [s.34.6]

An area designated by a municipal by-law made under section 40.1 of the *Ontario Heritage Act* as a **heritage conservation district study area**.

For more information, contact:

- municipal clerk – for a property that is the subject of notice of intention [s. 29 and s. 40.1]
- Ontario Heritage Trust

---

v. included in the Ministry of Tourism, Culture and Sport's list of provincial heritage properties

Provincial heritage properties are properties the Government of Ontario owns or controls that have cultural heritage value or interest.

The Ministry of Tourism, Culture and Sport (MTCS) maintains a list of all provincial heritage properties based on information provided by ministries and prescribed public bodies. As they are identified, MTCS adds properties to the list of provincial heritage properties.

For more information, contact the MTCS Registrar at registrar@ontario.ca.

3b. Is the property (or project area) a National Historic Site (or part of)?

National Historic Sites are properties or districts of national historic significance that are designated by the Federal Minister of the Environment, under the *Canada National Parks Act*, based on the advice of the Historic Sites and Monuments Board of Canada.

For more information, see the National Historic Sites website.

3c. Is the property (or project area) designated under the *Heritage Railway Stations Protection Act*?

The *Heritage Railway Stations Protection Act* protects heritage railway stations that are owned by a railway company under federal jurisdiction. Designated railway stations that pass from federal ownership may continue to have cultural heritage value.

For more information, see the Directory of Designated Heritage Railway Stations.

3d. Is the property (or project area) designated under the *Heritage Lighthouse Protection Act*?

The *Heritage Lighthouse Protection Act* helps preserve historically significant Canadian lighthouses. The Act sets up a public nomination process and includes heritage building conservation standards for lighthouses which are officially designated.

For more information, see the Heritage Lighthouses of Canada website.

3e. Is the property (or project area) identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office?

The role of the Federal Heritage Buildings Review Office (FHBRO) is to help the federal government protect the heritage buildings it owns. The policy applies to all federal government departments that administer real property, but not to federal Crown Corporations.

For more information, contact the Federal Heritage Buildings Review Office.

See a directory of all federal heritage designations.

3f. Is the property (or project area) located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?

A UNESCO World Heritage Site is a place listed by UNESCO as having outstanding universal value to humanity under the Convention Concerning the Protection of the World Cultural and Natural Heritage. In order to retain the status of a World Heritage Site, each site must maintain its character defining features.

Currently, the Rideau Canal is the only World Heritage Site in Ontario.

For more information, see Parks Canada – World Heritage Site website.

Part B: Screening for potential Cultural Heritage Value

4a. Does the property (or project area) contain a parcel of land that has a municipal, provincial or federal commemorative or interpretive plaque?

Heritage resources are often recognized with formal plaques or markers.

Plaques are prepared by:

- municipalities
- provincial ministries or agencies
- federal ministries or agencies
- local non-government or non-profit organizations

For more information, contact:

- municipal heritage committees or local heritage organizations – for information on the location of plaques in their community
- Ontario Historical Society's Heritage directory – for a list of historical societies and heritage organizations
- Ontario Heritage Trust – for a list of plaques commemorating Ontario's history
- Historic Sites and Monuments Board of Canada – for a list of plaques commemorating Canada's history

4b. Does the property (or project area) contain a parcel of land that has or is adjacent to a known burial site and/or cemetery?

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulations, Ontario Ministry of Consumer Services – for a database of registered cemeteries
- Ontario Genealogical Society (OGS) – to locate records of Ontario cemeteries, both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to locate early cemeteries

In this context, adjacent means contiguous or as otherwise defined in a municipal official plan.

4c. Does the property (or project area) contain a parcel of land that is in a Canadian Heritage River watershed?

The Canadian Heritage River System is a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage.

Canadian Heritage Rivers must have, and maintain, outstanding natural, cultural and/or recreational values, and a high level of public support.

For more information, contact the Canadian Heritage River System.

If you have questions regarding the boundaries of a watershed, please contact:

- your conservation authority
- municipal staff

4d. Does the property (or project area) contain a parcel of land that contains buildings or structures that are 40 or more years old?

A 40 year 'rule of thumb' is typically used to indicate the potential of a site to be of cultural heritage value. The approximate age of buildings and/or structures may be estimated based on:

- history of the development of the area
- fire insurance maps
- architectural style
- building methods

Property owners may have information on the age of any buildings or structures on their property. The municipality, local land registry office or library may also have background information on the property.

Note: 40+ year old buildings or structure do not necessarily hold cultural heritage value or interest; their age simply indicates a higher potential.

A building or structure can include:

- residential structure
- farm building or outbuilding
- industrial, commercial, or institutional building
- remnant or ruin
- engineering work such as a bridge, canal, dams, etc.

For more information on researching the age of buildings or properties, see the Ontario Heritage Tool Kit Guide Heritage Property Evaluation.

Part C: Other Considerations

5a. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) is considered a landmark in the local community or contains any structures or sites that are important to defining the character of the area?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has potential landmarks or defining structures and sites, for instance:

- buildings or landscape features accessible to the public or readily noticeable and widely known
- complexes of buildings
- monuments
- ruins

5b. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) has a special association with a community, person or historical event?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has a special association with a community, person or event of historic interest, for instance:

- Aboriginal sacred site
- traditional-use area
- battlefield
- birthplace of an individual of importance to the community

5c. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) contains or is part of a cultural heritage landscape?

Landscapes (which may include a combination of archaeological resources, built heritage resources and landscape elements) may be of cultural heritage value or interest to a community.

For example, an Aboriginal trail, historic road or rail corridor may have been established as a key transportation or trade route and may have been important to the early settlement of an area. Parks, designed gardens or unique landforms such as waterfalls, rock faces, caverns, or mounds are areas that may have connections to a particular event, group or belief.

For more information on Questions 5.a., 5.b. and 5.c., contact:

- Elders in Aboriginal Communities or community researchers who may have information on potential cultural heritage resources. Please note that Aboriginal traditional knowledge may be considered sensitive.
- municipal heritage committees or local heritage organizations
- Ontario Historical Society's "Heritage Directory" - for a list of historical societies and heritage organizations in the province

An internet search may find helpful resources, including:

- historical maps
- historical walking tours
- municipal heritage management plans
- cultural heritage landscape studies
- municipal cultural plans

Information specific to trails may be obtained through Ontario Trails.

McQuesten Park AT Bridge
Natural Heritage Evaluation

City of Hamilton
71 Main Street West,
Hamilton, ON L8P 1P9

R.J. Burnside & Associates Limited
1266 South Service Road, Suite C2-1
Stoney Creek ON L8E 5R9 CANADA

May 2026
3000060172.0000

Distribution List

No. of Hard Copies	PDF	Email	Organization Name
-	Yes	Yes	City of Hamilton

Record of Revisions

Revision	Date	Description
0	December 2025	Draft Submission to City of Hamilton
1	May 2026	Final Submission to City of Hamilton

R.J. Burnside & Associates Limited

Report Prepared By:

Ariana Burgener, M.Sc.
Terrestrial Ecologist & ISA Certified Arborist
AB:js

Report Reviewed By:

Hannah Maciver, B.Sc.
Manager, Land Development Ecology
HM:js

Table of Contents

1.0 Introduction 4
2.0 Background Records Review 6
2.1 Species at Risk 7
3.0 Methodology 8
4.0 Existing Conditions 8
4.1 Ecological Land Classification 8
4.2 Rare Vegetation 9
4.3 Significant Wildlife Habitat 14
5.0 Identification of Provincially Significant Features 14
6.0 Impacts Identification 18
6.1 Wildlife and Wildlife Habitat 18
6.2 Vegetation Communities 18
7.0 Mitigation Measures 19
8.0 Summary of Policy Conformity 21
9.0 Conclusion 24

Tables

Table 1: Provincially Significant Features within Study Area and on Adjacent Lands 15
Table 2: Mitigation Measures 19
Table 3: Summary of Policy Conformity 21

Figures

Figure 1: Study Area 5
Figure 2: Ecological Land Classification 10

Disclaimer

Other than by the addressee, copying or distribution of this document, in whole or in part, is not permitted without the express written consent of R.J. Burnside & Associates Limited.

In the preparation of the various instruments of service contained herein, R.J. Burnside & Associates Limited was required to use and rely upon various sources of information (including but not limited to: reports, data, drawings, observations) produced by parties other than R.J. Burnside & Associates Limited. For its part R.J. Burnside & Associates Limited has proceeded based on the belief that the third party/parties in question produced this documentation using accepted industry standards and best practices and that all information was therefore accurate, correct and free of errors at the time of consultation. As such, the comments, recommendations and materials presented in this instrument of service reflect our best judgment in light of the information available at the time of preparation. R.J. Burnside & Associates Limited, its employees, affiliates and subcontractors accept no liability for inaccuracies or errors in the instruments of service provided to the client, arising from deficiencies in the aforementioned third party materials and documents.

R.J. Burnside & Associates Limited makes no warranties, either express or implied, of merchantability and fitness of the documents and other instruments of service for any purpose other than that specified by the contract.

1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) has been retained by the City of Hamilton (City) to prepare a Natural Heritage Evaluation (NHE) to assist the Schedule B Municipal Class Environmental Assessment (MCEA) which will review options to develop an active transportation (AT) bridge between McQuesten Park and a future transit hub at Lime Ridge Road East (Lime Ridge Mall). The bridge would establish a connection between neighbourhoods to the south and north of the Lincoln M. Alexander Parkway (LINC). It would create a key link in a proposed multi-use path through the existing hydro corridor to the east of the park and mall.

The City has committed to improving AT links, including this proposed crossing of the LINC, which was identified in the Recreational Trails Master Plan (2016), and the Cycling Master Plan Update (2018). Funding was approved in 2019 under the Investing in Canada Infrastructure Program (ICIP) as part of initiatives to improve AT links to public transportation hubs. This project is crucial for creating a safe and efficient connection for pedestrians and cyclists between the residential areas near McQuesten Park and the commercial / transit hub at Lime Ridge Mall. The planning of the bridge is intended to be incorporated with a larger transit initiative that would see the development of a revamped transit station / terminal within the Lime Ridge Mall parking lot.

The study area comprises the lands immediately north and south of the LINC, and east of the Upper Wentworth Street junction, as shown in Figure 1. The study area consists primarily of naturalized meadow with tree plantings along the LINC right-of-way, a maintained and mowed lawn in McQuesten Park, and an unused commercial lot. Land uses include residential to the east, west, and south of McQuesten Park, community park, and commercial to the north by Lime Ridge Road East. In the City's Urban Hamilton Official Plan (OP) (November 2022), these areas are designated as Neighbourhoods, Open Space, Mixed Use – High Density, Mixed Use - Medium Density, and a Utility corridor on the east of the study area.

MCQUESTEN PARK BRIDGE NATURAL HERITAGE EVALUATION
ECOLOGICAL LAND CLASSIFICATION - STUDY AREA



File Path: \\GUE-Nasuni-v-07.rjburnside.com\Nasuni\Volume GIS\Data\CAD\0601721000008-GIS\0601721000008 McQuesten Park EA\0601721 McQuesten Park EA.aprx Print Date: 2025/11/27 Time: 01:53 PM

BURNSIDE

2729°

0 50 100
Metres
1:3,250

Datum: North American 1983 CSRS
Coord. System: NAD 1983 CSRS UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99960

Drawn By: HN
Checked By: TR
Client: City of Hamilton
Project: McQuesten Park Bridge Schedule B Municipal Class Environmental Assessment
Project Number: 300060172
Date: 2025/11/27

Study Area

Figure: 1

2.0 Background Records Review

A comprehensive desktop assessment was completed to review existing natural heritage information available for the study area. All areas within 120 m of the study area were reviewed as part of the high-level assessment to identify significant natural heritage features located within, or directly adjacent to the study area, that may be impacted by future development (herein referred to as “adjacent lands”).

Information reviewed included, but was not limited to, the following sources:

- Aerial photographic imaging and 1:10,000 Ontario Base Mapping (OBM).
- Ministry of Natural Resources (MNR) Make a Map: Natural Heritage Areas to identify natural heritage features and Natural Heritage Information Centre (NHIC) data of rare wildlife species on, and in the vicinity of, the study area: 1x1 km^2 Squares: 17NH9285, 17NH9284.
- MNR Land Information Ontario (LIO) database.
- MNR Natural Heritage Areas Mapping (2025).
- MNR Online GeoHub Search.
- Ontario Hydrology Network (OHN) mapping.
- The Ontario Breeding Bird Atlas (OBBA) 2001-2005 – 10x10 km^2 Square 17TNH98.
- iNaturalist records.
- eBird records.
- HCA regulated features mapping.
- Urban Hamilton Official Plan (November 2022).
- Comprehensive Zoning By-law (By-law 05-200) (2005, updated 2018)
- Provincial Planning Statement (2024).
- *Endangered Species Act*, 2007 (amended 2025)
- Federal *Fisheries Act* (1985).
- Federal *Migratory Birds Convention Act* (MBCA) (1994) and the Migratory Bird Regulations (MBR).

The study area is in the jurisdiction of Hamilton Conservation Authority (HCA). Online HCA Regulation mapping shows there are no regulated lands within the study area.

The Urban Hamilton OP Schedule B - Natural Heritage System figure shows that there are no Core Areas in the study area or adjacent lands. McQuesten Park is mapped as “Parks & General Open Space”.

2.1 Species at Risk

The background review identified the following Species at Risk (SAR) as potentially present within the study area and / or on adjacent lands:

- Spotted Wintergreen (*Chimaphila maculata*) (Threatened)
- Bobolink (*Dolichonyx oryzivorus)* (Threatened)
- Grasshopper Sparrow (*Ammodramus savannarum*) (Special Concern)
- Peregrine Falcon (*Falco peregrinus*) (Special Concern)

Spotted Wintergreen occurs in dry oak-pine woodland habitats with sandy soils. No suitable habitat is present with the study area or on the adjacent lands.

Bobolink and Grasshopper Sparrow are both grassland species, requiring open fields with sparse vegetation. Both these species are also considered “area sensitive”. According to MNR’s Significant Wildlife Habitat Technical Guide (2000), “area-sensitive” species are defined as species that require large areas of suitable habitat for long term population survival. While narrow strips of meadow are present within the study area, they are fragmented by the LINC interchange and surrounded by roadways. Located at a highway interchange, these habitats are subject to a high level of traffic noise disturbance. Furthermore, these habitat patches are too small to provide viable breeding habitat to either bird species. Grasshopper Sparrow prefer areas >30 ha in size, and Bobolink prefer fields >10 ha in size. As such, no suitable breeding habitat is present with the study area or adjacent lands.

Peregrine Falcon breeding locations are well known and documented in Southern Ontario. Since 1995 there has been a breeding pair of Peregrine Falcons at the Sheraton Hamilton Hotel in downtown Hamilton, approximately 6 km from the study area. Other confirmed breeding records are known from the Hamilton / Burlington area. Urban Peregrines raise their young on ledges of tall buildings. No tall buildings are located within the study area. Given there are no documented breeding records at the Mall to date, it is not considered suitable breeding habitat at this time. However, incidental sightings of banded Peregrines have been documented there occasionally since 2005, with a recent eBird reporting in January 2025 of a single bird chasing gulls. The Mall location may be used occasionally by resident falcons for hunting prey as this species is an opportunistic feeder and will often feed on pigeons and other birds.

3.0 Methodology

A field investigation was conducted on October 14, 2025. The purpose of the field investigation was to characterize natural heritage features and to determine the impacts of the proposed development. The study limits for characterization of vegetation communities and species were scoped to the study area. No natural heritage features were identified on the adjacent lands in the background review to warrant an extended area of study.

During the site visit, the following assessments were completed:

- Ecological Land Classification (ELC)
- Search for Butternut (*Juglans cinerea*) trees (Endangered)
- Identification and characterization of Significant Wildlife Habitat (SWH)

ELC followed the Ecological Land Classification for Southern Ontario: First Approximation and Its Application (Lee et al. 1998) with a focus on using Second Approximation 2008 codes (Lee, 2008).

4.0 Existing Conditions

4.1 Ecological Land Classification

MEGM3: Dry-Fresh Graminoid Meadow

These graminoid meadows are located along the right-of-way for the LINC, and at the edges of McQuesten Park. They are dominated by introduced grasses and old field forbs. Kentucky Bluegrass (*Poa pratensis*), Canada Thistle (*Cirsium arvense*), White Panicle Aster (*Symphyotrichum lanceolatum*), Common Milkweed (*Asclepias syriaca*), Teasle (*Dipsacus fullonum*), Wild Carrot (*Daucus carota*), Tufted Vetch (*Vicia cracca*), New England Aster (*Symphyotrichum novae-angliae*), Heath Aster (*Symphyotrichum ericoides*), Grass-leaved Goldenrod (*Euthamia graminifolia*), Bull Thistle (*Cirsium vulgare*) and Curly Dock (*Rumex crispus*) were documented. Shrubs included Staghorn Sumac (*Rhus typhina*), Grey Dogwood (*Cornus racemosa*) and Smooth Rose (*Rosa blanda*). Many ornamental and native trees have been planted into these areas, including White Pine (*Pinus Strobus*) and Eastern White Cedar (*Thuja occidentalis*).

CGL_2: Parkland

McQuesten Park and the power utility corridor is dominated by manicured lawn and common lawn weeds such as Kentucky Bluegrass, Common Dandelion

(*Taraxacum officinale*), English Plantain (*Plantago lanceolata*) and Black Medic (*Medicago lupulina*). Ornamental trees have been planted and maintained in the park.

CVC_1: Business Sector

The Business Sector comprises active and abandoned lots. A car wash is in operation with small gardens at the front of the property. A portion of the Lime Ridge Mall parking lot is located within the study area. An abandoned lot that is beginning to naturalize is also present. This lot is dominated by weedy grasses with occasional opportunistic trees and shrubs.

4.2 Rare Vegetation

No rare or SAR species were identified during the surveys. A targeted search for Butternut was conducted and none were identified.

MCQUESTEN PARK BRIDGE NATURAL HERITAGE EVALUATION
ECOLOGICAL LAND CLASSIFICATION - ELC



ELC Code	ELC Description
CGL_2	Parkland
CVC_1	Business Sector
CVI_1	Transportation
MEGM3	Dry - Fresh Graminoid Meadow

File Path: \\GUE-Nasuni-v-07.rjburnside.com\Nasuni\VolumeGIS\Data\CADD\060172\000008-GIS\060172 McQuesten Park EA\060172 McQuesten Park EA.aprx Print Date: 2025/11/27 Time: 01:51 PM

BURNSIDE

2729°

0 50 100
Metres
1:3,250

Datum: North American 1983 CSRS
Coord. System: NAD 1983 CSRS UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99960

Drawn By: HN
Checked By: TR
Client: City of Hamilton
Project: McQuesten Park Bridge Schedule B Municipal Class Environmental Assessment
Project Number: 300060172
Date: 2025/11/27

Study Area
ELC

Figure: 2

Image 1: MEGM3 Meadow buffer along north edge of McQuesten Park



Image 2: MEGM3 Meadow right-of-way adjacent the LINC



Image 3: CGL_2 Parkland at McQuesten Park



Image 4: CGL_2 Parkland along the power utility corridor



Image 5: CVC_1 Abandoned Business Sector Lot



Image 6: CVC_1 Lime Ridge Mall Parking Lot



4.3 Significant Wildlife Habitat

The Significant Wildlife Habitat Technical Guide (SWHTG) (2000) defines SWH as features and areas that are *"ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or NHS"*. These broadly include habitats of seasonal concentrations of animals, rare vegetation communities or specialized habitat for wildlife, habitat of Species of Conservation Concern, and animal movement corridors.

During the site visit, a targeted search for significant habitat features was conducted. Based on background review, very few categories of SWH were anticipated to be found within the study area. The following categories were noted as possibilities and were specifically searched for:

- Reptile Hibernaculum
- Special Concern and Rare Wildlife Species

Based on the absence of high-quality wildlife habitat or feature, SWH is not present on the subject lands.

5.0 Identification of Provincially Significant Features

Eight types of provincially significant natural heritage features are identified in policies 4.1.4 and 4.1.5 of the Provincial Planning Statement (2024), where development and site alteration are not permitted unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. Table 1 defines each feature and speaks to their presence on the subject lands and adjacent lands.

Table 1: Provincially Significant Features within Study Area and on Adjacent Lands

Significant Feature	Definition	Applicable to Study Area	Applicable to Adjacent Lands
Provincially Significant Wetlands	Section 8.0 of the PPS (MMAH, 2024) defines Significant Wetlands as "*an area identified as provincially significant using criteria and procedures established by the Province, as amended from time to time.*" PSWs are identified by MNR and can be found by searching the Ontario GeoHub open dataset or NHIC's Make a Map: Natural Heritage Areas.	No PSW within the study area.	No PSW on adjacent lands.
Significant Valleylands	The Natural Heritage Reference Manual (NHRM) (MNR, 2010) provides criteria for identifying Significant Valleylands, including a variety of landform related functions and attributes as well as ecological features and functions. According to the NHRM, a Significant Valleyland is defined as: "*a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year. Large, well-defined valleylands are often significant landscape features essential to the character of an area."*	No Significant Valleylands within the study area. There are no valleys or landform depressions present that meet the provincial criteria.	No Significant Valleylands on adjacent lands. There are no valleys or landform depressions present that meet the provincial criteria.

Significant Feature	Definition	Applicable to Study Area	Applicable to Adjacent Lands
Significant Woodlands	In the City of Hamilton, significant woodlands must meet two or more of the following criteria, as defined in the OP: size, interior forest, proximity / connectivity, proximity to water, age and/or rare species	No Significant Woodlands within the study area.	No Significant Woodlands on adjacent lands.
Significant Area of Natural and Scientific Interest	According to the PPS (MMAH, 2024), ANSIs are defined as: "*areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education.*" ANSIs are identified by MNR and can be found by searching the Ontario GeoHub open dataset or NHIC's Make a Map: Natural Heritage Areas.	No ANSIs within the study area.	No ANSIs on adjacent lands.
Significant Wildlife Habitat	MNR's SWHTG (2000) and SWH Criteria Schedule for Ecoregion 7E (2015) assist in identifying SWH. The four main categories of SWH are: 1. Habitats of seasonal concentrations of animals. 2. Rare vegetation communities, or specialized habitat for wildlife. 3. Habitat of species of conservation concern. 4. Animal movement corridors.	No SWH were identified within the study area.	No SWH on adjacent lands.

Significant Feature	Definition	Applicable to Study Area	Applicable to Adjacent Lands
Habitat of Endangered or Threatened Species	Burnside's background database review, consultation with agencies, and field investigations revealed the potential for species listed as Endangered or Threatened under the ESA on the subject lands and / or adjacent lands.	No habitat of Endangered or Threatened Species was identified within the study area.	No habitat of Endangered or Threatened Species was identified on adjacent lands.

6.0 Impacts Identification

Potential impacts to features can be categorized as direct (within the footprint of the development) and indirect (adjacent to the development but affected by spin-off effects). Direct impacts can further be categorized as temporary or permanent. Temporary impacts are caused by activities such as grading or earthworks, which will be restored to natural, self-sustaining vegetation. Permanent impacts are the result of built structures or infrastructure, such as buildings and parking, that will not be able to be restored to a natural state after their completion.

6.1 Wildlife and Wildlife Habitat

No SAR, rare flora or fauna species or SWH were documented within the study area or adjacent lands. However, Peregrine Falcon has been recorded incidentally at Lime Ridge Mall.

Temporary displacement of, and disturbance to, general wildlife and wildlife habitat may occur during the construction phase (i.e., vegetation removals, noise, light trespass). Given there is limited wildlife habitat in this area and wildlife is restricted to species that are highly adapted to disturbance and urbanization, no negative impacts to wildlife are expected.

There is the potential for disturbance or destruction of migratory breeding birds and their habitat during the construction phase where removal of vegetation is proposed. Such impacts are prohibited under the MBCA, 1994.

6.2 Vegetation Communities

The proposed development will impact a small area of the MEGM3 ecosite. This ecosite contains no rare flora species and does not provide SWH or habitat for SAR species. It is likely that trees will be removed within the development footprint. The exact number and location of these trees will be determined with an Arborist Report, once plans for the design of the bridge have been further developed.

7.0 Mitigation Measures

Disturbance and impacts to the natural features have been minimized to the extent feasible during site plan development. Where disturbance is unavoidable, appropriate mitigation strategies should be implemented to minimize impacts and negative residual effects. Table 2 below outlines site-specific mitigation measures that are recommended to avoid and minimize impacts to natural features.

Table 2: Mitigation Measures

Mitigation	Description
General	• All efforts should be made to minimize the area of disturbance to the extent feasible. • Construction activities should proceed in a continuous fashion to minimize the duration of work. • The limit of disturbance should be fenced or clearly signed, to prevent unintentional encroachment into adjacent areas of vegetation.
Timing	• Work should be coordinated to avoid wet and rainy periods, to the extent feasible, to minimize erosion and indirect impacts to adjacent vegetation. • To reduce the risk of contravening the MBCA, 1994, timing constraints shall be applied to avoid any limited vegetation clearing (including grubbing) during the breeding bird period – broadly from April 1 to August 31 for most species (regardless of the calendar year).
Wildlife	• Construction fencing should be installed prior to commencement of construction activities to prevent wildlife from entering the construction areas. • The excluded area shall be searched immediately following fencing installation for any wildlife (including SAR) that may have become trapped. Any wildlife shall be safely relocated, or permitted to escape, to a suitable habitat. All works shall stop immediately in the area and MECP contacted should a SAR be encountered within the construction, or operational area, to ensure compliance with the SCA.

Mitigation	Description
Wildlife	• If an animal is encountered during construction and does not move from the construction zone, the Contract Administrator shall be notified. If the construction activities are such that continuing construction in the area would result in harm to wildlife, construction activities in that location shall temporarily stop and MECP shall be contacted for direction.
Avifauna	• If a nesting migratory bird (or SAR protected under ESA) is identified within or adjacent to the extent of construction, and the activities are such that continuing works in that area would result in a contravention of the MBCA, 1994 or ESA, all activities will stop and the Contract Administrator (with assistance from an Avian Biologist) shall discuss mitigation measures with the City.
Vegetation	• All areas of grading and disturbed soils should be re-vegetated with St. Williams' Base Restoration mix (or an approved substitute) which contains a mix of native wildflower and grass species. • An Arborist Report and Tree Protection Plan (TPP) will be completed to document the number and location of trees to be removed. The Arborist Report and TPP will follow the City of Hamilton's Tree Protection Guidelines and recommend a 1 for 1 compensation for any trees to be removed.
Erosion and Sediment Control and Site Stabilization	• Appropriate sediment and erosion control measures should be employed throughout the construction process to minimize potential impacts to adjacent terrestrial habitat and downstream watercourses. • Disturbed soils should be re-vegetated with St. Williams' Base Restoration mix (or an approved substitute) as soon as possible to assist in providing stabilization of soils.

8.0 Summary of Policy Conformity

This section of the report provides a summary of how the proposed development is in conformity with the relevant federal, provincial, municipal land use and natural heritage policies, detailed in Table 3 below.

Table 3: Summary of Policy Conformity

Applicable Policy	Assessment of Policy Conformity
Federal Species at Risk Act, 2002 (SARA) Protection of species assessed by COSEWIC as Extirpated, Endangered, Threatened or Special Concern.	No SAR or their habitat will be impacted by the proposed development. Therefore, the development is in compliance with SARA policy.
Federal Fisheries Act, 1985 Fisheries and Oceans Canada (DFO) Authorization for “death of a fish by means other than fishing” or the “harmful alteration, disruption, or destruction (HADD) of fish habitat”.	No fish habitat is present with the study area or on adjacent lands. Authorization from DFO is not required.
Federal Migratory Birds Convention Act, 1994 and Migratory Birds Regulations, 2022 Protection of nests of all migratory bird species when they contain a live bird or a viable egg. The nests of 18 species whose nests are reused by migratory birds have year-round protection.	There is potential for disturbance or destruction of migratory breeding birds, and their habitat, during the construction phase. See Section 7.0 in the report which outlines mitigation measures to ensure compliance with MBCA.

Applicable Policy	Assessment of Policy Conformity
Planning Act, 1990 The protection of ecological systems, including natural areas, features and functions. **Provincial Planning Statement, 2024** Development and site alteration are not permitted unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions, as well as on adjacent lands.	Section 5.0 of the report defines the protected Provincially Significant Features and identifies any that may be located within the study area or on adjacent lands. No protected features were identified within the study area. However, Candidate SWH for Special Concern and Rare Wildlife Species: Peregrine Falcon was identified on the adjacent lands. As discussed in Section 6.0, no impacts are anticipated from the proposed development. See Section 7.0 in the report which outlines mitigation measures to ensure compliance with the PPS (2024).
Endangered Species Act, 2007 (amended 2025) The ESA provides protection for SAR and their habitat. The ESA is administered by MECP.	No SAR or their habitat will be impacted by the proposed development. Authorization from MECP is not required.
Conservation Authorities Act, 1990 CA's role is limited to their core mandate, that is, regulated areas / natural hazards and wetlands as per O. Reg 41/24 "Development, Interference with Wetlands and Alterations to Shoreline and Watercourses".	There are no HCA regulated features within the study area. A permit from HCA is not required.
Niagara Escarpment Plan, 2017 Guides land use in the vicinity of the UNESCO Biosphere Reserve of the Niagara Escarpment	The study area is located outside the Niagara Escarpment Plan area.

Applicable Policy	Assessment of Policy Conformity
Urban Hamilton Official Plan, 2022	The Urban Hamilton Official Plan "Schedule B - Natural Heritage System" maps the Core Areas, Linkages and Parks & General Open Space. There are no Core Areas in the study area or adjacent lands. McQuesten Park is mapped as "Parks & General Open Space". Section C3.2.1 states that the following uses shall be permitted in all land use designations: b) utilities, municipal infrastructure and transportation facilities, corridors and easements, electrical facilities used directly for the generation and distribution of electric power, natural gas and oil pipeline lines, telecommunication and new facilities approved under all relevant statutes, where the land(s) are less than 4 hectares in size, provided that the facility is not used for the purposes of maintenance or storage or railway yard; The proposed development falls under the category of municipal infrastructure, which is permitted in all land use designations. The proposed development is in conformity with these policies.

9.0 Conclusion

The City of Hamilton is proposing to build an AT bridge between McQuesten Park and a future transit hub at Lime Ridge Mall. This project is crucial for creating a safe and efficient connection for pedestrians and cyclists between the residential areas near McQuesten Park and the commercial / transit hub at Lime Ridge Mall.

Two bridge designs are being considered through an MCEAprocess. This NHE was written to support the MCEA by assessing possible impacts to the natural heritage features and proposing mitigation measures to reduce any identified impacts.

A background review and site visit was undertaken to determine what natural heritage features are present that may be impacted. No features or SAR were identified within the study area. Peregrine Falcon (Special Concern) has been recorded incidentally from adjacent lands at the Lime Ridge Mall, presumably hunting prey, but no breeding habitat is present. Breeding pairs have been well documented from the Sheraton Hamilton Hotel approximately 6 km from the study area.

To conform with Federal, Provincial and City policy, general mitigation measures have been advised in this report:

- Avoiding vegetation clearing during the breeding bird window (April 1 to August 31).
- Submission of a TPP with a 1-to-1 replacement for any trees removed.
- Re-vegetating disturbed soils with St. Williams' Base Restoration native seed mix.
- Use of appropriate sediment and erosion control measures.

With the recommended mitigation measures in place, no negative impacts are anticipated

McQuesten Park AT Bridge MCEA
Hamilton
Arborist Report

City of Hamilton
71 Main Street West
Hamilton ON L8P 1P9

R.J. Burnside & Associates Limited
1266 South Service Road, Suite C2-1
Stoney Creek ON L8E 5R9 CANADA

April 2026
300060172.0000

Distribution List

No. of Hard Copies	PDF	Email	Organization Name
-	Yes	Yes	City of Hamilton

Record of Revisions

Revision	Date	Description
0	April 27, 2026	Submission to City of Hamilton

R.J. Burnside & Associates Limited

Report Prepared By:

Ariana Burgener, M.Sc.
Terrestrial Ecologist & ISA Certified Arborist
AB/KB:js/tm

Report Reviewed By:

Kevin Butt, B.Sc. (Env)., Eco. Rest. Cert.
ISA Certified Arborist and Terrestrial Ecologist
Ecology Lead

Table of Contents

1.0 Introduction 1
2.0 Methodology 1
3.0 Proposed Construction 2
4.0 Findings 3
5.0 Comparison of Alternatives 5
6.0 Preservation Recommendations 6

Tables

Table 1: Bridge Options Impact Comparison; DBH 5
Table 2: Bridge Options Impact Comparison; Location 6

Appendices

Figures
Appendix A Tree Assessment Data
Appendix B Tree Study Methodology
Appendix C Limitation of Tree Studies

Disclaimer

Other than by the addressee, copying or distribution of this document, in whole or in part, is not permitted without the express written consent of R.J. Burnside & Associates Limited.

1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) has been retained by the City of Hamilton (City) to complete a Tree Inventory and Preservation Plan to assist the Schedule B Municipal Class Environmental Assessment (MCEA). The MCEA will review two options to develop an active transportation (AT) bridge between McQuesten Park and a future transit hub at Lime Ridge Road East (Lime Ridge Mall). The bridge would establish a connection between neighbourhoods to the south and north of the Lincoln M. Alexander Parkway (LINC). It would create a key link in a proposed multi-use path through the existing hydro corridor to the east of the park and mall.

In accordance with the City of Hamilton's Tree Protection Guidelines - City Wide (October 2010), review of trees within and immediately adjacent to the proposed construction zone is required to be completed by a Certified Arborist. The existing locations as well as their qualitative and quantitative measurements were determined and assessed in context with the proposed construction. Protection and mitigation guidelines required to reduce construction impacts are provided for trees that will be preserved. Anticipated impacts from the proposed design options are also documented.

The intent of the report and the associated figures and appendices is to illustrate the two proposed alternatives, provide a summary of the analysis of the impacts to trees for each option being reviewed by the MCEA, and prescribe general measures to promote their retention. Detailed tree protection prescriptions will be provided once the preferred option has been chosen.

2.0 Methodology

The tree inventory and assessment were completed by Ariana Burgener, ISA Certified Arborist (ON-2770A) on October 14, 2025 and November 7, 2025. The locations of the trees were GPS tagged in ArcGIS and assessed using the data collection application, ESRI Field Maps.

The following data was collected for each tree:

- Tree #
- Species (Common and Scientific Name)
- Dripline
- Diameter at Breast Height – DBH (cm)
- Tree Condition (Good, Fair, Poor or Dead)

The City's Tree Protection Guidelines states that TPPs are only to consider trees with a DBH of 10 cm or more. Due to the presence of City planted trees under 10 cm DBH, all planted trees within McQuesten Park were collected, no matter DBH size; however, trees under 10 cm have been assessed separately in this report.

Tree condition was assigned according to the City's Tree Protection Guidelines:

- Good: dead branches less than 10%; signs of good compartmentalization on any wounds, no structural defects.
- Fair: 10-30% dead branches, size or occurrence of wounds present some concerns, minor structural defects.
- Poor: more than 30% dead branches, weak compartmentalization, early leaf drop, presence of insects or disease, major structural defects.
- Dead: tree shows no signs of life.

Preservation recommendations (i.e., preserve or remove) are provided based on the existing conditions and proposed development impacts. A tree is recommended for preservation if it has been assigned a fair or good condition rating and can be incorporated into the development. A tree is recommended for removal if it has been assigned a poor condition rating and / or will be significantly impacted by, or conflicts with, the proposed development.

Tree assessment data is provided in Appendix A. Methodology and limitations of this tree assessment are provided in Appendices B and C, respectively.

3.0 Proposed Construction

The City has committed to improving AT links, including this proposed crossing of the LINC, which was identified in the Recreational Trails Master Plan (2016), and the Cycling Master Plan Update (2018). Funding was approved in 2019 under the Investing in Canada Infrastructure Program (ICIP) as part of initiatives to improve AT links to public transportation hubs. This project is crucial for creating a safe and efficient connection for pedestrians and cyclists between the residential areas near McQuesten Park and the commercial / transit hub at Lime Ridge Mall. The planning of the bridge is intended to be incorporated with a larger transit initiative that would see the development of a revamped transit station / terminal within the Lime Ridge Mall parking lot.

Two designs are being considered for the AT Bridge. Option 1 is a shorter span bridge that connects to an existing path in McQuesten Park on the south side and a disused private business property to the north. Option 2 is located further

west and runs from McQuesten Park to the Upper Wentworth St. exit ramp right-of-way (ROW), avoiding the private property. Option 2 would require a middle support within the exit ramp verge. Due to accessibility constraints, the verge was not surveyed for trees. However, aerial imagery and the City of Hamilton's Public Tree Inventory indicate that some small (<10 cm DBH) trees are present within the approximate area of disturbance.

As designs are preliminary and the exact areas of impact are not known, the approximate areas were calculated based on a 10 m buffer around each bridge support and entrance ramp. These areas are shown on Figure T1 with red dashed lines.

4.0 Findings

The assessment was comprised of naturalized trees, privately-owned trees and city planted trees within the McQuesten Park and public ROW. A total of 85 trees were individually assessed, of which 23 (27%) were under 10 cm in DBH. These were collected because they had been planted by the City as street trees or within McQuesten Park. Naturalized trees less than 10 cm were not collected. Trees less than 10 cm DBH are represented on Figure T1 in blue to help distinguish them and they are not assigned tree identification numbers.

The small DBH trees (i.e., less than 10 cm) were comprised of 12 species with English Oak (*Quercus robur*), Hackberry (*Celtis occidentalis*) and Persian Ironwood (*Parrotia persica*) representing approximately half the trees collected. The Hackberry and most of the English Oak were recently planted (between the October and November site visits), along the meadow buffer between McQuesten Park and chain-link fence to the LINC's ROW.

Trees over 10 cm DBH were comprised of 17 species. These trees primarily consist of Thornless Honey Locust (*Gleditsia triacanthos var. inermis*) and Norway Maple (*Acer platanoides*) and some Trembling Aspen (*Populus tremuloides*) and Manitoba Maple (*Acer negundo*), accounting for 69% of all inventoried trees. Most of the trees were located within naturalized meadows associated with the LINC ROW or McQuesten Park buffer. Some were located along the Limeridge Road East ROW or the disused business property.

Photo 1: McQuesten Park; Naturalized Buffer



Photo 2: McQuesten Park; Maintained Park Trees



5.0 Comparison of Alternatives

Table 1 compares how many trees will be preserved or removed, broken down by DBH (cm). Table 2 looks are where the impacted trees are located. The comparison of the AT Bridge options only reviews impacts to trees 10 cm DBH or greater.

Option 1 is anticipated to require the removal of trees T38, T55, T56, T57, T59 and T60. Option 2 is anticipated to require the removal of trees T19, T20, T22, T43 and T44. While Option 1 will remove one more tree than Option 2, the trees being impacted are all within the 10-19 cm DBH range. Option 2 will remove one fewer tree, but the canopy loss may be greater due to the large DBH of the trees being removed. It should be noted that the single tree in the 40-49 cm DBH category is T20, a multi-stemmed Manitoba Maple consisting of five stems ranging from 11 to 27 cm DBH.

Table 1: Bridge Options Impact Comparison; DBH

Trees to be Removed (DBH)	Option 1	Option 2
<10 cm		
10 to 19 cm	6	2
20 to 29 cm		2
30 to 39 cm		
40 to 49 cm		1
Total	**6**	**5**

Option 1 will impact trees across multiple locations, including one on private land (T38) and two maintained trees within McQuesten Park. While the two within the park are smaller and provide little canopy cover, they represent an investment from the City in planting and maintaining them. Option 1 will impact an additional Park tree; a Norway Maple <10 cm DBH, represented as the “(1)” in maintained McQuesten Park row.

Option 2 will only impact naturalized trees, which tend to be larger. Option 2 will also impact a recently planted English Oak <10 cm DBH. As this tree was planted late Fall 2025, depending on when the construction takes place, it may be possible to transplant this sapling to prevent damage. This tree is represented as the “(1)” in naturalized park buffer row.

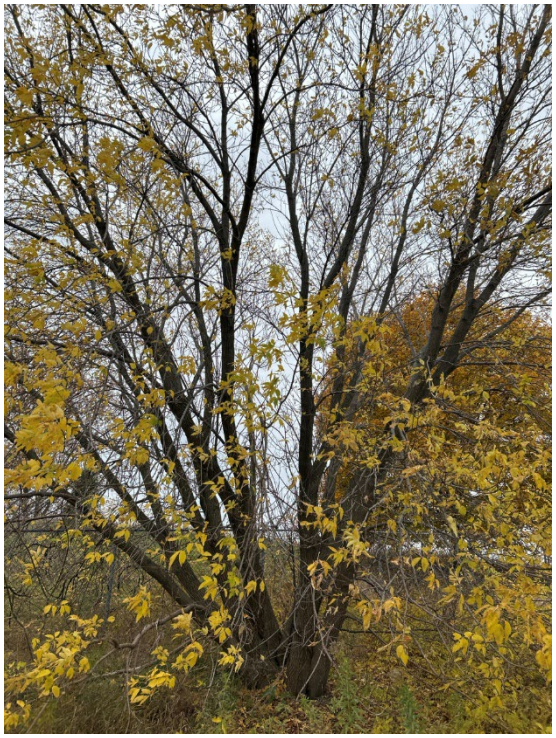
Table 2: Bridge Options Impact Comparison; Location

Locations of Removals	Option 1	Option 2
Maintained McQuesten Park	2 (1)	
Naturalized Park Buffer	1	2 (1)
Naturalized LINC ROW	2	3
Private Trees	1	

Photo 3: Recently Planted English Oak Sapling in McQuesten Buffer



Photo 4: T20, a Multi-stemmed Manitoba Maple to be Removed



6.0 Preservation Recommendations

The TPP discussed in this report does not include recommendations for tree protection fencing and detailed mitigation (i.e., root pruning, low impact construction methods). These details were not provided due to final grading and access / staging for each of the options is not known. Once an option is chosen and detailed design is being carried out, a new TPP should be issued showing the updated impacts from grading and outlining where protection fencing should be installed. Current impact comparisons are based on approximate areas of disturbance.

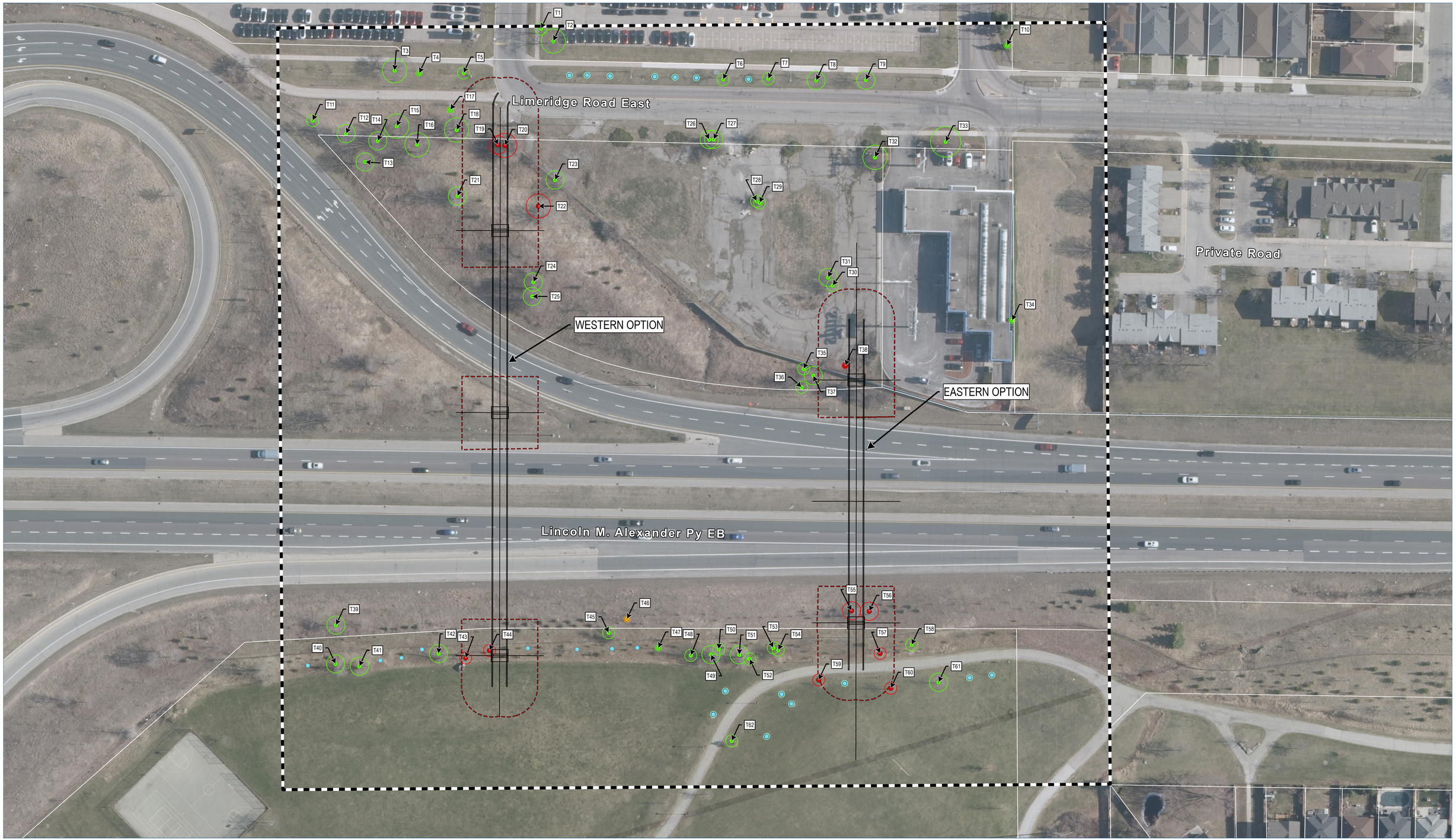
The following Best Management Practices are provided to promote the protection of trees and reduce impacts to wildlife:

- All permits must be received before tree removal and impacts (including site preparation) can occur.
- Tree protection fence must be reviewed daily when working adjacent to the fence and any identified deficiencies corrected immediately.
- No storage of materials, equipment, debris, soil or liquids is allowed within the TPF, as these activities can damage the tree roots and soil by compacting it and preventing nutrient and water absorption.
- To reduce the risk of contravening the Migratory Bird Convention Act, timing constraints shall be applied to avoid vegetation clearing (including grubbing) during breeding bird period. The breeding bird period is broadly from April 1 to August 31 for most species, regardless of calendar year.
- Active nests (nests with eggs or young birds) of protected migratory birds, including Species at Risk (SAR) protected under the Endangered Species Act (ESA), cannot be destroyed at any time of year. The destruction of inactive nests for some species may also be prohibited (e.g. Osprey, Great Blue Heron).
- If the construction activities are such that continuing construction in the area would result in harm to wildlife, construction activities in that location should temporarily stop and a qualified ecologist should be contacted for direction.
- Trees should be felled so they fall into the construction footprint to avoid damage to retained trees, including both trunk and roots.
- All retained trees should be reviewed following construction and prior to contractor demobilization to determine if additional mitigative measures such as pruning are required to reduce risk to residents or property.

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Figures



Existing Tree Recommended for Preservation, Circle Represents Crown Reserve of Tree

Existing Tree Recommended for Removal, Circle Represents Crown Reserve of Tree

Existing Tree Recommended for Removal Based on Condition of Tree, Circle Represents Crown Reserve of Tree

Existing Tree, (DBH <10cm) Circle Represents Crown Reserve of Tree

Area of Impact

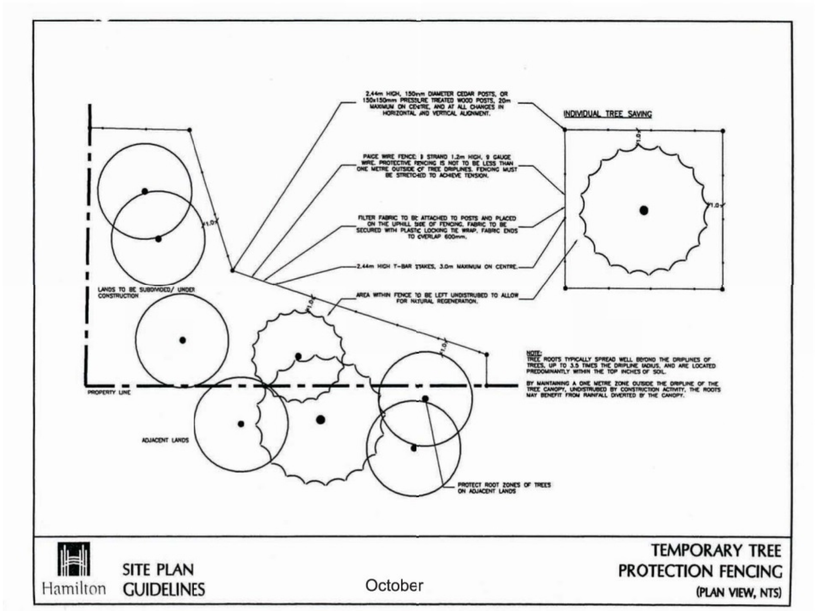
Study Area

0 25 50
Metres
1:550

17.02°
Grid North

Datum: North American 1983 CSRS
Coord. System: NAD 1983 CSRS UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99960

Drawn By: HN
Checked By: AB
Client: City of Hamilton
Project: McQuesten Park Bridge Natural Heritage Evaluation
Ecological Land Classification - Study Area
Project Number: 300060172





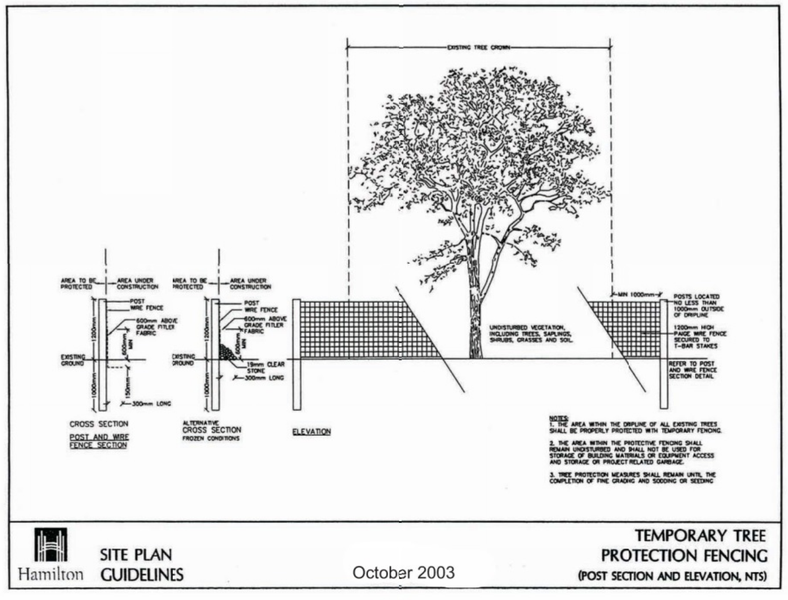
NOTE:
1. SIGN TO BE MIN. 40CM X 60CM AND TO BE CONSTRUCTED OF WHITE GATOR BOARD OR EQUIVALENT
2. SIGN TO BE POSTED ON ALL SIDES OF TREE PROTECTION BARRIERS

TREE PROTECTION NOTE::

TREES TO BE RETAINED ARE TO BE PROTECTED WITH TREE PROTECTION FENCING. BASED ON THE CITY'S COUNCIL ADOPTED TREE PROTECTION GUIDELINES (REVISED OCTOBER 2010), THE TREE MANAGEMENT PROFESSIONAL (I.E., CERTIFIED ARBORIST, REGISTERED PROFESSIONAL FORESTER, OR LANDSCAPE ARCHITECT) IS TO PROVIDE A VERIFICATION OF TREE PROTECTION LETTER TO THE DIRECTOR OF PLANNING. THIS LETTER WILL BE PROVIDED PRIOR TO THE START OF ANY ON-SITE ACTIVITIES.

MIGRATORY BIRDS PROTECTION NOTE:

IMPACTS TO THE VEGETATION (REMOVALS, INJURIES AND PRUNING) SHOULD OCCUR OUTSIDE OF THE MIGRATORY BIRDS BREEDING SEASON, TYPICALLY OCCURRING FROM MARCH 31 TO AUGUST 31, AS PROTECTED BY THE MIGRATORY BIRD CONVENTION ACT.



Drawn By: HN
Checked By: AB
Client: City of Hamilton
Project: McQuesten Park Bridge Natural Heritage Evaluation
Ecological Land Classification - Study Area
Project Number: 300060172

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix A

Tree Assessment Data

Tree ID	Species	Scientific Name	Crown Reserve (m) Radius	DBH (cm)	MTPZ (m)	Condition	Comments	Ownership	Recommendation Condition	Recommendation East Option Design	Recommendation West Option Design	Recommendation Final
T1	Freeman Maple	*Acer x freemanii*	2	35	5.15	Good	-	Lime Ridge Mall, 999 Upper Wentworth St.	Preserve	Preserve	Preserve	Preserve
T2	Freeman Maple	*Acer x freemanii*	4	42	6.42	Good	-	Lime Ridge Mall, 999 Upper Wentworth St.	Preserve	Preserve	Preserve	Preserve
T3	Norway Maple	*Acer platanoides*	4	35	5.15	Good	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T4	Redbud	*Cercis canadensis*	1	14	3.74	Good	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T5	Honey Locust	*Gleditsia triacanthos var. inermis*	2	11	3.71	Good	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T6	Norway Maple	*Acer platanoides*	2	25	3.85	Good	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T7	White Elm	*Ulmus americana*	2	16	3.76	Fair	Mild crown dieback	Public ROW	Preserve	Preserve	Preserve	Preserve
T8	Honey Locust	*Gleditsia triacanthos var. inermis*	3	23	3.83	Good	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T9	Honey Locust	*Gleditsia triacanthos var. inermis*	3	26	3.86	Good	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T10	Colorado Blue Spruce	*Picea pungens 'Glauca'*	1	19	3.79	Good	-	Lime Ridge Mall, 999 Upper Wentworth St.	Preserve	Preserve	Preserve	Preserve
T11	Norway Maple	*Acer platanoides*	2	24	3.84	Good	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T12	Norway Maple	*Acer platanoides*	3	30	5.1	Good	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T13	Norway Maple	*Acer platanoides*	3	30	5.1	Good	-	508 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T14	Norway Maple	*Acer platanoides*	3	33	5.13	Good	-	508 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T15	Norway Maple	*Acer platanoides*	4	35	5.15	Good	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T16	Norway Maple	*Acer platanoides*	4	34	5.14	Good	-	508 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T17	American Hazel	*Corylus americana*	1	15	3.75	Good-Fair	Codominant leader	Public ROW	Preserve	Preserve	Preserve	Preserve
T18	Manitoba Maple	*Acer negundo*	4	18, 16, 22, 14, 17, 22, 23	7.71	Fair	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T19	Manitoba Maple	*Acer negundo*	3	13	3.73	Good	-	508 Limeridge Rd E	Preserve	Preserve	**Remove**	**Remove**
T20	Manitoba Maple	*Acer negundo*	4	25, 27, 18, 11, 11	6.44	Good	-	508 Limeridge Rd E	Preserve	Preserve	**Remove**	**Remove**
T21	Manitoba Maple	*Acer negundo*	3	12, 13, 15, 13, 13	5.1	Good	-	508 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T22	Manitoba Maple	*Acer negundo*	4	25	3.85	Good	-	508 Limeridge Rd E	Preserve	Preserve	**Remove**	**Remove**
T23	Manitoba Maple	*Acer negundo*	3	22	3.82	Good	-	508 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T24	Norway Maple	*Acer platanoides*	3	32	5.12	Good	-	508 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T25	Norway Maple	*Acer platanoides*	3	28	3.88	Good	-	508 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T26	Sweet Cherry	*Prunus avium*	3	23	3.83	Good	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T27	Sweet Cherry	*Prunus avium*	3	18, 22	3.88	Good	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T28	Honey Locust	*Gleditsia triacanthos var. inermis*	2	14	3.74	Good	-	520 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T29	Honey Locust	*Gleditsia triacanthos var. inermis*	2	12	3.72	Good	-	520 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T30	Russian Olive	*Elaeagnus angustifolia*	2	11	3.71	Good	-	520 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T31	Russian Olive	*Elaeagnus angustifolia*	3	15, 13	3.8	Good	-	520 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T32	Sweet Cherry	*Prunus avium*	4	25	3.85	Good	-	520 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T33	Honey Locust	*Gleditsia triacanthos var. inermis*	5	26	3.86	Good	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T34	Eastern White Cedar	*Thuja occidentalis*	1	10	3.7	Good	-	544 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T35	Red Oak	*Quercus rubra*	2	13	3.73	Good	-	520 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T36	Honey Locust	*Gleditsia triacanthos var. inermis*	2	18	3.78	Good	-	520 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T37	Honey Locust	*Gleditsia triacanthos var. inermis*	3	20	3.8	Good	-	520 Limeridge Rd E	Preserve	Preserve	Preserve	Preserve
T38	Chanticleer Pear	*Pyrus calleryana 'Chanticleer'*	1	11	3.71	Good	-	520 Limeridge Rd E	Preserve	**Remove**	Preserve	**Remove**
T39	Norway Maple	*Acer platanoides*	3	18	3.78	Good	-	Public ROW	Preserve	Preserve	Preserve	Preserve
T40	Trembling Aspen	*Populus tremuloides*	3	26, 25, 25	6.44	Fair	Codominant leader	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T41	Trembling Aspen	*Populus tremuloides*	3	38, 14	5.2	Fair	Moderate crown dieback	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T42	Trembling Aspen	*Populus tremuloides*	3	48	6.48	Fair	Codominant leader	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T43	Honey Locust	*Gleditsia triacanthos var. inermis*	2	20	3.8	Good	-	T.B. McQuesten Community Park	Preserve	Preserve	**Remove**	**Remove**
T44	Honey Locust	*Gleditsia triacanthos var. inermis*	2	16	3.76	Good	-	T.B. McQuesten Community Park	Preserve	Preserve	**Remove**	**Remove**
T45	Russian Olive	*Elaeagnus angustifolia*	2	17	3.77	Good	-	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T46	Green Ash	*Fraxinus pennsylvanica var. subintegerrima*	1	10	3.7	Poor	Moderate suckering, severe crown dieback	Public ROW	**Remove**	Preserve	Preserve	**Remove***
T47	Honey Locust	*Gleditsia triacanthos var. inermis*	1	14	3.74	Good	-	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T48	Honey Locust	*Gleditsia triacanthos var. inermis*	2	15	3.75	Good	-	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T49	Trembling Aspen	*Populus tremuloides*	3	32, 12, 21	5.2	Fair	Codominant leader	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T50	Trembling Aspen	*Populus tremuloides*	2	16	3.76	Good	-	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T51	Trembling Aspen	*Populus tremuloides*	3	31, 13, 14,	5.16	Fair	Codominant leader	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T52	Trembling Aspen	*Populus tremuloides*	2	14	3.74	Good	-	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T53	Trembling Aspen	*Populus tremuloides*	2	11	3.71	Good	-	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T54	Trembling Aspen	*Populus tremuloides*	2	11	3.71	Good	-	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T55	Norway Maple	*Acer platanoides*	3	16	3.76	Good	-	Public ROW	Preserve	**Remove**	Preserve	**Remove**
T56	Norway Maple	*Acer platanoides*	3	16	3.76	Good	-	Public ROW	Preserve	**Remove**	Preserve	**Remove**
T57	Honey Locust	*Gleditsia triacanthos var. inermis*	2	12	3.72	Good	-	T.B. McQuesten Community Park	Preserve	**Remove**	Preserve	**Remove**
T58	Honey Locust	*Gleditsia triacanthos var. inermis*	2	16	3.76	Good	-	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T59	Siberian Elm	*Ulmus pumila*	2	12	3.72	Poor	Mild trunk lean, moderate trunk damage	T.B. McQuesten Community Park	**Remove**	**Remove**	Preserve	**Remove**
T60	Siberian Elm	*Ulmus pumila*	2	15	3.75	Good	-	T.B. McQuesten Community Park	Preserve	**Remove**	Preserve	**Remove**
T61	Norway Maple	*Acer platanoides*	3	21	3.81	Good	-	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve
T62	White Oak	*Quercus alba*	2	11	3.71	Good	-	T.B. McQuesten Community Park	Preserve	Preserve	Preserve	Preserve

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix B

Tree Study Methodology

Tree Studies: Methodology

The list provided below represents all data that may be collected in the analysis of trees. Methodology descriptions should be reviewed with the column headings provided in the data. The columns represent the scope and extent of the tree assessment carried out.

Tree #: This number may be assigned by the tree assessor or predetermined by the surveyor or client. The number corresponds with the tree tag affixed to the tree, if tree tagging is part of the study's scope.

Species Name: Botanical name of the species.

Common Name: Commonly used English name.

DBH (cm): Diameter at Breast Height measured using DBH tape or tree caliper.

Crown Reserve (m): Average measurement of the diameter or width of the dripline (extent of branches from the trunk). Generally, the trunk is the midpoint of this measurement. It is represented on the drawing(s) as a circle.

TPZ (m): The Tree Protection Zone (TPZ) provides the required setback of construction impacts from trees as listed by the municipal tree by-law and is scaled based on their DBH. The TPZ is calculated by doubling the setback and including the trunk diameter to create a diameter of circle of protection around the tree.

HT (m): Estimated Height from the base to the top of the tree.

Condition (G, F, P, D): A qualitative score of the combination of biological health and structural condition assigned as Good, Fair, Poor or Dead.

Preservation or Remove Reason: Reasons for recommended preservation or removals assigned in the tree study, Reasons for recommended removal may result from:

- Existing condition (critical deficiency such as severe crown dieback)
- Anticipated impacts of the proposed development (i.e., tree location is in conflict with construction element)
- Both existing condition and anticipated impacts

Description of Reason: Rationale for the assignment of preservation or removal designation based on analysis of collected date and proposed development.

Transplant Potential (G, F, P): Assignment of qualitative measure of reestablishment success of a tree when removed from its existing location and moved to another or removed and stored for replanting following construction. An assignment of Good, Fair or Poor is assigned based on a species' ability to reestablish, condition of the tree, new growing conditions, etc.

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix C

Limitation of Tree Studies

Limitations of Tree Studies

This report, drawings and data (i.e., qualitative and quantitative measurements) are intended to inform the recipient and reviewer(s) of the report of the tree(s) condition at the time of the assessment. The assessment may be limited by the following constraints:

1. Access – tree is located off-site or the on-site location is not reasonably accessed.
2. Weather – accumulated snow around the base or in branch attachments may obscure defects.
3. Season – biotic indications (e.g., foliage chlorosis or fungal fruiting bodies) are only obvious for a portion of the year.
4. Visual obstructions – Elements such as other trees' canopies can prevent the view of the entire tree.

The study is completed from the ground using a DBH tape or tree caliper. Non-invasive tools such as binoculars and a sounding hammer may be used to provide additional information about defects and characteristics. Excavation of the rootzone and other intensive analyses have not been completed unless stated.

It must be understood that trees may not manifest signs or symptoms (e.g., dieback) of some impacts (e.g., root compaction) immediately and so recent changes to the tree or its growing conditions prior to the assessment may not be apparent to the assessor. Also, changes to the tree condition resulting from damage, weather, infestations, defects, soil, decay, light, moisture, exposure, etc. may occur after the assessment.

No tree is without some level of risk, where a tree may fail and strike a target. Mitigation options, if provided, will not eliminate risk, but are prescribed treatments to reduce risk based on the measured and assessed factors at the time of assessment, subject to site and assessment constraints.

Identification of the ownership of assessed trees (i.e., on-site or off-site) made in the report is based on the legal survey. The assessor of trees uses the point location of the tree provided on the survey and the limits of property to assign ownership in the report and associated materials.

R.J. Burnside & Associates Limited 6990 Creditview Road, Unit 2 Mississauga ON L5N 8R9 CANADA
telephone (905) 821-1800 **fax** (226) 526-9660 **web** www.rjburnside.com

BURNSIDE
[THE DIFFERENCE IS OUR PEOPLE]

Technical Memorandum

Date: January 20, 2026 **Project No.:** 300060172.2000

Project Name: McQuesten Pedestrian Bridge Environmental Assessment

Client Name: City of Hamilton

Submitted To: Stephen Oguegbu

Submitted By: Vadhul Krishnan Veerakumar

Reviewed By: Tricia Radburn

The City of Hamilton retained Burnside to undertake a Schedule B Municipal Class Environmental Assessment (MCEA) for a proposed Active Transportation (AT) bridge crossing the Lincoln Alexander Parkway (LINC), intended to provide a connection between McQuesten Park and Limeridge Road East. As part of this study, Burnside developed two preliminary design alternatives for the AT bridge, differentiated primarily by the proposed bridge location.

The purpose of this technical memorandum is to identify and assess the potential impacts of the proposed design alternatives on existing utility services and their infrastructure within the study area. This assessment facilitates a comparative evaluation of the design alternatives from an infrastructure and servicing perspective and supports the identification of the preferred design option.

An initial review of existing infrastructure and utility services was completed to support this assessment. Public infrastructure and municipal servicing information, including storm sewers, sanitary sewers, and watermains, were obtained using the City of Hamilton Open Data portal. In addition, a utility locate request was submitted through the Ontario One Call system to identify privately owned utilities within the study area.

Upon submission of the locate request, the identified utility companies were notified by Ontario One Call and subsequently provided utility location mark-ups within approximately one week. These mark-ups form the basis of the existing conditions review presented in this memorandum.

Based on the limits provided in the locate request, the following private utility providers were identified within the study area:

- Electrical: Alectra Utilities
- Natural Gas: Enbridge Gas
- Telecommunications: Bell Canada
- Cable: Rogers Communications

The following sections summarize and discuss the potential impacts of each AT bridge design alternative on the identified municipal infrastructure and private utility services. The design alternatives referenced in this memorandum are provided at the end of this report for clarity.

It should be noted that no direct utility coordination was undertaken with any of the identified utility owners as part of this work. The information summarized herein is based solely on available records and utility locate data.

1.0 Design Option Eastern Alignment

AT Bridge Eastern Option consists of a single-span structure with an overall length of 80 m, supported without intermediate piers. The bridge is located 36.83 m west of the off-ramp painted bullnose, as measured along the LINC corridor with a minimum overhead clearance of 5.3 m above the corridor.

Based on the available information, no utility relocations are anticipated for this design option, as there is no direct conflict or interaction between the proposed AT bridge and the identified existing utilities.

2.0 Design Option Western Alignment

AT Bridge Western Option consists of a two-span structure with individual span lengths of 80 m and 60 m, resulting in a total bridge length of 140 m. The structure is supported by a single intermediate pier. The bridge is located approximately 154.14 m west of the off-ramp painted bullnose, as measured along the LINC corridor with a minimum overhead clearance of 5.3 m above the corridor.

Again, based on the available information, no utility relocations are anticipated for this design option, as there is no direct conflict or interaction between the proposed AT bridge and the identified existing utilities.

3.0 Conclusion

Based on the review of available municipal servicing records and private utility locate information, neither of the proposed AT bridge design alternatives is anticipated to result in disturbances to existing public or private utilities or associated infrastructure.

It should be noted that both proposed AT bridge alignments are located in proximity to existing roadway lighting poles. Under the Eastern Option, the AT bridge is situated adjacent to an existing roadway lighting pole (identified on the drawings as light pole 1) located on the north side of the LINC. Under the Western Option, the bridge alignment is located in proximity to an existing roadway lighting pole (identified on the drawings as light pole 2) positioned between the LINC mainline corridor and the northbound exit ramp. While no physical conflict is anticipated, the proximity of the bridge structure may partially obstruct light distribution to the roadway.

Therefore, from an infrastructure and utilities perspective, both alternatives are considered feasible and acceptable, subject to confirmation during detailed design and utility coordination.

R.J. Burnside & Associates Limited

Vadhul Krishnan Veerakumar

Transportation Designer, EIT

VV:

Enclosure(s) Design Options

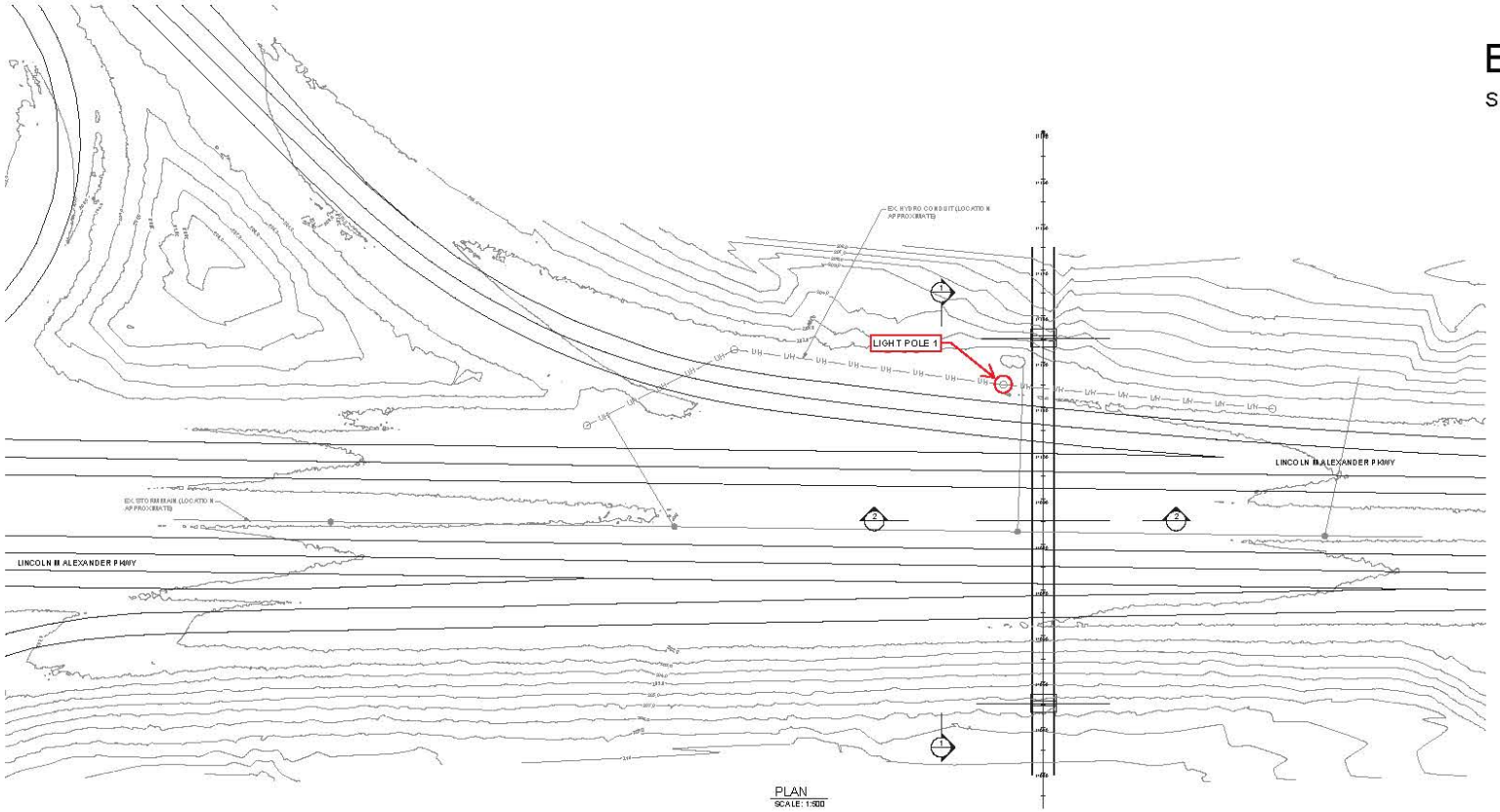
Other than by the addressee, copying or distribution of this document, in whole or in part, is not permitted without the express written consent of R.J. Burnside & Associates Limited.

Eastern Option

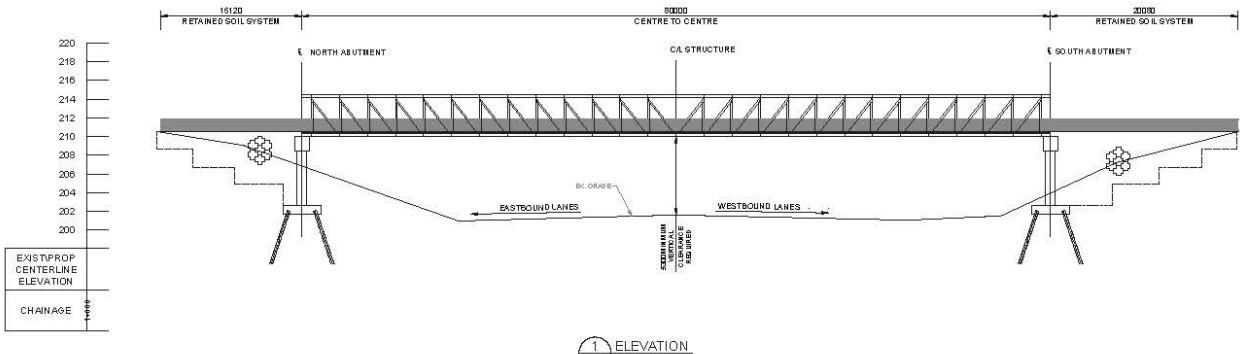
SINGLE SPAN 80m, NO PIERS

McQuesten Park
1199 UPPER WENTWORTH ST, HAMILTON, ON L8W 2Y7
43.210901, -79.864429

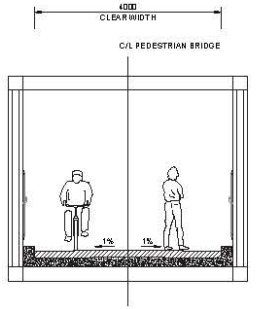
CONSTRUCTION NORTH



PLAN
SCALE: 1:500



1 ELEVATION
SCALE: 1:250



2 SECTION
SCALE: 1:50

Notes
1. This drawing is the exclusive property of R. J. Burnside & Associates Limited. The reproduction of any part without prior written consent of this office is strictly prohibited.
2. The contractor shall verify all dimensions, levels, and datums on site and report any discrepancies or omissions to this office prior to construction.
3. This drawing is to be read and understood in conjunction with all other plans and documents applicable to this project.

NOT FOR CONSTRUCTION

No.	Issue / Revision	Date	Auth.
1	ISSUED FOR TAC REVIEW	25/01/16	C.B.

BURNSIDE
R.J. Burnside & Associates Limited
9 Prinell Crescent,
Collingwood, Ontario, L9Y 4J8
Telephone 1-800-265-9662
web www.rjburnside.com

Client
City of Hamilton
100 KING ST W
HAMILTON, ON
905 1J1

Drawing Title
McQuesten Park, Upper Wentworth St
GENERAL ARRANGEMENT - EASTERN OPT

Drawn	Checked	Designed	Checked	Date
R.F.	C.B.	C.B.	C.B.	25/01/16

Project No. 300005172 | Control No. CONTRACT NO. | Revision No. 0

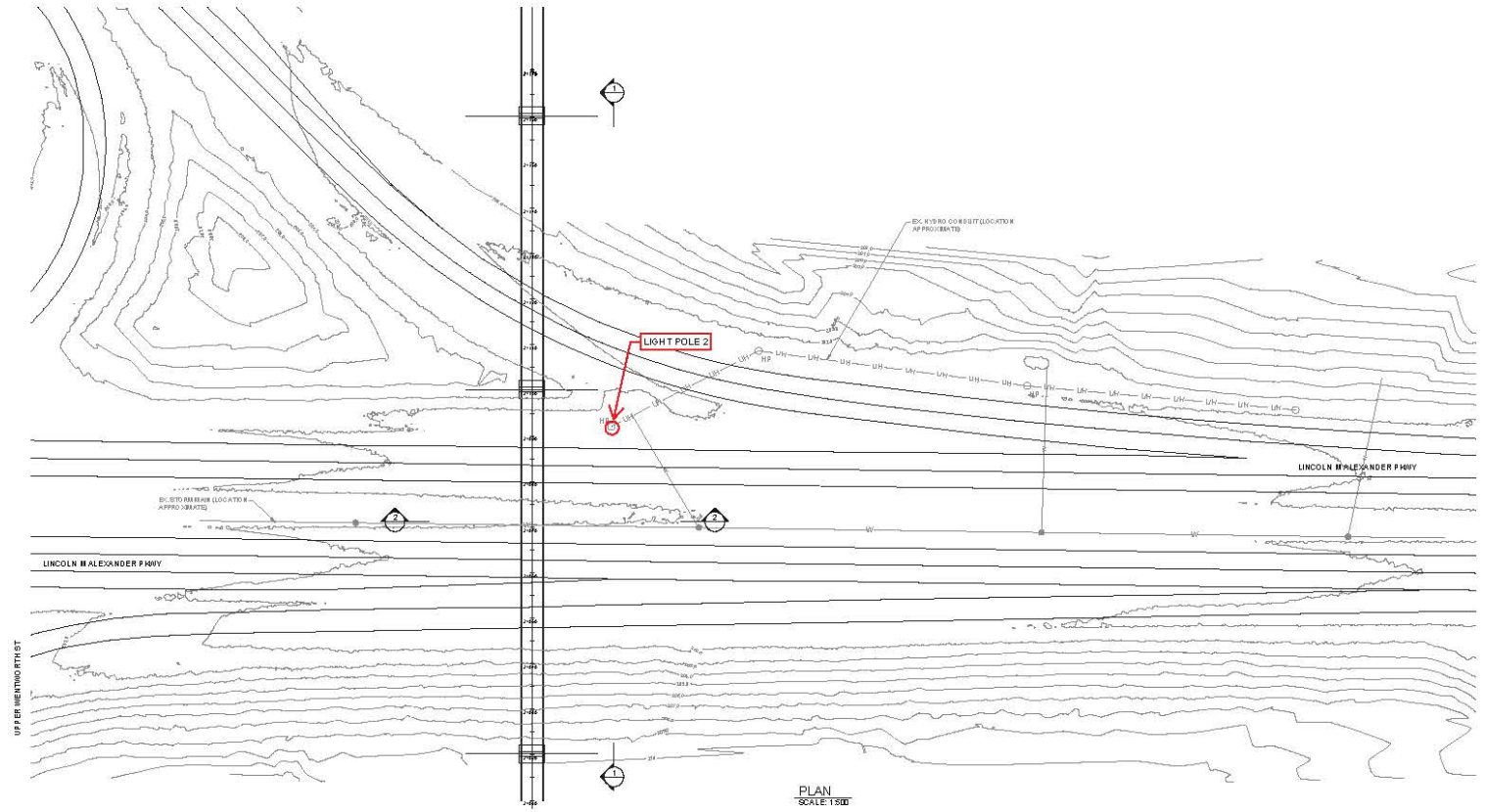
Scale: AS NOTED

Drawing No. **B-001**

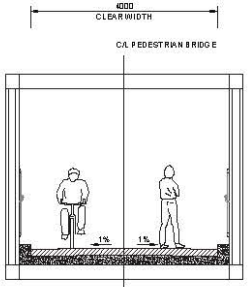
Western Option

TWO SPANS - 80 AND 60m
TOTAL 140m, WITH PIER

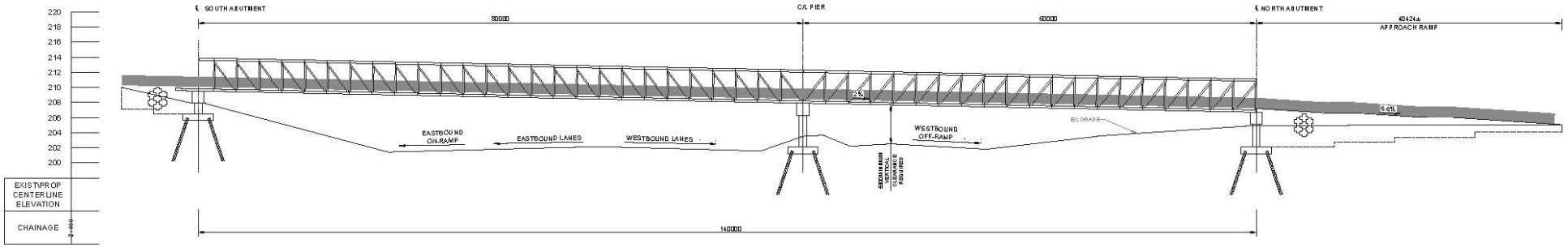
McQuesten Park
1199 UPPER WENTWORTH ST, HAMILTON, ON L8W 2Y7
43.210901, -79.864429



PLAN
SCALE: 1:500



1 SECTION
SCALE: 1:50



1 ELEVATION
SCALE: 1:250

Notes:
1. This drawing is the exclusive property of R.J. Burnside & Associates Limited. The reproduction of any part without prior written consent of this office is strictly prohibited.
2. The contractor shall verify all dimensions, levels, and datums on site and report any discrepancies or omissions to this office prior to construction.
3. This drawing is to be read and understood in conjunction with all other plans and documents applicable to this project.

NOT FOR CONSTRUCTION

No.	Issue / Revision	Date	Auth.
1	ISSUED FOR TAC REVIEW	29/01/16	C.S.

R.J. Burnside & Associates Limited
9 Prinell Crescent
Collingwood, Ontario, L9Y 4J8
telephone 1-800-265-9662
web www.rjburnside.com

Client
City of Hamilton
100 KING ST W
HAMILTON, ON
L8P 4Y5

Drawing Title
McQuesten Park, Upper Wentworth St
GENERAL ARRANGEMENT - WESTERN OPT

Drawn	Checked	Designed	Checked	Date
R.F.	C.S.	C.S.	C.S.	29/1/16

Project No. 300001172
Contract No. CONTRACT NO.
Revision No. 0
Scale AS NOTED

Drawing No. B-002

Construction Staging and Implementation Report – McQuesten Park Pedestrian Bridge

City of Hamilton

R.J. Burnside & Associates Limited
1266 South Service Road, Suite C2-1
Stoney Creek ON L8E 5R9 CANADA

July 2026
300060172.0000

Distribution List

No. of Hard Copies	PDF	Email	Organization Name
0	Yes	Yes	City of Hamilton

Record of Revisions

Revision	Date	Description
0	May 2026	Initial Submission to City of Hamilton
1	July 2026	Submission to City of Hamilton

R.J. Burnside & Associates Limited

Report Prepared By:

Tanner Wright
Engineering Assistant, Bridges and Culverts
TW:jm

Report Reviewed By:

Christine Beard
Regional Vice President, Bridges and Culverts

Executive Summary

R.J. Burnside & Associates Limited was retained by the City of Hamilton to evaluate the constructability and implementation of a multi-use pedestrian and cyclist bridge crossing the Lincoln M. Alexander Parkway (the Linc), connecting the TB McQuesten Community Park trail system to Limeridge Road East. The recommended structure is an approximately 80 m span prefabricated steel truss bridge with a cast-in-place concrete deck on a galvanized steel deck pan or equivalent with a complementary aesthetic. It is recommended that the deck be equipped with an anti-throw enclosure system such as a fully enclosed mesh / chain link or similar cladding to prevent debris from falling onto the highway. (Accessibility for Ontarians with Disabilities Act) AODA-compliant approach ramps for the multi-use trail have been considered and all elements are to be designed in accordance with the MTO Structural Manual, CSA S6:25, and CSA S7:23. Staged construction is recommended, with the substructure and superstructure progressing concurrently in an adjacent work zone and the assembled main span lifted or launched into place during a scheduled two-day Linc weekend shutdown to minimize highway disruption.

Land acquisition will be required on the north approach to accommodate an approach multi-use trail and ramp or approach spans Temporary staging areas will be required at both ends of the new bridge. On the north side, the staging area will be on private property, and an access / use agreement will be required. On the south end, the primary staging area will be within the park. The park is anticipated to have spring flooding which will need to be accommodated by the contractor. Subject to geotechnical investigation, surveys, and coordination with Hydro One and the City's traffic operations group, the project is constructible within the corridor's physical, regulatory, and operational constraints and can be delivered on the approximately three-year schedule outlined in this report.

Table of Contents

1.0 Introduction 1
1.1 Location 1
2.0 Design Criteria and Considerations 2
2.1 Architectural Considerations 4
2.2 Design Code and References 6
2.3 Maintenance Criteria 6
2.4 Proposed Geometry and Cross-Section 6
2.4.1 Bridge Deck 7
2.4.2 Vertical Clearance 9
2.4.3 Barriers 11
2.5 North Approach 11
2.6 Utilities 12
3.0 Risk Management 13
4.0 Implementation Strategy 13
4.1 Construction Phasing and Staging 14
5.0 Financial Summary 18
6.0 Summary and Conclusion 18
7.0 References 19

Figures

Figure 1: Location of Proposed Linc Crossing 2
Figure 2: White Painted Box Truss Over Conestoga Expressway, Region of Waterloo . 5
Figure 3: Arched Weathering Steel Truss Bridge, City of Kitchener 5
Figure 4: Proposed Cross-Section 7
Figure 5: Waterproofing / Wearing Surface Detail 9
Figure 6: Minimum Clearance for Steel I-Girders over Highways 10
Figure 7: Construction Access Plan 17

Appendices

Appendix A General Arrangement
Appendix B Class D Cost Estimate

1.0 Introduction

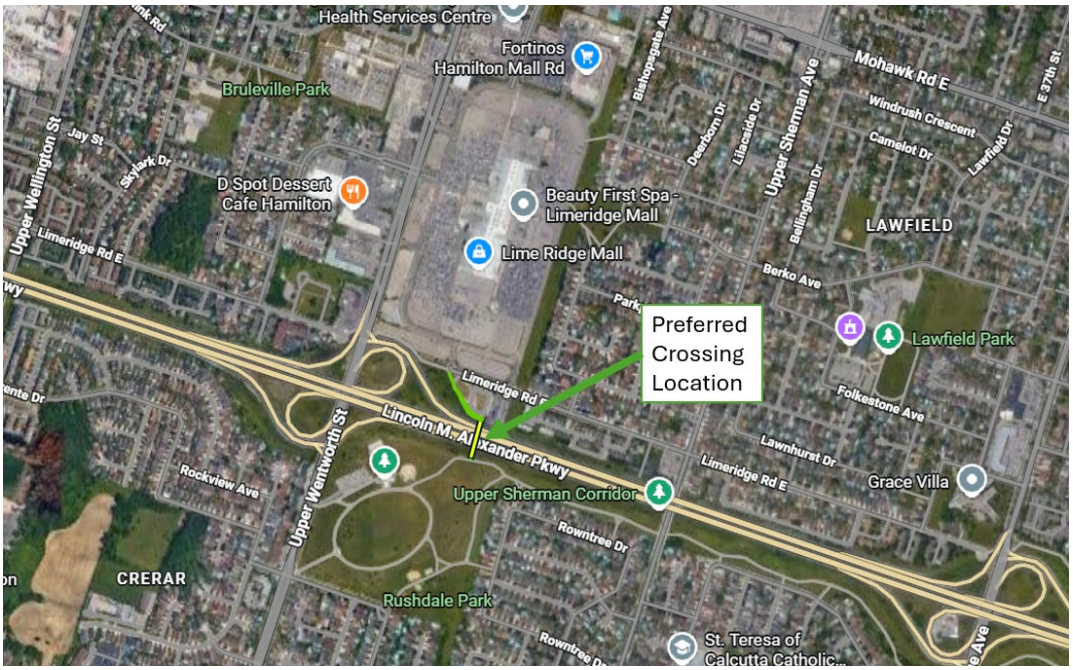
R.J. Burnside & Associates Limited (Burnside) was engaged by the City of Hamilton (Hamilton) to outline and evaluate constructability options to improve the connectivity for pedestrians and cyclists over the Lincoln M. Alexander Parkway (the Linc) between the Thorner and Rushdale neighbourhoods. Through the Municipal Class Environmental Assessment (MCEA), the preferred alternative is to construct a multi-use pedestrian and cyclist bridge connecting the east end of the TB McQuesten Community Park (McQuesten Park) trail system to Limeridge Road East. The proposed pedestrian bridge is expected to divert pedestrian and bicycle traffic away from the Upper Sherman Avenue and Upper Gage Avenue highway bridge crossings.

This report will review existing conditions, design criteria, utilities, construction impacts, implementation and staging to install the bridge and trail improvements.

1.1 Location

The proposed bridge and trails will be connected at the east end of McQuesten Park and will cross the Linc and connect the trail system near the soccer fields to Limeridge Road East trails. The preferred alternative includes a Linc crossing and trail connection at the east end of McQuesten Park to a private property that fronts onto Limeridge Road East.

Figure 1: Location of Proposed Linc Crossing



2.0 Design Criteria and Considerations

The proposed crossing is to be designed considering the constraints of the Linc corridor and a minimum 75-year service life. There is a potential for future Linc widening, and the placement of the abutments and retaining walls is to be outside of that corridor. The following elements will require development during the detailed design phase:

- **Anti-throw Enclosure System** – Develop a full anti-throw enclosure as a performance-based system in accordance with Canadian Highway Bridge Design Code (CHBDC) and Ministry of Transportation (MTO) requirements.
- **Steel Corrosion Protection** – Select the steel truss protection system through a comparative assessment of painted, galvanized, metallized, weathering, and hybrid systems.
- **Winter Maintenance and Operations** – Develop a practical winter maintenance and operations plan confirming maintenance equipment requirements, snow-clearing methods, de-icing policies, snow storage and discharge areas, approach turning movements, and long-term wearing surface durability.
- **Linc Lighting Assessment** – In accordance with Illumination Engineering Society (IES) standards. Review the potential impact to the existing Linc street lighting, including any required relocation of existing poles.

- **Pedestrian / Multi-use Path (MUP) Bridge Lighting Assessment** – Complete a lighting assessment and design for the bridge and approaches in accordance with the applicable IES recommended practice for off-road pedestrian / MUP pathways.
- **Driver Distraction and Highway Safety Review** – Complete a driver distraction and highway safety review to assess the visual impact of the structure on Linc traffic and confirm no adverse effect on highway safety.
- **Ensure Operational Safety** – Incorporate Crime Prevention Through Environmental Design principles into the design.
- **Prepare Arborist Report** – To assess potential for tree damage and removal and compensation as a result of a new bridge, contractor site access and work zone.
- **Risk Management Plan** – Complete a risk register to assess design, construction and other risks at each phase of the project.
- **Approach Turning Movements and Geometry** – Address the approach turning radii on the pedestrian trail so bridge approach angles accommodate cyclists and maintenance equipment safely.
- **Perform a Life Cycle Cost Analysis** – Compare options for the bridge and approaches for their short and long-term maintenance costs to determine the best value.
  - **Deck Design** – Assess alternative deck designs to ensure Linc disruptions are minimized and traffic protection is prioritized. Consider post-tensioned concrete deck, precast panels and a galvanized steel deck pan as a minimum.
  - **North Approach** – Compare alternatives including retaining wall, approach spans, embankments, and hybrid alternatives for the most cost-effective long-term solution.

A review of the various requirements for a bridge crossing is discussed in this section. The intention of the dedicated MUP crossing is to divert pedestrian and bicycle traffic away from the high-volume crossings at Upper Sherman Ave and Upper Gage Ave. The bridge will be accessible for pedestrian, maintenance vehicle and bicycle traffic and will be used and maintained year-round.

2.1 Architectural Considerations

Given the prominent location of the crossing over the Linc, a discussion on aesthetics is warranted. The bridge design style can be categorized into three levels of aesthetic; basic, complementary, and elaborate. Safety requirements over the highway (e.g., glass panels, wire mesh, or chain-link fencing to prevent falling objects) will further modify the appearance regardless of the tier selected. The safety feature aesthetics are to match the level of aesthetics required by the project. A description of the aesthetic levels is:

- **Basic Aesthetic** – A functional prefabricated structure fabricated and designed without specialized architectural input. The fabricator typically completes all superstructure engineering, while the design engineer remains responsible for the abutments and foundations ($3-$8M for this site).
- **Complementary (Medium) Aesthetic** – May be supplied. Prefabricated and designed by a manufacturer such as Iron Bridge or Algonquin Bridge, with engineering support for the foundations. Some consultation with the manufacturer is warranted during detailed design to confirm that specified architectural details are available. Shape and colour upgrades to an otherwise standard truss are common practice in Ontario ($5-$15M for this site).
- **Elaborate (High) Aesthetic** – A unique, one of a kind landmark structure that may or may not be prefabricated. Architectural consultation is required and specialty engineering, such as vibration mitigation or wind-tunnel analysis, may be warranted. These structures carry the highest capital and maintenance costs and the greatest project risk ($15-$27M for this site).

The level selected determines the degree of architectural involvement, capital costs and long-term maintenance obligations. The proposed preferred alternative bridge for this location has a complementary aesthetic. Some examples of bridges with a complementary aesthetic include prefabricated truss bridges similar to Figure 2 and Figure 3, which are modifications of a basic aesthetic functional truss to improve the appearance of the bridge.

Figure 2: White Painted Box Truss Over Conestoga Expressway, Region of Waterloo



Figure 3: Arched Weathering Steel Truss Bridge, City of Kitchener



2.2 Design Code and References

The proposed structure shall be designed in accordance with the following standards and code requirements:

- City of Hamilton Design Standards and Specifications.
- Ontario Provincial Standard Specifications (OPSS).
- MTO Structural Manual – Section 1.
- CHBDC CSA S6-25.
- Pedestrian, Cycling and Multi-use Bridge Design CSA S7-23.

2.3 Maintenance Criteria

Snow removal operations are a critical consideration when dealing with pedestrian bridges over major roadways. Regularly scheduled snow removal will be required to prevent excessive buildup on the bridge deck and avoid snow discharge onto the roadway below. Snow falling from the bridge onto the Linc is a safety issue and needs to be avoided. Snow and ice must be contained to the deck and pushed off the deck ends to prevent windrowing along the edge of the deck. Land is available on the park side of the crossing to serve as a snow disposal area. A layout of the proposed location for a snow dump is identified in Figure 7. It is recommended that the proposed cross-section incorporates at least a 400 mm +/- high concrete barrier wall from end to end to allow for some moderate snow accumulation between maintenance cycles.

As per Section 1.7.2.1 of the CHBDC, the minimum longitudinal grade of the bridge deck shall be 0.5% to allow for adequate bridge deck drainage. Drainage from the ends of the bridge is to be considered in the design, no drains should outlet on to the Linc below.

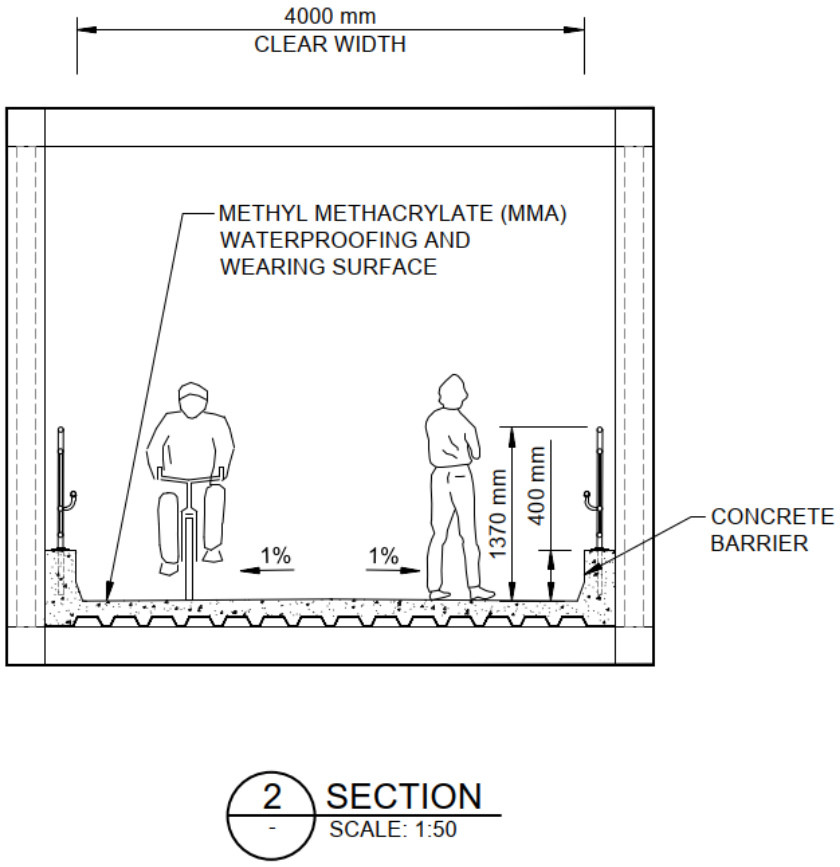
Regular sand and salt maintenance should be considered along the bridge deck to provide safe traction for pedestrian use during the winter months. The deck wearing surface is to be roughened, with anti-slip characteristics. Proper drainage and concrete waterproofing will provide suitable protection for the concrete deck during de-icing maintenance.

2.4 Proposed Geometry and Cross-Section

In accordance with the City's requirements for multi-use trails, the clear width of the trail on the bridge will be 4 m. This clearance will be from the face of handrail to the face of handrail. This report will focus on the choices and general direction for the preliminary design including the selected complementary aesthetic. The

proposed depicted cross-section consists of a prefabricated pedestrian truss bridge with a galvanized deck pan to accept a cast-in-place concrete deck. A general proposed cross section for the bridge is included in Figure 4.

Figure 4: Proposed Cross-Section



2.4.1 Bridge Deck

To limit disruption to the Linc, the deck must be installed within a two-day weekend highway closure. This requires consideration for accelerated deck construction and minimizing the cast-in-place concrete that could impact live traffic. Three options are described, each aimed at reducing time the highway corridor is impacted, to ensure the safe passage of traffic.

2.4.1.1 Full-Depth Precast Concrete Deck Panels

Full-depth precast panels are fabricated off-site and set directly onto the truss, connected with grouted shear key joints and shear pockets to develop composite

action. The shear key joints and pockets are filled with an ultra high strength concrete during the Linc closure. A traffic protection system will still be required to protect traffic from construction of the barriers and anti-throw system construction.

2.4.1.2 Post-Tensioned Concrete Deck

A post-tensioned concrete deck can act as the truss tension member, cast and stressed at the manufacturer's facility, or on site and launched as a finished unit. This is a heavier system and will increase the costs and limitations associated with installation. A traffic protection system will still be required to protect traffic from construction of barriers and anti-throw system construction.

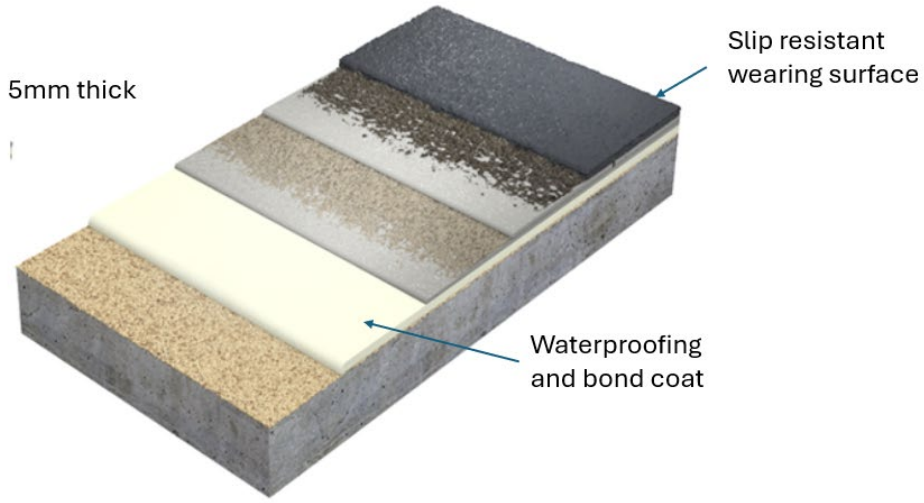
2.4.1.3 Galvanized Steel Deck Pan as Stay-in-Place Formwork

A galvanized steel deck pan acts as permanent stay-in-place formwork, eliminating removable formwork while providing debris protection during the pour. It also adds corrosion protection at the deck soffit. This is the simplest, lowest risk option for maintaining the highway, at the cost of a longer on-site cure.

2.4.1.4 Other Considerations

A concrete deck may be reinforced with premium stainless steel or glass fibre reinforced polymer (GFRP) bars, in combination with a slip resistant wearing surface, to help improve the deck resistance to salt exposure. A thin waterproofing wearing surface such as methyl methacrylate (MMA) or Polyurethane Methacrylate (PUMA) for pedestrian bridges could be installed on the surface to improve the durability and wearing surface on the bridge and protect the bridge structure from salt ingress. CSA S7-23 Pedestrian Bridge Design Guideline provides a detail similar to the one in Figure 5 to protect concrete bridge decks. The graphic shown depicts an MMA waterproofing and wearing surface.

Figure 5: Waterproofing / Wearing Surface Detail



2.4.2 Vertical Clearance

The current standard for vertical clearance is governed by the Transportation Association Canada (TAC) Geometric Design Guidelines. These guidelines currently require a minimum of 5.0 m clearance between an overhead structure and the highway below. The City of Toronto requires 5.3 m for pedestrian bridges. In addition, the MTO Structural Manual identifies the minimum vertical clearance requirements above travelled lanes for Steel I-Girders. While the proposed design option for this project will not incorporate I-Girder shaped steel members, consideration of Figure 6 has been used to evaluate the durability needs for other similar bridges over highways.

Figure 6: Minimum Clearance for Steel I-Girders over Highways

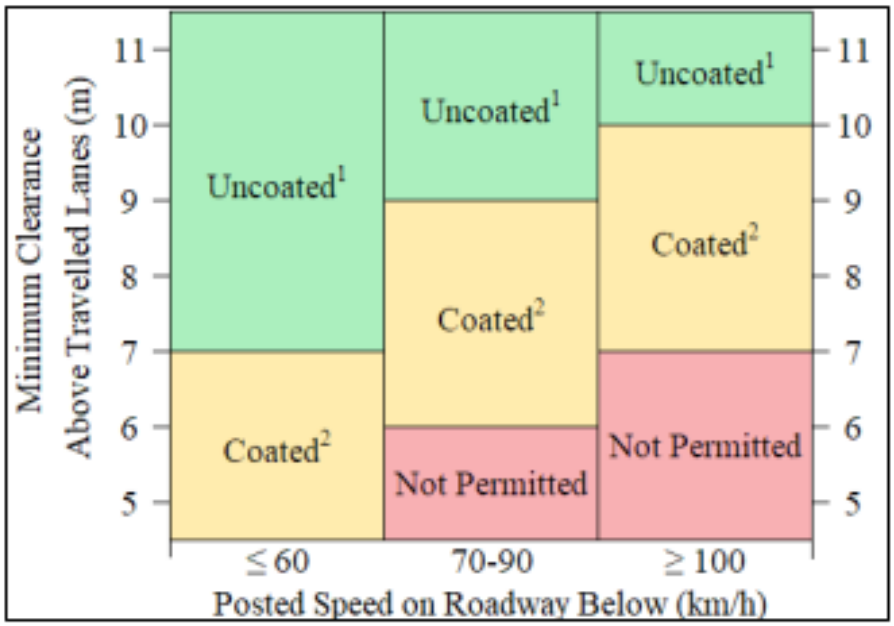


Figure 8.1-2 – Use of ACR I-Girders Over Highways

The vertical clearance from the underside of the soffit to the roadway below for Steel I-Girders is required to be a minimum of 6 m.

Options to reduce the exposure of steel elements to highway salt spray include increasing the overhead clearance of steel components. In other locations in Ontario, a post-tensioned concrete bottom chord in the truss system has been used to improve structural durability by protecting structural steel road spray and de-icing salts. In this configuration, instead of supporting the deck on steel floor beams and a separate bottom chord, the concrete deck itself can act as the tension member of the truss system. The steel diagonal and vertical truss members connect directly to this concrete element through embedded anchor plates and connection hardware.

Based on the preliminary general arrangement included in Appendix A, the vertical clearance for this structure's soffit is a minimum of 8 m, the mitigation table in Figure 6 indicates that with that clearance coated steel is sufficient to protect the structure from highway spray.

2.4.3 Barriers

The barriers for the bridge need to be designed in accordance with CHBDC requirements for a multi-use trail with a complementary aesthetic. This will require barriers above the trail to be at least 1.37 m high with gaps restricted to 100 mm or less. Chain link fence can also be used with openings no larger than 50 mm x 50 mm. It is further recommended that the AODA be considered and that a handrail be added for the length of the bridge at a height between 0.865 m and 0.965 m high.

In addition to the above guidelines, it is recommended that a full anti-throw enclosure system be utilized to prevent debris from being dropped onto traffic. Small aperture mesh cladding could be used for this purpose extending from the deck to a closed top chord, providing protective screening over the full length of deck above any travelled lane.

2.5 North Approach

Due to the difference in elevation between the bridge deck and the existing grade at the north approach of the structure, a multi-use trail ramp, bridge spans or hybrid are recommended to provide an accessible connection from the pedestrian bridge to the surrounding trail network. Preliminary design indicates the bridge profile at the north approach is higher than the surrounding grade. A detailed topographic survey during detailed design is required to confirm the north approach slope and extents. The bridge is currently assumed to have a longitudinal slope of 2%.

The approach ramp for the pedestrian bridge should be designed in accordance with the requirements of the AODA – Integrated Accessibility Standards Regulation (O. Reg. 191/11). Under this standard, exterior accessible ramps are permitted a maximum running slope of 1:15 (6.67%), with level landings required at intervals not exceeding 9 m to provide rest areas for users.

Construction of the north approach ramp will require the acquisition of private land, as the north end of the structure ties into privately owned property fronting Limeridge Road East. To minimize cost and impact to the affected landowner, it is recommended that the acquisition be limited to the footprint required for the ramp, maintenance and associated grading where the ramp ties into the existing Limeridge Road East trail as shown in Figure 7. A legal survey establishing the property limits and the required acquisition area is required during detailed

design to confirm the extent of land to be acquired and to support negotiations with the landowner.

Based on a preliminary footprint of approximately 780 m² (a 6 m wide corridor along the ramp and continuing trail), the land acquisition cost is estimated in the order of $300,000, inclusive of an allowance for appraisal, legal and survey costs. This is a preliminary estimate and will need to be confirmed during detailed design.

The general arrangement in Appendix A depicts retaining walls with barriers on each side of the north approach.

2.6 Utilities

The available information indicates that there are existing hydro one transmission lines running north-south approximately 50 m +/- east of the proposed structure location. The transmission lines are not expected to directly interfere with the project; however, safety measures will need to be taken to ensure the Hydro One mandated 15 m horizontal clearance is maintained and protected at all times throughout the duration of construction. The horizontal clearance zone will also include storage and staging activities. Safety measures will include but are not limited to warning signage, barriers, spotters, physical boom limiters and electrical safety training.

Two existing municipal utilities at the proposed crossing location are identified in the General Arrangement in Appendix A. A storm sewer main runs longitudinally between the eastbound and westbound travelled lanes of the Linc within the median. While this utility is not in direct conflict with the proposed structure and is not anticipated to require relocation, its presence precludes the use of a centre median pier and reinforces the selection of a single-span superstructure clear-spanning the Linc from abutment to abutment. In addition, an existing highway light pole and its associated underground conduit are located in close proximity to the north abutment and main span landing. This light pole has the potential to conflict with the structure footprint, the crane swing and lifting envelope during superstructure erection, and the north approach ramp grading. Temporary or permanent relocation of the light pole and its conduit is anticipated and will need to be coordinated with the City's traffic operations group during detailed design, with any relocation or temporary removal schedule.

3.0 Risk Management

Risk Management should take an iterative approach that begins with the development of a risk register and is updated periodically during detailed design and construction. The following risk categories should be considered by the design team for the risk register along with rankings (low, medium, high) and mitigation measures:

- Stakeholder / Reputational
- Permitting / Regulatory Approval
- Environment
- Tendering
- Procurement
- Technical / Design
- Construction
- Operations

Some examples of risks that should be reviewed and considered for this project include:

- Property acquisition and permitting.
- Unforeseen changes during construction.
- Geotechnical risks (varying underground conditions).
- Detailing and Fabrication delays.
- Construction Schedule delays.
- Risks related to the proximity of the Linc and highway traffic.

Risks in a project like this should be evaluated, monitored and mitigated to minimize their likelihood.

4.0 Implementation Strategy

The design and construction will take a minimum of two years to implement, given the potential for risks and delays it is recommended that it be planned over three years. In order to be able to proceed to detailed design, the following information will need to be collected:

- Geotechnical boreholes compliant with the CHBDC, minimum one near each abutment or pier.
- Site Survey.
- Legal Survey with property limits identified.

During detailed design, the final span and abutment locations and foundation type will be identified. The City should allow at least one year for detailed design.

Following detailed design, tendering for at least three to four weeks is recommended with contractor mobilization approximately two to three months following award. Mobilization and construction of the abutments are anticipated to take 12 to 18 weeks depending on the foundation recommendations. Delivery of a prefabricated bridge may depend on the design and detailing selected. A prefabricated bridge will take at least two months but could take six months to fabricate.

In summary a proposed schedule for the timing on this project is as follows:

- City Issued Request for Proposal (RFP) and Award: (Four – Six months).
- Investigation, Preliminary Design and Permitting: (Six months).
- Property Acquisition (One year).
- Geotechnical Investigation and Surveying: (Four – Six months).
- Detailed Design: (Six months).
- Tender and Award: (Four – Five months).
- Mobilization and Shop Drawings: (Three months).
- Construction Period: (Four – Six months).

4.1 Construction Phasing and Staging

Staged construction sequencing will provide major project advantages in safety, efficiency, and traffic management. By constructing the main truss span on-site in the designated work zone, the timing window for a required highway shutdown will be significantly reduced to reduce the overall requirements for a shutdown on the Linc during installation. The staged construction approach is also faster and a more cost-effective method overall, as it enables the construction of the substructure and the superstructure fabrication to be completed concurrently. This reduces the need for temporary falsework over traffic and allows for efficient installation using large cranes during a planned closure window.

The superstructure can be assembled on-site and lifted onto the abutments over a two-day Linc shutdown period. The remaining work on the superstructure (concrete and deck work) while the highway is in operation by using a steel deck pan as the deck form, and through debris protection. The removal of temporary systems to protect the highway from debris should be completed from midnight to a.m. to minimize traffic disruption. Some lane closures may be required during this period.

The typical procedure for the installation of the prefabricated structure would be to roll the structure out onto the roadway using self propelled mobile transporters (SPMTs), or through swinging on cranes, there is also the potential to launch the bridge from one abutment. The procedure selected is a function of the contractors means and methods and the ultimate bridge design. For a crane which is the most common installation method, the elevation difference between the work zone and the roadway, require lifting the structure from the work zone and over onto the abutments. Figure 7 indicates anticipated laydown requirements and work zones for the project. Lay down areas need to minimize impacts to the park, allow for movement of heavy equipment at both ends of the bridge to facilitate the approach ramp, retaining walls and abutment construction. No access is allowed by heavy equipment under the hydro one corridor. It is anticipated that on the McQuesten Park side that the parking area off Upper Wentworth Street will be the primary means of access into the laydown site. Shared access with the public from the parking areas to the staging area will be required. Flaggers will be needed for each vehicle that uses the trail to access the staging area.

In addition to the permanent land acquisition described in Section 2.5, a temporary laydown and staging area will be required on the private property north of the Linc for the duration of construction. As shown in Figure 7, the work zone encompasses effectively the entire private lot fronting Limeridge Road East and is approximately 6,200 m².

The north private property work zone may prove more favourable for heavy equipment and material storage during the spring months, when the south work zone within McQuesten Park is prone to flooding, ground saturation with reduced bearing capacity.

The Hydro One corridor will limit crane placement and swing directions for a crane. Cranes will require additional precautions to operate on this site – including flaggers. Barriers on-site should be used to protect the Hydro One corridor from accidental access. The consequences of a corridor breach could be catastrophic for the power distribution network and the constructors on the site. Consideration of elevated safety standards adjacent to the corridor are required.

The construction sequencing can be broken down into three Stages; the final staging should be confirmed by the successful contractor.

Stage 1:

- Site Mobilization, and access improvement.
- Construction of south concrete substructure.
- Construction of north concrete substructure.
- Assembly of the main truss span and deck within the designated work zone.
- Preparation of the movement path for structure installation.

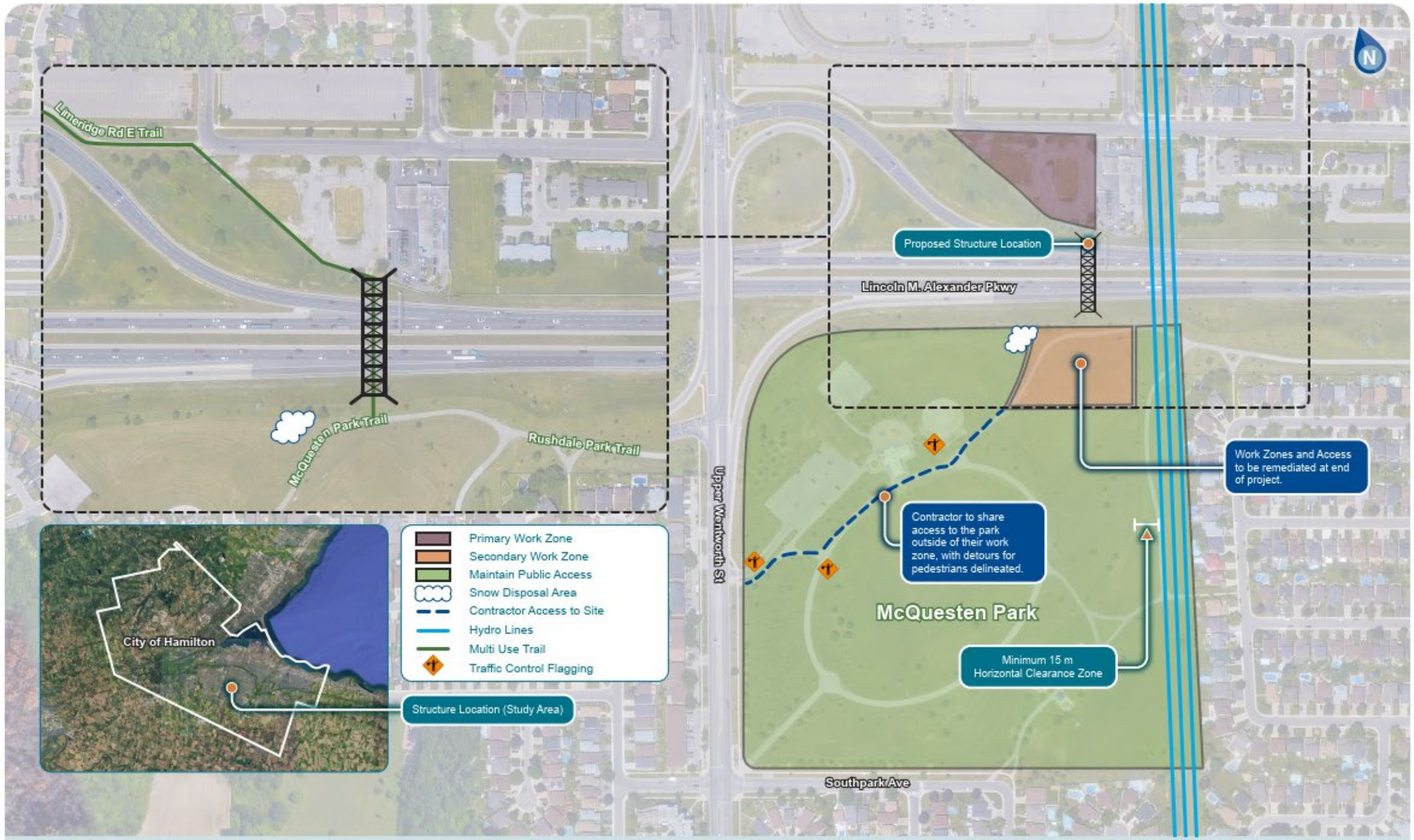
Stage 2:

- Close Highway.
- Remove or temporarily relocate light poles and other obstacles on the highway interfering with the structure installation.
- Launch or lift the main span from the work zone and set onto bearings.

Stage 3:

- Install protection systems for the Linc.
- Finish the concrete deck (precast, post-tensioned or cast-in-place on galvanized deck pan).
- Remove temporary protection systems.
- Construct multi-use trail and retaining walls or approach spans.
- Site restoration and grading, including trail and landscaping improvements in the park.
- Reinstall north sound barriers.
- Site demobilization.

Figure 7: Construction Access Plan



5.0 Financial Summary

The proposed pedestrian bridge will be an 80 m long-span steel truss with complementary aesthetics. The proposed reinforced concrete deck will be supported by the steel truss on a galvanized steel deck pan. The concrete deck will have 400 mm high curbs with a multi-use trail barrier to cyclist height mounted on top. An AODA handrail will be implemented into the design. The south approach will consist of a 20 m long retaining wall approach to meet grade at McQuesten Park. The north approach will consist of a 65 m long multi-use trail supported by a retaining wall system to provide connection from the pedestrian bridge to the surrounding trail network. As this retaining wall represents a long-term structural asset with ongoing maintenance obligations, its life cycle cost should be compared against approach span (approach bridge) alternatives during detailed design to confirm the most cost-effective long-term solution. A budget estimate for the construction of the bridge is $8M. A general arrangement of the proposed bridge is included in Appendix A, and a breakdown of the estimate is included in Appendix B.

6.0 Summary and Conclusion

The McQuesten Park Pedestrian Bridge is constructible within the physical, regulatory, and operational constraints of the Linc corridor. A prefabricated steel truss superstructure with a precast, post-tension or galvanized deck pan concrete composite deck with a complementary aesthetic is feasible in this location. The bridge can be assembled in the designated work zone and installed by tandem mobile cranes or launched depending on the contractor’s means and methods during a two-day Linc shutdown. The delivery strategy and schedule are technically feasible for this crossing. The final selection of the bridge design is to be confirmed during detailed design but has been assumed as a complementary aesthetic. Subject to geotechnical investigation, site and legal surveys, and early coordination with Hydro One and the City’s traffic operations group, the project can be delivered within the three-year schedule outlined in Section 3.0. This will provide the Thorner and Rushdale neighbourhoods with a safe, year-round, accessible active-transportation connection across the Linc.

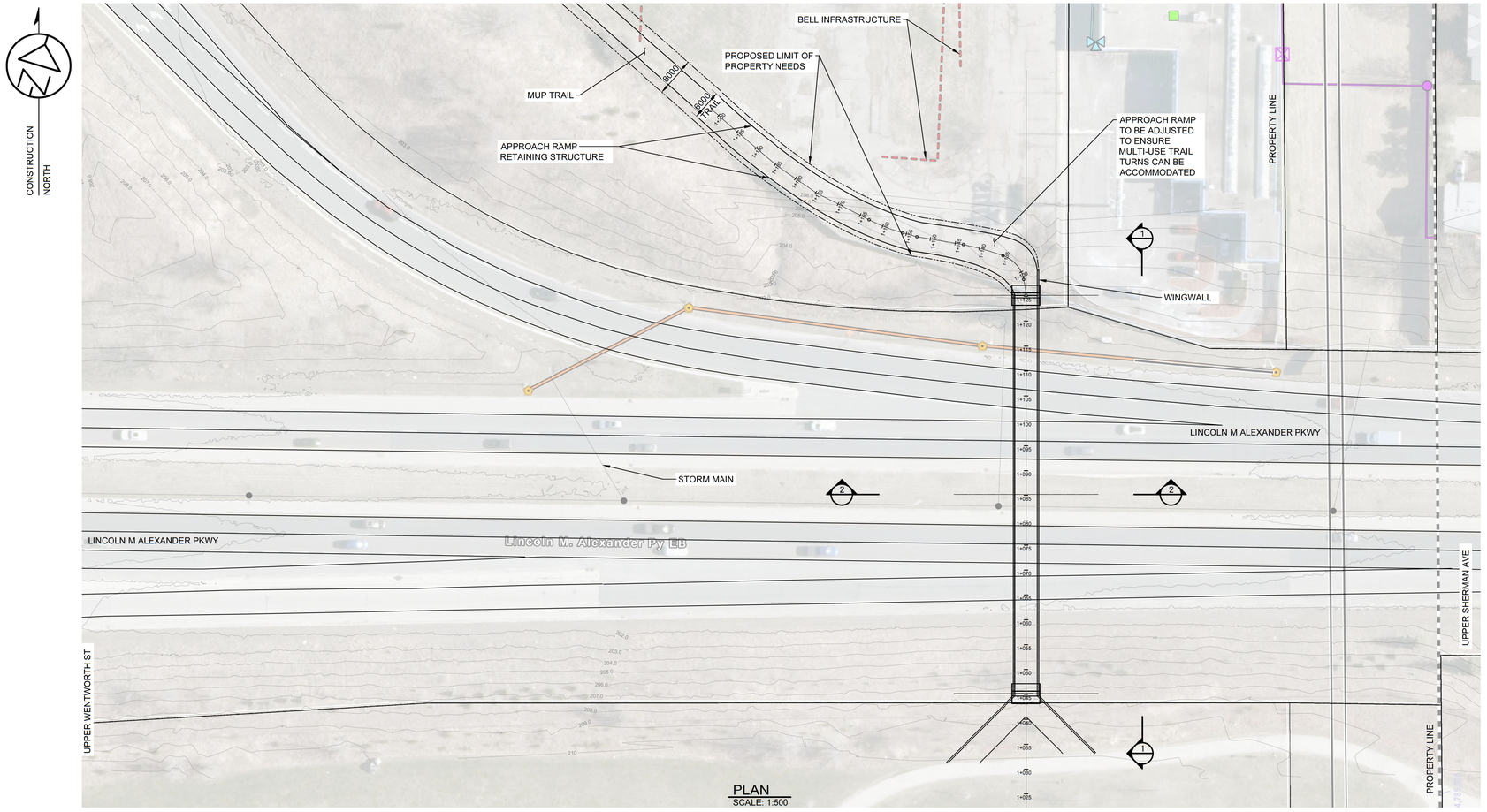
7.0 References

1. Accessibility for Ontarians with Disabilities Act (AODA) O. Reg. 413/12, December 2012.
2. CSA S6-25 Canadian Highway Bridge Design Code.
3. Highway 7/8 Pedestrian and Cycling Bridge. www.Ironbridgefab.com/signature-bridges 10/15/2025.
4. Walter Bean Trail Pedestrian Bridge. Photo courtesy of Iron Bridge.
5. MTO Structural Manual.
6. CSA S7-23 Pedestrian Bridge Design Guideline.

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix A
General Arrangement



PLAN
SCALE: 1:500

LEGEND:

ROGERS:
- EXISTING ROGERS PEDESTAL
- EXISTING TELEPHONE POLE
- EXISTING BURIED COAXIAL CABLE

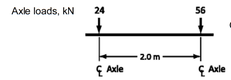
ENBRIDGE:
- IN-LINE VALVE (ACTIVATED) WITH ELBOW AND REDUCER
- PIPE SEGMENT (36 TO 420KPA) (ENBRIDGE)

ALECTRA:
- UNKNOWN ALECTRA

CITY OF HAMILTON:
- POLE
- HYDRO CONDUIT
- OVERHEAD HYDRO WIRES

GENERAL NOTES:

1. SPECIFICATIONS:
   - CITY OF HAMILTON CONSTRUCTION AND MATERIALS SPECEFICATIONS
   - ONTARIO PROVINCIAL STANDARDS SPECIFICATIONS
   - CANADIAN HIGHWAY BRIDGE DESIGN CODE (CHBDC) S6-25
   - CHBDC MAINTENANCE VEHICLE (MINIMUM)



Gross load, 80 kN (8.16 tonnes)

2. CONCRETE:
   - EXPOSURE CLASS C-1 WITH A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 35 MPa AT 28 DAYS.

3. CLEAR COVER TO REINFORCING STEEL:

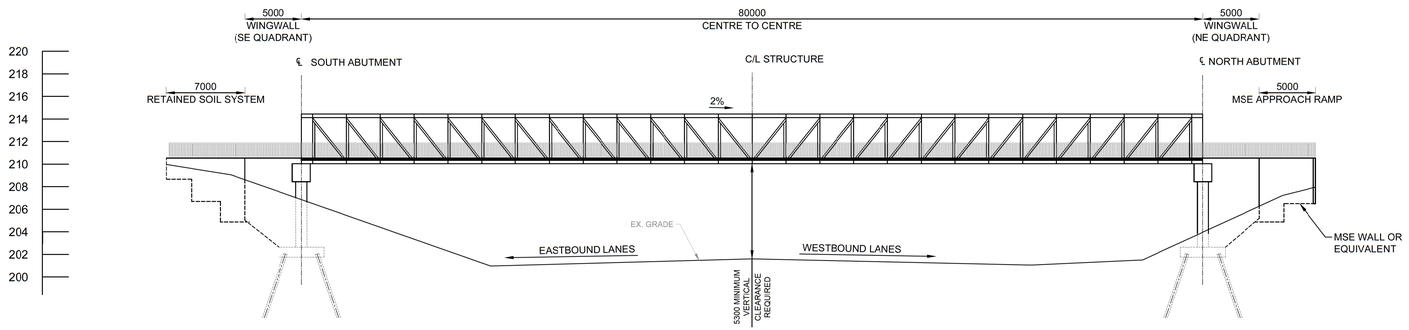
FOOTINGS		100±25
DECK	TOP	70 ± 20
	BOTTOM	40 ± 10
REMAINDER		70 ± 10 UNLESS OTHERWISE NOTED

3. REINFORCING BARS:
   - REINFORCING STEEL (B) SHALL BE GRADE 500W.
   - UNLESS SHOWN OTHERWISE, TENSION LAP SPLICES FOR REINFORCING STEEL BARS SHALL BE CLASS B.
   - STAINLESS REINFORCING STEEL SHALL BE TYPE 316LN OR DUPLEX 2205 AND HAVE A MINIMUM YIELD STRENGTH OF 500 MPa, UNLESS OTHERWISE SPECIFIED.
   - BAR MARKS WITH PREFIX 'S' DENOTE STAINLESS STEEL BARS.
   - GLASS FIBRE REINFORCED POLYMER REINFORCING BARS SHALL BE GRADE III, AND THE NOMINAL DIAMETER, TENSILE MODULUS OF ELASTICITY AND GUARANTEED MINIMUM TENSILE STRENGTH SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.
   - NOT ALL LAP SPLICES ARE SHOWN ON THE DRAWINGS. WHERE BARS ARE SHOWN AS CONTINUOUS, LAP SPLICES ARE REQUIRED TO SUIT THE ACTUAL AVAILABLE LENGTHS OF THE REBAR. THE CONTRACTOR MAY PROVIDE LAPS NOT REPRESENTED IN THE DRAWINGS, SUBJECT TO THE APPROVAL OF THE ENGINEER.
   - WHERE LAP SPLICES ARE PROPOSED BY THE CONTRACTOR, THE LOCATIONS SHALL BE SUCH THAT THEY LEAST IMPACT THE STRUCTURE.
   - BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STIRRUPS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL STANDARD DRAWING SS112-1, UNLESS INDICATED OTHERWISE.

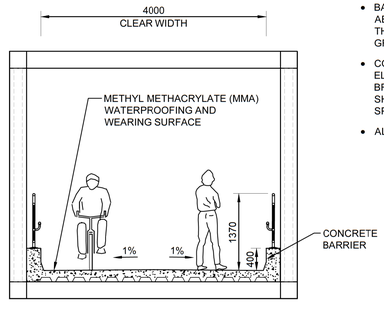
4. MECHANICALLY STABILIZED EARTH (MSE) SYSTEM:

APPLICATION:	HIGH
PERFORMANCE:	HIGH
APPEARANCE:	HIGH

5. CONSTRUCTION NOTES
   - THE CONTRACTOR SHALL CONFIRM ALL DIMENSIONS, DETAILS AND ELEVATIONS BEFORE STARTING WORK.
   - THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES, SERVICES, STRUCTURES, ROADWAYS, ETC. DURING CONSTRUCTION.
   - BACKFILL SHALL NOT BE PLACED BEHIND THE ABUTMENTS UNTIL THE DECK SLAB IS IN PLACE AND HAS REACHED 70% OF ITS DESIGN STRENGTH.
   - BACKFILL SHALL BE PLACED SIMULTANEOUSLY BEHIND BOTH ABUTMENTS KEEPING THE HEIGHT OF THE BACKFILL APPROXIMATELY THE SAME. AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 500 mm.
   - CONSTRUCT ABUTMENTS AND WINGWALLS TO THE BEARING SEAT ELEVATIONS. THE CONTRACTOR SHALL SUPPLY TEMPORARY LATERAL BRACING FOR THE ABUTMENTS. FORMWORK AND LATERAL BRACING SHALL NOT BE REMOVED UNTIL CONCRETE HAS REACHED 70% OF ITS SPECIFIED 28-DAY STRENGTH.
   - ALL EXPOSED EDGES TO HAVE 20 mm CHAMFER.



1 ELEVATION
SCALE: 1:250



2 SECTION
SCALE: 1:50

Notes
1. This drawing is the exclusive property of R. J. Burnside & Associates Limited. The reproduction of any part without prior written consent of this office is strictly prohibited.
2. The contractor shall verify all dimensions, levels, and datums on site and report any discrepancies or omissions to this office prior to construction.
3. This drawing is to be read and understood in conjunction with all other plans and documents applicable to this project.

NOT FOR CONSTRUCTION

No.	Issue / Revision	Date	Auth.
1	CONCEPT GENERAL ARRANGEMENT	26/07/16	C.B.

BURNSIDE
R.J. Burnside & Associates Limited
3 Ronell Crescent,
Collingwood, Ontario, L9Y 4J6
telephone 1-800-265-9662
web www.rjburnside.com

Client
City of Hamilton
100 KING ST W
HAMILTON, ON
L8G 1J1

Drawing Title
McQuesten Park, Upper Wentworth St
GENERAL ARRANGEMENT

Drawn	Checked	Designed	Checked	Date	Drawing No.
H.F.	C.B.	C.B.	C.B.	26/07/16	B-001
Project No. 300069172		Contract No. CONTRACT NO.		Revision No. 0	
Scale AS NOTED					

File: \\BRN1-FS01\DOCS\DOCS\300069172\Eng Data\Drawings\B-001.dwg Tuesday, July 19, 2016 - 11:59 AM

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix B
Class D Cost Estimate

Client	**City of Hamilton**
Project	**McQuesten Pedestrian Bridge**
Project No.	**300060172.0000**
Submission	**30% Preliminary Cost Estimate**

Item No.	Description	Contract Quantity	Unit	ESTIMATED UNIT PRICE	ESTIMATED PRICE
Part A - General Work					
A1	Mobilization and Demobilization	1.0	LS	$80,000.00	$80,000.00
A2	Contract Bonds & Insurance	1.0	LS	$25,000.00	$25,000.00
A3	Construction Layout	1.0	LS	$20,000.00	$20,000.00
A4	As Built Drawings	1.0	LS	$8,000.00	$8,000.00
A5	Management of Excess Material	1.0	LS	$25,000.00	$25,000.00
Part B - Temporary Works					
B1	Site / Traffic Control Signing	1.0	LS	$30,000.00	$30,000.00
B2	Heavy Duty Silt Fence Barrier	250.0	m	$25.00	$6,250.00
B3	Full Highway Closure (48 hours, LMA Pkwy) (Provisional)	1.0	LS	$150,000.00	$150,000.00
B4	Falsework, Formwork and Temporary Works (Engineered)	1.0	LS	$90,000.00	$90,000.00
B5	Temporary Concrete Barriers	1.0	LS	$25,000.00	$25,000.00
B6	Tree Protection / Arborist Allowance	1.0	LS	$15,000.00	$15,000.00
B7	Utility Protection – Hydro One Lines	1.0	LS	$35,000.00	$35,000.00
Part C - Bridge Works					
C1	Earth Excavation for Structure	1.0	LS	$20,000.00	$20,000.00
C2	Concrete in Abutments	25.0	m	$1,400.00	$35,000.00
C3	Concrete in Wingwalls	18.0	m^3	$1,400.00	$25,200.00
C4	Concrete in Footings	20.0	m^3	$1,200.00	$24,000.00
C5	Concrete in Deck	72.0	m^3	$1,800.00	$129,600.00
C6	Concrete in Barriers	13.0	m^3	$2,200.00	$28,600.00
C7	Concrete in Approach Slabs	2.0	ea	$18,000.00	$36,000.00
C8	Granular Backfill to Structure	780.0	t	$35.00	$27,300.00
C9	Steel Truss Superstructure – Fabrication, Coating, Delivery and On-Site Assembly (Complimentary Aesthetic)	80.0	m	$30,000.00	$2,400,000.00
C10	Mobile Crane Supply (2 × ~500 t Class), Setup, and Demobilization	1.0	LS	$180,000.00	$180,000.00
C11	Bridge Transport and Erection	1.0	LS	$120,000.00	$120,000.00
C12	Bearings	4.0	ea	$4,000.00	$16,000.00
C13	Bridge Deck Waterproofing	320.0	m^2	$110.00	$35,200.00
C14	Cyclist Barrier with Handrail (Complimentary Aesthetic)	160.0	m	$350.00	$56,000.00
C15	Pedestrian Cage (Chainlink Fence or Equivalent) (Complimentary Aesthetic)	160.0	m	$220.00	$35,200.00
C16	Expansion Joints	2.0	ea	$8,000.00	$16,000.00
C17	Deck Drainage	4	ea	$1,000.00	$4,000.00
C18	Deep Foundation System - (Provisional)	1	LS	$220,000.00	$220,000.00
C19	Reinforcing Steel Bar	1.0	LS	$70,000.00	$70,000.00
C20	Bridge Lighting and Electrical Conduit	1.0	LS	$65,000.00	$65,000.00
Part D - Approach Works					
D1	Earth Excavation, Grading and Disposal	1.0	LS	$45,000.00	$45,000.00
D2	Temporary Stockpiling and Onsite Re-use	1.0	LS	$10,000.00	$10,000.00
D3	Granular A (roadway)	145.0	t	$40.00	$5,800.00
D4	Granular B Type I (roadway)	290.0	t	$35.00	$10,150.00
D5	Granular 'B' - Type I, Retaining Wall Backfill	3800.0	t	$35.00	$133,000.00
D6	Concrete Curb & Gutter	135.0	m	$180.00	$24,300.00
D7	MSE Retained Soil System	144.0	m^2	$1,500.00	$216,000.00
D8	Redi Rock Retaining Wall or Equivalent	276.0	m^2	$1,500.00	$414,000.00
D9	Retaining Wall Multi-Use Trail Barriers with Handrail	135.0	m	$400.00	$54,000.00
D10	Hot Mix HL-4	350.0	t	$200.00	$70,000.00
D11	MUP Sub-drain Behind Retaining Wall	70	m	$75.00	$5,250.00
D12	MUP Signage and Pavement Markings	1.0	LS	$5,000.00	$5,000.00
Part E - Restoration Works					
E1	Site Restoration	1.0	LS	$30,000.00	$30,000.00
E2	Restoration of Primary and Secondary Work Zones	1.0	LS	$40,000.00	$40,000.00
E3	Removal and Reinstatement of Existing Sound Barrier	1.0	LS	$60,000.00	$60,000.00
E4	Landscaping and Tree Replacement Allowance	1.0	LS	$10,000.00	$10,000.00
E5	Temporary Light Pole Relocation	1.0	LS	$20,000.00	$20,000.00

Subtotal Estimated Construction Price	$5,204,850.00
20% Contingency	$1,040,970.00
Property Acquisition Allowance	$300,000.00
6% Engineering Support Allowance	$312,291.00
Project Subtotal	$6,858,111.00
13% .H.S.T	$891,554.43
TOTAL ESTIMATED CONSTRUCTION PRICE	$7,749,665.43