



University Drive Bridge Class Environmental Assessment Environmental Study Report Appendices

September 2026

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Appendix A

Study Design



Final Study Design Report
Western University -
University Drive Bridge Class Environmental
Assessment, Project No.: 9M5173

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Revision History

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1.0 INTRODUCTION

Western University (Western) has initiated a Class Environmental Assessment (EA) Study for improvements to the University Drive Bridge located across the north branch of the Thames River in London, Ontario. The existing bridge is near the end of its service life for vehicular traffic and Western will define a plan for the Thames River crossing. The plan will consider a range of alternatives to address Western's needs, including:

- Rehabilitation of the existing bridge;
- Rehabilitation of the existing bridge plus structure widening;
- A new bridge on the existing alignment; or
- Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

The existing bridge provides access across the North Thames River for vehicular traffic, transit, pedestrians and cyclists.

This Final Study Design Report (SDR), a discretionary document for the Municipal Class Environmental Assessment, presents a description of the work plan, preliminary alternatives, consultation plan and overall study process. It describes the key activities required to complete the Study. The Final Study Design will be made available to Federal and Provincial ministries and agencies.

1.1 Study Area(s)

The Study Area is located on Western University's campus in London, Ontario and is illustrated in **Figure 1**. The EA Study will also consider effects of the project beyond the limits of the campus. These effects will consider traffic diversion on the wider City of London transportation network, should restrictions be implemented that restrict public vehicular access across the University Drive Bridge on campus.

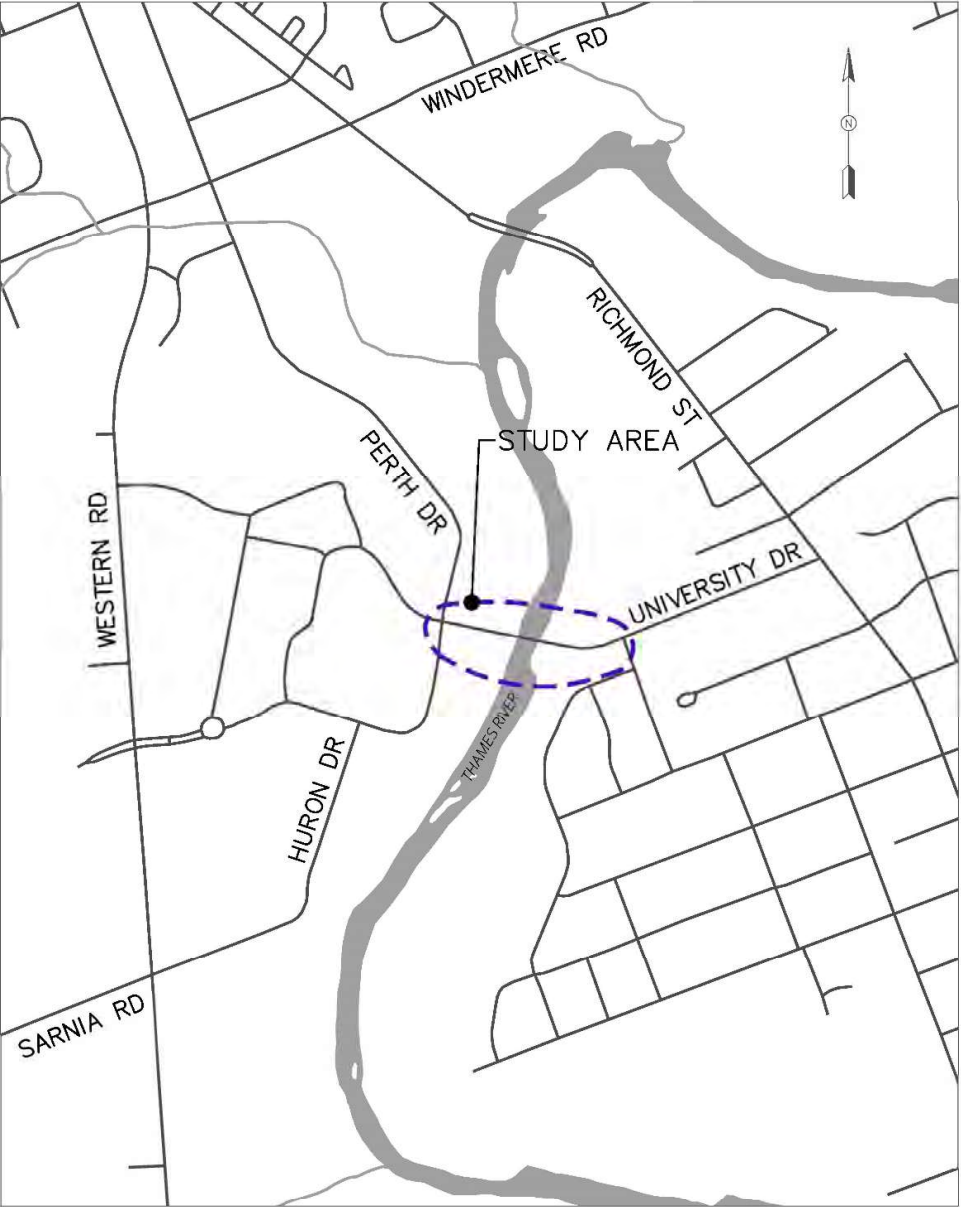


Figure 1: Study Area

1.2 Study Background

The University Drive Bridge was constructed in the early 1920's in the Collegiate Gothic style which is also reflected in the architectural detailing of buildings on campus. In particular, the limestone masonry of the bridge maintains a material connection to the campus buildings. There is also a need to provide additional space on the bridge to accommodate active modes of transportation (pedestrian and non-motorized bicycles) per the initiatives detailed in Western's Open Space Strategy (April 2018).

Major rehabilitation of the existing bridge is required to meet current standards for vehicle weight and lane widths.

The University Drive Bridge is an important access link to Western and is a prominent feature of the University, providing an entry gateway to the campus across the North Branch of the Thames River. This study will evaluate a range of alternatives to address improvements to the University Drive Bridge and will document the decision-making process as part of the Class Environmental Assessment (EA).

1.2.1 Existing Bridge

The existing University Bridge was initially constructed in 1922. The structure is a steel girder bridge with the girders shaped to provide an arch profile. The exterior faces of the girders are concealed with a concrete facing that was part of the original construction. The girders are continuous over the piers with bearings at the abutments and at each side of the central drop-in span.

As part of London Bus Rapid Transit (BRT) Project, a Cultural Heritage Evaluation Report (CHER) for the University Bridge was undertaken. The CHER determined that the bridge has cultural heritage value.

A Stage 1 Archaeological Assessment (AA) was undertaken as part of this study. The Stage 1 AA was entered into the Ontario Public Register of Archaeological Reports. The report covers the Study Area for the present undertaking, and indicates the area has archaeological potential and recommends a Stage 2 test pit survey.

The bridge was modified and repaired over the years from 1965 to 2014 with a major modification to widen the useable sidewalk width and replace part of the deck in 2002. No major repairs were made to the bearings, girders or substructure over this period.

A detailed inspection of the structure, including a load evaluation, was completed in 2016 titled University Drive Bridge Structural Assessment, prepared for Western University by Webster Engineering Services Ltd. in association with Parsons Inc. dated January 16, 2016. This report indicated that the structure included severe deficiencies in the bearings and drop-in-span support locations. The remaining fatigue life of the bridge structure was identified as “undefined” due to unobservable details, although no fatigue cracking was noted as being observed.

The capacity of the bridge was confirmed by a load test conducted March 28, 2016 under the observation of Webster Engineering Services Ltd. using a 60-tonne GVWR test vehicle. The test indicated that the load could be supported, and the results were used to inform the posting limit of the bridge at that time.

Bracing repairs were undertaken in 2016 to correct identified critical member loss conditions. Additional rehabilitation was undertaken in 2019. The abutment and drop-in span bearings were replaced and the hinge at the drop-in-span support was extensively reinforced. Minor concrete repairs were also undertaken.

Inspection reports completed in 2019, 2020, 2021 and 2022 indicate that there is no observed significant deterioration of the structure.

The bridge remains open to restricted traffic and is subject to frequent inspections.

1.3 Study Considerations

Key considerations will include:

Cultural Heritage: The bridge was found to be of cultural heritage value/interest and is listed on the municipal heritage register. In addition, the Thames River is a designated Canadian Heritage River (<https://chrs.ca/en/rivers/thamesriver>). The Study Area also has archaeological potential. Technical cultural heritage studies are required to inform the proposed rehabilitation or replacement of the bridge.

City of London Transit: Western University is a large generator of transit ridership in the City of London. The University Drive Bridge may be required to accommodate larger transit vehicles.

Environmental Permitting: The North Branch of the Thames River and Medway Creek tributary are cool/cold water systems and are identified as critical habitat for the provincially and federally listed Silver Shiner and Black Redhorse. Online databases including the Natural Heritage Information Centre (NHIC) and Department of Fisheries and Oceans (DFO) Species at Risk (SAR) mapping and have identified the potential for additional SAR including the Wavyrayed Lampmussel, Spiny Softshell turtle, Eastern False-Rue anemone, Butternut tree, Eastern Meadowlark and Barn Swallow. Permitting and environmental protection will therefore be a significant component of the project.

Traffic Staging: The management of traffic and construction staging will be a key element of the project.

University Infrastructure: The existing bridge accommodates major infrastructure servicing the campus, all of which will need to be maintained and protected throughout construction.

Emergency Services: Access for emergency vehicles will be required. This will include emergency vehicles travelling to and from the University Hospital.

1.4 Background Studies and Existing Conditions

Western University aims to anticipate and accommodate future growth on campus through master planning studies that guide its development, including:

- Western University Campus Master Plan 2015 (June 2015)
- Western’s Open Space Strategy (April 2018)
- Towards Western at 150, Western University Strategic Plan (April 2021)
- As part of the London Bus Rapid Transit (BRT) Project, a Cultural Heritage Evaluation Report (CHER) for the University Bridge was undertaken. The CHER determined that the bridge has cultural heritage value.

These studies identify Western’s goals and visions for the University’s physical and academic growth based on projected enrollment. The following sections summarize elements of these reports that are applicable to the University Drive Bridge with respect to the vision and planning objectives of Western.

1.4.1 Western University Campus Master Plan (2015)

The Western University Campus Master Plan (June 2015) focuses on the challenges facing the Western Campus for the coming decades. Foremost among those challenges is the ability to accommodate continued growth while respecting the essential qualities of the campus and ensuring efficient, modern space and safe access around the campus. The Campus Master Plan identified key initiatives, including:

- Improve Campus Connectivity - emphasis on improving pedestrian/bicycle connectivity and the potential for rapid transit.
- Creation of High-Quality Public Spaces – creating public spaces that contribute to a sense of place consistent with Western’s history and future.
- Identification of Campus Gateways - the sense of place and arrival at Western augmented by the use of new developments, sites, open space and pedestrian improvements to emphasize the principal gateways.

The Plan recognizes University Drive as a major “Arrival Drive” as part of the Proposed Movement and Open Space concept. Further in Chapter 6.1 Future Transportation Strategies, two key components were Active Transportation in the form of walking and cycling infrastructure.

1.4.2 Western’s Open Space Strategy (April 2018)

The purpose of Western’s Open Space Strategy (April 2018) was to identify opportunities to accommodate future growth on campus, increase pedestrian safety, and integrate higher order bus transit through the campus. This Strategy started with an inventory of existing conditions that identified key opportunities to improve the campus, including the need to improve pedestrian safety, accommodate improved transit service and improve the quality of open spaces.

Network Recommendations from the Strategy include:

- Limit access to the University Drive bridge to bicycles, pedestrians, Bus Rapid Transit vehicles, and designated university vehicles.
- Create a dedicated pedestrian drop-off area at Sunset Drive which provides access to the Medway parking lot but restricts public vehicle access across the bridge.

The Open Space Strategy identified the implementation of the University Drive Bridge as a medium-term priority project occurring between 2023 and 2027.

1.4.3 Towards Western at 150 - Western University Strategy Plan (April 2021)

Western University’s Strategic Plan was undertaken to address the University’s post pandemic recovery plan. The Strategic Plan commits to:

- Enhance Western’s campus by investing in the quality, accessibility, and beauty of the physical environment.
- Increase the space for students to gather by creating more “collision spaces”.

1.4.4 London Health Sciences Centre (LHSC)

London Health Sciences Centre (LHSC) is a multi-site facility that includes University Hospital adjacent to the Western University campus at 339 Windermere Road. University Hospital is a teaching hospital that is affiliated with Western’s Schulich School of Medicine and Dentistry.

1.4.5 Affiliated University Colleges

Western University has three affiliated colleges located on their main campus:

- Brescia University College – Brescia is a liberal arts women’s college located at 1285 Western Road. Brescia college has 46 academic staff and 1350 full- time students.
- Huron University College – Huron is a co-educational liberal arts university located northeast of the intersection of Western Road and Burnlea Walk. Huron has 125 administrative staff and 1100 full time students.
- King’s University College – King’s is a co-educational, liberal arts college located on Epworth Avenue. King’s has 173 academic staff and 3,800 students.

2.0 NEED AND JUSTIFICATION

2.1 Problem and Opportunity Statement

The University Drive Bridge over the North Branch of the Thames River was one of the first structures constructed on the Western University campus in the early 1920's. Over the past 102 years, this structure has become an icon, synonymous with Western University's campus gothic style of architecture. The original bridge opening is illustrated in **Photo 1**.



Photo 1: Original Bridge Opening

The structure is nearing the end of its service life for vehicular traffic. The plan will consider a range of alternatives to address the University's transportation requirements over a future life span of 100 years for durability of the bridge. These alternatives include¹:

1. Retention of existing bridge with no major modifications undertaken;
2. Restoration of missing or deteriorated elements where physical or documentary evidence (e.g. photographs or drawings) exist for their design;
3. Rehabilitation of the existing bridge with sympathetic modification;
4. Retention of existing bridge with sympathetically designed new structure in proximity;
5. Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic;
6. Retention of bridge as a heritage monument for viewing purposes only;
7. Relocation of smaller, lighter single span bridges to an appropriate new site for continued use (see 4) or adaptive re-use (see 5); and
8. Bridge removal and replacement with a sympathetically designed structure.

¹ MTO Heritage Bridge Guidelines (Interim) – Jan 11, 2008

The current structure (bridge) deck has been modified from its original cross section to accommodate and serve the increased volumes of active transportation in the form of pedestrians, cyclists and road users in the form of vehicles. The vehicular traffic crossing this bridge has destinations both within the Western campus and beyond. A significant volume of traffic through the University today does not need to travel through the campus to access the greater London destinations. A previous Western study determined that approximately 40% of the vehicular traffic crossing the bridge is comprised of trips external to Western.

The University Master Plan encourages sustainable modes of travel throughout the campus (transit, walking, and cycling) and identifies the need for future transportation infrastructure to accommodate Western's planned growth. Reducing vehicular traffic and trips not required to travel through the campus is a goal outlined in the Toward Western at 150, Western University Strategic Plan (2021).

The problem statement can be summarized as:

"Improvements to the University Drive bridge are required to safely and reliably accommodate all modes of transportation. The existing bridge is nearing the end of its service life as a vehicular bridge and requires significant repairs. This Class Environmental Assessment will consider a range of improvement alternatives to address the University's transportation requirements while respecting the character of the iconic image of the bridge and the Middlesex Memorial Tower at University College that is synonymous with Western University."

Photo 2 illustrates the view of University Hill and the Middlesex Memorial Tower west of the bridge.



Photo 2: View of University Hill and Middlesex Memorial Tower from the Bridge

2.2 Project Opportunities

While this problem statement presents a number of challenges, it also provides a number of opportunities to address Western’s goals. Western’s Open Space Strategy (2018) sets out a series of progressive opportunities (Vision, Principles and Big Moves) that can be achieved in varying degrees in the planning and design of the bridge. The readily identified opportunities include:

- **Vision:** “The Western Open Space Strategy will build on the natural beauty of Western’s campus and legacy of landscape stewardship to deliver a safe and beautiful campus that will foster learning and promote Western as a destination of choice for world class education and research.”
- **Principles:**
 - Access to University
 - Mobility
- **Big Moves:**
 - Prioritize Pedestrians
 - Accommodate Higher Order Bus Service
 - Allow for Service Access
 - Improve Accessibility
 - Reduce Cut-through Traffic
 - Maintain Vehicle Access
 - Complete Bicycle Network
 - Engage the River

These Principles and Big Moves will be incorporated into the design and construction of the project and considered in the Environmental Assessment.

2.2.1 Landscape Architecture and Urban Design

Bridge Rehabilitation Considerations

Rehabilitating the existing bridge maintains the existing views and sightlines of the North Thames River and the central campus tower and Welcome Plaza. The historic bridge as a focal point for travel through the campus is maintained with possible rejuvenation of the heritage and historic features of the original structure restored. Minimal impacts to the existing tree canopy can be anticipated, including the protection of aquatic and terrestrial SAR species and their habitat.

Protection, restoration and identifying conservation considerations that define the heritage value of the bridge’s inherent qualities are anticipated. The bridge represents engineering and architectural heritage representing the early 1920’s Collegiate Gothic style which is also reflected in the architectural detailing of buildings on campus and it may also be readapted/repurposed to active transportation modes and continue as a landmark feature within the Western Campus.

Bridge Replacement Considerations

The construction of the new bridge presents an opportunity to capitalize on important views, showcase and strengthen connections to the Thames River, enhance pedestrian and cyclist circulation and safety through this part of the campus and highlight the cultural significance of the original bridge. Preserving the existing tree canopy to the extent possible, while seeking opportunities for aquatic and terrestrial habitat enhancements will offset potential impacts to the natural environment during bridge construction.

The importance of the design of the bridge is heightened due to the importance of the structure as a gateway into the campus. Therefore, seeking opportunities for placemaking contributing to an experience of the campus is a key principle of the design for the new bridge. The bridge design should incorporate design aesthetics, materials and amenities that are complementary to the surrounding landscape.

To realise the project vision and principles, a series of design criteria have been drafted under the headings of Placemaking, Movement, Economy of Means, and Ecology. These criteria will assist the project team in evaluating the various alternative solutions and ultimately inform the development of the chosen design direction. The design’s thoughtful consideration and response to each of these criteria will result in a solution which successfully realizes the project vision. The criteria are listed in **Figure 2**.

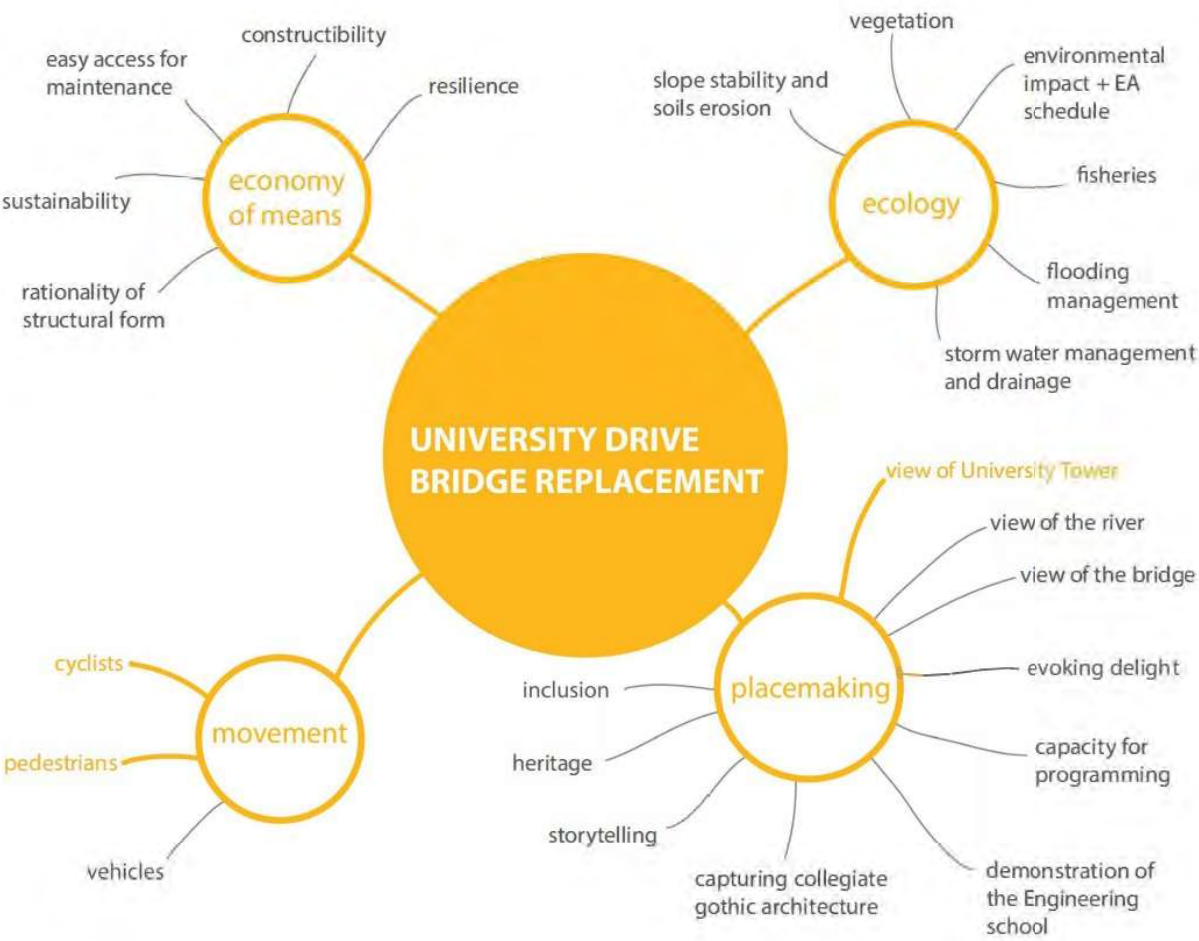


Figure 2: Landscape Architecture and Urban Design Pillars

3.0 ALTERNATIVE PLANNING SOLUTIONS

3.1 Structure Alternative Planning Solutions (Planning Alternatives)

The Municipal Class Environmental Assessment requires that reasonable and feasible Planning Solutions be identified and evaluated at the start of the Study. These alternatives consider the overall needs of the Study Area and identify alternative approaches of addressing the need for improvements.

The analysis and evaluation of Alternative Planning Solutions (APS) for this Study will be summarized in the Preliminary Alternative Planning Solutions Report and presented at Public Information Centre No. 1.

The Alternative Planning Solutions for this study, and the preliminary coarse screening of these alternatives, are summarized below:

Alternative 1: Retention of Existing Bridge with No Major Modifications Undertaken

The “Do Nothing” strategy must be considered as mandated by the Class EA. It represents a baseline to which other approaches can be compared. This alternative would maintain the existing 2-lane bridge in its current location without any rehabilitation or repairs.

The existing structure is nearing the end of its service life as a vehicular bridge and requires repair if it is required to accommodate vehicular traffic. The preliminary recommendation for the Do Nothing Alternative is that it not be carried forward as a feasible alternative.

Alternative 2: Restoration of Missing or Deteriorated Elements Where Physical or Documentary Evidence (e.g. Photographs or Drawings) exist for their Design

The “Restoration of the Existing Bridge” strategy would conserve the existing structure by making required repairs/restorations.

Western’s planning documents recommend improving campus connectivity with a focus on active transportation elements. Restoration of the existing bridge will not allow for improved functionality of the bridge for active transportation modes.

In addition, this alternative provides reduced reliability because it defers the eventual replacement required to accommodate vehicular loading. The preliminary recommendation for the Restoration of the Existing Bridge Alternative is that it not be carried forward as a standalone long-term feasible alternative.

Alternative 3: Rehabilitation of the Existing Bridge with Sympathetic Modification

The “Rehabilitation of the Existing Bridge” strategy would conserve the existing structure by making required repairs/restorations.

Western's planning documents recommend improving campus connectivity with a focus on active transportation elements. Rehabilitation of the existing bridge will not allow for improved functionality of the bridge for active transportation modes.

In addition, this alternative provides reduced reliability because it defers the eventual replacement required to accommodate vehicular loading. The preliminary recommendation for the Rehabilitation of the Existing Bridge Alternative is that it not be carried forward as a standalone long-term feasible alternative.

Alternative 4: Retention of Existing Bridge with Sympathetically Designed New Structure in Proximity

This alternative would conserve the existing bridge as a meeting place, with a modern, subordinate but elegant vehicular bridge beside it. The offset between the new and historic bridges will be carefully selected to respect and augment the visibility of the historic structure. This alternative keeps vehicular traffic on the existing bridge which can not be maintained. The preliminary recommendation for the Retention of Existing Bridge with Sympathetically Designed New Structure in Proximity Alternative is that it not be carried forward as a standalone long-term feasible alternative.

Alternative 5: Rehabilitation of the Existing Bridge for Active Transportation plus Construction of a New Bridge for Vehicular Traffic

This alternative would conserve and repurpose the existing bridge for both active transportation (pedestrians and cyclists) and as a meeting place with a modern, subordinate but elegant vehicular bridge beside it. The offset between the new and historic bridges will be carefully selected to respect and augment the visibility of the historic structure. This approach would give new life to the University Drive bridge, simplify construction, and create a new and memorable open space on campus (see **Figure 3**). The preliminary recommendation to Rehabilitate the Existing Bridge for Active Transportation plus Construction of a new Bridge for Vehicular Traffic is carried forward.

Alternative 6: Retention of Bridge as A Heritage Monument for Viewing Purposes Only

The "Retention as a Heritage Monument for Viewing" strategy would conserve the existing structure as a monument; however, the structure would retain the ability to support active transportation, a key principle for improving campus connectivity. The bridge would no longer support: the sense of place for the arrival on campus; the sightlines to the tower and campus views; or the movement of people that is integral to the bridge's sense of place and purpose. The preliminary recommendation for the Retention of Bridge as a Heritage Monument for Viewing Purposes Only Alternative is that it not be carried forward as a standalone long-term feasible alternative.

Alternative 7: Relocation of Smaller, Lighter Single Span Bridges to an Appropriate New Site for Continued Use (see 4) or Adaptive Re-Use (see 5)

This alternative is not applicable due to the size and materials of the bridge. It is not a light single span bridge which can be relocated.

Alternative 8: Bridge Removal and Replacement with a Sympathetically Designed Structure

The "New Bridge on the Existing Alignment" strategy would construct a new bridge on the existing alignment and remove the existing bridge. Sub-alternatives for this Planning Solution include:

Alternative 8A: Signature Structure on the Existing Alignment – A new bridge type acting as both a gateway to the University and an addition to the placemaking of the campus. This could be a single span arch or a different visually exciting structural system such as an extradosed or cable stayed bridge. There is also the possibility to design a structural form below the deck, with the view from above kept similar to what it is today. Significant markers and deck features such as lookouts or plaza space could be incorporated into the design. It would create a new gateway with a contemporary structure appropriate to the time and place and would add a new and memorable open space to the campus. (see **Figure 4**).

Alternative 8B: Historic Reimagination Structure on the Existing Alignment – A new bridge on the existing alignment with a contemporary structure that frames the western view to the University. It would be a contemporary structure that would not overwhelm the entry to the campus and could include sympathetic design elements. Like the existing bridge, the aesthetic design would include aspects of the Collegiate Gothic aesthetic language which is strongly associated with Western. The new bridge would not attempt to mimic a heritage structure. Rather, it would utilize materials and forms reflecting the existing bridge. This would reflect the original bridge design, providing a gateway without dominating the site. (see **Figure 5**).

Based on the initial coarse screening described above, three Planning Alternatives are being carried forward for further review:

- Alternative 5: Rehabilitation of the Existing Bridge for Active Transportation plus Construction of a New Bridge for Vehicular Traffic;
- Alternative 8A: Signature Structure on the Existing Alignment; and
- Alternative 8B: Historic Reimagination Structure on the Existing Alignment.

These 3 Planning Alternatives are recommended to be carried forward for additional consideration and a comparison of these alternatives will be presented at Public Information Centre No. 1.

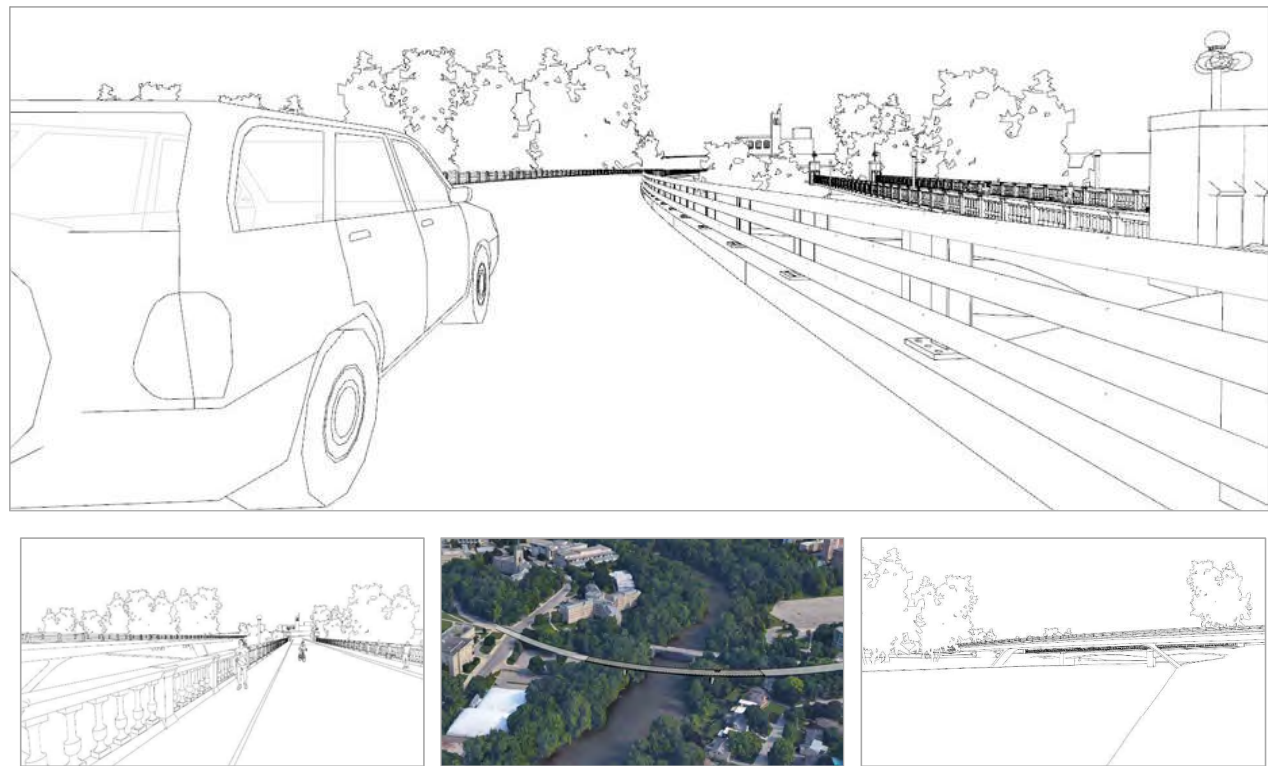


Figure 3: New Bridge and Conserve Existing Structure

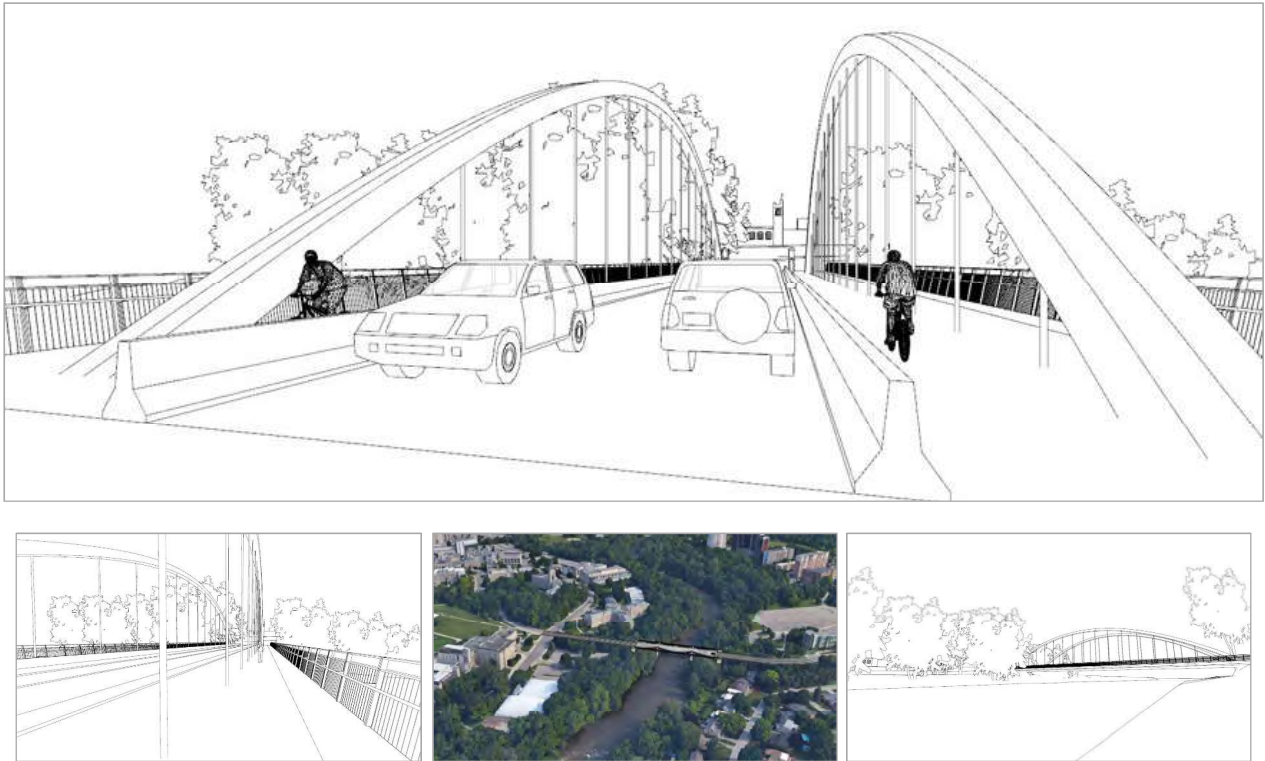


Figure 4: Signature Structure on the Existing Alignment

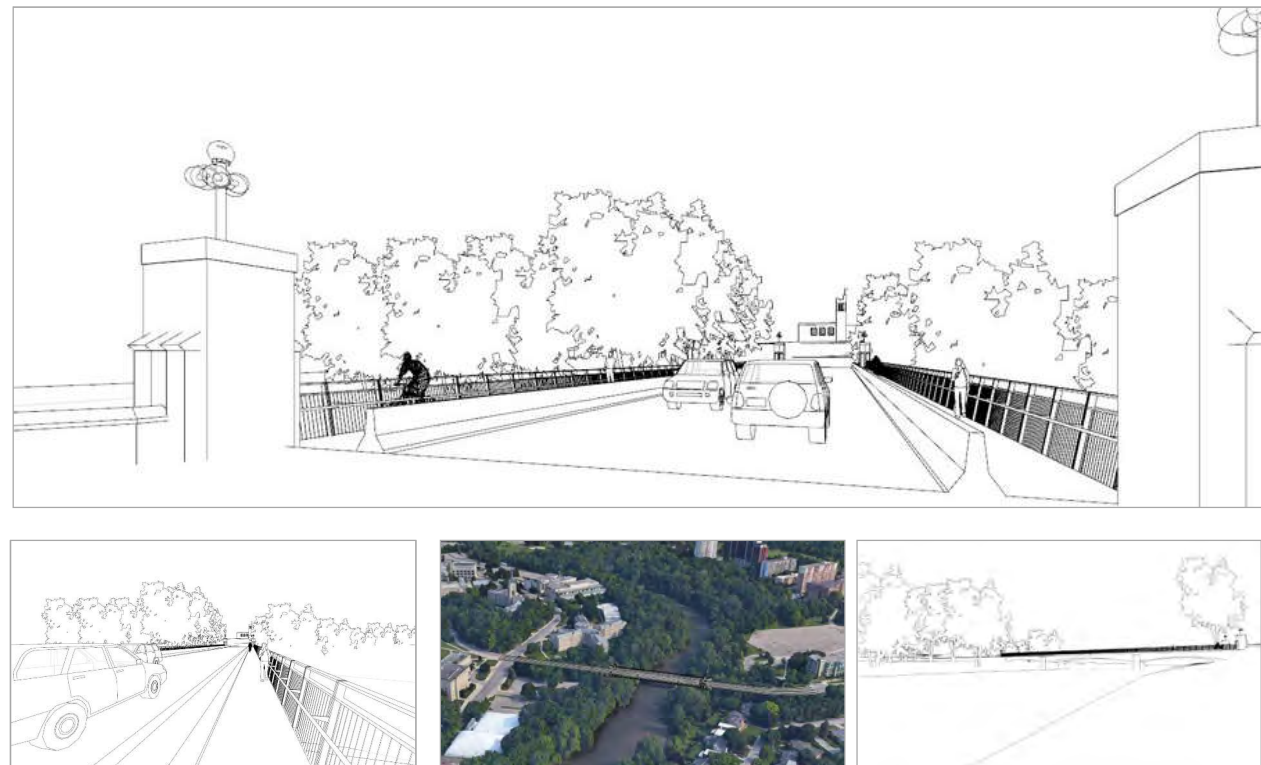


Figure 5: Historic Reimagination Structure on the Existing Alignment

This study will complete all requirements under the Municipal Class EA by establishing the need and justification for the project, considering all reasonable alternatives with acceptable effects on the natural, social and cultural environments, and proactively involving the public and all interested stakeholders in defining a Recommended Plan.

4.1 Guiding Principles

The study approach reflects the following Ministry of the Environment, Conservation and Parks (MECP) five guiding principles for EA studies, namely:

- Consider all reasonable alternatives;
- Provide a comprehensive assessment of the environment;
- Utilize a systematic and traceable evaluation of net effects;
- Undertake a comprehensive public consultation program; and
- Provide a clear and concise documentation of the decision-making process and the public consultation program.

4.2 Environmental Assessment Act Requirements

The Environmental Assessment will follow the Class EA process, meeting the requirements of the Municipal Class Environmental Assessment (2015). The Study is being initiated as a Municipal Schedule C project based on the range on anticipated effects and capital cost of the project.

The Schedule C project will include two public meetings and conclude with the preparation of an Environmental Study Report (ESR). Following this approach, the public will be provided with a 30-day review period at the Study conclusion.

As the second step in the Class EA process this Study Design Report is being made available to the public upon request. This satisfies discretionary Step 1.2 of the Municipal Class EA process, as illustrated in **Figure 6**. The public and agencies will have this initial opportunity to comment on the proposed approach.

The Municipal Class EA Process is illustrated in **Figure 6**.

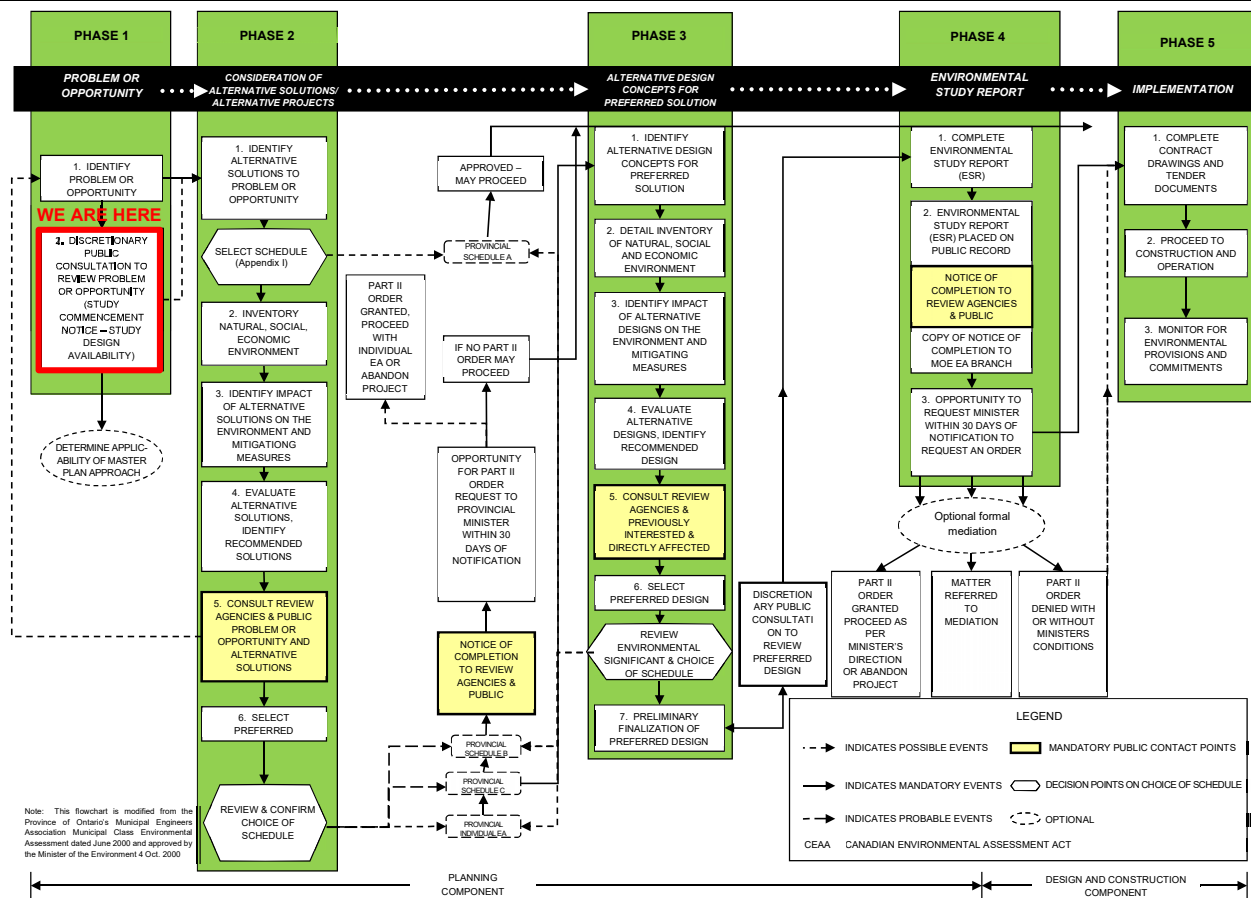


Figure 6: Municipal Class EA Process

The Consultation Program identifies opportunities for the public/stakeholders, agencies and Indigenous Peoples to be involved in the study process. This Study will use several processes to engage with interested parties and provide an opportunity for input. The Consultation Program will include:

- Notices published in local newspapers, issued as media releases and directly mailed/mailed to the study mailing list at key points over the course of the study including:
 - Notice of Study Commencement at the study start-up
 - Public Information Centres No. 1 and 2
 - Notice of Study Completion to announce the start of the 30-day public review period
- Communication and coordination with agencies to obtain background information for input into the study and to obtain required approvals/permits.
- Meetings with the City of London, Upper Thames River Conservation Authority, London Health Sciences Centre, Emergency Services and other University Stakeholders.

5.1.1 Public Consultation

The study will use several techniques to proactively involve the public including Public Information Centres (PIC) and meetings with external stakeholders. These meetings will include representatives from Western and the consultant team.

Two public meetings will be held as Public Information Centres (PICs). PIC No. 1 will present the project goals, problem and opportunity statement, Study Design (work plan), environmental inventories, traffic analysis, assessment of Planning Solutions and seek public/agency input. PIC No. 2 will present the evaluation of design alternatives and the Technically Preferred Alternative (TPA).

The public meetings will seek input and comments from the public and stakeholders. There will be an opportunity for the public to comment on the study at any time. All information will be collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act* (2009). Anyone interested in the study will be added to the study contact list upon request.

5.1.2 Agency Consultation

Agencies/Ministries will be contacted at the start of the study to inform them of Study Commencement and the circulation of this Study Design. As the study progresses, meetings will be held with select agencies (as required) to review the study and obtain approvals in accordance with the Municipal Class EA. Agencies will include:

- Ministry of the Environment, Conservation and Parks (MECP)
- Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)
- Ministry of Natural Resources and Forestry (MNRF)
- Ministry of Indigenous Relations and Reconciliation
- Infrastructure Ontario (IO)
- Department of Fisheries and Oceans (DFO)
- Upper Thames River Conservation Authority (UTRCA)
- Transport Canada (TC)
- City of London
- London Transit Commission (LTC)
- London Health Sciences Centre (LHSC)
- Emergency Services (Police, Fire and EMS)
- City of London Community Planning, Urban Design and Heritage - Planning and Development
- Other Stakeholders (as identified)

5.1.3 Indigenous Peoples Consultation

Western University has a duty to consult with Indigenous Peoples with traditional land use or interests within the Study Area. This will include:

- Identification of interested/affected Indigenous Peoples early in the decision-making process;
- Distribution and notification of relevant project-related information, including the Class EA process, environmental inventories and potential alternatives/impacts;
- Early identification of concerns/issues;
- Understanding of potential risk and impacts of the Study on Indigenous Peoples interests;
- Development of mutually acceptable solutions involving Indigenous Communities; and
- Ensuring regulatory compliance throughout the Class EA process.

Indigenous Peoples will be engaged throughout the duration of the Study.

5.2 Work Program

The major elements of the work program are described in the following sections.

5.2.1 Phase 1: Identify the Problem

This phase of the Study will include establishing the Study scope, schedule and approach with the Project Team, agencies and stakeholders; issuing the Notice of Study Commencement; the collection and organization of background information; reviewing and documenting existing conditions; and the structural / transportation analysis to identify operational, safety and traffic concerns.

In addition, this Final Study Design Report was prepared to proactively engage agencies early in the Study. This Final Study Design presents: the Problem/Opportunity Statement; the

consultation plan; schedule; and identifies the scope of the Study's technical requirements, design standards and proposed evaluation criteria. This document is available for agency review and will help establish the foundation for all remaining environmental planning and public consultation processes.

After the first PIC, and based on comments received, the Final Study Design Report will be completed.

5.2.2 Phase 2: Alternative Planning Solutions

The list of Alternative Planning Solutions is provided in **Section 3.0**. Based on this evaluation, a context sensitive design approach will be used in the development and evaluation of preliminary design alternatives. In addition, technical cultural heritage studies will guide the selection of the recommended alternative planning solution.

The consideration of all reasonable alternatives is a guiding principle for EA studies. The alternatives will be generated through discussions with Western, agencies and the general public.

5.2.3 Phase 3: Alternative Design Concepts for the Preferred Planning Solution

Preliminary Design Alternatives will be generated for the Preferred Alternative Planning Solution based on studies of the natural, social and cultural environment and results of technical studies.

5.2.3.1 Environmental and Technical Studies

Environmental and technical studies will be completed to assess the impacts of alternative design concepts. These studies are described in the following **Sections**.

5.2.3.2 Archaeology Resources

Based on the previously completed Stage 1 Archaeological Assessment, a Stage 2 Archaeological Assessment will be completed to determine whether or not archaeological resources are present based on the selection of the Technically Preferred Alignment. The Stage 2 archaeological assessment will be conducted in accordance with MHSTCI's 2011 Standards and Guidelines for Consultant Archaeologists. The scope of the work for the assessment will consist of the following tasks: on-the-ground assessment and documentation of areas that do not require Stage 2 survey; test pit survey of areas requiring additional investigations; artifact processing and analysis; and a summary of results in a technical report. If it is determined that there will be new impacts in the river (underwater), a marine archaeological assessment may be required.

Archaeological concerns will have been addressed when all reports have been entered into the Ontario Public Register of Archaeological Reports recommending that:

1. The archaeological assessment of the project area is complete; and

2. All archaeological sites identified by the assessment are either of no further cultural heritage value or interest (as per Section 48(3) of the Ontario Heritage Act) or that mitigation of impacts has been accomplished through an avoidance and protection strategy.

5.2.3.2.1 Built Heritage Resources and Cultural Heritage Landscapes

The design process for the bridge will require an understanding of the heritage attributes of the existing bridge and its context to ensure that the replacement continues to reflect the values associated with this gateway location. The Campus Master Plan and the Cultural Heritage Evaluation Report (CHER) recognize the contribution that this bridge makes to the identity and sense of place so valued by the Western community.

The University Drive bridge is of cultural heritage value or interest, along with the North Thames River, which is a designated Canadian Heritage River. A Heritage Impact Assessment (HIA) will be carried out for the development of alternatives to determine if any built heritage resources and/or cultural heritage landscapes are impacted by a specific proposed development or site alteration. The HIA will also identify resources that will be conserved in the context of redevelopment or site alteration. Mitigative or avoidance measures or alternative development or site alteration approaches may be recommended. This work will contribute to the understanding of the bridge and will be integrated into the planning process through historic research, field work, and evaluation of the cultural heritage landscape resources as part of the development of design alternatives and contribute to the selection of the preferred alternative.

5.2.3.2.2 Natural Environment

A desktop review of available information and previous investigations of the Local Study Area will be completed at the start of the project to determine the presence of known natural features and ecological functions. Consultation will occur with Indigenous Peoples, relevant environmental agencies including the Upper Thames River Conservation Authority (UTRCA), the Ministry of the Environment, Conservation and Parks (MECP), the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNR) and the Department of Fisheries and Oceans (DFO). The purpose of consultation will be to obtain all available information and confirm field survey requirements. An aquatic and terrestrial field reconnaissance was completed in April, 2022 to review existing mapped natural features, identify additional constraints that should be considered during the evaluation of alternatives solutions and designs, and confirm field survey requirements for 2022/2023.

These constraints have been summarized and mapped as part of a Spring 2022 Natural Environmental Reconnaissance Memorandum. The memorandum includes initial recommendations for timing and phasing of the work and mitigation measures based on the ecological features present. Based on a review of background material and spring 2022 field reconnaissance, should in-water work be required, it will be allowed to proceed between July 16 and March 14.

This memorandum will be distributed to UTRCA and MECP following publication of the Municipal Class Environmental Assessment (MCEA) Commencement Notice and Study Design to confirm the information and receive input regarding the potential for additional

surveys beyond the identified scope. A detailed botanical survey and tree inventory will be required, and these are scheduled for the fall of 2022.

The final deliverable will be a Natural Environment Assessment Report. The report will provide a comprehensive summary of existing conditions, an impact assessment, and will propose suitable mitigation and offsetting measures for inclusion in final design drawings. This report will form the primary deliverable for all permits and approvals. It is anticipated that the work will require: a work permit from UTRCA; potential clearance in the form of a species registration or permit from MECP under the *Endangered Species Act* due to the presence of provincially-listed Species at Risk (SAR); and, if any work is proposed to occur below the two-year high water mark, a DFO project review culminating in a combined Fisheries Act Authorization (FAA) and *Species at Risk Act* (SARA) permit due to the presence of direct fish habitat and two federally-listed SAR (Silver Shiner and Black Redhorse, Threatened). One registration or permit under the ESA and one FAA/SARA permit are considered within the scope of this project.

High-level recommendations for habitat compensation, offsetting and restoration, construction monitoring, and post-construction monitoring will be developed during detailed design; however, the requirement for and extent of these tasks will not be confirmed until permits/approvals are finalized with relevant agencies.

5.2.3.2.3 Hydraulic Analysis

The work will be carried out in accordance with the Canadian Highway Bridge Design Code, MTO Highway Drainage Design Criteria, the MTO Drainage Manual, and current bridge waterway design practice with consideration of the existing bridge profile and flood clearance. Protection of the watercourse during construction, and the potential to eliminate or reduce to a minimum the required in-water work will have significant influence in the design. The Upper Thames River Conservation Authority has regulation mapping for the site which will be used as the basis for the work.

5.2.3.2.4 Drainage and Hydrology

The Drainage Design will include the design of the bridge deck drainage requirements and the drainage of the approaches. The design will be in conformance with the City of London's Design Specifications and Requirements Manual and other manuals by the City in its Consultant Resources. In addition, the requirements of the Provincial Stormwater Management Planning and Design Manual 2003 and Low Impact Development practices will be considered in the design.

5.2.3.2.5 Utility Coordination and Subsurface Utility Engineering

All utilities on the structure and in the work zone will be located during the concept design phase, and preliminary support-in-place and relocation strategies will be assessed and developed. The costing at the concept stage level will include utility work at a concept level and the design criteria will be developed with the utility requirements included. Utilities that require daylighting to manage potential conflicts will be identified at this stage. The work for the

maintenance of the utilities will be developed progressively through the design process to ensure the utility work is consistent with requirements and is properly documented.

5.2.3.2.6 University Services:

Major services on the bridge include high voltage electrical distribution, 300 mm trunk watermain and several communications services. Depending on the new bridge design, it may be necessary to relocate/reinstate existing infrastructure. An important part of the design will include the protection of the existing services during construction.

5.2.3.2.7 Geotechnical Investigation

An initial geotechnical investigation will be completed at the concept stage using available information where possible, with supplementary boreholes if needed. This information will be used to assess the viability of various foundation options with the likely approaches and indicative costs. This will help inform the discussions of the various concepts at the early stages of the project. Following the EA Process, when a Technically Preferred Alternative is determined, the geotechnical engineering team will complete any additional investigations to support the detailed design.

5.2.3.2.8 Survey

The University completed advance topographic survey. The work program will include additional supplemental field survey as required to support the technical recommendations.

5.2.3.3 Evaluation of Alternatives

Preliminary Design Alternatives will be evaluated using evaluation criteria such as safety, durability, property impacts, socio-economic environment, natural environment, cultural heritage, technical aspects/construction complexity and implementation.

The evaluation and analysis will identify all improvement alternatives and associated cost estimates including lifecycle costs, alternative construction/ material options, proposed timeline and innovative solutions.

Based on the results evaluation, a Technically Preferred Alternative (TPA) will be selected. A technical memorandum outlining the results of the evaluation will be completed and will include: the assessment of alternatives to the undertaking; generation and assessment of preliminary design alternatives; evaluation criteria (i.e., environmental inventories and technical investigations); and selection of the TPA.

This document will be presented to the public for input at PIC No. 2. Following the PIC, refinements will be made to the TPA (if applicable), and the refined alternative will become the Recommended Plan.

5.2.4 Phase 4: Environmental Study Report (ESR)

The preparation of the draft and final EA report will follow the format and content for an Environmental Study Report as required by the Municipal Class Environmental Assessment

document approved by the Ministry of the Environment, Conservation and Parks (MECP). The ESR will document the study methodology, findings, public involvement and recommendations. The Report will provide recommendations on the phasing of the proposed works. The public will be notified of the availability of the ESR for a 30-day public review period.

6.0 PRELIMINARY DESIGN ALTERNATIVES

This Section describes Preliminary Design Alternatives that will be considered for the recommended Planning Solution. The Environmental Assessment will identify the preferred alternative for various elements including:

- 1) Bridge Alternatives:

a) Span alternative

b) Structure type

i) Alternative with Timber Arch

ii) Inclined Leg

iii) Polygonal Arch

iv) Variable Depth Steel Girder
- 2) Alignment Alternatives (new bridge):

a) Twin north of existing structure

b) Twin south of existing structure
- 3) Alternatives for Vehicular Access for the Public:

a) No public vehicular access (restricted to transit, university vehicles and emergency services)

b) Restricted public access (allows unrestricted transit, university vehicles and emergency services)

c) Full vehicular access
- 4) Designated University Vehicles, Emergency Services and Transit Access Alternatives:

a) 2-lane

b) Single lane signalized (contra-flow)
- 5) Cross Section Alternatives:

a) Active transportation spine (conservation structure)

b) Sidewalk and lookout (new twinned structure)
- 6) Heritage Alternatives:

a) Barrier alternatives

b) Plinth alternatives

c) Material alternatives
- 7) Network Connectivity Alternatives:

a) Sunset Street intersection improvements
- 8) Hydraulic Alternatives:

a) Waterway opening

7.0 STUDY SCHEDULE

The schedule for this Study is shown below in **Table 1**.

Table 1: Study Schedule

Task	Date
Project Start-Up Meeting	Spring 2022
Information Gathering	Spring 2022
Environmental Review	Spring/Summer 2022
Study Commencement Notice	August 2022
Study Design	Fall 2022
Public Information Centre No. 1	November 2022
Analysis and Evaluation of Alternatives	November 2022
Public Information Centre No. 2	February 2022
Preparation of ESR	February 2022
University Review of ESR	March 2022
30-day Public Review Period	April 2023
Proceed to Detail Design	Spring/Summer 2023

Appendix B

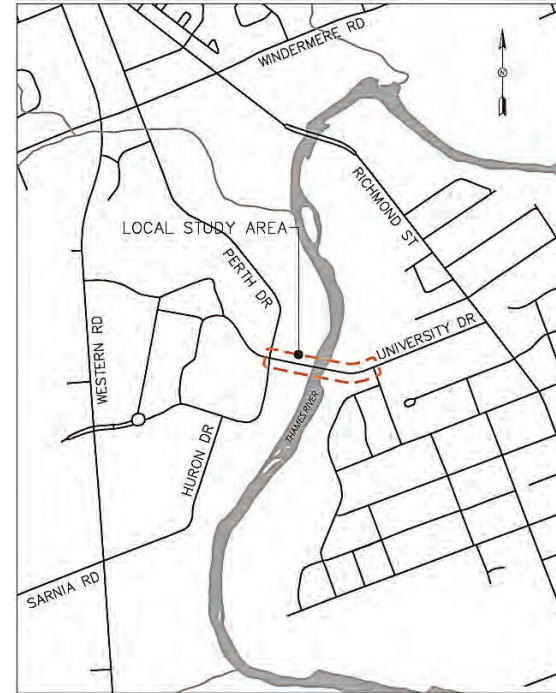
Record of Consultation

Notice of Study Commencement University Drive Bridge, Western University Municipal Class Environmental Assessment (EA)

Introduction

Western University retained Entuitive and BT Engineering Inc., in joint venture, to complete the Environmental Assessment (EA) and detailed design for the rehabilitation/replacement of the University Drive Bridge over the North Branch of the Thames River in London, Ontario. The existing bridge is near the end of its service life for vehicular traffic and the University will define a plan for the Thames River crossing. The plan will consider a range of alternatives to address the University's needs, including:

- Rehabilitation of the existing bridge;
- Rehabilitation of the existing bridge plus structure widening;
- A new bridge on the existing alignment; or
- Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.



Study Process

The University Drive Bridge rehabilitation/replacement will be completed as a Schedule C project under the Municipal Class Environmental Assessment (MCEA) (2015). The study will complete all necessary phases of the MCEA, including: establishing the need and justification for the project; documenting existing environmental conditions; documenting engineering considerations; considering alternatives; involving the public and regulatory agencies in developing the preferred solution for improvements; completing the related roadway design; and obtaining environmental clearance for construction. The study will also define the construction staging plan and traffic management plan.

Public Consultation

Public consultation is a key component of the Class EA, and we value your input during the planning process. There is an opportunity at any time during the EA process for interested persons to provide comments. All information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act* (2009). With the exception of personal information, all comments will become part of the public record.

If you require additional information or wish to provide comments during the Class EA process, please contact us anytime at: westernubridge@uwo.ca.

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PIC No. 1 Summary Report
Western University -
University Drive Bridge Class Environmental
Assessment, Project No.: 9M5173

February 22, 2023
REV. 1

Prepared by: BT Engineering and
Entuitive Joint Venture
509 Talbot Street
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1.0 INTRODUCTION

Western University (Western) is conducting a Class Environmental Assessment (EA) Study for improvements to the University Drive Bridge located across the north branch of the Thames River in London, Ontario. The existing bridge is nearing the end of its service life as a vehicular bridge and is unable to accommodate all transportation modalities safely in its current form. A Municipal Class Environmental Assessment (Class EA) is underway to develop a multimodal crossing of the Thames River at University Drive (UD). The plan will consider a range of alternatives to address Western's needs, including:

- Rehabilitation of the existing bridge;
- Rehabilitation of the existing bridge plus structure widening;
- A new bridge on the existing alignment; or
- Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

The existing bridge provides access across the north branch of the Thames River for vehicular traffic, transit, pedestrians, and cyclists.

This Public Information Centre (PIC) No. 1 Summary Report provides an overview of the comments received by the public during the PIC review period. PIC No. 1 for this Study was held online from November 15 to November 30, 2022. A virtual live presentation and questions and answers session was held on November 17, 2022, from 6:00 to 8:00 pm. The PIC presented information on background information, the study objectives and the preliminary design alternatives.

All members of the public and interest groups were invited to view the Online Public Information Centre material and were encouraged to provide a written response to any issues or concerns.

1.1 Study Area

The Study Area is located on Western University's campus in London, Ontario and is illustrated in **Figure 1**.

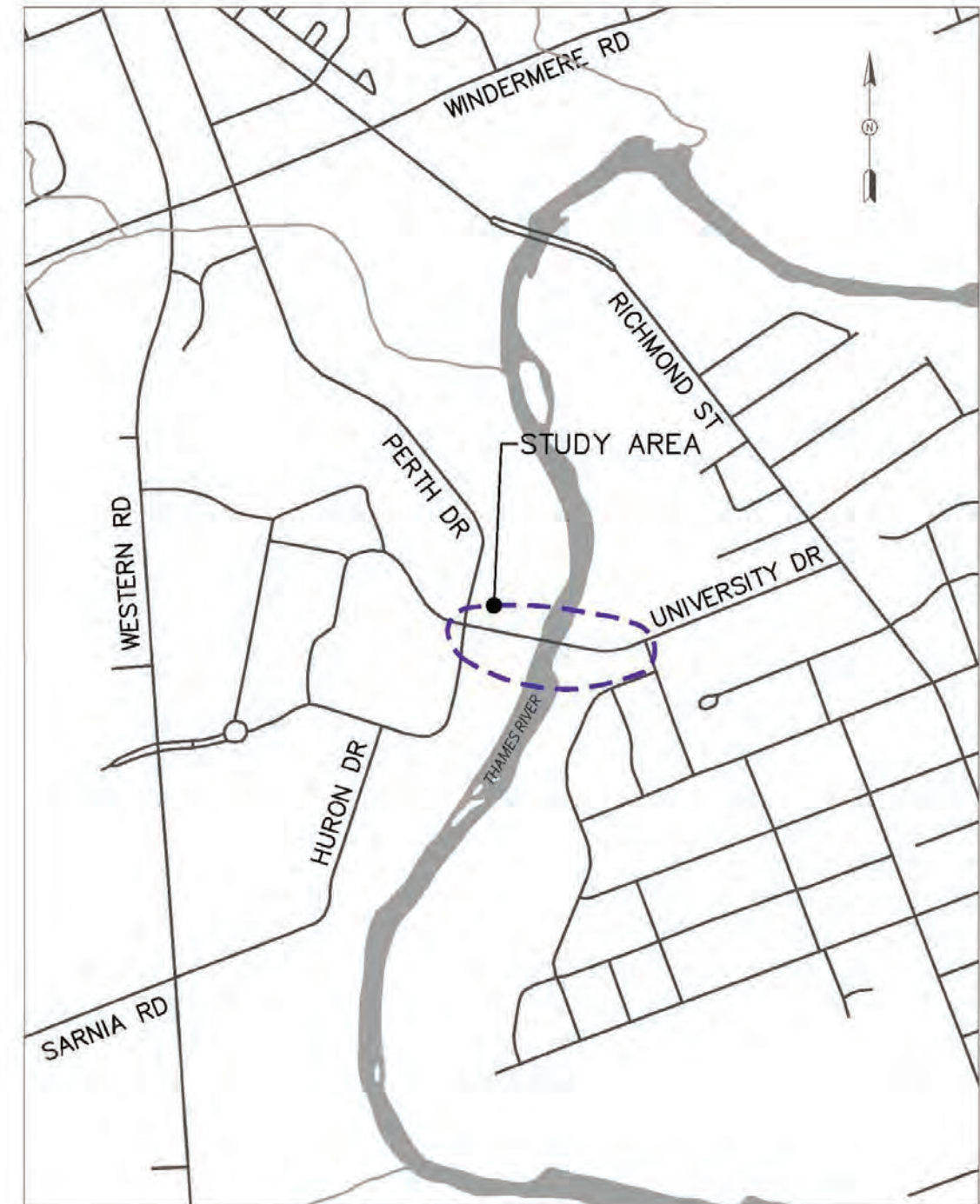


Figure 1: Study Area

2.0 PUBLIC AND AGENCY CONSULTATION

One of the key aspects of the study is to provide the public, interested parties, affected agencies and municipalities with the opportunity for input. In order to ensure this objective is met, a public and agency notification program was undertaken. The program includes a number of communication mechanisms, discussed in the following sections.

2.1 Public Contacts

Notices were mailed to members of the public who were on the study contact list preceding PIC No 1. This contact was to invite them to attend the online Public Information Centre. The notice was distributed electronically to members of the public/ stakeholders that had identified an interest in the study or requested to be on the contact list.

2.2 Indigenous Peoples Contacts

Notices were sent to Indigenous Peoples in the vicinity of the Study Area, inviting them to attend the online PIC. Notices were sent to the following:

- Aamjiwnaang First Nation
- Bkejwanong Territory (Walpole Island First Nation)
- Chippewas of Kettle and Stony Point First Nation
- Chippewas of the Thames First Nation
- Caldwell First Nation
- Munsee-Delaware Nation
- Oneida Nation of the Thames
- Delaware Nation

2.3 Newspaper Notice

Notices of the Public Information Centre were published in the London Free Press on November 9 and November 12, 2022.

The newspaper notice is in **Appendix A**.

2.4 Western University Website

The Notice of the Public Information Centre was posted on the Western University website inviting interested persons to attend the online PIC. The website link is:
www.uwo.ca/fm/projects/capital_projects/ud_bridge.html

2.5 Agency and Stakeholder Contacts

The following ministries, agencies and stakeholders were invited to attend the online PIC:

- Ministry of the Environment, Conservation and Parks
- Ministry of Natural Resources and Forestry
- Ministry of Municipal Affairs and Housing
- Ministry of Indigenous Affairs
- Ministry of Citizenship and Multiculturalism
- Ministry of Tourism, Culture and Sport

2.6 Adjacent Residential Area

Hand delivered notices were provided to residential properties in close proximity to the study area, as shown in **Figure 2**.

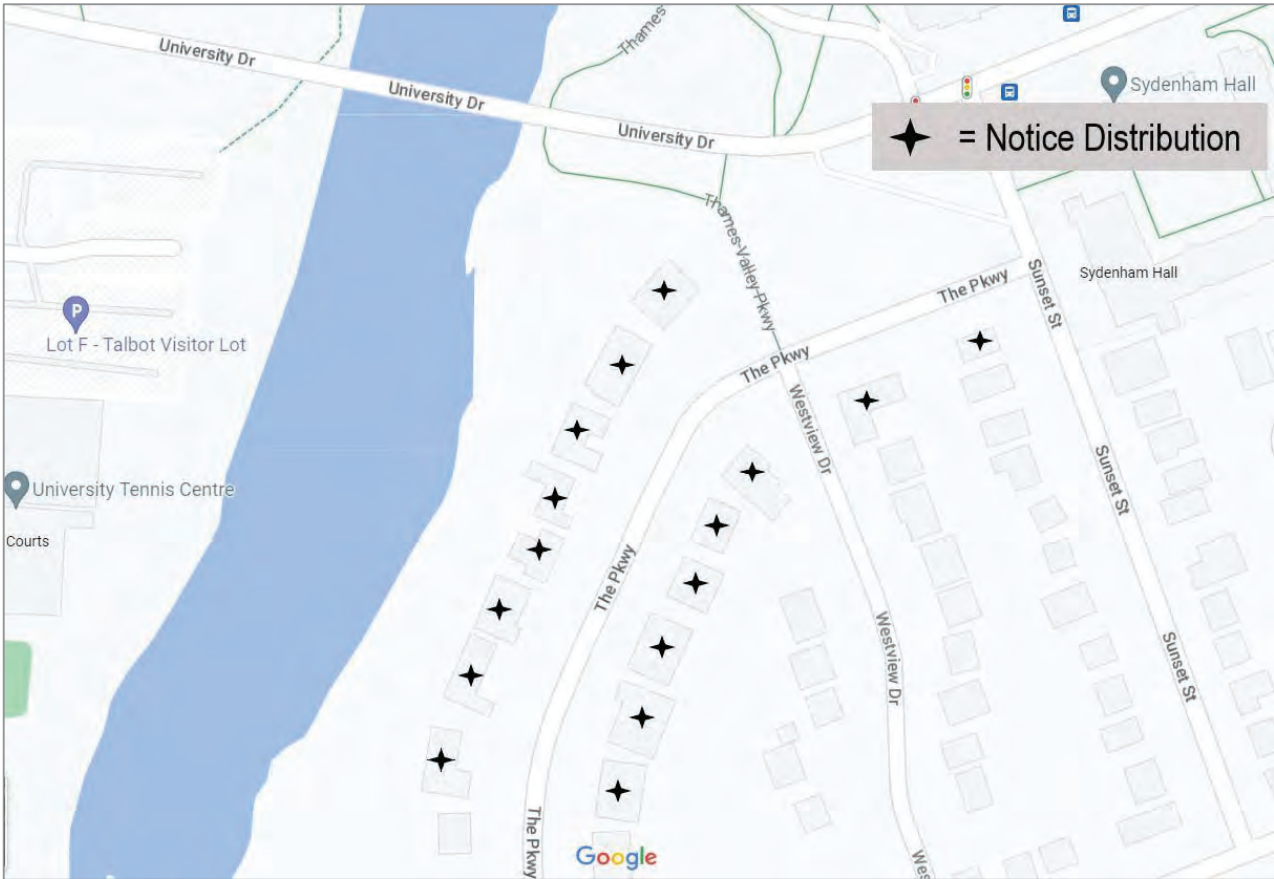


Figure 2: Notice Distribution Map

3.0 PIC COMMENTS

PIC Exhibits were provided online for public/agencies to view at their convenience. A copy of the PIC exhibits is provided in **Appendix B**.

Invitations to attend the PIC were sent to First Nations, public agencies and members of the public who were on the contact list and who had requested to be on the contact list in advanced to the PIC. Invitations that were sent by email were able to be forwarded to other interested members of the public. The number of individuals that participated in the zoom PIC call were forty-nine (49). Comments were received from those that participated in either of the live PIC or who reviewed the exhibits online. Comments were received from either the live PIC or website comment sheets. Copies of the written submitted comments (33), excluding personal information, are provided in **Appendix C**.

3.1 Summary of Comments

The comments received, and verbal discussions held at the Public Information Centre are summarized in **Table 1**.

Table 1: Major Themes of PIC No. 1 Public Comments		
Comment	Number of Respondents	Comment Sheet No.
Respect Heritage Setting of Project - Ensure the bridge architecture matches the character of the University and existing heritage bridge. - Appreciation for the historical features (Collegiate Gothic style).	3	6, 19, 24
Reduce Vehicular Use of the Bridge - Strongly support closure of the bridge to non-transit vehicles / non-emergency vehicles (non-campus vehicles). - Reduce vehicle traffic, ensure an active transportation safe road width.	17	1, 2, 3, 4, 7, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 21, 23, 25
Accommodating Transit Service Design the new twin bridge to support buses, potential future Light Rapid Transit System (LRT) or campus shuttles.	9	4, 12, 15, 16, 23, 25
Protection of the Environment - Protect Thames River/Deshkan Ziibiing and surrounding ecological habitat (factor in winter salt use on the bridge). - Include information from the Citizen Science Data Collection report for records of Species at Risk (SAR). - Reiterate Western's commitment to being a leader in sustainability.	8	7, 10, 16, 17, 18, 19, 21, 23
Support for EA Recommendations Support for the Conserve and Twinning bridge solution.	7	4, 9, 11, 12, 21, 22, 24
Maintain Public Vehicular Access Support not closing traffic access on the main artery bridge.	2	8, 13
Safety Provide traffic signals / alert systems for pedestrians if there is oncoming emergency vehicles or buses approaching the bridge or the active transportation link to the Welcome Plaza.	2	11, 23
Create Drop-off Area at Sunset Street Designate / create passenger pickup/drop-off area between bridge and Richmond Street to the east.	1	23

4.0 CONCLUSIONS

The online PIC was a very successful method to consult with the public. The primary conclusions from the meeting include:

- Based on the comments received and level of involvement, the public generally supports the study purpose to accommodate all Active Transportation Modes on the existing University Drive Bridge .
- There was also general agreement on the Planning Solutions carried forward.
- Issues were identified in residential areas including active transportation, cumulative effects on vehicular traffic and heritage values. These issues will be considered in the evaluation of the preliminary design alternatives. The information and commentary received on the issues and preliminary long list of alternatives has provided good insight to specific issues and concerns within each of the alternative corridors. This information will be used to refine and enhance the evaluation criteria and the assessment of the preliminary design alternatives.

The main comments, both verbal (i.e. phone calls, virtual meeting) and written, from the public information centre were:

- Support for reinstating the historic Collegiate Gothic structure;
- Prioritizing active transportation;
- Support for the technical recommendation to designate the existing bridge for pedestrians and cyclists only; and
- Many members of the public suggested limiting non-emergency vehicular access across the new bridge.

Appendix A

Newspaper Notice

Ford says Ontario presenting CUPE with 'improved' offer

ALLISON JONES

TORONTO Students were back in classrooms Tuesday as Ontario education workers returned to the bargaining table with the government to discuss an offer the premier described as "improved."

Negotiations with the Canadian Union of Public Employees resumed a day after Premier Doug Ford promised to repeal legislation that imposed contracts on the workers and their union agreed to end a walkout that shut hundreds of schools.

"While I can't get into details, we're back at the table with an improved offer, particularly for the lower-income workers," Ford said during a news conference.

But Laura Walton, president of CUPE's Ontario School Board Council of Unions, had a different take.

"I wouldn't say it's an improvement," she said during a breakfast negotiations. "I think there's still a huge concern. We do not do two-tiered bargaining."

The union had hoped Ford would recall the legislature — it is on a previously scheduled break this week — to quickly repeal of the law. Walton said having the law still technically in place makes negotiations difficult.

Ford struck a more conciliatory tone at the legislature Tuesday than when he was telling CUPE last month, "Don't force my hand."

"I'm past the stage of fighting," he said Tuesday.

Along with the new offer, Ford also cautioned that any agreement with the 55,000 education workers will affect the four major teachers' contracts also in bargaining, possibly leading to "tens of billions of dollars" in increases for teachers.

"That's money we need for schools, health care, transit and infrastructure," Ford said.

The government had originally offered raises of two per cent a year for CUPE workers making

less than \$40,000 and 1.25 per cent for all others, and the four-year deal imposed by the soon-to-be-repealed law gave 2.5 per cent annual raises to workers making less than \$45,000 and 1.5 per cent raises for all others.

CUPE said that framing was not accurate because the raises actually depend on hourly wages and pay scales, so the majority of workers who earn less than \$43,000 in a year wouldn't get 2.5 per cent.

CUPE originally sought annual salary increases of 11.7 per cent and said it later tabled a counter offer that cut its wage proposal in half.

Ford disclosed Tuesday that the government had previously offered a higher amount than what was in its original proposed contract, and he was surprised that CUPE's offer was higher.

"I thought we had a deal," he said. "I was convinced we had a deal and all of a sudden they came back to my office and said, 'There's no deal.' I was floored."

The CUPE walkout by workers including education assistants, librarians and custodians began Friday, shutting hundreds of schools to in-person learning, and stretched into Monday.

Schools reopened Tuesday after CUPE said its workers would be back on the job following Ford's promise to rescind the legislation, which also banned strikes and used the notwithstanding clause to guard against constitutional challenges.

Parents expressed relief at morning drop-off Tuesday.

Sona Popal, a Toronto mother of a Grade 1 student, said she had to drop her child at a friend's house while schools were closed because she and her husband had to work.

"I am happy and I am glad that today is the day that they are coming back," she said. "Otherwise it was like a nightmare for us, (figuring out) how to take care of our kids at home if they don't go to school."

with files from Sharif Hassan



Dan Fawcett was found unresponsive in Gibbons Park early Sunday and died soon after, police say. His death is considered a homicide. FACEBOOK

'Sweet guy' Fawcett was 'always smiling,' shocked Helix singer says

HOMICIDE FROM A1

Hendry, a world-renowned Elvis tribute artist, met Fawcett 34 years ago after moving to London from Saul Ste. Marie. They bonded over music, playing in bands together and touring Canada.

"He and I travelled together all the time and were just inseparable. That was inseparable. He was like a brother to me and I'm going to miss him so much. I loved him dearly," Hendry said Tuesday from his home in Pigeon Forge, Tenn.

The COVID-19 pandemic was tough on Fawcett, who, like most musicians, was out of work when live-music venues had to close.

But Hendry said he spoke with Fawcett last week and invited him to Tennessee.

"I was going to fly him down here to get him to meet everybody, because there's so much work down here," Hendry said, adding his longtime friend was excited at the prospect.

A high point of Fawcett's career came in the early 2000s when he joined Canadian rockers Helix.

"Dan was a sweet guy — always smiling — and a great guitar player as well. ... All I can say is that both Lynda and I are in shock. Stay tuned," Helix lead singer Brian Vollmer said in a post on the band's Facebook page.

Tributes to Fawcett poured in

on social media, where users recalled a talented musician and loyal friend and expressed shock at his death.

"Why take one of the kindest? We ALL need more Dutch. Fawcett's in this world, not less," Pete Young wrote on Facebook.

A London police spokesperson said there was no information about the homicide probe Tuesday.

Investigators spent two days holding the crime scene at Gibbons Park, where investigators performed a grid search for evidence.

Lydia Maljkovic said she was staying with her mother at her Grosvenor Street apartment overlooking Gibbons Park Sunday when she noticed a heavy police presence at the park.

Several officers surrounded a white blanket on the ground a few metres from the road leading to the parking lot before the covering was removed to reveal the body of a man wearing black pants and a black backpack, Maljkovic said.

"He looked like he had no shirt on," she said of the deceased man, Maljkovic said she and her mother had heard frequent yelling coming from the park in recent nights but doesn't know whether it was connected to the homicide.

Hendry, meanwhile, hopes police make an arrest in his friend's death, noting Fawcett has a young daughter.

Despite the difficult work, pay is low

NON-PROFITS FROM A1

"The work has gotten more complicated. The complexity of clients with a severity of needs, there are more and the complexities are greater. So, they're also more risks involved for some of the staff," said Pam Hill, a regional director with CMHA Thames Valley Addiction and Mental Health Services.

"The employees' market has created a lot of opportunities for people to re-evaluate. Is this still the work I want to do? Is this the environment I want to do it in?" Despite the difficult work, paycheques are small.

Funding for staff salaries hasn't kept up with inflation and rising rents, said Sarah Campbell, executive director of Ark Aid Street.

"If we're an anti-poverty organization, our staff should not be living in poverty," she said. "In London, where we have the lowest unemployment rates, we really are struggling to be competitive."

Short-term funding that forces agencies to live from contract to contract prohibits offering staff benefits, vacation time or stability, Campbell said. Non-profits need long-term commitments from government funders, she added.

"We're all on such shoestring budgets and trying to piece together programs because of the lack of sustainable funding."

Data suggest London non-profits may face deeper problems than those feeling the same pressures elsewhere. Seale said 47 per cent of area non-profits cited lack of funding as a main factor in their ability to recruit and retain staff. The provincial average was 39 per cent.

With a drop in temperatures approaching, winter plans are expected soon, a joint effort between city and community agencies.

Additional winter efforts to serve those on the street during the coldest months started amid COVID-19. It costs millions and requires experienced people to run. That's especially important since the people who use the seasonal shelters or drop-in spaces are deemed "high acuity." They have the greatest needs, often battling significant mental illness and addiction, and typically can't or won't use traditional emergency shelters.

Without staff who can build trust with the most marginalized — and defuse tricky situations or violence that may arise — the efforts can deteriorate. Already, London's downtown appears to be at a breaking point as tensions rise between merchants, citizens, and the homeless or those helping them.

Workers also are reaching the end of their ropes.

"Everyone is exhausted, more than I've seen in 20 years," said Chuck Lazenby, who heads the Unity Project.

It shows. The analysis from Pillar and the Elgin Middlesex Oxford Workforce Planning and Development Board includes some alarming 2021 statistics:

■ Layoffs were responsible for almost two-thirds of "separations" between non-profit workers and employers, but just 14 per cent in other sectors.

■ Non-profits were less likely to hire for permanent positions — 46 per cent compared to 62 per cent in other sectors — and more likely to have short-term contracts.

■ Salary hikes were used less often as a tool to retain workers compared to other sectors.

The Unity Project's retention rates are enviable, with most of its full-time staff around for 10 years or more. But there are almost always openings for relief positions, required for a 24-hour shelter operation.

Building expertise needed for those roles is another pitfall, Lazenby and Hill say.

"There is not any comprehensive training that exists prior to people entering the workforce," Lazenby said.

Front-line homelessness workers suffer poor wages and long hours, fuelled by a belief in their work's importance, experts say.

But what drives many away is being forced to enforce rules they know harm or at least fail to help their clients, veteran outreach manager Dan Oudeboom said.

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Notice of Public Information Centre (PIC) No. 1

University Drive Bridge, Western University
Municipal Class Environmental Assessment (EA)

Introduction

Western University has retained Entuitive and BT Engineering Inc., in joint venture, to complete the Environmental Assessment (EA) and detailed design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River in the City of London. The existing bridge is near the end of its service life for vehicular traffic and the University will define a plan for the Thames River crossing considering the need to make improvements for active transportation. The plan will consider a range of alternatives to address the University's needs, including:

- Rehabilitation of the existing bridge;
- A new bridge on the existing alignment; or
- Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.



Study Process

The University Drive Bridge rehabilitation/ replacement will be completed as a Schedule C project under the Municipal Class Environmental Assessment (MCEA) (2015). The study will complete all necessary phases of the MCEA, including: establish the need and justification for the project; document existing environmental conditions; document engineering considerations; consider alternatives; involve the public and regulatory agencies in developing the preferred solution for improvements; complete the related roadway design; and obtain environmental clearance for construction. The study will also define the construction staging plan and traffic management plan.

Public Consultation

Public consultation is a component of the Class EA, and we value your input during the planning process. Western has scheduled the first Public Information Centre (PIC) for this project. This PIC will introduce the project, present background information, evaluate Alternative Planning Solutions, and summarize next steps.

The PIC public review period will be for a two-week period from November 15 to 30, 2022. Exhibits will be available during this period online at the University's website.

In addition, an online meeting (presentation and Q&A) will be held during the two-week review period. This event is scheduled for:

Date: November 17, 2022 from 6 to 8 pm

Location: Online Zoom Webinar

To register for the online meeting, please send an email to westernubridge@uwo.ca before November 17, 2022, identifying your interest in attending.

There is an opportunity at any time during the EA process for interested persons to provide comments. All information will be collected in accordance with the Freedom of Information and Protection of Privacy Act (2009). With the exception of personal information, all comments will become part of the public record.

If you require additional information or wish to provide comments during the Class EA process, please contact us anytime at: westernubridge@uwo.ca

Tucker Morton, P.Eng., M.Eng.
Project Coordinator
Western University
1151 Richmond Street, London, ON N6A 3K7

Steve Taylor, P.Eng., M.Eng.
Project Manager
BT Engineering Inc.
509 Talbot Street, London, ON N6A 2S5

Embattled crypto exchange FTX files for bankruptcy

NEW YORK

It took less than a week for FTX to go from the third-largest cryptocurrency exchange in the world to bankruptcy court.

The embattled cryptocurrency exchange, short billions of dollars, is seeking bankruptcy protection after the exchange experienced the crypto equivalent of a bank run. FTX, the hedge fund Alameda Research, and dozens of other affiliated companies filed a bankruptcy petition in Delaware on Friday.

CEO and founder Sam Bankman-Fried has resigned, the company said.

Bankman-Fried was recently estimated to be worth US\$2.3 billion and has been a prominent political donor to Democrats. His net worth has all but evaporated, according to Forbes and Bloomberg, which closely track the net worth of the world's richest people.

"I was shocked to see things unravel the way they did earlier in the week," Bankman-Fried wrote in a series of posts on Twitter.

Companies that backed FTX are writing down their investments.

The Associated Press

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HEARING SERVICES

Notice of Public Information Centre (PIC) No. 1

University Drive Bridge, Western University
Municipal Class Environmental Assessment (EA)

Introduction

Western University has retained Entuitive and BT Engineering Inc., in joint venture, to complete the Environmental Assessment (EA) and detailed design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River in the City of London. The existing bridge is near the end of its service life for vehicular traffic and the University will define a plan for the Thames River crossing considering the need to make improvements for active transportation. The plan will consider a range of alternatives to address the University's needs, including:

- Rehabilitation of the existing bridge;
- A new bridge on the existing alignment; or
- Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

Study Process

The University Drive Bridge rehabilitation/ replacement will be completed as a Schedule C project under the Municipal Class Environmental Assessment (MCEA) (2015). The study will complete all necessary phases of the MCEA, including: establish the need and justification for the project; document existing environmental conditions; document engineering considerations; consider alternatives; involve the public and regulatory agencies in developing the preferred solution for improvements; complete the related roadway design; and obtain environmental clearance for construction. The study will also define the construction staging plan and traffic management plan.

Public Consultation

Public consultation is a component of the Class EA, and we value your input during the planning process. Western has scheduled the first Public Information Centre (PIC) for this project. This PIC will introduce the project, present background information, evaluate Alternative Planning Solutions, and summarize next steps.

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BT Engineering Inc.
509 Talbot Street, London, ON N6A 2S5

COUNCIL BRIEFS

Developer denied break on city fees

Council voted not to cut a new developer a break on the fees it pays to city hall for new services. The builder behind Eve Park, a net-zero development planned in the west end, had appealed the development charges, saying it took too long for planning staff to approve its project and issue the permits. City staff said the build was treated the same as any other, and noted the permits were not paid and picked up in 2021 when they were first available.

City's triple-A credit rating source of pride

London's triple-A credit rating was renewed for a 46th year, an accomplishment Mayor Ed Holder said is unmatched by cities across the country. That rating — the highest possible — helps city hall get the lowest interest rates when it takes on debt, such as for capital works. Holder returned to the credit rating in his final remarks to close the last council meeting of the term. "I declare this city to be in exceptional hands," he said of the incoming council. "And please, for God's sake, keep our triple-A credit rating."

Time to say goodbye

Councillors spent the bulk of Tuesday's meeting reflecting on the last term as London prepares to swear in a new city council next week. Eight members of the current council will not be returning. Councillors Michael van Hoel, Mariam Hamou and John Fyfe-Millar were defeated in the Oct. 24 election, and Mo Salih, Jesse Helmer, Maureen Cassidy, Stephen Turner and Josh Morgan — who ran successfully for mayor — opted not to seek re-election in wards. Many councillors thanked their families and city staff. "Your achievements are many, your impact will be long-lasting, and it is our distinct pleasure to work alongside you," city manager Lynne Livingstone told the outgoing council.

Megan Stacey

THE PATH TO BETTER JOINT HEALTH

Turmeric is a golden coloured spice from the root of the curcuma longa plant. It has long been used in both India and China, for its joint health properties, but recently turmeric has shown to have numerous other health benefits.

A POWERFUL SPICE WITH GOLDEN HEALTH BENEFITS

Few spices have been studied as much as turmeric, and even fewer can show as strong evidence of health benefits. Therefore, turmeric has become increasingly popular, as an addition to people's diet, and for mainly the anti-inflammation and joint health effects.

THE EASY WAY TO INCLUDE TURMERIC INTO YOUR DAILY ROUTINE

It can be hard to include turmeric in your diet. Not many people remember to use this spice every day, nor do we use it in smoothies or salads.

NATURAL PAIN RELIEF !

I'm in my early 60's & for 10 years experienced increasing pain in my hands and knees. I heard about Turmeric Gummies by New Nordic and for almost 3 months I've been taking it. Wow what an improvement! My hands no longer cause me pain or extreme discomfort as they did in the past. My knee has improved 80%. These gummies taste great! Thank you to Nordic for helping me live a better and pain free life.

- Donna G.

Results may vary. Please read the information on the box to determine if this product is right for you. This product is not intended to diagnose, treat, cure or prevent any disease.

Furthermore, because the curcumin content in turmeric is low, it may be difficult to reap the full benefits of this herb, unless it's dried and concentrated. That's why taking a turmeric supplement with a high amount of the active ingredient, makes things easy.

DID YOU KNOW?

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Turmeric™ Gummies is a new, delicious, sugar free and vegan gummy, that delivers high amounts of pure and natural turmeric extract. This tasty orange and mango flavoured supplement is the convenient way to help relieve inflammation and joint pain, naturally.

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Appendix B

PIC Exhibits



University Drive Bridge Class Environmental Assessment (EA)

Public Information Centre No. 1
November 15 to November 30, 2022



Land Acknowledgement

- We/I acknowledge that Western University is located on the traditional territories of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Chonnonton Nations, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum. This land continues to be home to diverse Indigenous Peoples (First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors of our society.



University Drive Bridge PIC No. 1
November 15 to November 30, 2022

Welcome

- Thank you for participating in the first Public Information Centre (PIC) for Western University's Class Environmental Assessment (EA) Study for the University Drive Bridge.
- The existing bridge is near the end of its service life for vehicular traffic and this EA Study will help define a plan for the Thames River crossing.
- There is an opportunity at any time during the EA process for interested persons to provide written input. Any comments received will be collected under the *Environmental Assessment Act* and, with the exception of personal information, will become part of the public record.
- PIC No. 1 comments can be submitted by emailing westernubridge@uwo.ca by November 30, 2022.



Agenda and Exhibits

- Introduction
- Problem and Opportunity Statement
- Existing Condition
- Alternative Planning Solutions
- Next Steps
- Questions



Project Team



Fred Janzen, Western University
Director (Capital Projects)



Tucker Morton, Western University
Project Coordinator



Steve Taylor, BTE
Consultant Project Manager



Stephen Brown, Entuitive
Consultant Structural Lead



Wendy Shearer
Consultant Cultural Heritage



Shannon Wiley, MSA
Consultant Bridge Architect

PIC Purpose

- Project Introduction.
- Provide an overview of the Municipal Class Environmental Assessment (MCEA) process.
- Provide a summary of work completed to date.
- Present the Problem and Opportunity Statement.
- Describe the existing conditions in the area.
- Present the alternative planning solutions, evaluation and preliminary recommendations.
- Receive your feedback.

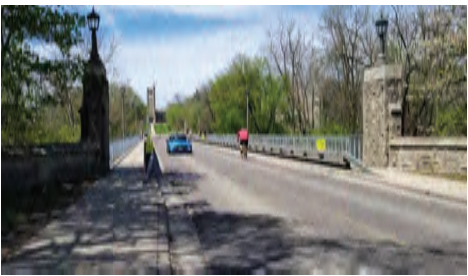


Municipal Class Environmental Assessment (Class EA) Process

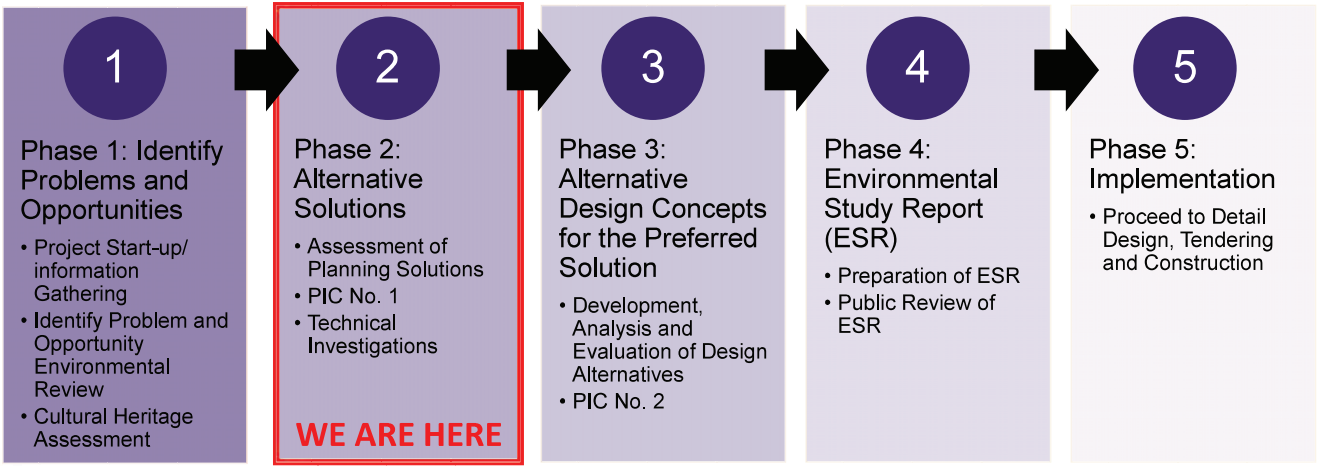
- The University Drive Bridge was constructed by Western and opened to traffic in the fall of 1923, on lands owned by the University. As such, the University is a private sector Proponent under the EA Act. The Municipal Class EA affords the use of the Class EA for private sector undertakings.
- This project is being undertaken in accordance with the Municipal Engineer Association’s Class EA for a Schedule C project.
- The Class EA process allows an opportunity for public consultation during the planning and design process.
- The Municipal Class EA process is illustrated on the following exhibit.

Background

- A Class Environmental Assessment (EA) Study will be completed to develop a bridge management plan for the University Drive Bridge across the North Thames River.
- This Study will consider how to provide a structure that can address the active and vehicular transportation requirements of a growing campus, while respecting the 100-year-old landmark character of the bridge framing the view to the Middlesex County Memorial Tower at University College that is synonymous with Western University.
- The project will complete all phases of the approved Municipal Class EA process (2015) by establishing the need and justification for the project, considering all alternatives and proactively involving the public in developing a Recommended Plan for improvements.

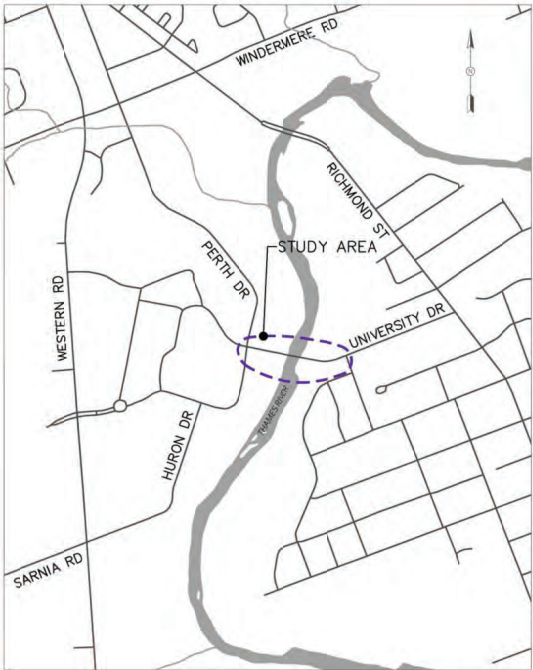


Municipal Class Environmental Assessment (Class EA) Process



Study Area

- The Study Area is located on the Western University Campus and includes the University Drive Bridge over the North Branch of the Thames River and adjacent areas.

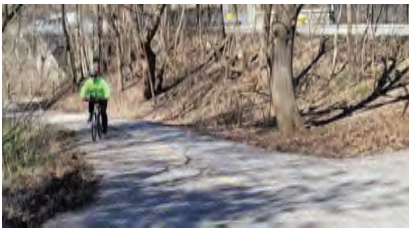


Study Area Features



Existing Conditions Active Transportation

- The existing bridge experiences high volumes of pedestrian and cyclist traffic crossing the Thames River at this location.
- This existing bridge does not follow the Complete Streets approach to provide separate space for each mode.
- The Thames Valley Parkway along the River is a major spine in the City of London's active transportation network, which also serves the University community.



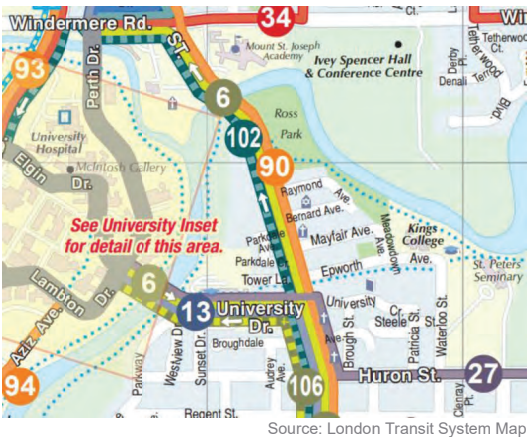
Existing Conditions Structure

- The existing University Bridge was initially constructed in 1922.
- The structure is a steel girder bridge with the girders shaped to provide an arch profile.
- The bridge was modified and maintained over the years to suit changing needs, with the major change being the widening of the sidewalk and deck replacement in 2002.
- Additional bridge repairs have been completed based on a detailed inspection of the bridge in 2016.
- Ongoing inspections show the bridge condition is stable.
- The bridge remains open to load restricted traffic.



Existing Conditions Transit

- Western University is a large generator of transit ridership in the City of London.
- The existing bridge accommodates four London Transit Routes (6, 13, 27 and 106).



Existing Conditions Traffic

- University Drive currently carries an average of approximately 3,000 vehicles/day.
- Traffic uses the route as a shortcut and accounts for a significant percentage of vehicular traffic on University Drive.
- University Drive also provides a means of vehicular access to the London Health Sciences Centre’s University Campus.



Existing Conditions Archaeology

- A Stage 1 Archaeological Assessment has been completed and has determined areas of archaeological potential (see green shading). A Stage 2 Archaeological Assessment will be completed as part of the EA.
- A marine assessment will be required if the blue shaded area is impacted.



Existing Conditions Natural Environment

- Environmental baseline surveys are being completed.
- There is potential for aquatic and terrestrial Species at Risk in the vicinity of the Study Area.
- The Study will address potential impacts to the Natural Heritage System.
- Regulatory agencies have been contacted and will review the Study recommendations.



Existing Conditions Cultural Heritage

- A Cultural Heritage Evaluation Report was previously completed in 2017 which concluded that the University Drive Bridge demonstrated cultural heritage value or interest
- The bridge is listed on the City of London’s Heritage Register of Properties of Potential Heritage Value or Interest
- A Heritage Assessment Report will be completed to assess the cultural heritage impacts of the Design Alternatives



Existing Conditions

Infrastructure

- The existing bridge carries private and public utilities including a watermain, communications and gas utilities.



Background Information

Western University Campus Master Plan (2015)

The Campus Master Plan identified key initiatives, including:

- Improve Campus Connectivity
- Creation of High-Quality Public Spaces
- Strengthening and reinforcing the Campus Gateways
- Enhancing University Drive as a gateway to the campus



Problem and Opportunity Statement

Problem: The existing bridge is nearing the end of its service life as a vehicular bridge and has insufficient width to suitably accommodate the number of vehicles, pedestrians and cyclists. The EA will consider a range of improvement alternatives to address the University's transportation requirements while considering the character of the bridge that is synonymous with Western University's campus collegiate gothic style of architecture.

Opportunity: This Study will develop an active transportation focused Recommended Plan that can be integrated with the University's Campus Master Plan, Open Space Strategy and ongoing campus development.



Background Information

Western's Open Space Strategy (2018)

This Strategy states "The bridge on University Drive was the original gateway to the campus and frames the iconic view towards University College. Although internalized into the larger campus, it will continue to serve as an important threshold in the campus."

Key considerations from the Strategy related to the Study Area include:

- Limiting access to the University Drive Bridge. Only bicycles, pedestrians, transit vehicles, emergency services and designated university vehicles would be permitted on the bridge.
- Creating a dedicated pedestrian drop-off area immediately east of the bridge.



Design Considerations

The project will consider the following objectives:

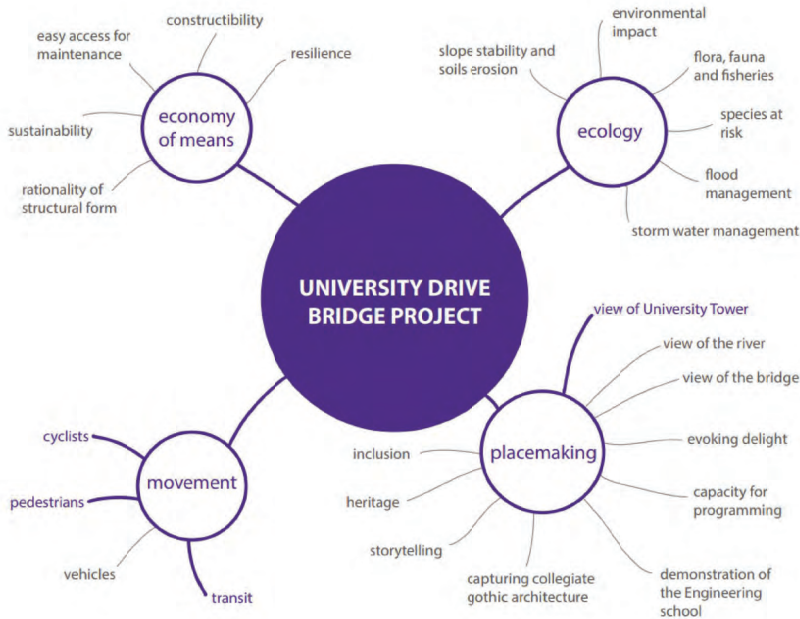
- Meet the future needs of connecting Western University across the Thames River.
- Frame the view of the Tower at University College.
- Consider the use of materials complementary to the fabric of the buildings for which Western University is known.
- Enhance the experience of life at Western University by adding to the identity and cultural life of campus by becoming a memorable place on campus and be known as a destination as much as a transition.
- According to national standards for Heritage Conservation, the Cultural Heritage design of any new structure should be “compatible with, distinguishable from and subordinate to” the existing University Drive Bridge and surrounding landscape.

Key Study Considerations

- **Cultural Significance** – Consideration will be given to the historical character of the existing bridge that is rooted in the natural, cultural, biophysical and urban contexts of the site.
- **Natural Environment** – The North Thames River and Medway Creek tributary are cool/cold water systems and are identified as critical habitat for provincially and federally listed species.
- **Active Transportation** – There is opportunity to improve access and safety for pedestrians and cyclists.
- **Transit** – Western University is a large generator of transit ridership in the City of London.
- **Traffic** – Consideration of the restriction of external vehicles (shortcutting through the campus) across the bridge.
- **University Infrastructure** – The existing bridge accommodates major infrastructure servicing the campus.

Design Vision

The project is an opportunity to consider a multitude of possibilities.
Public input will assist the design team in refining this vision.



Alternative Planning Solutions

The EA requires that all reasonable and feasible Planning Solutions be identified and evaluated. These Planning Solutions identify alternative approaches of addressing the need for improvements. The Alternative Planning Solutions for this Study include:

1. Do Nothing and continue to post the bridge to limit large vehicular traffic
2. Rehabilitate Existing Bridge
3. New Bridge on the Existing Alignment
 - A. New Signature Structure on the Existing Alignment
 - B. New Historic Reimagination Structure on the Existing Alignment
4. New Bridge on a New Alignment
 - A. New Bridge and Abandonment/Demolition of Existing Structure
 - B. Conserve Existing Bridge and Twin with a New Structure

All alternatives may include limiting the volume of vehicular traffic on the bridge.

Alternative Planning Solutions

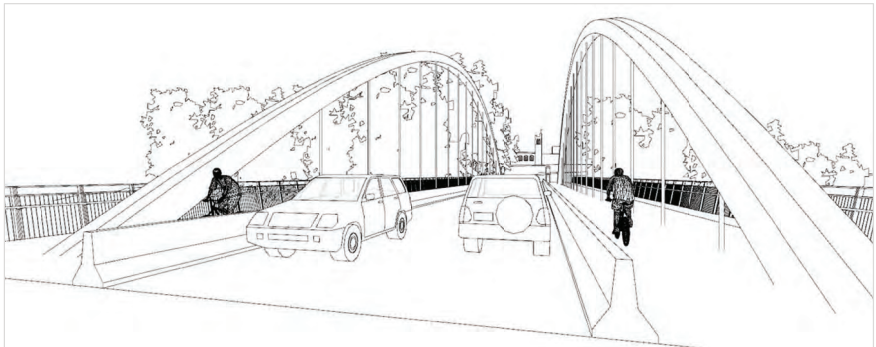
Preliminary Coarse Screening

- ✗ **Alternative 1: Do Nothing** – The cross section on the existing bridge is insufficient to accommodate both vehicular traffic and active modes of transportation for modern standards. **Not carried forward.**
- ✗ **Alternative 2: Rehabilitate Existing Bridge** - The University’s planning documents recommend improving campus connectivity with a focus on active transportation elements. Rehabilitation of the existing bridge will not allow for improved functionality of the bridge for active transportation modes. The cross section on the existing bridge is insufficient to accommodate active modes of transportation per modern standards.

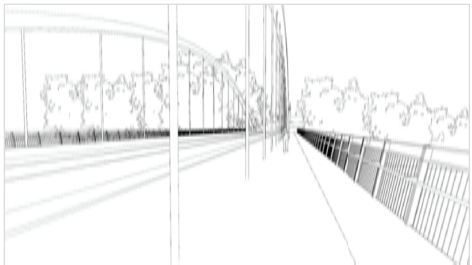
In addition, this alternative provides reduced reliability because it defers the eventual replacement required to accommodate heavy vehicle loading. **Not carried forward.**
- ✗ **Alternative 4A: New Bridge on New Alignment and Abandon/Demolish Existing Bridge** - This alternative does not maintain the existing location for arrival on campus or the sightlines to the tower. It represents the loss of heritage material and form. **Not carried forward.**

Alternative Planning Solutions

Alternative 3A: Signature Structure on the Existing Alignment



These graphics illustrate a representative approach for this alternative. The structure type will be determined during the next phase of the Study based on the preferred Planning Solution carried forward.



Alternative Planning Solutions

Preliminary Alternatives

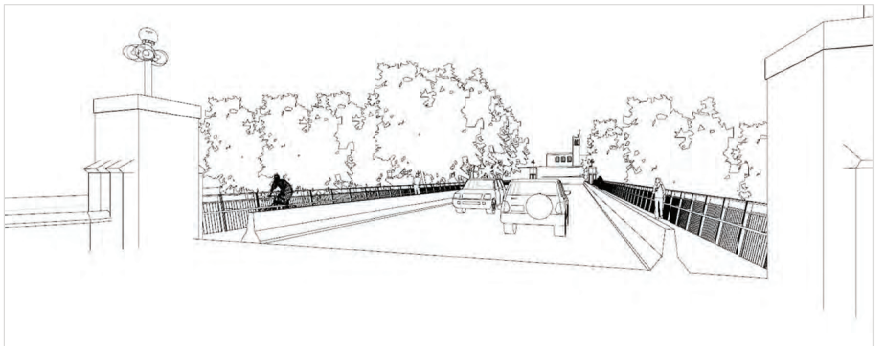
Alternative Planning Solutions carried forward for additional evaluation are:

- ✓ **Alternative 3A: Signature Structure on Existing Alignment** - A new bridge type acts as both a gateway to the University and an addition to the placemaking of the campus.
- ✓ **Alternative 3B: Historic Reimagined Structure on Existing Alignment** - Reimagination of the existing structure using the same spans, pier and abutment location.
- ✓ **Alternative 4B: Conserve and Twin** - This alternative would construct a new structure for vehicular traffic on an adjacent alignment and would conserve the existing structure through preservation, restoration or rehabilitation for active transportation.

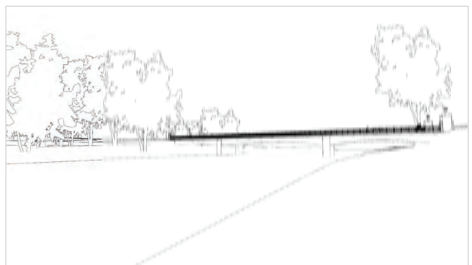
These alternatives are illustrated on the following exhibits.

Alternative Planning Solutions

Alternative 3B: Historic Reimagined Structure on the Existing Alignment

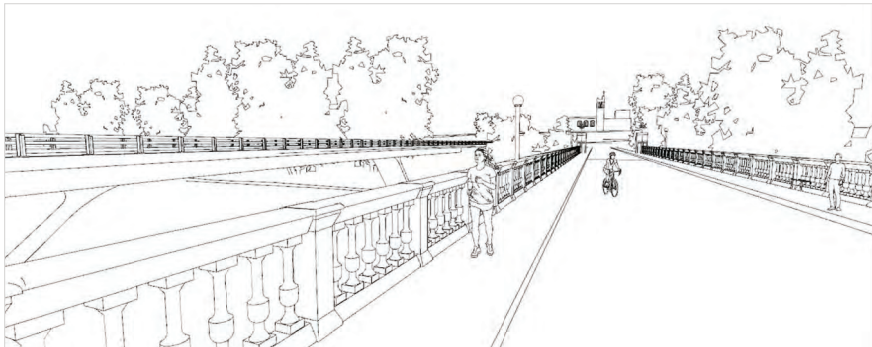


These graphics illustrate a representative approach for this alternative. The structure type will be determined during the next phase of the Study based on the preferred Planning Solution carried forward.

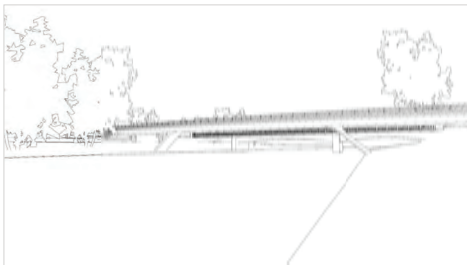


Alternative Planning Solutions

Alternative 4B: Conserve and Twin



These graphics illustrate a representative approach for this alternative. The structure type will be determined during the next phase of the Study based on the preferred Planning Solution carried forward.



Preliminary Recommended Planning Solution

Alternative 4B: Conserve and Twin with new structure is recommended as the preferred Alternative Planning Solution. Conservation of the existing structure and construction of a new bridge on an adjacent alignment will:

- Safely accommodate active transportation following the Complete Streets approach with separated space for each mode of travel, leading to Western's future Welcome Plaza.
- Create an opportunity for gathering and engaging with the river.
- Maintain a gateway into campus and compliment the view to the University College Tower.
- Follow conservation best practices for the heritage structure.

Alternative Planning Solutions

Preliminary Evaluation

Screening Criteria	Alternative 3: New Bridge, Existing Alignment		Alternative 4: New Bridge, New Alignment
	3A: Signature Structure	3B: Historic Reimagination	4B: Conserve and Twin
Transportation	✓	✓	✓
University Master Planning Objectives	-	-	✓
Cultural Environment	✗	✗	✓
Natural Environment	-	✗	-
Affordability	✗	✗	✓
Constructability	✗	✗	✓
Preliminary Recommendation	✗	✗	✓
	These alternatives do not allow for conservation of the existing heritage structure and are not compatible with the University's planning approach to enhance the traditional historic architectural character of the campus. Additionally, significant temporary works would be required during construction of the new bridge on the existing alignment, resulting in increased costs and constructability issues/risks.		Recommended as the preferred Alternative Planning Solution.

Preliminary Recommended Planning Solution

This approach utilizes the value of the existing structure for:

- Cultural heritage.
- Maintaining major infrastructure and utilities.
- Reducing the overall width of the new structure.

The new structure can reserve the space available on the existing bridge for active transportation-focused uses.



Preliminary Design Alternatives

Preliminary design alternatives for the recommended Planning Solution for a new bridge (on a new alignment) and to conserve the existing structure include:

- 1) Bridge Alternatives

a) Span arrangement

b) Structure type
- 2) Hydraulic Alternatives
- 3) Alignment Alternatives
- 4) Vehicular Access Alternatives

a) Restricted vehicular access

b) Partially restricted vehicular access (time of day, day of week, school year, etc.)

c) Full vehicular access
- 5) Cross Section Alternatives:

a) 2-lane

b) Single-lane signalized (contra-flow)

c) Active transportation spine (conserved structure)

d) Sidewalk and lookout (new twinned structure)
- 6) Heritage Alternatives

a) Railings

b) Plinth and Lighting

c) Materials
- 7) Sunset Street Intersection

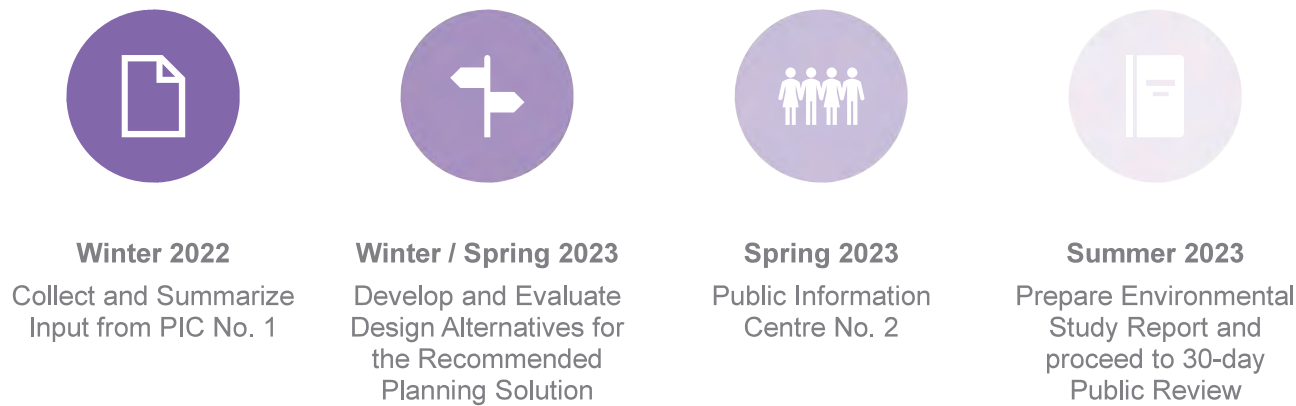
Stay Connected

- **We want to hear from you!** Please provide comments to westernubridge@uwo.ca or by contacting the University's representative or the consultant below:

Tucker Morton, P.Eng., M.Eng. Project Coordinator Western University 1151 Richmond Street London, ON N6A 3K7	Steve Taylor, P.Eng., M.Eng. Project Manager Entuitive-BT Engineering Inc. Joint Venture 509 Talbot Street London, ON N6A 2S5
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- Please provide your comments on or before November 30, 2022.
- Thank you for your participation in the Study. To receive updates on the project, request that your name/e-mail be added to the contact list.
- Your input into this Study is valuable and appreciated. All information is collected in accordance with the *Freedom of Information and Privacy Act*.

Next Steps



Appendix C

PIC Comment Sheets



From: [redacted]
Sent: November 16, 2022 9:09 AM
To: westernubridge
Cc: [redacted]
Subject: The problem is the problem statement

Hello:

As with any planning exercise, the choice of direction or purpose makes all the difference to the potential outcome.

I think that everyone involved should step back and seriously look at the problem statement as written in the information slides:

"Problem: The existing bridge is nearing the end of its service life as a vehicular bridge and **has insufficient width to suitably accommodate the number of vehicles**, pedestrians and cyclists. " [Emphasis mine]

If University Drive was closed to vehicular traffic excepting buses, that problem would disappear, wouldn't it?

Everyone who has studied planning knows that adding width to a clogged vehicular route just adds traffic volume, which then leads to more clogging as well as the impact of the increased traffic volume. On Western's campus, that increased traffic volume would be unwanted and dangerous.

The possibility of restricting through-traffic on Western's campus was considered during the planning for the proposed Light Rapid Transit system. It had many attractive features then, and still has now. I hope you will consider this option.

Thank you.

[redacted signature]

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From: [REDACTED]
Sent: November 9, 2022 11:33 AM
To: westernubridge@uwo.ca
Subject: [REDACTED]

Hi there,

I'd like to attend the meeting on november 17th regarding the Western University Drive Bridge.

I strongly support a bridge for active transportation only. The bridge should be closed to cars, as part of the vision for a pedestrian-friendly campus.

[REDACTED]

From: [REDACTED]
Sent: November 9, 2022 9:18 AM
To: [REDACTED]
Subject: Western Bridge Consultation

Good Morning,

I am interested in attending the online zoom meeting on November 17th but have a conflict in my schedule and will not be able to attend.

I would like it noted, however, that I commute daily on a bike across the bridge and have never found it safe. During periods of low traffic, cars and trucks will try to pass cyclists – often quickly and without much distance – while at periods of higher traffic volumes some drivers also get very impatient. The merge heading westbound is perhaps the most dangerous part where some drivers really don’t seem to care that they are squeezing cyclists out. It is important that I note here that over this time there have been several changes that have made the bridge a bit safer. I am not sure, though, that it can fully achieve this goal while allowing automobile traffic.

In the winter I walk and the bridge also cannot accommodate the volume of pedestrians. The sidewalks are too small for two way foot traffic.

The ideal solution, which has happened periodically in the past, is for the bridge to be restricted to only foot and bike traffic. It is the right size for these volumes of pedestrians and bikes.

I would like these comments noted as part of the public consultation process. In my opinion, the bridge, as well as the intersection on the west side of it, are accidents waiting to happen.

Thank you.

[REDACTED]

[REDACTED]

From:
 November 17, 2022 11:57 AM
To: westernubridge
Subject:

Hello, my name is and I'm a

I would like to participate in the public input for this project - specifically I'd like to advocate for the removal of non-transit vehicle access across the bridge, and I support the twinning option that allows for the bridge to become a fully pedestrianized public space. The location is beautiful and the quality-of-life events that could go on as it naturally connects to the new plaza could be simply amazing.

All the best,

You're receiving this message because you're a member of the westernubridge group from The University of Western Ontario. To take part in this conversation, reply all to this message.

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From:
 November 25, 2022 12:03 PM
To: westernubridge
Subject:

Thank you very much for providing an opportunity to comment about this project.

The only thing I'd like to remind the community (and decision makers) about is the traffic outcomes when the bridge was closed for emergency maintenance a few years ago. The repercussions on traffic around the university were nothing short of chaos in all directions. One couldn't get down Perth Drive toward Windermere in less than 15-20 minutes, which I imagine was a huge problem for University Hospital access. Going in the other direction down Lambton was also a nightmare and made Alumni Circle impossible for both pedestrians and drivers. There were simply no good options and it resulted in making other parts of the campus--and I might add those areas include far more central and beautiful areas of campus than the University Bridge area--much worse for pedestrians and drivers alike.

I drive some days and walk other days, so I see both sides of the problem. I totally understand the motivation to get cars off the campus, but I really don't think the answer is closing University Bridge to traffic for those needing to be on the campus. I think there are other more creative ways to approach this without shutting off a major artery into campus. I can certainly imagine closing University Drive beyond the Perth/Lambton line. There is no real need to go through here except for busses and deliveries and this would make a central part of our beautiful campus even more amazing.

Decreasing traffic east of University Bridge is not the real problem. The area is on the edge of campus and sidewalks here are already wide. Everyone already expects to walk on the sidewalks coming from the residence halls there and to cross the bridge on the sidewalks. The areas that will be affected by increased traffic if the bridge were closed are far more central and more a part of the iconic beauty of Western (e.g. Alumni Circle) or a major resource of the University (e.g. the hospital).

It's also worth looking at how many of your faculty and staff live in Old North and other neighbourhoods east of University Bridge and, therefore, use the bridge daily. Think about not only people who drive and park but students who take Ubers/taxis to get to their jobs off campus, emergency vehicles, delivery trucks. Again, I too would love to see all these vehicles out of the core of the campus, but not to the detriment of other, more central areas of campus, and not if the trade off is the traffic nightmare that we saw a few years ago. Everyone has noticed that traffic in London over the past 6-12 months has ramped up significantly. Please don't add to this frustration with something that makes the campus traffic and the major arteries nearby untenable.

What about having a fob to get us into campus on University drive if we belong on campus and not just driving through? Yes, a real problem for a few weeks while people who don't belong there realize this, but that's going to happen when you close the bridge anyway for those people who don't belong and don't receive campus-wide emails (I think that's primarily who you're trying to keep off the roads anyway, right?). Put the gates just beyond Sunset St. so those going into Medway Lot can turn right without hindrance and those who didn't realize they can't go through and don't have appropriate access can turn left down Sunset. Everyone

From: [REDACTED]
Sent: November 25, 2022 11:22 AM
To: westernubridge
Subject: [REDACTED]

The University Drive bridge should be closed to vehicular traffic. No replacement should be built. The university is well aware that much of the traffic over the bridge is from non-UWO drivers cutting through campus from Sarnia Road to Richmond (or vice versa). By reducing this traffic, which includes long queues of cars in the morning and evening commutes, we would reduce emissions from gas & diesel powered vehicles and make an important contribution to reducing air pollution. Removing this commuter route would also make travel safer for pedestrians and cyclists who are attempting to cross campus intersections in the face of speeding cars and cars that simply do not see them. As a pedestrian commuter to campus, I see near misses almost every day - especially as winter approaches and people complete their commutes in darker conditions. In addition, removing this traffic from campus would help busses run in a timely manner, making them a more viable form of commuting.

This bridge closure should be part of a broader strategy to enhance the environmental quality of our beautiful campus. That strategy should prohibit most private vehicular traffic on campus and instead route this traffic to lots on the campus perimeter. The existing parking on campus could then be turned into green space, natural habitats, and used for additional campus buildings the university wants to build. Campus shuttles could help people cross campus and provide close building access for disabled students and staff. Roadways would then be maintained for facilities management, deliveries, emergency vehicles, mobility vehicles, busses, campus police, and perhaps very special private commuters (e.g., the University's President and Provosts). By eliminating other traffic, more people would walk around the campus instead of trying to drive, and the campus population would become healthier, less stressed, and higher in wellbeing, according to research by the HEAL Lab.

Finally, the Thames river is home to an amazing variety of animals and plants. Adding another car bridge would further reduce habitat for the creatures who call LondON home, some of whom are in precarious positions due to habitat loss elsewhere. Western seems very happy to Tweet about its sustainability initiatives and awards. For campus members, however, the story looks less like action and more like greenwashing. The green-bin program does not seem to have made it inside my building (although there is a green bin hiding back behind the loading dock it is not accessible where it needs to be). The recycling program has very nice bins near the elevators, but I see housekeeping staff putting the contents of those bins into the same trash bag bound for landfill. If Western is truly interested in reducing its environmental impact instead of merely greenwashing, it needs to take big, bold steps, that are consistent with its open space plan, environmentally sustainable and responsible. Making the decision to cut traffic through campus would be a big step in that direction.

[REDACTED]

[REDACTED]

From: [REDACTED]
Sent: November 25, 2022 11:48 AM
To: westernubridge
Subject: [REDACTED]

Hi there,

Thank you for accepting feedback and commentary on University Bridge changes.

The biggest comment I would like to share is that I think that all vehicular traffic should continue to be able to travel through this artery. I have seen some suggestions that this bridge is made accessible to only public transit vehicles and pedestrian traffic. I think that would just make traffic flow terrible for other arteries on campus and you have now closed the only eastside access.

Thanks,

[REDACTED]

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From: [REDACTED]
To: November 27, 2022 7:57 AM
westernubridge@uwo.ca
Subject: [REDACTED]

Hi

I've lived in NW London since [REDACTED] and frequently use the University Bridge on my bicycle and in my vehicle. I support recommended planning solution 4B. The bridge is currently not safe for cyclists. Maintaining the current bridge for active transportation would alleviate this problem.

However I strongly urge you to continue to allow public vehicular access to the proposed new bridge. There are currently few east-west routes over this branch of the Thames. South of campus the closest east-west road is Oxford St (1.7 km south). There is already traffic deadlock on Oxford St, especially during rush hours. The 'next' east-west road to the north, Windermere Rd, is not much better, especially since it is only one lane each way with irregular left/right turn lanes at Perth Dr. And Windermere Rd is only an east-west through-street from Western Rd to Adelaide. Fanshawe Park Rd is the next closest east-west through-street north of campus. It is very busy as well, and is more than 3 km north of University Bridge!

Especially given the continuing population growth in NW London, closing the proposed new University Bridge to public through-access from the west to the east side of campus would unnecessarily contribute to traffic gridlock in NW London at a time when solutions are needed!

Thank you,
[REDACTED]

From: [REDACTED]
Sent: November 27, 2022 4:21 PM
To: [REDACTED]

Good afternoon

I am compelled to offer just a few thoughts on the importance of the University bridge to my bike commute everyday. It is my access point to the TVP.

I would submit that Wonderland road and University bridge are the two most dangerous segments of my commute. Each morning, I cross around 6:45am, long before most students are traversing campus. A week does not go by when a car does not pass me despite the signs. It's not busy, so I assume drivers feel they have the freedom to jeopardize the safety of myself or another cyclist coming from the opposite direction. I've taken to riding right in the middle to avoid these situations.

Each late afternoon or evening, I return to a much different picture with traffic backed up beyond Sydenham Hall. Trying to merge into that chaos is maddening where I am sandwiched between bumpers. Drivers give no leeway for pedestrians who might not cross at a stoplight.

There have only been a couple of times where I had the absolute pleasure of riding the bridge when closed to traffic. Imagine removing the bottleneck of traffic. Imagine how much more inviting that gateway to campus would become for pedestrians and cyclists. Campus should be a walkable space. Keep drivers to the edges in the parking lots. Lastly, the University should invest in its connection to and protection of the Thames River. Removing traffic from more spaces on campus, and specifically from this bridge, would show a commitment to the relationship between people and the river's eco niche.

The bridge is the threshold of access to the university. Protect pedestrians, cyclists, and the river by closing the bridge to car traffic.

I appreciate your consideration.

[REDACTED]

[REDACTED]

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From: [REDACTED]
Sent: November 27, 2022 10:05 PM
To: [REDACTED]
[REDACTED] Feedback on University Drive Bridge assessment

Hello,
I cycle across the University Bridge on a daily basis. It's not a pleasant experience due to drivers passing you, and speeding. So I definitely agree with the idea of keeping the bridge, and only allowing pedestrians and cyclists. As you note there is a fair amount of traffic on the bridge today that uses it as a shortcut that generates quite a bit of traffic on campus. I definitely hope that this can be addressed in the new design of the twinning bridge. For example with a type of barrier that can only be crossed by a bus and other prioritized vehicles. For example movable bollards or other types of obstacles that cannot be crossed by personal vehicles that want to take a shortcut through campus. One thing that also would appreciate, as new intersections will be constructed, are traffic signals that react to cyclists. This is not always the case, so sometimes you have to get over and press the beg button if you want the signal to switch. For example at Sunset St/University Dr.

Thank you,
[REDACTED]

From: [REDACTED]
Sent: November 28, 2022 8:01 AM
To: [REDACTED]
[REDACTED]

Hi,

A colleague alerted me to the call for comments on the EA for the WesternU Bridge. Otherwise, I would not have known about it. It has not been widely communicated to the Western Community, and I see the deadline for feedback is Wednesday. I have just reviewed all the slides and am excited by the possibilities! As a person who commutes to campus on a bicycle, I feel nervous every time I cross the bridge, as drivers frequently ignore the many signs instructing them not to pass cyclists on the bridge. I love the Conserve and Twin solution, as long as vehicular traffic using campus as a short cut is limited significantly. I think it would be great to limit access to public transit vehicles.

Thanks for the consultation.

[REDACTED]

[REDACTED]

Western University is located on the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Attawandaron peoples. This land continues to be home to diverse Indigenous peoples, whom we recognize as contemporary stewards of the land and vital contributors of our society.

From: [redacted]
Sent: November 28, 2022 10:30 AM
To: westernubridge
Subject: [redacted]

To whom it may concern:

I would like to register my preference for **not** closing the bridge to car traffic.

Such a closure would limit the number of cars that cut through campus. While there are many who want to have a car-free campus, many studies show quite conclusively that the mere presence of car traffic greatly reduces the number of crimes committed, in particular, crimes of sexual assault. Given Western's ongoing issues with respect to gender-based violence, I would be strongly opposed to reducing car traffic in and around campus. If the bridge were closed, the area in front of a number of campus residences, including Medway-Sydenham Hall, would receive little to no car traffic as well.

Thank you for providing the opportunity to give feedback. Before any decision is made regarding the bridge is made, I hope there will be further opportunity to give feedback as this opportunity was not well advertised and, in fact, was buried in an "Inside Western" mass email.

Sincerely,

[redacted signature block]

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From: [redacted]
Sent: November 28, 2022 11:31 AM
To: westernubridge
Subject: [redacted]

Good morning,

I'm writing to provide input to the EA for the new University Bridge.

While I appreciate that the proposed Alternative 4B: Conserve and Twin provides space exclusively for active transportation, I have serious concerns about how this proposed solution would integrate active transportation and private vehicular traffic at either end of the bridges. Under the current design, the most dangerous areas for cyclists and pedestrians are at the intersections at either end of the bridge—this is where the vast majority of collisions and near-misses happen, as active transportation users and private vehicle users are forced to interact due to road design. In the drawing offered in the EA presentation, pedestrian and bicycle traffic travelling from the south on the Thames Valley Parkway would need to cross several lanes of traffic to access the active transportation bridge when entering campus, and depending on their campus destination, would need to cross that traffic again once they have exited the active transportation bridge, as well as repeating the same process when leaving campus. This presents many opportunities for the types of collisions and near-misses that we currently see on a day-to-day basis at the existing intersections.

The primary source of danger for those seeking to enter Western's campus via University Bridge is private vehicle traffic. As such, I'm confused as to why installing a second bridge—at great expense, I'm sure—is being considered, when closing this route to private vehicles would be the simplest, cheapest, and safest option available for the University. We know that much of the traffic travelling over University Bridge is using our beautiful campus as a cut-through not a destination, which does a disservice to Western. We can prioritize the safety of Western's community members and fulfill Western's goals around sustainability by re-routing private vehicles around campus, and prioritizing active transportation modes for accessing central campus.

- In connection to this concern, I have three questions:
1. How will the new bridge design ensure the safety of those using active transportation modes to enter Western's campus? What infrastructure will be installed to protect cyclists and pedestrians?
 2. Why is closing the existing bridge to private vehicular traffic without building an additional bridge, and simply requiring that private vehicular traffic use alternate routes to access campus not presented or assessed as an option within the EA?
 3. Has a study been done to determine the impacts of closing the bridge to private vehicular traffic (remaining open for busses), and re-routing campus traffic to alternative routes? If so, can the results be shared?

Looking forward to your response,

[redacted signature block]

[Input](#) | [Learner](#) | [Context](#) | [Intellection](#) | [Harmony](#)

From: [redacted]
To: westernubridge
Subject: [redacted]

Hi There,

I have read through the University Drive Bridge Class Environmental Assessment (EA). I am not in favour of any of the proposed solutions. I feel that a very cost-effective, environmentally friendly, and pedestrian and cycling friendly option has been overlooked:

- Leave one lane of the existing bridge roadway open to traffic, only for the use of transit and service vehicles.
- Use the 2nd lane for non-walking active transportation, divided by direction.
- Use the north sidewalk for walking into campus (or bi-directional for both sidewalks as it is now)
- Use the south sidewalk for walking out of campus
- Improve connections to active transportation on both sides.

Thanks for receiving my feedback, and you can add my email address to the contact list.

Best,

[redacted signature block]



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From: [redacted]
Sent: November 28, 2022 2:00 PM
To: westernubridge
Subject: [redacted]

Hello

Thanks for your presentation. At future presentations I hope to hear more about ecological concerns related to the building of the second bridge which were mostly absent from the meeting. Western is trying to connect closely to the river and I have concerns about losing gains we have with endangered river species with the creation of the second bridge.

I would like to see us seriously limit through traffic other than transit and city vehicles. I hear your arguments around accessibility but with 3000 vehicles a day being through traffic I think we can promote accessibility without allowing free for all traffic through campus across the new bridge.

Additionally, there are serious accessibility concerns with having heavy traffic through campus so the simple argument that some people need to drive close to their building is not a reason to allow 3000 people per day to drive through campus without stopping.

I would like to see the bridge be a part of a complete shift in how we support more sustainable practices on our campus. Therefore the main university bridge should be entirely bike and pedestrian focused and part of a bigger active transportation plan.

Thanks very much, and I look forward to more information.

[redacted signature block]

[redacted] is located on the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak, and Attawandaron peoples, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum. This land continues to be home to diverse Indigenous peoples whom we recognize as contemporary stewards of the land and vital contributors of our society.

From: [REDACTED]
Sent: November 28, 2022 7:22 PM
To: westernubridge@uwo.ca
Subject: [REDACTED]

I have a long and proud association with Western - [REDACTED]
[REDACTED] have the opportunity to be on campus several times a year and have continued to enjoy the beauty of the campus and the wonderful environment that it provides students and other community members engaging with the university.

As an active commuter, most of my trips to campus are on bicycle or sometimes even running there.

I am thrilled to have the opportunity to provide comments on the future renovation of the bridge. I was particularly excited to see that Western is considering a pedestrian only option and strongly urge the university to proceed with that. Key issues behind this for me are as follows.

- safety - as an active commuter, I've encountered several times when vehicles have passed on the bridge, or sped towards the bridge to "get ahead" before I've been on the bridge - contributing to the safety concerns for me and other active commuters and pedestrians.
- environmental issues - Western is a leader in sustainability. Reducing vehicle access to campus will reduce GHG's from vehicles on campus, promote active transportation and promote Western's sustainability leadership.
- enhanced campus beauty - the western campus is known for its beauty. Creating a car-free zone at the existing bridge site would greatly enhance that beauty and provide a far more pleasant experience for all campus users.

Thank you for the opportunity for input into this important project. I strongly urge Western to take the bold move to eliminate vehicle traffic in a renewed University Bridge.

[REDACTED]

From: [REDACTED]
Sent: November 28, 2022 8:48 PM
To: westernubridge
Subject: [REDACTED]

Dear colleagues,

I want to add my voice to the consultation on the future of University Bridge..

I strongly support a closure of the bridge to individual car traffic. Such a closure would have multiple benefits:

- 1) reduce greenhouse gas emissions, especially when combined with strengthening of public transport and cycling and walking infrastructure to campus.
- 2) increase safety on campus. There have been several serious accidents, and many more close calls, on or close to the bridge over the last years.
- 3) make the campus more lively. The University has invested in making its spaces more welcoming. Inclusion of the bridge in these efforts would make perfect sense, especially in light of the current work along University Hill.
- 4) reduce vehicle shortcuts through campus, which further increases pollution and risks on campus..

Over my [REDACTED] years at Western I have commuted to campus most often by bike, but also by car, foot, and public transport. I firmly believe that closing the bridge to individual cars (and possibly maintaining bus traffic) is the right thing to do. The University should be a leader in sustainability within the London community, and this is one opportunity to take such leadership.

Best wishes,

F [REDACTED]

[REDACTED]

From: [REDACTED]
Sent: November 29, 2022 4:04 PM
To: westernubridge
Subject: [REDACTED]

Hello,

The University Drive bridge is a part of my daily commute to and from Western University. As a pedestrian, the bridge needs improvements for pedestrian safety and comfort.

The sidewalks on the approach to the bridge have a comfortable width, with wide margins between the road and sidewalk. However, on the bridge, the sidewalks are narrow and pen pedestrians between two metal railings, with only room for two people to walk abreast. This issue is exacerbated at either end of the bridge, where the stone pillars and the metal railings overlap, creating an even narrower passage.

By making room for pedestrians, walking on the bridge will feel safer and more comfortable. New students and alumni alike would enjoy walking to Western's campus. The experience of looking up UC hill and at UC tower is far more impactful when viewed on foot rather than through a car windshield.

Another issue is the iciness of the bridge during freezing temperatures. As cars drive across the bridge, water is splashed on the sidewalk, freezing quickly and becoming ice. Facilities Management works hard to de-ice the bridge using salt, but many may walk on the slippery bridge before it is salted. In addition, the salt falls into the river, which may have negative environmental impacts.

The bridge also places large vehicles near pedestrians. The loud sounds not only remove the possibility of peaceful strolls but also detract from the beautiful views of Deshkan Zibiing / Thames River. The bridge is truly one of the most picturesque parts of Western's campus, with the view from either side a painting of nature, but loud vehicle noises – along with the narrow sidewalk – make it difficult to appreciate the beauty surrounding Western's campus.

Hopefully, the reimagining will include an improved method to deal with bridge icing and the proximity in which pedestrians are placed to vehicles.

In addition to pedestrian safety, cyclist safety should also be a priority. I have seen dangerous situations where personal vehicles overtake cyclists on the bridge. This overtaking is often done at high speed, endangering both people on the cycle and in the vehicle. Signs are not enough to deter unsafe passing, but implementing infrastructure that disallows this behaviour would stop these situations from being created.

I hope that the issues I have presented will be addressed and that this reimagining leads to the best use of the University Drive bridge for all its users.

Thank you for accepting comments.

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From: [REDACTED]
Sent: November 29, 2022 6:01 PM
To: [REDACTED]
Subject: [REDACTED]

Dear Tucker Morton,

please find attached a summary of our feedback on the Public Information Center for the University Drive Bridge Class Environmental Assessment. I am submitting this on behalf of the Western Active Transportation Society, which consists of ~200 students, staff and faculty from the Western University community.

I would like to thank you for involving us at relatively early stages of the public consultation and look forward to continuing this conversation, not only about the specific Bridge design, but about the transportation strategy for campus in general.

Best wishes,

[REDACTED]

On Nov 15, 2022, at 12:22 PM, westernubridge <westernubridge@uwo.ca> wrote:

Good afternoon,

Thank you for your email regarding the University Drive Bridge Class Environmental Assessment (EA). You have been added to the attendee list and will receive a separate email with the online meeting invitation for the Public Information Centre (PIC) on November 17.

The Public Information Centre (PIC) No. 1 exhibits are available at the following link: https://uwo.ca/fm/projects/capital_projects/ud_bridge.html

If you require additional information or wish to provide additional comments during the Class EA process, please contact us anytime at: westernubridge@uwo.ca.

Thank you

London, November 29th, 2022

Dear project committee,

On behalf of the Western Active Transportation Society (WATS), we would like to provide input to the Environmental Assessment (EA) of the University Drive bridge.

Our main concern is that one important alternative solution was not seriously studied: namely to transform existing bridge into a bridge for pedestrian and cyclists (as suggested in solution 4B), but not to build a new bridge for vehicular traffic. We believe that this solution would have substantial advantages over all other studied solutions and that it would be most consistent with the stated goals of the University’s open space strategy. In short, we do not believe that the EA has presented enough evidence that there is a need to maintain vehicular traffic across a University Drive bridge.

Why do we think this solution is possible?

The “Big Moves” in Western’s Open Space Strategy (2018) propose to reduce cut-through traffic across campus, to situate parking at the perimeter (for example by construction of a parking garage on Medway parking lot), and to provide drop-off points for pedestrians to reduce traffic and parking on campus. If the University is still aiming to reach these goals in the foreseeable future, it is not clear that there is a need for maintaining access for private motorized vehicles across the University bridge. Vehicular access to campus and the University hospital is well served by Western Road from the west and Perth Drive from the north. While the drive from, for example, University Drive / Richmond intersection to the Chemistry parking lot would increase by 600m, we believe that the change would lead to more people to choose active transportation alternatives for shorter distances, ultimately removing capacity concerns. The EA has not shown that this would on balance not lead to better transportation outcomes.

A main goal for the University must be to improve public transportation connectivity. The original north-branch of the BRT proposal was not approved, but alternatives for high-frequency bus services to campus remain a priority for the City of London. It has not been clearly demonstrated by the EA that buses must cross the river at the University Drive Bridge to achieve this goal. High-frequency bus services running on Western Road with a branch on Philip Aziz and Perth Road, plus bus service on Richmond Street (with a bus hub on the east side of the University Bridge) would likely be competitive solution in terms of travel times and a substantial improvement on the current situation.

What advantages would this solution have?

The transformation for the existing University Drive Bridge into a structure dedicated to active transportation has substantial advantages from a safety and heritage standpoint, most of which are already pointed out in the EA. Not having to build and maintain a bridge for vehicular traffic would remove the adverse impact on the sensitive ecosystem of the river (apart from having clear financial and health advantages). We estimate that closure of the bridge would lead to a substantial mode shift from cars to active transportation, with the associated reductions in CO2 emissions and substantial health benefits for Western’s students and staff. Individual and community net health benefits of a mode shift to active transportation include up to one year longer life expectancy, lower cancer and cardiovascular risks, less days of absence, and better memory. Restricting vehicle access to one of the most iconic and most beautiful parts of our campus will create a livable and safe space that will transform the campus

experience for everyone. We believe these advantages alone warrant a serious consideration of this solution.

Importantly, the University Bridge has been a major safety hazard in the past, with numerous car-pedestrian and car-cyclist collisions occurring on the associated intersections (many of which are unreported). The proposed solution 4B has the potential to remedy some of these concerns. However, the blending of vehicular traffic, buses, and active transportation both on the west and east side of the bridge remains unsolved, and we anticipate this to cause safety problems in the future. Removing vehicular traffic across the river would make it much easier to provide a truly safe environment for the campus community.

Conclusion

We agree with the committee that, from the proposed solutions, a “conserve and twin” approach (solution 4B) is the most promising to ensure safe campus access for active transportation users. However, we would request that the EA include a clear consideration of the suggested alternative: not to maintain vehicular traffic across the river. We believe that when planning a structure as impactful and long-lasting as a second bridge, the University needs to provide more clarity on their transportation plan for the next decade. Is the University willing to be more serious about preventing cut-through traffic? Will the University move parking to the perimeter? Is the University committed to encouraging active transportation and environmental sustainability? The construction of a new 2-lane bridge designed for individual motorized traffic appears to maintain the status quo. We urge the University to seriously consider taking the opportunity offered by the end-of-life of the current bridge to accelerate their environmental and transportation vision and to look at more sustainable, future-oriented and sustainable solutions.

On behalf of the Western Active Transportation Society,

Jörn Diedrichsen

Chris DeGroot

Yolanda Hedberg

[REDACTED]

From: Dante Mazzetti <dmazzetti@hotmail.com>
Sent: November 30, 2022 7:51 PM
To: westernubridge@uwo.ca
Subject: Bridge

Be bold, be a mustang, twin that bridge.

Hope your day is going as planned,
Dante Mazzetti

[REDACTED]

From:

[REDACTED]

To whom it may concern,

I am writing to submit comments to the ongoing public consultation about the Environmental Assessment (EA) for the University Drive bridge project.

My name is

[REDACTED]

I have gained plenty of experience with reviewing Environmental Assessments similar to this file.

Please find a question, as well as comments and recommendations listed below:

1. **Question:** The University Drive bridge EA is one of three studies associated with major upcoming roadwork around the University's campus, including Western/Sarnia/Philip Aziz and Windermere Road. How do these projects link together? Each of these projects will have implications for how people move on and through the campus, yet the plans appear to be developing independently and it is unclear what the cumulative impacts on campus mobility will be. For example, if the new University Drive bridge were to restrict through access for personal vehicles, would it make sense to add extra lanes for vehicles elsewhere?
2. **Recommendation:** whatever the new concept for the bridge may be, that it should remain permanently closed to personal vehicles at all times. Exemptions should be made for emergency vehicles, buses, vehicles associated with university facilities management and on a case-by-case basis for accessibility reasons. There are numerous possible ways that this could be enforced, such as monitoring using traffic cameras, installing a parking barrier gate. A traffic alert system (e.g., lights, sounds) should be implemented to alert pedestrians and cyclists on the bridge to an oncoming vehicle such as a bus or ambulance.
3. **Recommendation:** If the bridge is closed permanently to personal vehicles, then a designated passenger pickup/drop-off area should be created between the current bridge and Richmond St to the east. The University could facilitate faster access to main campus from Richmond St through dedicated shuttles that could transport people across the bridge and throughout main campus areas.
4. **Recommendation:** Before carrying out the any survey protocols for the Environmental Assessment, it is recommended that the consultant should check citizen science databases such as iNaturalist and eBird (per the [City of London Environmental Management Guidelines](#), Appendix C, Data collection standards, Guidelines for Data Collection) for records of species at risk near the bridge, and include a summary of relevant historical citizen science records (i.e., species at risk observations) in your report.
5. **Recommendation:** On the southeast side of the bridge, there is currently a massive sprawling patch of invasive English Ivy and Lesser Periwinkle on Western's property that is spilling into the riparian

corridor. If restoration and plantings occur in areas surrounding the bridge to remediate negative impacts, it is recommended that this patch of invasive species should be managed as well.

- 6. **Recommendation:** The University Drive bridge currently lacks any signage to acknowledge the Thames River running below it that gives Western's campus and the vista of the bridge its character. There may be an opportunity through the new bridge to orient the community to the river in a way that is engaging and educational.
- 7. **Comment:** The University Drive bridge and roadways surrounding it are currently some of the most dangerous spaces for pedestrians and cyclists on campus. I have personally been nearly struck by vehicles passing over the bridge at least 3 times during my 6 years at Western. There is plenty of historical evidence to indicate that the existing design and traffic calming measures are insufficient to keep people safe (for example, collisions [in 2015](#), [in 2018](#), [in 2022](#)). It is reasonable to assume that many traffic incidents and near-misses are never reported. Many in our community at Western share stories of close calls with cars around the bridge.
- 8. **Comment:** Use of personal vehicles is one of the [leading contributors to greenhouse gas emissions in London](#) and significantly elevates [Scope 3 emissions](#) on Western’s campus – indirect emissions created by campus users but not by the University itself. Designing the new University Drive bridge in a way that promotes use of active transportation and public transit, discourages use of personal vehicles and improves public safety is consistent with Western’s [Strategic Plan](#), [Open Space Strategy](#) and various commitments to climate change mitigation and adaptation.

Thank you for the opportunity to submit feedback on the bridge project. I look forward to participating in subsequent stages of the EA.

Regards,

[Redacted signature]

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[Redacted header]

From: Steve Taylor (London) <stevenj.taylor@bteng.ca>
Sent: December 1, 2022 11:46 AM
To: [Redacted]
Cc: [Redacted]
Subject: Fw: University Drive Bridge

[Redacted line]

[Redacted line]

[Redacted block]

[Redacted line]



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
President
509 Talbot Street
London, Ontario
N6A 2S5
E-Mail: stevenj.taylor@bteng.ca
Phone: 519-672-2222
FAX: 1-613-280-1305
Toll Free: 1-866-218-1001
www.bteng.ca

From: [Redacted]
Sent: November 30, 2022 10:31 PM
To: Steve Taylor (London) <stevenj.taylor@bteng.ca>
Subject: University Drive Bridge

To Steve Taylor:

We are writing as representatives of [Redacted], regarding your public presentation about the redesign of the University Drive Bridge. We enthusiastically endorse several aspects of your plans as they have developed so far: the decision to emphasize the bridge's role as a gateway to what is now the inner core of the campus and to retain its view of the iconic University College tower; the intention to maintain the Collegiate Gothic style of the bridge, in keeping with the dominant style of the historic campus; and, in the favoured option of twinning the bridge, the plan to effect a complete restoration of the original bridge. We do have two important questions about the preferred option, however, one concerning proposed traffic plans and the other a recommendation about the proposed placemaking function of the bridge.

As persons with long-standing affiliations with Western, we are aware of the problems with non-University traffic through the campus and with unsuccessful former attempts to curtail it. The problem arises, of course, because of the lack of bridges across the Thames River in the steadily expanding neighbourhoods north Oxford Street. Oxford Street, Richmond Street, and Wharncliffe Road are all regularly blocked or slowed by traffic bottlenecks of historic dimensions now, which will become worse if traffic is severely limited on the University Bridge (especially if, as seemed suggested at the presentation on November 17, even faculty members living east of the river are prohibited from using the bridge). To make plans for a bridge of substantially restricted use without consultation with the City seems short-sighted and possibly counter-productive even in connection with the University's own employees.

(As mentioned on November 17, a bridge at Huron Street might be a logical solution, given that the University already owns the property on which a link to Sarnia Road would sit. If a bridge were to be built in this location, would a twinned bridge at University Drive even be necessary?)

Finally, we look forward to hearing more about the ways in which the placemaking aims associated with the bridge may be fulfilled. One feature we would like to see incorporated is an area (platform, plaza, clearing, etc.) from which the restored bridge can be well viewed. Right now the best public place from which to get a comprehensive view of the bridge is the bicycle path below the bridge; a higher and less interrupted viewing site could also allow space for some of the other suggested placemaking initiatives.

Thank you for considering these suggestions and for providing the opportunity for us to make them.

[Redacted signature]

[Redacted header]
From: [Redacted]
Sent: December 1, 2022 4:26 AM
To: westernubridge
Subject: [Redacted]

Hello,

I strongly support eliminating car traffic for the new bridge design and designating it solely for transit, cycling and pedestrians. As a former Western student one of my favourite times was the brief period a few years ago when the bridge was closed to car traffic for construction, making the campus feel incredibly safe, quiet and peaceful to travel through - a sentiment shared by many of my fellow students. With the return of cars students and staff were forced back on to the bridge's incredibly narrow sidewalks - bumping and squeezing past each other in single file lines. Reinforcing the bridge to support a potential future LRT should be considered.

Cheers,
[Redacted signature]

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From: westernubridge <westernubridge@uwo.ca>
Sent: November 16, 2022 10:18 AM
To: [REDACTED]
Subject: Re: Bridge & UTC

Good morning,

Thank you for your email regarding the University Drive Bridge Class Environmental Assessment (EA). Your information was added to the Study's contact list, and you will receive a separate email with the online meeting invitation for the Public Information Centre (PIC) on November 17.

If you require additional information or wish to provide additional comments during the Class EA process, please contact us anytime at: westernubridge@uwo.ca.

Thank you

From: [REDACTED]
Sent: Wednesday, November 16, 2022 8:32 AM
To: westernubridge <westernubridge@uwo.ca>
Cc: [REDACTED]
Subject: Bridge & UTC

To whom it may concern,

November 1992 marks the 30th anniversary of the founding of the University Tennis Centre. Over the years, the domes have played host to thousands of tennis players and countless hours of fun filled recreation. We serve an important role in the community and on campus and we want to continue running this business in its current location. We are an interested party in this project as we require parking near the domes to continue operating on campus. We would appreciate an opportunity to speak to someone about our concerns. Would you kindly add us to the Zoom meeting Nov 17 too (this email address thank you)?

Thank you,

[REDACTED]

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PIC No. 2 Summary Report
Western University
University Drive Bridge Class Environmental
Assessment, Project No.: 9M5173

June 4, 2026

Prepared by:
BT Engineering Inc. and Entuitive
Joint Venture
509 Talbot Street
London, ON N6A 2S5



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1.0 INTRODUCTION

Western University (Western) is conducting a Class Environmental Assessment (EA) Study for improvements to the University Drive Bridge located across the north branch of the Thames River in London, Ontario. The existing bridge is nearing the end of its service life as a vehicular bridge and has insufficient width to suitably accommodate the number of vehicles, pedestrians and cyclists.

This Public Information Centre (PIC) No. 2 Summary Report provides an overview of the comments received by the public during the two-week PIC review period. The second PIC for this Study was held online from 1:00 pm to 3:30 pm on May 13, 2026. The webinar meeting included a live presentation where the following was presented:

- Overview of the Municipal Class Environmental Assessment (MCEA) process
- Summary of work completed to date
- Problem and Opportunity Statement
- Preliminary design alternatives
- Effects and mitigation
- Technically Preferred Plan

A live question-and-answer period followed the presentation,

All members of the public and interest groups were invited to view the online PIC No. 2 material and were encouraged to provide a written response to any issues or concerns.

1.1 Study Area

The Study Area is located on Western University's campus in London, Ontario and is illustrated in **Figure 1**.

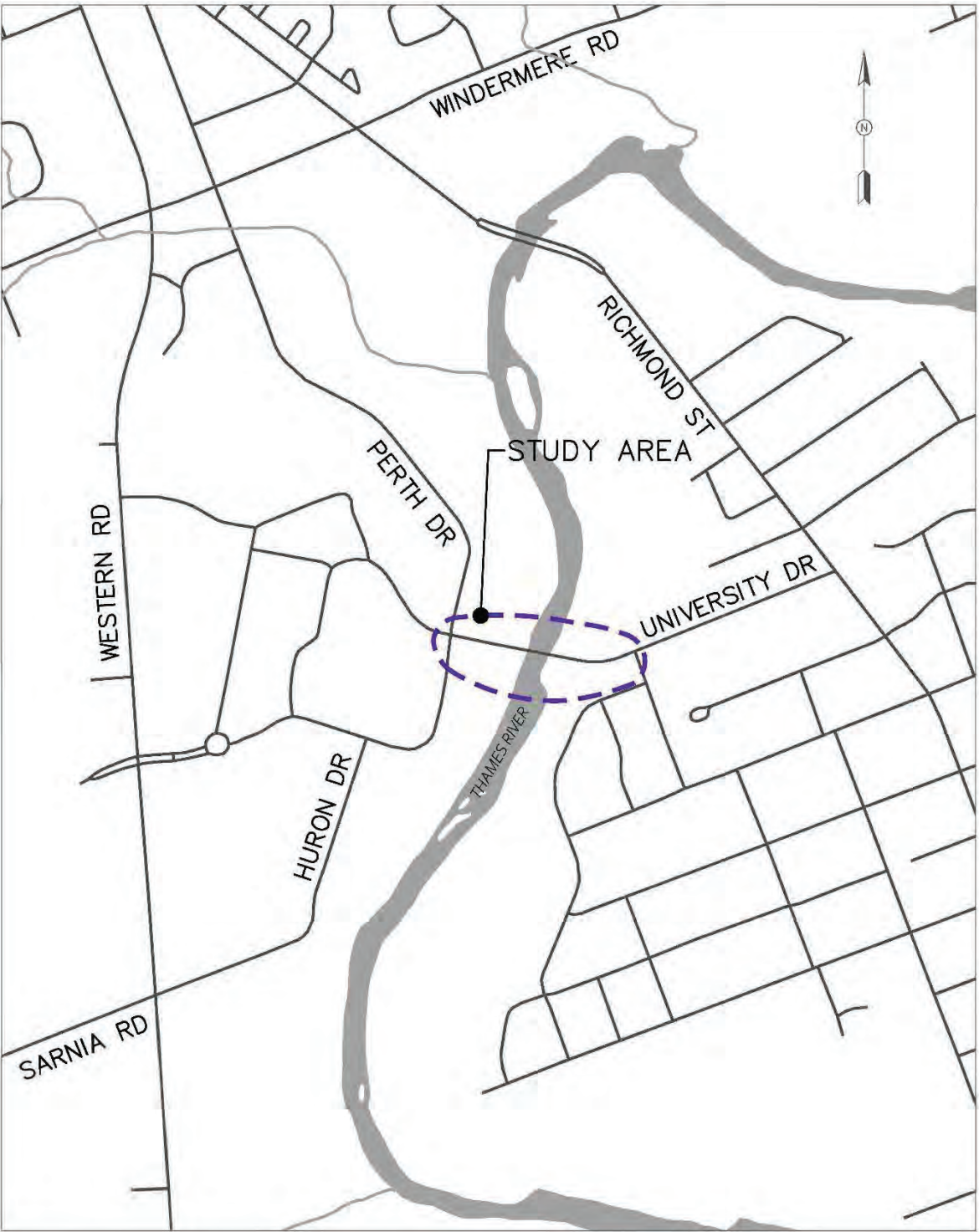


Figure 1: Study Area

2.0 PUBLIC AND AGENCY CONSULTATION

A key aspect of the EA process is to provide the public, interested parties, affected agencies and municipalities with the opportunity for input. To ensure this objective is met, a public and agency notification program was undertaken. The program includes a number of communication mechanisms, discussed in the following sections.

2.1 Public Contacts

Notices were mailed to members of the public who were on the study contact list to invite them to attend PIC No. 2. The notice was distributed electronically to members of the public/ stakeholders that had identified an interest in the study or requested to be on the contact list.

2.2 Indigenous Peoples Contacts

Notices were sent to Indigenous Peoples in the vicinity of the Study Area, inviting them to attend the online PIC. Notices were sent to the following:

- Aamjiwnaang First Nation
- Bkejwanong Territory (Walpole Island First Nation)
- Chippewas of Kettle and Stony Point First Nation
- Chippewas of the Thames First Nation
- Munsee-Delaware Nation
- Oneida Nation of the Thames
- Delaware Nation

2.3 Newspaper Notice

Notices of the PIC No. 2 were published in the London Free Press on May 6 and May 9, 2026. The newspaper notice is included in **Appendix A**.

2.4 Western University Website

The Notice of PIC No. 2 was posted on the Western University website inviting interested persons to attend the online webinar. The website link is: www.uwo.ca/fm/projects/capital_projects/ud_bridge.html

2.5 Agency and Stakeholder Contacts

The following ministries, agencies and stakeholders were invited to attend the online PIC:

- Ministry of the Environment, Conservation and Parks
- Ministry of Natural Resources and Forestry
- Ministry of Municipal Affairs and Housing
- Ministry of Indigenous Affairs
- Ministry of Northern Development, Mines and Natural Resources
- Ministry of Citizenship and Multiculturalism
- Ministry of Tourism, Culture and Sport

2.6 Adjacent Residential Area

To ensure nearby residences were informed of the study, notices were distributed to residential properties adjacent to and within the immediate vicinity of the study area. Notices were hand delivered

to properties along The Parkway, Richmond Street, Parkdale Cres, and Tower Lane in the immediate vicinity of the study area and were mailed to adjacent properties. Properties that received hand-delivered notices are identified by red dots, and properties that received mailed notices are identified by green and blue boxes on **Figure 2**, **Figure 3**, and **Figure 4** below.



Figure 2: The Parkway Notice Distribution Map

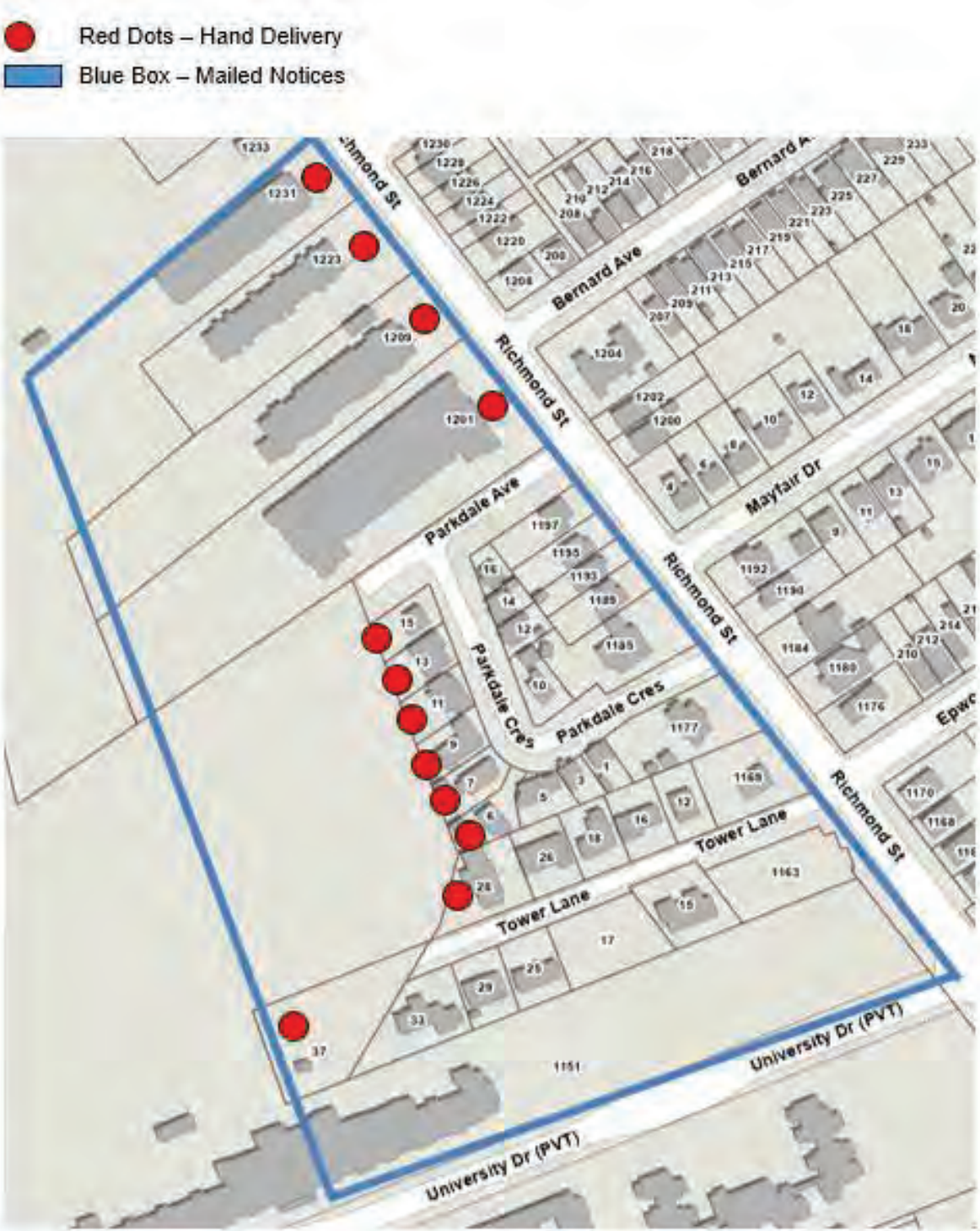


Figure 3: Richmond Street/Parkdale Cres/Tower Lane Notice Distribution Map

- Red Dots – Hand Delivery
- Blue Box – Mailed Notices



Figure 4: Richmond Street Notice Distribution Map

3.0 PIC COMMENTS

PIC 2 Exhibits were made available online for review by members of the public, Indigenous communities, and agencies at their convenience. A copy of the PIC 2 exhibits is provided in **Appendix B**.

A total of eighty-seven (87) individuals attended the PIC 2 webinar, including 73 members of the public and 14 representatives of the project team, consisting of staff from Western University, Entuitive, Sanchez Engineering Inc. (S.E.I.), and BTE. The presentation panel included Andrew Konowalchuk (Assistant Vice President, Western University), Steve Taylor (EA Project Manager, BTE Inc.), Stephen Brown (Structural Engineer, Entuitive), and Leo Sanchez (Hydraulic Engineer, S.E.I.). A question-and-answer session was held following the presentation. Members of the public were invited to submit questions and comments through the webinar chat function, and responses were provided by the panelists during the discussion period.

Comments and questions received during the live webinar were documented and are included in **Appendix C**. Additional written comments were also received from individuals that reviewed the PIC 2 exhibits online. Copies of all written comments (25), excluding personal information, are provided in **Appendix D**.

3.1 Summary of Comments

Table 1 provides a summary of the comments received at PIC No. 2. Comments and questions submitted during the PIC No. 2 webinar are identified in **Table 1** by the asterisk (*) following the comment sheet number to distinguish webinar submissions from written comments submitted online.

Table 1: Main Themes of PIC No. 2 Public Comments		
Comment	Number of Respondents	Comment Sheet No.
Support for retaining the existing bridge for active transportation only.	6	1, 5, 7, 8, 22, 33*
Opposition to the twinned bridge option.	5	1, 5, 8, 25, 33*
Comments suggesting alternative transportation or bridge alignment solutions.	7	1, 5, 8, 14, 15, 9*, 17*
Support for a twinned bridge with the existing bridge retained for pedestrians and cyclists.	5	2, 4, 23, 24, 23*
Preference for the concrete arch bridge design.	2	2, 23
Questions or comments regarding campus access and connectivity.	4	2, 5, 12, 17*
Questions or comments regarding construction timing, coordination, and traffic impacts.	5	3, 12, 16, 22*, 32*
Questions or comments regarding parking availability and access concerns.	11	6, 10, 11, 13, 15, 16, 13*, 14*, 21*, 22*, 40*
Questions, comments or requests for improved cycling and pedestrian connections.	20	7, 14, 18, 20, 21, 22, 25, 10*, 15*, 18*, 20*, 26*, 27*, 28*, 30*, 34*, 35*, 38*, 39*, 41*
Comments discussing opportunities for Indigenous recognition, reconciliation, and placemaking.	1	9
Requests for project information, contact list additions, or webinar materials.	6	17, 18, 19, 45*, 47*, 48*
Concerns regarding pedestrian and cyclist safety and accessibility, including the lack of separation between users on the existing bridge, cyclists' safety along Sunset Street, indirect travel routes for pedestrians/cyclists, and the need for a pedestrian crossing on University Drive.	1	22
Comments providing local environmental observations.	1	24
Questions regarding evaluation methods, design rationale, and technical analysis.	9	2*, 3*, 5*, 7*, 8*, 11*, 12*, 19*, 37*
Comments regarding property, neighbourhood, and environmental impacts.	4	16*, 24*, 25*, 27*
Questions regarding traffic operations, transit service, and roadway function.	7	4*, 13*, 23*, 35*, 36*, 40*, 42*

Questions regarding coordination with municipal and campus planning initiatives.	2	14*, 43*
--	---	----------

Comments submitted during the PIC webinar are indicated by an asterisk (*) in **Table 1** above.

4.0 CONCLUSIONS

Overall, the majority of the comments received during the PIC No. 2 reflected support for retaining the existing bridge for active transportation purposes. Several respondents expressed support for the twinned bridge solution, while others questioned whether the improvements would result in more through traffic on campus and/or questioned whether the solution was consistent with the University’s active transportation initiatives. Participants also provided feedback regarding campus access and connectivity, parking availability at Talbot parking lot during and following construction, and opportunities to improve cycling and pedestrian facilities within the study area as well as the broader active transportation network. The most reoccurring comments included the following:

- Questions or comments regarding parking availability and access concerns.
- Comments or questions regarding pedestrian and cyclist safety, and requests for improved cycling and pedestrian connections.

Respondents that provided comments regarding parking availability and access concerns emphasized the importance of maintaining accessible parking for faculty, staff, students, and visitors. Respondents noted that parking availability influences campus accessibility, user experience, and community engagement. Comments also raised questions regarding how the bridge project and other ongoing or planned campus initiatives may affect parking supply, access routes, event operations, and overall functionality of the campus transportation network.

The most frequently discussed theme was related to cycling and pedestrian connectivity and safety. Respondents generally supported improvements to active transportation infrastructure and provided numerous suggestions to enhance connections within campus and to the broader active transportation network. Comments included requests for improved links to the Thames Valley Parkway (TVP), safer pedestrian and cycling routes, enhanced wayfinding and signage, and improved intersection and crossing designs. Several respondents also identified existing and potential safety concerns related to interactions between pedestrians, cyclists, and vehicles.

The feedback received through PIC No. 2 has been reviewed and documented by the project team and will be considered as the study progresses. The comments received have provided valuable feedback into refinements of the preferred bridge replacement strategy and will help inform detail design of the bridge.

Appendix A

Newspaper Notice

Notice of Public Information Centre (PIC) No. 2

University Drive Bridge, Western University Municipal Class Environmental Assessment (EA)

Introduction

Western University retained Entuitive and BT Engineering Inc. to complete the Environmental Assessment (EA) and design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River in the City of London. The existing bridge is near the end of its service life for vehicular traffic. The preliminary planning solution, presented at PIC No. 1, recommended rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

Study Process

The University Drive Bridge rehabilitation/ replacement is being completed as a Schedule C project under the Municipal Class Environmental Assessment (MCEA) (2015). The study includes all necessary phases of the MCEA and will also define the impacts of the proposed solution including impacts during construction and how these impacts will be mitigated.

Following PIC No. 2, an Environmental Study Report will be prepared for a 30-day review period.

Public Consultation

Public consultation is a component of the Class EA, and we value your input during the planning process. Western has scheduled a second on-line PIC for this project. At PIC No. 2 the recommended bridge location, preferred bridge design, hydraulic performance of the bridge, repurposing of the existing bridge for active transportation, effects and mitigation and next steps will be presented.

The PIC public review period will be for a two-week period from **May 13 to 27, 2026**. Exhibits will be available during this period online at the University's website at www.uwo.ca/fm/projects/capital_projects/ud_bridge.html.

In addition, a presentation will be held beginning at 1 p.m. with a Question-and-Answer session to follow.

This event is scheduled for:

Date: May 13, 2026, from 1 pm to 3 pm

Location: Online Zoom Webinar

To register for the online meeting, please send an email to westernubridge@uwo.ca before May 13, 2026, identifying your interest in attending.

PIC No. 2 comments can be submitted by emailing westernubridge@uwo.ca by May 27, 2026.

There is an opportunity at any time during the EA process for interested persons to provide comments. All information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act* (2009). With the exception of personal information, all comments will become part of the public record.

If you require additional information or wish to provide comments during the Class EA process, please contact us anytime at: westernubridge@uwo.ca

Trent Williams, C.E.T.
Project Coordinator
Western University
1151 Richmond Street
London, ON N6A 3K7

Steve Taylor, P.Eng., M.Eng.
Project Manager
BT Engineering Inc.
509 Talbot Street
London, ON N6A 2S5



Appendix B

PIC Exhibits

University Drive Bridge Class Environmental Assessment (EA)

Public Information Centre No. 2

May 13, 2026



University Drive Bridge PIC No. 2
May 13, 2026



Welcome

- Thank you for participating in the second Public Information Centre (PIC) for Western University's Class Environmental Assessment (EA) Study for the University Drive Bridge
- The existing bridge is near the end of its service life for vehicular traffic and this EA Study will help define a plan for the Thames River crossing
- There is an opportunity at any time during the EA process for interested persons to provide written input. Any comments received will be collected under the *Environmental Assessment Act* and, with the exception of personal information, will become part of the public record
- PIC No. 2 comments can be submitted by emailing westernubridge@uwo.ca by May 27, 2026

Page 3

University Drive Bridge PIC No. 2
May 13, 2026

Land Acknowledgement

We acknowledge that Western University is located on the traditional territories of the Anishinaabek, Haudenosaunee, and Lūnaapéewak on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum. This land continues to be home to diverse Indigenous Peoples (First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors of our society.



Page 2

University Drive Bridge PIC No. 2
May 13, 2026

PIC No. 2 Purpose

- Project Introduction
- Overview of the Municipal Class Environmental Assessment (MCEA) process
- Summary of work completed to date
- Problem and Opportunity Statement
- Preliminary design alternatives
- Effects and mitigation
- Technically Preferred Plan
- Feedback



Page 4

University Drive Bridge PIC No. 2
May 13, 2026

Background

- A Class Environmental Assessment (EA) Study is being completed to develop a bridge management plan for the University Drive Bridge across the North Thames River
- This study considers how to provide a structure that can address the active and vehicular transportation requirements of a growing campus, while respecting the 100-year-old landmark character of the bridge framing the view that is synonymous with Western University
- The project is completing all phases of the approved Municipal Class EA process and alternatives have been considered by involving the public in developing a recommended plan for improvements



Study Area

- The study area is located on the Western University Campus and includes the University Drive Bridge over the north branch of the Thames River and adjacent areas.



Problem and Opportunity Statement

Problem: The existing bridge is nearing the end of its service life as a vehicular bridge and has insufficient width to suitably accommodate the number of vehicles, pedestrians and cyclists. The EA has considered a range of improvement alternatives to address the University's transportation requirements and the character of the bridge that is synonymous with Western University's campus collegiate gothic style of architecture

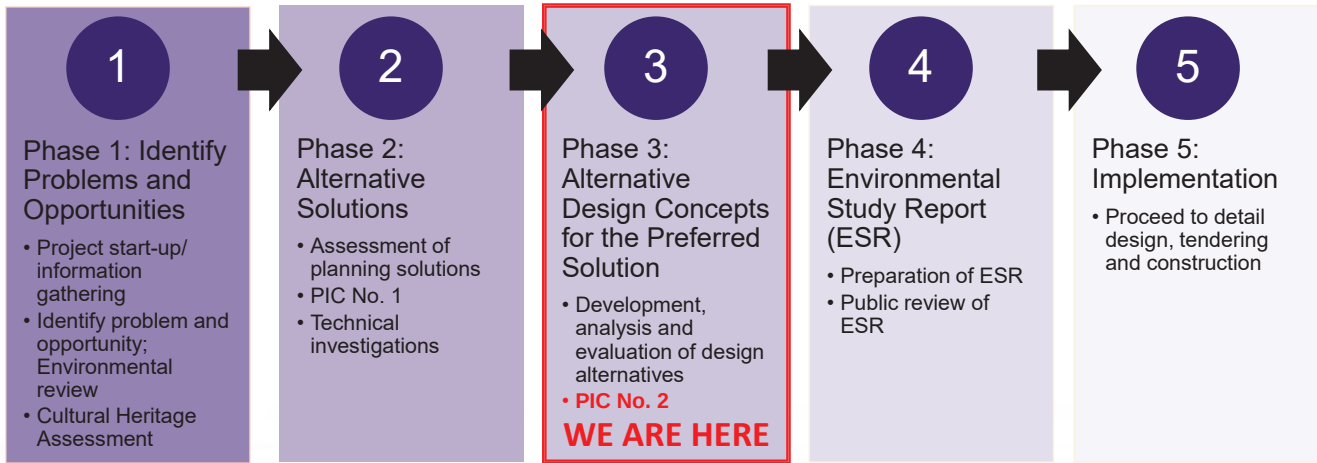
Opportunity: This Study will develop an active transportation-focused Bridge Management Recommended Plan that can be integrated with the University's Campus Development Strategy and Open Space Strategy



Municipal Class Environmental Assessment (Class EA) Process

- The University Drive Bridge was constructed by Western University and opened to traffic in the fall of 1923, on lands owned by the University. As such, the University is a private sector Proponent under the EA Act. The Municipal Class EA affords the use of the Class EA for private sector undertakings
- This project commenced in 2022 and is being undertaken in accordance with the Municipal Engineer Association's Class EA for a Schedule C project
- The Class EA process allows an opportunity for public agencies and Indigenous communities to provide feedback during the planning and design process. The study timing has allowed the Upper Thames Region Conservation Authority to review the hydraulics of the project between PIC 1 and 2, which they approved in December 2025
- The Municipal Class EA process is illustrated on the following exhibit

Municipal Class Environmental Assessment (Class EA) Process



Preliminary Design Alternatives

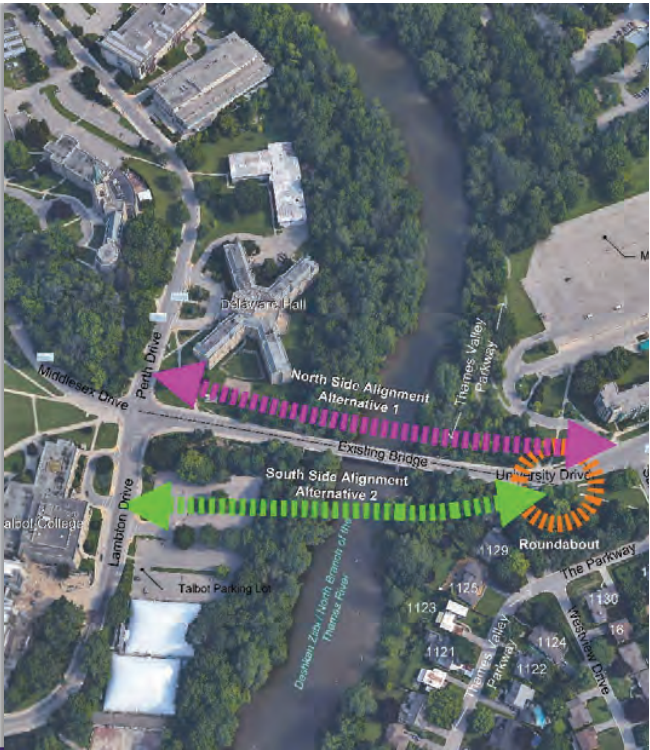
Preliminary design alternatives for the recommended planning solution for a new bridge and to conserve the existing structure include:

- 1) Bridge alignment alternatives
- 2) Structural alternatives
- 3) Hydraulic alternatives



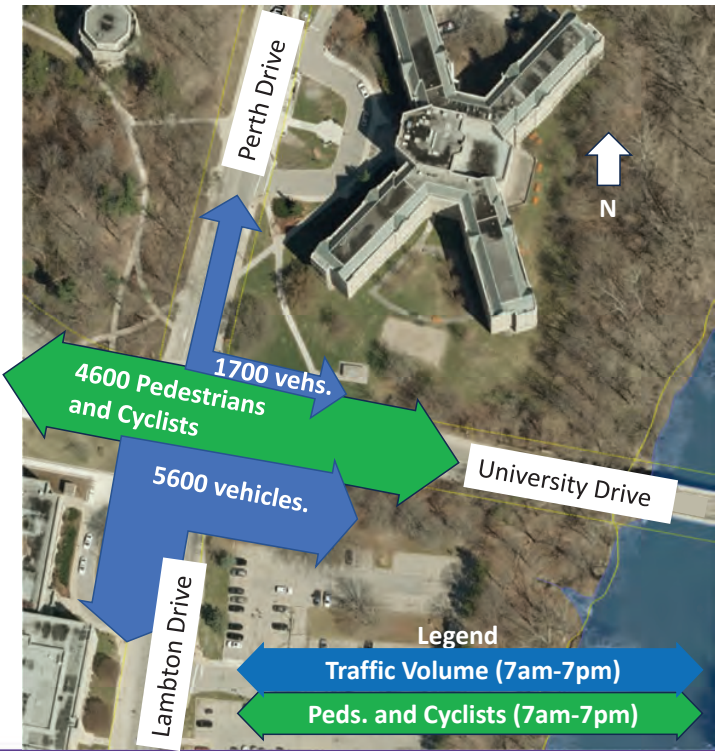
Alignment Alternatives

- The evaluation compared either a new vehicular bridge alignment to the north (Alternative 1) or to the south side (Alternative 2) of the existing bridge.
- Alternative 1 – To the north was not feasible due to insufficient physical space and impacts to infrastructure.
- Alternative 2 – To the south alignment is recommended to be carried forward, this alternative:
- Exhibits the best transportation characteristics and minimizes the impacts to the natural, cultural and social environments, land use and property
- Will avoid impacts to infrastructure and a SAR species (Kentucky Coffee tree) found at the existing bridge's northwest abutment



Existing Traffic Demand (7am – 7pm)

- Traffic volumes were recorded on Tuesday November 18, 2025
- Over 75% of the motorists on University Drive turn to/from Lambton Drive
- The high volume of pedestrians will further increase once the new residence on University Drive is occupied
- Realigning a new structure to the south would:
 - Reduce the pedestrian/vehicle conflicts crossing Perth Drive, and
 - Enable traffic signal operations to prioritize area pedestrian movements



Bridge Alternative 1 - Concrete Arch

- The main span over the river is supported on a single shallow concrete arch rib
- The deck is a post-tensioned concrete slab, supported on concrete wall-columns
- The arch bears against concrete foundations, supported on a combination of battered piles and inclined micropiles
- An open concrete barrier wall exposes the slenderness of the deck
- The bridge has an elegant, understated, and classic form that complements and does not detract from the form and style of the existing bridge

Bridge Alternative 2 - Steel V-Pier

- The deck is formed by a stiffened steel plate, coated with a high-traction wearing surface
- The spans consist of three parallel steel box girders, connected by floor beams. These girders are supported by two V-shaped piers, each leg of which is a welded hollow steel tube. These V-piers are founded on concrete pedestals supported by piles
- An open steel barrier exposes the slenderness of the deck. The bridge has a very slender, minimal, and modern appearance
- Driving surface can include conventional 90 mm asphalt and waterproofing

Bridge Alternative 1 - Concrete Arch

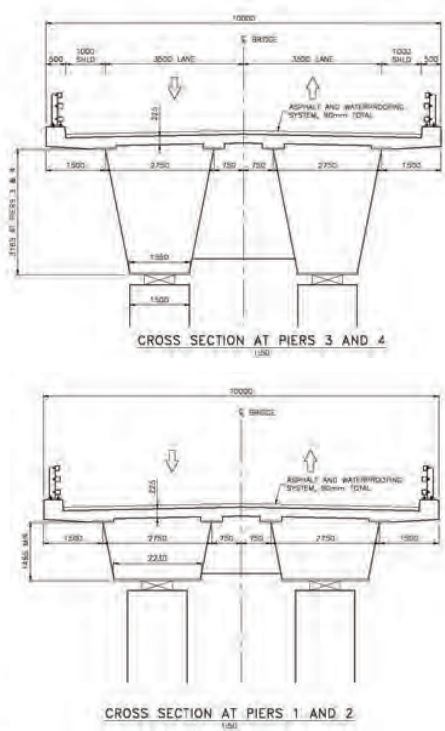


Bridge Alternative 2 - Steel V-Pier



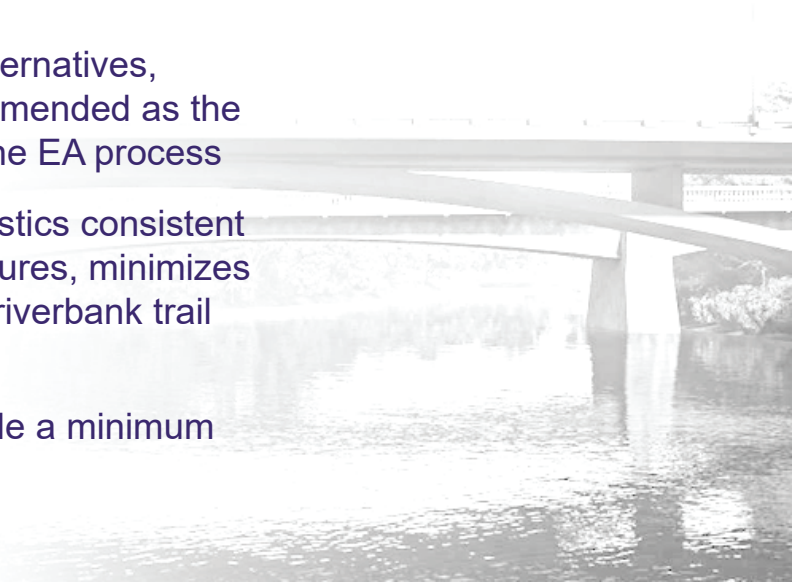
Bridge Alternative 3 Steel Box-Girder

- This is a conventional structural system commonly used for highway bridges
- The spans consist of steel “tubs” onto which a concrete deck is cast
- For the main span, the girders vary in depth, becoming deeper at the piers
- This alternative was not carried forward for further evaluation because of the depth of the superstructure interfering with the trail on the east side interfering with the hydraulic capacity of the river, vertical clearance for MUP and impacts raising Lambton Drive



Bridge Evaluation Summary

- Based on the evaluation of bridge alternatives, Alternative 1 Concrete Arch is recommended as the Technically Preferred Alternative in the EA process
- This alternative has visual characteristics consistent with existing bridge architectural features, minimizes the risk of ice impacts, and has less riverbank trail impacts
- The bridge design criteria is to provide a minimum 100-year service life



Summary of Bridge Evaluation

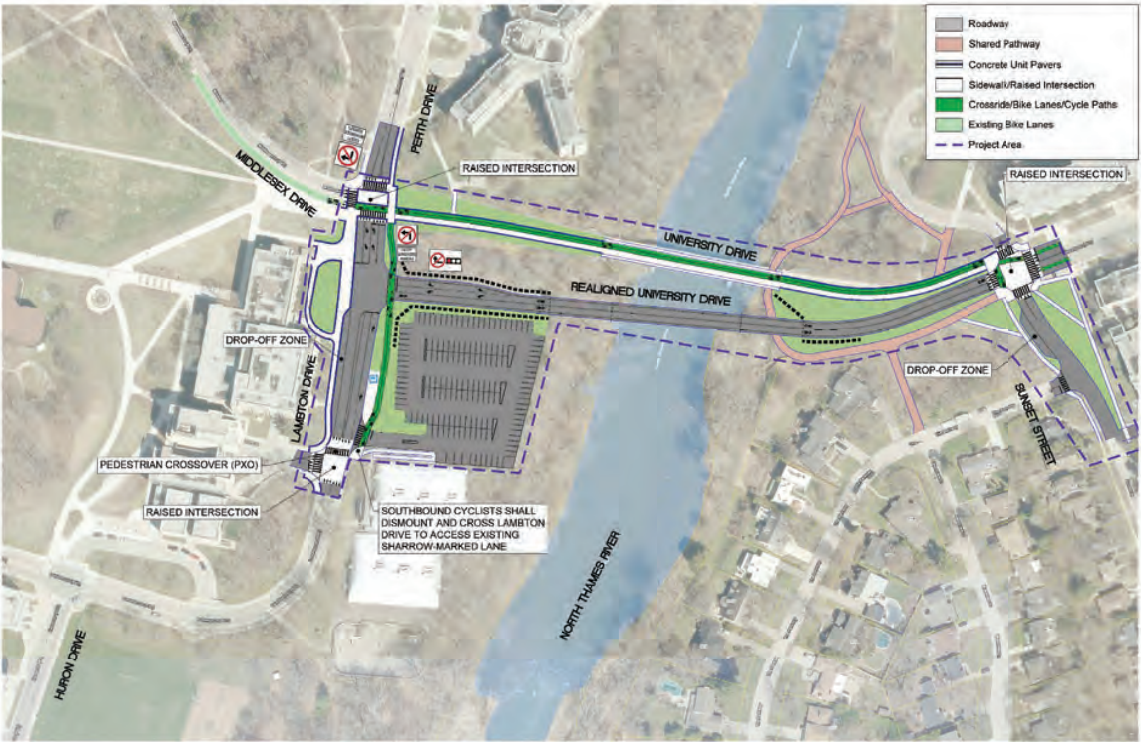
Factor	Concrete Arch	Steel V Pier
Transportation		
Roadway improvements at Lambton Drive will improve safety and promote active transportation.	Equal ✓	Equal ✓
Structure Considerations		
Durability	Equal ✓	Equal ✓
Ice Impacts	Good ✓	Fair —
Maintenance	Equal ✓	Equal ✓
Hydraulics	Good ✓	Poor x
Physical Appearance		
Aesthetics of concrete generally match the existing architecture	Good ✓	Fair —
Community Impacts		
Noise (Deck Surface)	Good ✓	Good ✓
Trail interference	Good ✓	Poor x
Cost		
Cost to Construct	Comparable —	Comparable —
Constructability	Fair —	Good ✓
Recommendation	Technically Preferred Alternative	Do not carry forward.

Hydraulic Review

The following bridge alternatives were evaluated for hydraulic performance:

- Alternative 1 – Concrete Arch
- Alternative 2 – Steel Girder bridge with V-Piers
- Alternative 1 – Concrete Arch was selected as the preferred hydraulic alternative:
 - Span: 127 m, with a main span of 65 m and no pier in the channel
 - The proposed concrete arch bridge results in no change to water levels, except for localized effects immediately upstream and downstream of the structure. These localized effects are generally confined to University-owned lands, and no impacts to adjacent private property are anticipated
 - The results of the hydraulic analysis were reviewed and accepted by the Conservation Authority
 - Private property owners immediately upstream and downstream of the proposed bridge are being contacted
 - The public has opportunity to offer feedback during the consultation process and will be documented as part of the EA

Technically Preferred Bridge Alternative



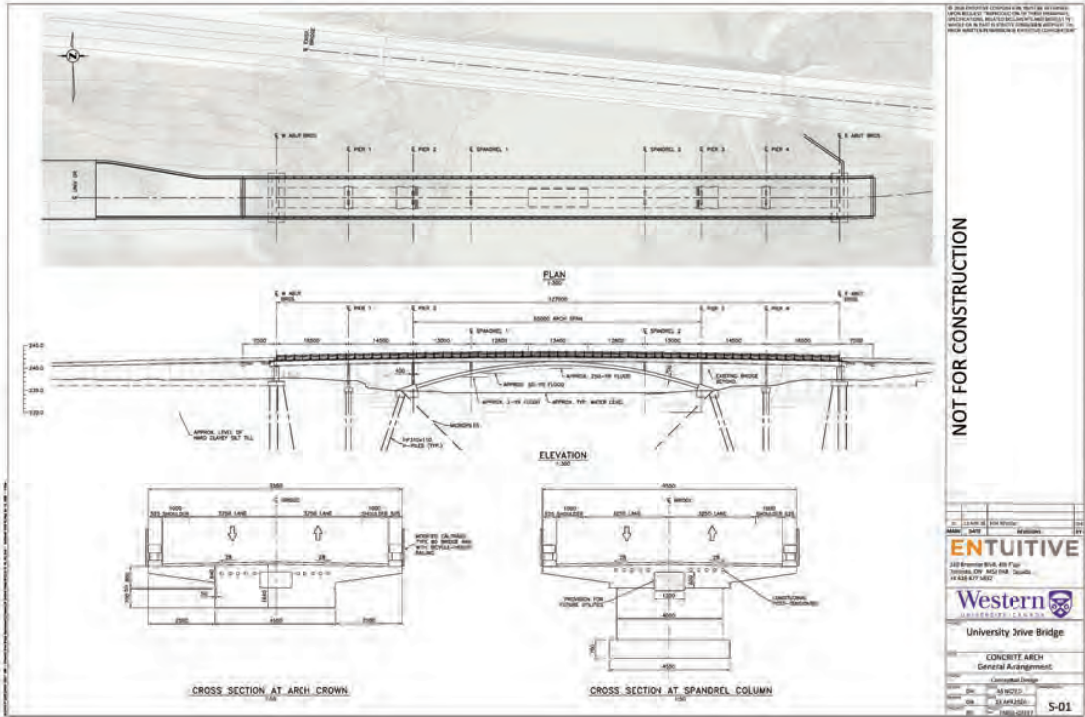
West Side Features of the Recommended Plan

- Realigning University Drive eliminates the major vehicle–pedestrian conflicts.
- The proposed intersection would provide improved safety and allow priority to be given to pedestrians (raised crosswalk and signal phasing)
- The existing intersection operates at Level of Service* (LOS) B/C for motorists during peak hours
- During the pm peak hour, the LOS for motorists would improve from C to B with the proposed intersection
- More significantly, the LOS for pedestrian movements crossing Lambton/Perth Drive would improve from D to A

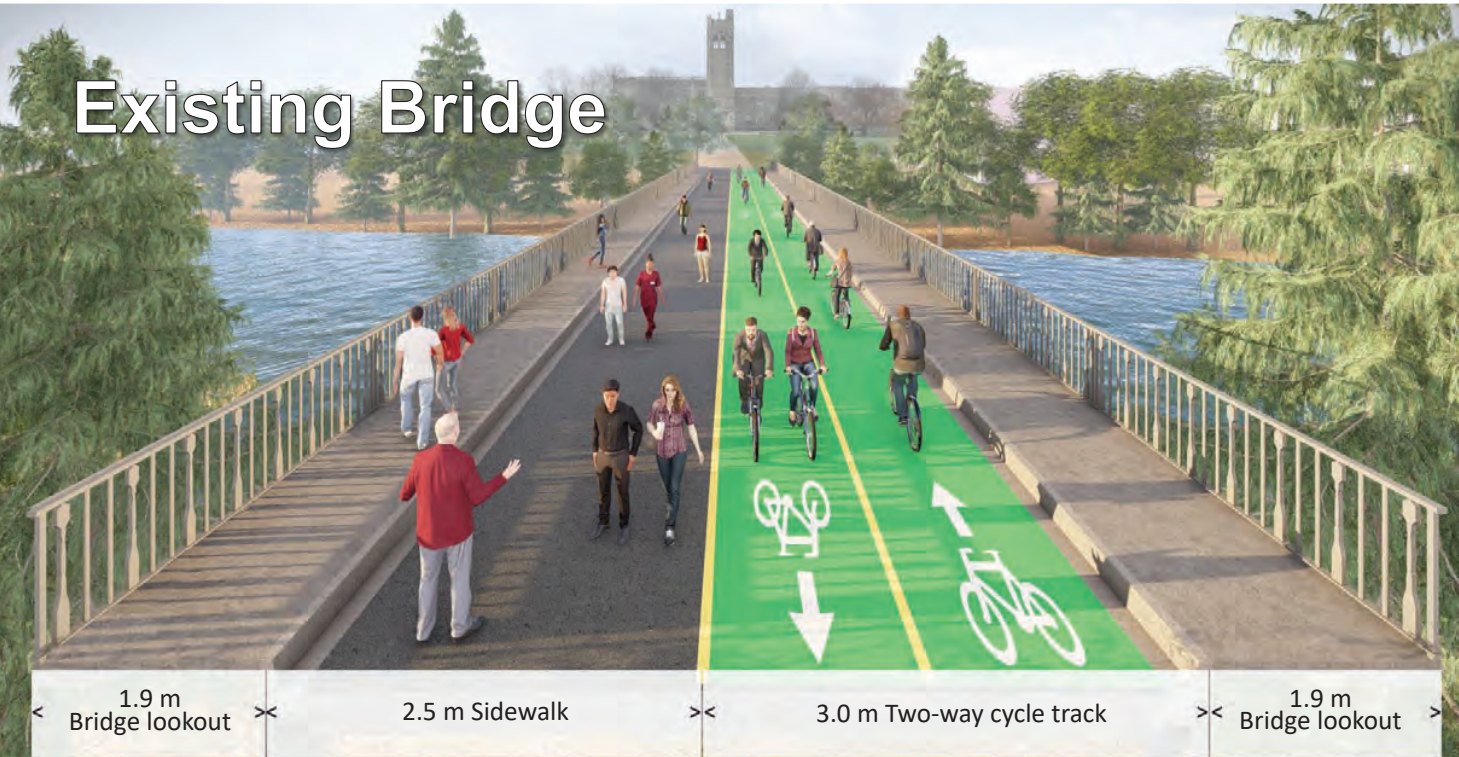
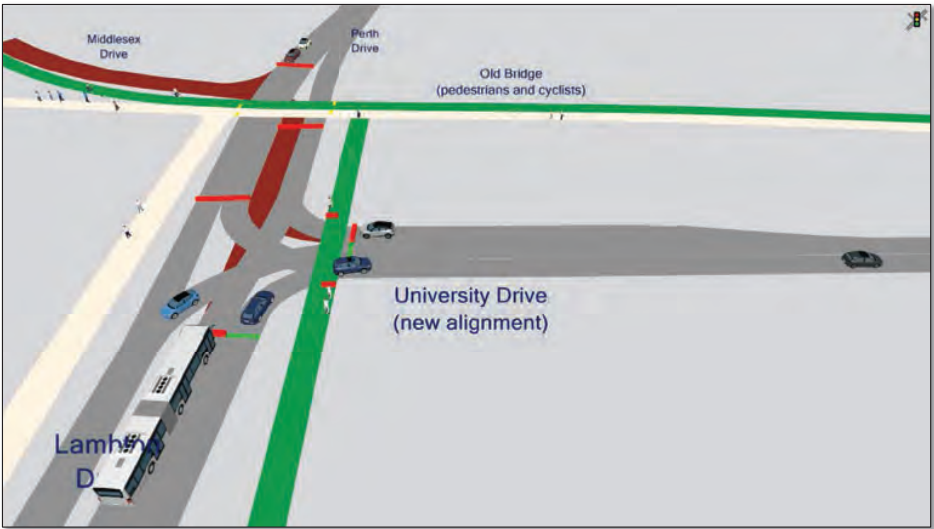
*Level of Service are measures of delay at the intersection ranging from LOS A depicting free flow conditions to LOS F depicting congested conditions with significant delays and queuing

Perth & Lambton Drive Raised Crosswalk





Vissim Simulation



Existing Bridge

< 1.9 m Bridge lookout > 2.5 m Sidewalk >< 3.0 m Two-way cycle track >< 1.9 m Bridge lookout >

Effects and Mitigation [1/2]

Issue/Concern Potential Effects	Concerned Agency	Proposed Mitigation (prevent, lessen or remedy potential detrimental environmental effects)
Archaeology	Ministry of Citizenship and Multiculturalism (MCM)	- Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore be subject to Section 48(1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the Ontario Heritage Act - Indigenous Peoples communities will be contacted during the construction phase - The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 requires that any person discovering remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with Ontario Regulation 30/11 the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act, related to burial sites. In situations where human remains are associated with archeological resources, MCM should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act
Species at Risk (SAR)	MECP	Undertake targeted, specialized SAR surveys during Detail Design as required, depending on species conservation status designations as they exist at that time. Comply with the Species Conservation Act (2025); Install netting to deter Barn Swallow (<i>Hirundo rustica</i>), Threatened
Erosion and Sediment Control	Downstream impacts to Thames River fish habitat.	Erosion and sedimentation controls (ESC) and standard Best Management Practices (BMP) should be used around the watercourses to prevent encroachment and the transfer of deleterious substances into the direct or indirect aquatic habitat prior to construction works

Effects and Mitigation [2/2]

Issue/Concern Potential Effects	Concerned Agency	Proposed Mitigation (prevent, lessen or remedy potential detrimental environmental effects)
Migratory Birds	MNR	• Any clearing and grubbing should be completed outside the active breeding bird season of April 1 to August 31
Turtles and Turtle Habitat	MNR	• Conduct a turtle basking survey during detail design to confirm species presence • Install silt fencing before turtle nesting season (May 15 to July 30) • Protect and buffer active nests • Avoid groundwater alteration in nearby wetlands and creeks between October 1 and April 1 during turtle hibernation
Hydraulic Review	UTRCA	• No mitigation needed as the rise in water levels is localized at the new bridge and is contained within the University's property
Vegetation	MNR	• Limit tree clearing and additional landscape planting as part of the landscape plan
Noise	University	• Maintain equipment in good operating condition to prevent unnecessary noise. Restrict idling of equipment to the minimum necessary to perform the work
Permitting	UTRCA	• Permit by Upper Thames River Conservation Authority (UTRCA) under the Ontario Conservation Authorities Act Regulation 41/24 - Prohibited Activities, Exemptions and Permits
	City of London	• Distinctive Tree Permit or a Tree Protection Area Permit
	DFO	• Request for review
Management of Surplus Materials	MECP	• OPSS 180 apply MECP "Management of Excess Materials in Road Construction and Maintenance Guidelines" • Management and disposal of wet soils

Stay Connected

- **We want to hear from you!** Please provide comments to westernubridge@uwo.ca or by contacting the University's representative, or the consultant below:

Trent Williams Project Coordinator Western University 1151 Richmond Street London, ON N6A 3K7	Steve Taylor, P.Eng., M.Eng. Project Manager Entuitive-BT Engineering Inc. Joint Venture 509 Talbot Street London, ON N6A 2S5
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- Please provide your PIC comments on or before May 27, 2026.
- Thank you for your participation in the study. To receive updates on the project, request that your name/e-mail be added to the contact list.
- Your input into this study is valuable and appreciated. All information is collected in accordance with the *Freedom of Information and Privacy Act*.

Next Steps

- Review comments from PIC 2
- Refinements based on public input
- Senior Leadership approval of project recommendations
- 30-day public review of Environmental Study Report
- Detail design, permits and approvals
- Prepare tender ready package
- Construction (access to be maintained on existing bridge until the new bridge is constructed)



Appendix C

PIC Webinar Questions and Answers

Western University
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PIC No. 2 Public Consultation Log

Comment No.	Correspondence/Discussion Submitted In Webinar Comment Section During PIC No. 2	Verbal Response Provided
1	Test	
2	Are there any decisions yet to be finalized for which comments will be meaningfully considered, or is this purely an information session telling us what is going to happen?	I think it's a great first question to kick off with, and I will just reiterate that this is following a part of a process in terms of us presenting the preferred solution, but we are getting into detailed design over the next several months. We will be looking towards feedback from today's session, collected via email, some that we have already received in advance of today, and subsequently over the next few weeks we will be looking at where we can practically and meaningfully incorporate feedback as the design is finalized. So certainly want to encourage everyone to continue to share their perspectives and feedback. Comments may be added to the mitigation measures, being documented in the ESR and/or small refinements made to the design.
3	Page 12: Bullets points 1 & 2: The motorists traffic volume was recorded on only one speicific day (Nov 18, 2025) and based on that it was assumed that 75% of the motorists traffic went to/from Lamton Drive. Shouldn't there be more recent recordings to have a less biased estimate? In particular, the traffic to/from Perth was significantly discouraged by the years-long construction therein. So 75% estimate might be quite biased. And deciding on the southern route might have been influenced by this bias.	I think one thing that was characterized a little bit in today's presentation, was the south-alignment and the traffic volumes. If you go back to our PIC 1, we had several design principles that provided guidance to the preferred option being the south alignment of the bridge. One of the issues was not around traffic necessarily. The north alignment was ruled out because there was not enough roadwidth between the north side of the bridge and the student residence Delaware Hall. There was also some conflicts there with some of the existing infrastructure and water mains, but also, one of our priorities in designing the project and selecting the location was to minimize the ecological impacts on the river. This was really important for us on the design team. There are also species at risk on the northwest abutments of the existing bridge that would be impacted by having an alignment north of the bridge. Also, the river is a little wider in that location and the abutments would have potentially been further into the river or into the floodplain to accept the span that was needed. So really when you take that full context in terms of, the technical reasons, but also the ecological reasons and limitations that really did lead to the south alignment being the preferred alignment. Even though we only showed traffic volumes on a single date, we have historical traffic counts that we compared it to, but we showed one that was the most recent for today's presentation, but they're very consistent with the previous traffic counts that we had.
4	Page 30: Does the last bullet point ("Construction...") mean that the motor vechicle access (for cars at least) on the existing bridge is still maintained during the construction of the new one? If the answer is No, what are the solutions to preempt/mitigate the potential traffice jams at Western-Windermere and at Western-Sarnia?	The intent is to keep traffic on the existing bridge until the new bridge is in service. At that point, we will move everything on to the new bridge to do the rehabilitation on the existing bridge. We are not intending to close the existing until the new one is open and available for traffic. There may be sometimes, during the intersection improvements in particular, where there may be closures that are needed. The construction will have some impacts, but we are certainly looking to minimize those impacts through the design and construction of the project.

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5	Some pics show the bridges close together and some quite far apart. Is there a planned spacing yet?	The bridge widens from east to west, from University Drive towards Talbot College and the music faculty buildings. That is to land at the intersection on the other side and also to reduce the impact on the mature trees that are south of the existing bridge as you cross the river.
6	Slide 18	Slide 18 describes the rationale for the technical recommendations of the concrete arch bridge alternative.
7	The existing traffic demand slide was interesting, showing 1700 vehicles turning north and 5600 turning south versus 4600 pedestrians traversing the bridge per day. However, what are the future projections, given the University's goal of reducing cut-through traffic? It has been reported previously that up to 50% of traffic across the bridge (i.e., 3650 vehicles) came in the form of cut-through personal motor vehicles... so, if the University manages its goal of eliminating cut-through traffic, how might that influence this project? Has this been considered?	There is growth forecast for the University and what the recommended plan includes is traffic calming features (raised intersections) that should lead to a diversion around the campus as opposed to going through the campus. Traffic management can be an ongoing/future operational practices and if they need to change can be considered at that time. But the focus of the EA is what is the right bridge project and bridge mangement plan to be implemented at this time, rather than considering future traffic management by the University.
8	Why are certain issues assessed "poor" for the steel construction but then mentioned by the speaker to be the same to the concrete construction?	The hydraulics part had very exact criteria that we had to meet. Even though the difference in water levels caused by the Steel 'V' Pier bridge alternative was very small, it did not meet the criteria. As there was no way that we could improve it to reduce the increase to meet the criteria it became a poor solution to the river.
9	Why are there no other construction methods (e.g. hanging traffic surface) considered?	A hanging traffic surface, entails either a extradosed bridge, cable state bridge, or an earth bridge, where you have superstructure above the deck. That structure will become quite prominent in the environment. The design team wanted the bridge to integrate with the existing aesthetic on the site. So the desire was to have the superstructure below the deck and keeping it low, so it was not interfering with the vistas in any direction.
10	P 23: It looks like cyclists travelling south in front of Talbot will have to cross and rejoin vehicle traffic on the road just before going around the big curve. Wouldn't it be safer to put the bike path behind Talbot (on its west side), then rejoin the road after the curve?	The location of the bi-directional pathway on Lambton Drive is illustrating only what would be included in this project at this time. It would be desirable for a future project to extend that bi-directional bike path, southerly, all the way down to Huron Drive. Right now this is a concept that does not exist on campus, but the thought process is that, a dedicated two-way cycling track would be more preferred than running on the other side of Talbot Drive where there is potential for more conflicts with pedestrians because of the existing pathways that are there.
11	p 26: Why put the bike lanes on the new bridge over to one side with pedestrians down on the same level, rather than centering the bike lanes and widening the sidewalks ("bridge lookout") on either side?	We did look at that solution in the design phase in between PIC 1 and PIC 2. What ruled that out was partially due to snow clearing and also due to accessibility. The wider sidewalk shown on the south meets the accessibility requirements for a sidewalk following thebest practises of the City of London. Also, if we were to introduce some lane delineators or other controls between the cycle path and the pedestrian sidewalk width it inhibits our snow clearing equipment to move across the bridge effectively as well.
12	Just wondering why you've chosen to keep the general surface strucutre of the existing bridge (original roadway and curbs with separation between pedestrian and cycling uses) rather than creating a cobbled walkway for mixed use designed something like the Dundas Place multi-use roadway?	The current sidewalks that are on the bridge are at a higher elevation than the roadway. The outboard sidewalks on that existing bridge were added at a later stage and are part of a new integrated steel structure that is at a higher elevation. It is not feasible to lower those sidewalks to the deck of the bridge. The alternative of that, which we have explored is then raising up the centre portion of the bridge to match the existing sidewalks. We did mention that the design of the bridge does not allow us to introduce that additional dead load ofcobblestone to get us up to that sidewalk level. Therefore, we did not carry forward raising the centre portion of the deck.

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13	Page 27 (Vissim Simulation): Through the new bridge, can cars still turn north from the bridge to Perth thereby accessing the Middlesex Parking Lot?	It was confirmed that westbound vehicles can turn right to continue north on Perth Drive. (Although there will be a no-right turn on red prohibition for this movement). Access to the Middlesex parking lot will be unchanged by this project.
14	Has this been worked out with the proposed changes to proposed campus development strategy? Will parking be lost in the Talbot lots? I would like to see the before and after schematics for that lot and how the new traffic pattern is going to impact the turn in/out.	Certainly the design of the bridge and the traffic flow or pedestrian flow is considered and forms part of the coordinated planning with the Open Space Strategy. The Open Space Strategy deals more with mobility and the campus development strategy. The second part of that question is around parking loss in the Talbot lot. Our goal with the design is to minimize the loss of parking in Talbot. Through some redesign, our consultants were great at redesigning a lot to be more efficient. So while we are losing some parking, we are able to add some parking within that existing space and are looking at likely a net loss at the end of the project of 10 to 14 stalls. One thing I want to point out with the redesign of the parking lot as well, and it may not be as obvious in the plans when that driveway shifts a little further south in the Talbot parking lot. We want to have really safe pedestrian crossings from the Talbot lot to the music building. That was shown in that intersection improvement where, the driveway to that lot, which really serves also as the pedestrian movement in and out of the lot, is aligned with a raised pedestrian crossing, a lit pedestrian crossing, all the way from the intersection, to provide a safer way to cross the street that is more controlled, and the driveway by shifting south, the slope of that driveway being a little longer than it is now. Right now, the driveway slope does not meet the building code from an accessibility perspective. The new drive the design does meet that requirement. It is going to be a more accessible access for crossing Talbot Drive even though it is slightly further to the south than the existing driveway. So for folks who either have mobility issues or are carrying large instruments, to practice or rehearsals, that slope is a more general slope to walk on from the Talbot lot, and to cross the street again at a pedestrian crossing. It does align well with the accessible entrance that is created between the newer music building to the older Talbot music building as well, which is an accessible entrance.
15	From slide 23 of today's presentation: On the east side of the river, the shared pathway currently connects The Parkway with University Bridge for pedestrians and cyclists. It looks like this connection will disappear in the new configuration. Many pedestrians and cyclists approach the bridge not from Sunset Street but from The Parkway, which serves as a connection from the Thames Valley Parkway and Gibbons Park. How will this be addressed under the proposed reconfiguration?	The Thames Valley Parkway (TVP) walkways remain as they are today. The multi-use path under the bridge remains as existing with a new sidewalk connection up to the existing bridge. It will continue along the river under both bridges and to cross you would either go up to the new Sunset Street intersection which has been pulled closer to the existing bridge or travel under the bridge and loop up to the existing bridge. See the tan lines (slide 23), they connect up at the intersection on either the north and south side of the new bridges. The beige line is the existing TVP connections that are there now. You have that choice as a cyclist/ pedestrian to take Sunset Street to the pedestrian crossing or to cross under the bridge and loop back and not engage with vehicles at all, and cross back on to the existing bridge. All pedestrian/ cyclists would have two choices.

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16	What is the new width of the bridge down the river, meaning how much further down the river south... what does the Sunset exit look like ? Will the last home on the Parkway riverside be taken down?	The centre line distance between the two bridges ranges from approximately 20 m on the east side to approximately 30 m on the west side. The last house on the Parkway is going to be taken down. It has been purchased by the University. It is not affected by the project. The University did acquire that house earlier, to allow flexibility if it was needed as part of this project. This is consistent with what would be allowed with Class EA. It is a property that the University is likely to be looking at creating a landscape buffer in the future between the properties on Sunset Street and the new bridge.
17	P. 7: Naive Q perhaps, but why was Philip Aziz - Huron not considered as a location, to bring the through traffic across without entering the campus? The span would likely be at a slight angle (NW-SE) relative to Philip Aziz, landing in Baldwin Flats and bringing traffic up to Huron. P. 8: UT River CA P. 12: No blue line for historic traffic straight across University Drive to Middlesex Drive? P. 26: lose the conifers - not at all real and LOOKS UNPROFESSIONAL, seriously calls to question the consultants paid as part of this project. General: WHERE will the arch be formed and how will it move into place? I applaud the lack of construction activity IN the river.	Philip Aziz -Huron is City owned as well as Huron Street so from a governance perspective, these would not be the purview of Western's ability to place a bridge there. This new university bridge being considered by the EA was envisioned in the context of the existing bridge that Western does own and control the access to. The EA is looking at how we can preserve access across the river to connect our students and our residential zones as well as maintain the existing bridge into the future. So that was really the chosen option where Western had the property and the ability to provide a solution. The City had historically considered the use of Huron Street but did not carry it forward in their current TMP or Official Plan. It is not a City project as well. The contractor's lay down areas are something that will be set in detailed design to minimize interference with existing parking and buildings. If the concrete arch bridge is carried forward it may be pre-cast off site and brought to the site by truck in pieces and assembled. That is the work of the detailed design, so we cannot provide exact details of the implementation but it is very likely that the arch would not be installed in a single piece. Much more likely, it will be either cast in place on false work or using the pre-cast method. The actual laydown areas are part of setting up the contract, and we have not been able to get to that stage yet, and we're looking forward to it. We will be minimizing it as much as possible. With respect to a road and bridge product, the road approaches on either side would typically be built to create an area for the contractor to access the bridge, and if there are precast pieces for the bridge, they will have the 2 road approaches in place for them to use.
18	Was there a slide showing detailed traffic flow on the east side of the bridge, e.g. how cyclists coming north on the TVP will cross all the vehicle and pedestrian traffic to get onto the bike lane on the renovated old bridge, and how traffic flow is supposed to work around the new drop-off area?	Cyclists do not have to go through the Sunset Street intersection if they choose to go under the bridges. If they had a destination that was going to head off to the east (i.e., residences) and they were coming from the south then they could cross the intersection or get on the existing bike lanes to go under both bridges. All movements are still available. We will look at it in more detail and we might add a further connection to the intersection.

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19	I note that the new bridge includes a narrow shoulder. Will pedestrians be prevented from using the new bridge?	I think that is the right characterization that pedestrians would not be on the new bridge unless there were other circumstances where we needed to do that, but in normal operations it would be vehicles only or cyclists who are on that roadway as well, can cross with vehicles. It may be signed for pedestrians prohibited. There might be a stage during construction if work is being completed on the existing bridge where one lane is used to create a corridor for active transportation during staging of the two bridges, but long term, the pedestrians would not be on that bridge.
20	Page 27 (Vissim Simulation): Could you please elaborate on how a pedestrian would need to walk through from Parkway to the walkbridge?	This is a new connection to let you get up and around to the new bridge so it does not exist today. You can get back to the old bridge as Andrew described from two routes. There is a number of design elements that can be incorporated to safely direct pedestrians and cyclists to/from the TVP. We will consider these in detail design. From the University's perspective, the TVP access will be maintained. It may be interrupted during the construction period of the new bridge for safety reasons.
21	I believe I heard that there will be reconstruction of the Talbot College parking lot. Can you elaborate on this a bit. I didn't see the Tennis Bubble in any of the diagrams that were shown	On slide 23 you will see that the reconfiguration of the parking lot is shown with a little more efficient layout, which allows us to retain the maximum amount of parking stalls. I mentioned as well that, ingress/egress is now on the south end of the parking lot, and then below that, the two existing tennis bubbles remain in place.
22	In regards to slide 23. Will the Talbot parking be fully closed down? and secondly, where will the laydown areas be located during construction of the new bridge on each side of the river? Thanks!	The laydown areas during construction have not been defined yet.
23	Appreciate the inclusion of a passenger drop off area on the east side of the bridge. Recognizing we are not making operational decisions about the bridge yet, would this area be sufficient in scale to accommodate future changes such as closure of the new bridge to personal vehicles?	I think when we look at that roadway and the length of runway that we have, the drop off area beside the Talbot College is about the largest that we could get to in between the intersections. If the new bridge was closed for an event (and we do close the bridge sometimes) such as during homecoming week, that we may allow drop offs in those instances and use the bridge for pedestrian or/and cycling only.

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24	What will happen to the salt runoff on the new vehicle bridge? And will you be salting both bridges, doubling runoff to the river?	The answer is that, that is the common maintenance strategy for all roads and bridges, but in detail design, we will be taking a look at water quality measures so we have an ability to direct run off off the bridge deck and collect stormwater on the two sides of the new bridge before release into the river, but salt is something that is a common approach for liability and safety on the road. There will be no deck drains releasing directly into the river. I will add we did experience regionally, a salt shortage this year. The reliance on salt as a primary use is certainly something that, we would be considering as a university to, potentially reduce the amount of salt used in these areas and along the river, safety is always, our primary concern. But there are possibilities of introducing more sand than salt or a mix. We have also recently had a campus as a living lab project where we partnered up with researchers and faculty who were experimenting on Perth Drive with some different mixtures, whether it was beet juice or other products. So we are always open to looking at products that can reduce the environmental impacts of salt on our roadways and sidewalks and I think we look forward to seeing more different technical solutions for that for those issues in the future for us as well.
25	Rumor has it that the University purchased the home at 1129 The Parkway, presumably for demolition to make room for the new bridge 'twin', as it has since been kept vacant. Is this true? Has the University considered the potential impact of this plan on the adjoining neighbourhood or consulted with the community, especially now that the active roadway will be much closer to nearby residences?	It has now been purchased by the University, it can stay, its not affected by project. We did acquire that house earlier, depending if it was needed as part of this project but as mentioned this is a property likely that we would be looking at potentially creating a landscape buffer between the properties on Sunset Street and the new bridge so the future use of that property is one that we are considering.
26	there is a cut through path for bikes that will be lost with the new road	The travel paths for cyclists and pedestrians will be developed using best practices to direct users to one of the two safe crossings of University Drive.
27	p23, shows the trails on the east side of the river, but not on the west side. How will the trail on the west side be impacted? Will the trees between the existing bridge and Talbot parking lot be protected?	The naturalized trails that run along the river are not formalized trails but they would not be impacted by this project. You would be able to pass under the new bridge along the river the same way you do now with the exisiting bridge. As mentioned earlier this alignment was the preferred alignment that pulled away as it moved west from the existing bridge partially due to the grade change but to preserve the mature trees between the existing bridge and the new bridge on the west side as it approaches Lambton and Perth Drive. There will be a phase during construction where directly below the bridge would be closed for safety during construction.
28	Cyclists arriving from the south will need to double back to Sunset St. or travel under the bridge, but the path under the bridge is often flooded. So, this plan prioritizes traffic flow over ease of travel for cyclists and pedestrians	I would characterize this as making a better condition for pedestrian and cyclist than exists now. I do take the feedback that the existing Thames Valley Parkway, which is a City of London amenity, is in the floodplain and does encourage some closures from time to time, depending on the levels of the river and for safety, it does get closed. But thankfully, there will be that other option to go to the raised pedestrian crosswalk and to take either that crosswalk to continue on heading north through the parking lot or crossing over the existing University of Drive Bridge and taking Perth Drive or Middlesex Drive. So the options that are there now exist into the future, but certainly safety is improved at the intersections in this concept.
29	the question doesn't have anything to do with the pink path	The design team will review the connections from TVP to both the exisiting bridge and to the Sunset Street Intersection (on the north side of University Drive).

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30	Pedestrians aren't going to loop back or go all the way to Sunset Street.	For those pedestrians that are dropped off at the Sunset drop-off area it is expected that they will walk to the raised intersection at Sunset Street. They would then walk across the new active transportation route on the existing bridge to continue to main campus. We note this was asked in a subsequent question. The question was: many students who take the route from the Parkway may cut across the road on the east side of the new bridge. This is something that we do need to consider whether it is through landscape design or other controls is to make sure that we do not have pedestrians jaywalking across the road.
31	Thanks - very helpful	
32	Is the goal to have an operational new bridge by the end of 2027/early 2028?	We cannot commit with a high degree of specificity in terms of the construction timeline. There are certainly approval processes and other things that need to take place. More than likely if we get into the ground, in early 2027, we could see the construction going through the 2028 construction season. The construction schedule is much better informed once we have a contractor in place.
33	You mention that Philip Aziz is not owned by Western and they would have purview over extending it across the river. Why, then, should Western foot the bill with this bridge project to maintain cut-through traffic for London citizens who aren't coming to/from the University? Couldn't we instead eliminate PMV traffic across the river on University Drive, pressuring the city to fund their own solution, if they so value that cut-through option?	Restricting non-campus traffic is an operational choice that can be made by the University. It is something that the University can employ for future generations of leadership of Western to choose how to operate the new bridge. We certainly do have the need with our campus being on both sides of the river to connect, again, for Western purposes, in terms of, accessibility, our Western special constable services, service vehicles, maintenance vehicles, food delivery, all of those reasons to have that connection across as well as the access for the university hospital is important for us. I think how we start to consider limiting, cut through traffic is a conversation that is happening both in the open space strategy, and it is also another one that can happen in terms of how we operationalize or provide access to the bridge. Similar to what we do now on the existing bridge.
34	Andrew Konowalchuk and Steve Taylor responded to my question about pedestrian access from the Parkway by suggesting that the new configuration will be an improvement because pedestrians and cyclists coming from the Parkway will be able to go under the bridges and "loop back" to the old University Bridge or go to the Sunset Street intersection. Neither is realistic or likely for the dozens of students who take this route from The Parkway. They will cut across the road on the east side of the new bridge.	See item 36.
35	How is traffic flow supposed to work around the proposed drop-off zone on Sunset Drive? I would have loved to see the Sunset/University Drive intersection modelled in a video as well.	The drop off area at the Sunset Street intersection allow drivers coming from Richmond Street to turn left from University Drive to the drop off area and then continue through city streets to get back to Richmond. This intersection will operate more efficiently than it does today. Instead of having two legs with split phases, which adds extra signal phases, it will be improved over what it is today allowing more green time to be dedicated to pedestrians and cyclists.
36	Sunset may be getting more traffic which routes back to Huron St to access Richmond - has this been modelled?	It is possible that additional traffic will be using Sunset Street but anyone that is using the drop off zone will be using public streets under the jurisdiction of the City. We will document that change as part of the project in the ESR. That's a good question, but we don't foresee it being substantial volume, unless there's days that the bridge is closed.

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37	What is the size of the base/foundation on each side of the bridge? Where is the exact location?	We have not completed detailed design yet but this does give a good sense of where and the approximate sizing of the piers and abutments. The spring for the arch is a fairly substantial concrete component, but it is largely underground. Abutments are normal, reasonably tall, full height to provide good clearance underneath them. I do not think that we can be more specific at this time as we have not completed our detailed design. All the spans are open until you get to the abutments on the two sides.
38	Given the discussion about ease of access for cyclists/pedestrians approaching from the south on the TVP (flooding under the bridge, doubling back to Sunset), will there be any consideration/prevention of those who choose to cut across the grass and new roadway (following the existing connection) to reach the pedestrianized bridge?	This question is similar to one discussed earlier. We have to obstruct that move by the design of the embankment incorporating landscaping features (which make it undesirable to climb the embankment to cross the street in that location).
39	Andrew - many pedestrians are coming from the Parkway, not from Sunset Street.	See item 36.
40	Can we retain the bus parking in front of Talbot. Many high school students are bussed into our shows and this is important recruitment for the music faculty.	The drop off area that you have now in front of the music building is there and it is expanded in this scheme. I certainly take the pressures for the public visitations to the music building and the drop offs as something that we will look at more closely as the design progresses. We do want to make sure that we do have as much drop off zone on the building side of Lambton Drive as possible to reduce crossings from the parking lot or from folks stopping illegally in the middle of the street right now. This is a longer drop off than you have now.
41	Page 23: Do I understand it correctly that if a pedestrian is walking to campus from Parkway, he needs to do a crossing/intersection in order to get on the walk bridge, unless he takes the path under the bridge? If Yes, my concern is that the latter route would be unavailable when the river bank is flooded, thereby forcing pedestrians to negotiate with bikes/cars.	I think the answer is yes, it would be closed if it was subject to flooding. If this is closed because of flooding then the Sunset Street intersection would be the only route. It would be a safer route through a signalized pedestrian crossing and a raised intersection with slow speeds.
42	are LTC stops being relocated in this plan? Like the LTC stop outside of Talbot?	The bus stop is shown on the drawing. We welcome any comments that might come related to transit.
43	Can you describe the consultation that's been done with the City, if any?	There has been a separate consultation with the City.
44	Thank you.	
45	can we download this pdf'	A PDF of this presentation is available to download on the project website: westernubridge@uwo.ca
46	thanks again - very helpful	
47	is this power point available	The presentation is available on the project website: westernubridge@uwo.ca
48	hello	

Appendix D

Written Comment Sheets



FW: Provide your feedback: University Drive Bridge

From Steve Taylor <steven.taylor@bteng.ca>
Date Mon 2026-05-04 11:10 AM
To Brooke Finlay <brooke.finlay@bteng.ca>
Cc Kristine Dimoff <kristine.dimoff@bteng.ca>

Treat this as a comment sheet.

Steve



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
E-Mail: steven.taylor@bteng.ca
Ottawa: 613-228-4813
London: 519-672-2222
Toronto: 905-709-4554
FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: [REDACTED]
Sent: Monday, May 4, 2026 11:07 AM
To: westernubridge <westernubridge@uwo.ca>
Subject: RE: Provide your feedback: University Drive Bridge

Hi Lynn & team,

Thank you for the opportunity to provide feedback. Keeping the current bridge for pedestrians and cyclist use only is an excellent plan to provide safe access for those walking from the East residences & parking lots, promote active transportation for students, faculty & staff and preserve historical campus features.

I think it would be great if smaller, electric vehicles such as golf carts, e-cargo bikes, etc could be cleared for use on the pedestrian bridge for FM, food service and other staff purposes to ideally eliminate the need for a twinned bridge.

Thank you,
[REDACTED]

From: Lynn Logan, Vice-President (Operations & Finance) <westernubridge@uwo.ca>
Sent: Monday, May 4, 2026 10:37 AM
To: Laura Langford <laura.langford@uwo.ca>
Subject: Provide your feedback: University Drive Bridge

Dear Western community member,

As we move into the next phase of the University Drive Bridge project, we invite you to share your feedback at an upcoming Public Information Centre.

The University Drive Bridge was built in the early 1920's and is nearing the end of its service life for vehicular traffic.

Western initiated a Municipal Class Environmental Assessment (MCEA) Study to identify a solution that maintains connectivity, accommodates Western's active and vehicular transportation needs, protects the bridge's historic character, and limits impacts to the Thames River.

The solution under consideration would retain the existing bridge for pedestrian and cyclist use while constructing a parallel bridge for vehicular traffic.

Public Information Centre

The university is hosting an online Public Information Centre where you can learn more about this proposal and ask questions.

Date: May 13, 2026, from 1 – 3 p.m.

Location: Online Zoom Webinar

To register for the online meeting, please send an email to westernubridge@uwo.ca before May 13, 2026, identifying your interest in attending. The meeting link will be provided to you via email.

Provide Feedback Online

Until May 27, you can share comments about the University Drive Bridge by emailing westernubridge@uwo.ca at any time during the MCEA process.

A formal comment period for the Public Information Centre will take place from May 13 to May 27.

More information is available on the [project website](#).

Thank you, in advance, for your participation.

Lynn Logan
Vice-President (Operations & Finance)



FW: Feedback about bridge

From Steve Taylor <steven.taylor@bteng.ca>
Date Mon 2026-05-04 11:31 AM
To Brooke Finlay <brooke.finlay@bteng.ca>

Comment sheet



Steve Taylor P.Eng., M.Eng., CVS LIFE, P.E.
Chief Executive Officer
E-Mail: steven.taylor@bteng.ca
Ottawa: 613 228 4813
London: 519 672 2222
Toronto: 905 709 4554
FAX: 1 613 248 4979
Toll Free: 1 866 218 1001
<https://bteng.ca/>

From: [REDACTED]
Sent: Monday, May 4, 2026 11:29 AM
To: 'westernubridge@uwo.ca' <westernubridge@uwo.ca>
Subject: Feedback about bridge

Hi,

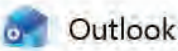
I am an associate professor in the Dept. of Clinical Neurological Sciences at Western.

I just wanted to say that I really like the idea of having a second bridge, parallel to the existing bridge, and that I really like the idea of keeping the old bridge for pedestrian and cycling traffic. I often cycle on the existing bridge, and it is a bit of a menace at the moment.

I also like the concrete arch design over the steel V design. It looks much nicer than the gross steel V design, and blends in with aesthetic of the campus much better.

I would note that a replacement road bridge doesn't fix the overall difficulty with getting onto campus though. There are really only 3-4 ways in: Perth Dr., University Bridge, Philip Aziz Dr., and Lambton Rd. It's like the campus is on an island with only a few ways off it. Hopefully people can consider constructing other entrances/exits onto the campus in the future.

Thank you,
[REDACTED]



FW: Provide your feedback: University Drive Bridge

From Steve Taylor <steven.taylor@bteng.ca>
Date Mon 2026-05-04 11:46 AM
To Brooke Finlay <brooke.finlay@bteng.ca>
Cc Kristine Dimoff <kristine.dimoff@bteng.ca>

Log this as a PIC comment sheet. Note it requires a response.

Create an excel sheet of comments and a column for responses. Or type no response required for those not requiring one.



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
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London: 519-672-2222
Toronto: 905-709-4554
FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: [redacted]
Sent: Monday, May 4, 2026 10:54 AM
To: westernubridge@uwo.ca
Subject: FW: Provide your feedback: University Drive Bridge

Good morning,

Thank you for sharing this update on the University Drive Bridge project.

Given the significant construction already planned for May '26 at Philip Aziz, Sarnia Road, and Western Road, could you please provide some clarity on the anticipated timeline for this project? Specifically, will this work overlap with those other projects, and if so, has there been any coordination to minimize the cumulative impact on traffic flow and campus access?

This would be helpful for Ivey staff and commuters who will be already navigating considerable disruptions in the area.

Thank you for the opportunity to provide feedback.

[redacted]



Ivey Business School at Western University
1255 Western Road, London, ON, Canada N6G 0N1
519-661-3533
[redacted]
www.ivey.ca/pledge



My working hours may not be your working hours. Please do not feel obligated to reply outside of your normal work schedule

From: Lynn Logan, Vice-President (Operations & Finance) <westernubridge@uwo.ca>
Sent: Monday, May 4, 2026 10:37 AM
To: [redacted]
Subject: Provide your feedback: University Drive Bridge

Dear Western community member,

As we move into the next phase of the University Drive Bridge project, we invite you to share your feedback at an upcoming Public Information Centre.

The University Drive Bridge was built in the early 1920's and is nearing the end of its service life for vehicular traffic.

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The solution under consideration would retain the existing bridge for pedestrian and cyclist use while constructing a parallel bridge for vehicular traffic.

Public Information Centre

The university is hosting an online Public Information Centre where you can learn

more about this proposal and ask questions.

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To register for the online meeting, please send an email to westernubridge@uwo.ca before May 13, 2026, identifying your interest in attending. The meeting link will be provided to you via email.

Provide Feedback Online

Until May 27, you can share comments about the University Drive Bridge by emailing westernubridge@uwo.ca at any time during the MCEA process.

A formal comment period for the Public Information Centre will take place from May 13 to May 27.

More information is available on the [project website](#).

Thank you, in advance, for your participation.

Lynn Logan
Vice-President (Operations & Finance)

Western University
1151 Richmond St.
London, Ontario, Canada N6A 3K7
Tel: 519.661.2111

This is an email from Western Communications.

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FW: Positive Feedback

From Steve Taylor <steven.taylor@bteng.ca>
Date Mon 2026-05-04 1:14 PM
To Brooke Finlay <brooke.finlay@bteng.ca>
Cc Brenda Badham <brenda.badham@bteng.ca>

Brooke- comment sheet

Brenda - invite



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
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<https://bteng.ca/>

From: [REDACTED]
Sent: Monday, May 4, 2026 1:13 PM
To: westernubridge <westernubridge@uwo.ca>
Subject: Positive Feedback

Hello,

I have reviewed the slideshow of the proposed plan for a second bridge for University Drive and am excited and supportive of the project. As a cyclist I find it a dangerous place at present.

[REDACTED]



FW: Alternative to Bridge Twinning

From Steve Taylor <steven.taylor@bteng.ca>
Date Mon 2026-05-04 1:11 PM
To Brooke Finlay <brooke.finlay@bteng.ca>; Brenda Badham <brenda.badham@bteng.ca>

Add as a comment sheet.

Brenda inviter to the PIC



Steve Taylor P.Eng., M.Eng., CVS LIFE, P.E.
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FAX: 1 613 248 4979
Toll Free: 1 866 218 1001
<https://bteng.ca/>

From: [REDACTED]
Sent: Monday, May 4, 2026 11:53 AM
To: westernubridge <westernubridge@uwo.ca>
Subject: Alternative to Bridge Twinning

Hi there,

I use the current bridge as a walker, as a cyclist and as a driver, as I live in Old North. I'm quite familiar with the various problems related to the multi-modal use of this old and aging bridge.

I have seen that the current proposal is for restricting vehicular traffic on the current bridge and building a new bridge just to the south.

While I think restricting vehicular traffic on the current bridge is long overdue, I do not like this 'twinning' solution.

It will still result in a dangerous intersection on campus with most vehicles having to make a left turn. It will still mean lots of traffic on University Drive where there is an increasing number of students. It would ruin the view of the Thames River from the current bridge. There would be no benefit aside from getting vehicles from one side to the other.

I would like to suggest a better alternative.

Huron Street, main thoroughfare through eastern London, should be extended across the Thames River to connect with Sarnia Road. And this bridge should be multimodal – allowing not only vehicle traffic but proper cycling and pedestrian capacity.

Benefits of this approach:

- It would eliminate cut-through vehicular traffic along University Drive and improve safety there
- It would eliminate the dangerous left turn onto Huron Drive (I have found even the right turn there to be dangerous)
- It would provide a much-needed alternative for cyclists and pedestrians coming from the Richmond / Oxford area
- It would take advantage of the new widening of Philip Aziz Ave that the City is undertaking
- It would not ruin the view of the river from the current bridge, and at the same time provide a new view of the river and the current historic bridge.
- It would provide better connectivity with the Thames Valley Parkway.
- Buses and ambulances would be able to use this new bridge to quickly access campus via Western Rd, without having to go through the heart of the campus.

Drawbacks

- The one drawback I see is that given the orientation of the river at that location, the bridge would need to be somewhat longer and affect more of the river and its vegetation. I'm sure a bridge could be designed to minimize the impact.

I sincerely hope you will consider this alternative.

Many thanks,



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FW: Concerns

From Steve Taylor <steven.taylor@bteng.ca>
Date Mon 2026-05-04 2:23 PM
To Brooke Finlay <brooke.finlay@bteng.ca>
Cc Kristine Dimoff <kristine.dimoff@bteng.ca>

Comment sheet



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
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Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: [redacted]
Sent: Monday, May 4, 2026 1:26 PM
To: westernubridge@uwo.ca
Subject: Concerns

Hello:
As I further inform myself in regards to the bridge, and other, upcoming projects, I have serious concerns as to accessible and practical parking options for the Faculty of Music. Our outreach is as pivotal for recruitment as it is crucial for community support and engagement. We host literally 100s of events in the academic year, and we require Talbot Lot (plus more) for parking for these events. If patrons lack easy, close and accessible parking, they will truly rethink their attendance.
As a part-time lecturer, as so many of us are at the DWFOM, I often struggle to find parking in lots any time after 10, as I often arrive at noon and am on campus till after 10pm. We already seem to have a parking shortage and profs are frustrated by the lack of secure parking when we're already commuting in for part time work.
Please consider that parking around and for the faculty of music has specific outreach and community impacts. Please allow us to continue to share our music with campus, with London, and beyond.

[redacted signature]



FW: Bridge Plan Feedback - from Cyclist

From Steve Taylor <steven.taylor@bteng.ca>
Date Tue 2026-05-05 8:46 AM
To Brooke Finlay <brooke.finlay@bteng.ca>
Cc Kristine Dimoff <kristine.dimoff@bteng.ca>

PIC comment sheet



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
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London: 519-672-2222
Toronto: 905-709-4554
FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: [redacted]
Sent: Monday, May 4, 2026 5:23 PM
To: westernubridge <westernubridge@uwo.ca>
Subject: Bridge Plan Feedback - from Cyclist

Dear Western Bridge Organizers,

I'm a cyclist who uses the current bridge for daily commuting, while I support the plan to turn the current bridge into a ped/active transport dedicated route. One aspect missing from the proposed design is better integration with the shared pathways that connect to the TVP. Many cyclists use that path and the current connection to university drive is separate from the intersection with Sunset and at sharp angles & steep hills (and is poorly marked / visible to motorists) making it risky/physically difficult to transition from the TVP to the current bridge. Improving these connections would make it safer for cyclist and could be potentially be designed to provide a by-pass route for cyclists (and pedestrians) around the intersection during high traffic times.

Best,
[redacted signature]

[redacted signature]



FW: Keep one bridge

From Steve Taylor <steven.taylor@bteng.ca>
Date Tue 2026-05-05 2:48 PM
To Brooke Finlay <brooke.finlay@bteng.ca>
Cc Kristine Dimoff <kristine.dimoff@bteng.ca>

Log as a comment sheet



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
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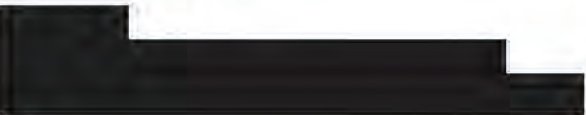
From: [REDACTED]
Sent: Tuesday, May 5, 2026 12:48 PM
To: westernubridge <westernubridge@uwo.ca>
Subject: Keep one bridge

Thank you for requesting comments on plans for the University Bridge.

This represents an opportunity to restrict vehicular traffic onto the main campus from Richmond, keeping the existing bridge for pedestrians and cyclists, with access for emergency vehicles only.

As Western Road evolves to become the University's primary access, including for transit, vehicular access through the campus from Richmond will become increasingly unimportant.

Setting aside the impacts on the river, could the resources associated with the new bridge not be put to better use?



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FW: Submission from OII – University Drive Bridge EA (PIC No. 2)

From Steve Taylor <steven.taylor@bteng.ca>
Date Tue 2026-05-05 2:49 PM
To Brooke Finlay <brooke.finlay@bteng.ca>
Cc Kristine Dimoff <kristine.dimoff@bteng.ca>

Scroll down for PIC comment



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
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London: 519-672-2222
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FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: westernubridge <westernubridge@uwo.ca>
Sent: Tuesday, May 5, 2026 12:37 PM
To: [REDACTED]; westernubridge <westernubridge@uwo.ca>
Cc: [REDACTED]
Subject: Re: Submission from OII – University Drive Bridge EA (PIC No. 2)

Good afternoon,

Thank you for your email regarding the University Drive Bridge Class Environmental Assessment (EA). Your information was added to the Study's contact list, and you will receive a separate email with the online meeting invitation for the Public Information Centre (PIC) on May 13, 2026.

If you require additional information or wish to provide additional comments during the Class EA process, please contact us anytime at: westernubridge@uwo.ca.

Thank you

From: [REDACTED]
Sent: Tuesday, May 5, 2026 11:58 AM
To: westernubridge <westernubridge@uwo.ca>
Cc: [REDACTED]
Subject: Submission from OII – University Drive Bridge EA (PIC No. 2)

Sent: Tuesday, May 5, 2026 11:58 AM
To: westernubridge <westernubridge@uwo.ca>
Cc: [REDACTED]
Subject: Submission from OII – University Drive Bridge EA (PIC No. 2)

Comment # 9

Dear Project Team,

On behalf of Western University's Office of Indigenous Initiatives (OII), I am writing to provide a formal submission in response to the University Drive Bridge Class Environmental Assessment (EA) process, following Public Information Centre No. 2.

The OII wishes to signal its strong interest in this project as a meaningful opportunity to advance Western's commitments to reconciliation with local Indigenous communities, as articulated in *Towards Western at 150*. Given the bridge's location over Deshkan Zibing (a.k.a. the Thames River) and its significance as a central point of connection within campus, we see this project as uniquely positioned to reflect relationships to land, water, and the local Nations whose territories Western occupies.

This perspective builds on earlier discussions I held with President Alan Shepard in 2022, and subsequently with Vice-President (Operations and Finance) Lynn Logan, regarding the opportunity to Indigenize the anticipated bridge project. At that time, there was shared interest in the general premise, including the potential for Indigenous-language naming and the inclusion of ceremony and acknowledgement of the local Nations connected to Deshkan Zibing as part of the bridge's opening. We are now bringing this forward more formally at a stage where there is greater clarity regarding the project's direction.

At the same time, we recognize that the EA process is currently focused on technical planning, design alternatives, and environmental considerations. As such, OII is not proposing that decisions regarding naming or specific cultural design elements be made within the EA phase.

Rather, we recommend that Western use this stage of the project to:

- Embed a clear institutional commitment acknowledging the cultural and territorial significance of the land and waterway, and Western's responsibility to advance reconciliation with local Indigenous communities; and
- Intentionally reserve space within the project—both conceptually and within the design—for future Indigenous-led co-development of naming, cultural elements, and interpretive features.

This approach would allow the project to proceed within its current timelines, while ensuring that Indigenous engagement related to naming, ceremony, language, and cultural expression is undertaken in a meaningful, community-led way following the EA phase. It also aligns with the principles of respectful engagement, avoids the risk of premature or tokenistic decisions, and creates a clear pathway for collaboration with local Nations, Knowledge Holders, and community partners.

We further note that the EA process already identifies Indigenous stakeholder engagement as an important component of the project. Building on this foundation, the approach outlined above would strengthen Western's ability to carry this work forward in a manner that reflects both institutional commitments and Indigenous protocols.

We would welcome the opportunity to work collaboratively with Facilities Management and project partners to help shape next steps following the EA, including the development of an appropriate engagement and co-development process with local Indigenous communities.

Thank you for the opportunity to provide input. We appreciate the care being taken in the planning of this important project and look forward to supporting its continued development in a good way.

Miigwech,



5/6/26, 8:47 AM

Inbox - Brooke Finlay - Outlook

Comment # 9

Western Student Services Building, 2150E

Western University

1151 Richmond Street, London, ON, N6A 5B8



www.indigenous.uwo.ca

***My working hours may not be your working hours. Please do not feel obligated to reply outside of your work schedule.**

Western University is located on the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak peoples, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish With One Spoon Covenant Wampum.

From: Lynn Logan, Vice-President (Operations & Finance) <westernubridge@uwo.ca>

Sent: May 4, 2026 10:37 AM

To: [REDACTED]

Subject: Provide your feedback: University Drive Bridge

Dear Western community member,

As we move into the next phase of the University Drive Bridge project, we invite you to share your feedback at an upcoming Public Information Centre.

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Location: Online Zoom Webinar

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A formal comment period for the Public Information Centre will take place from May 13 to May 27.

More information is available on the [project website](#).

Thank you, in advance, for your participation.

Lynn Logan
Vice-President (Operations & Finance)



FW: Bridge construction

From Steve Taylor <steven.taylor@bteng.ca>
Date Tue 2026-05-05 4:25 PM
To Brooke Finlay <brooke.finlay@bteng.ca>
Cc Kristine Dimoff <kristine.dimoff@bteng.ca>

Comment sheet



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
E-Mail: steven.taylor@bteng.ca
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London: 519-672-2222
Toronto: 905-709-4554
FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: [REDACTED]
Sent: Tuesday, May 5, 2026 8:57 AM
To: westernubridge <westernubridge@uwo.ca>
Subject: Bridge construction

Hello,
I have serious concerns about the health and welfare of the Faculty of Music under the proposed construction plans, mainly as it impacts parking.

Nearby parking is essential for our Faculty. Some of us (both faculty and students) have to carry large instruments to the buildings. Secondly, and perhaps most importantly, it is part of our mandate to contribute to the cultural life of the city. Our audiences are often seniors with limited mobility. I cannot imagine that they will continue to attend events if parking is not within a reasonable distance.

If the upcoming plans include limiting parking in Talbot and the South Valley lot then this will have serious consequences for the health of our faculty.

Sincerely,
[REDACTED]

[REDACTED]
Lecturer



FW: concerns regarding Talbot lot

From Steve Taylor <steven.taylor@bteng.ca>
Date Wed 2026-05-06 9:29 PM
To Brooke Finlay <brooke.finlay@bteng.ca>
Cc Kristine Dimoff <kristine.dimoff@bteng.ca>

Comment sheet



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
E-Mail: steven.taylor@bteng.ca
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London: 519-672-2222
Toronto: 905-709-4554
FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: [REDACTED]
Sent: Wednesday, May 6, 2026 5:24 PM
To: westernubridge <westernubridge@uwo.ca>
Subject: concerns regarding Talbot lot

Hello,

My name is [REDACTED], and I am a tenured professor in the Faculty of Music. I hold a core parking permit and typically use the **Talbot** and **South Valley** lots due to their proximity to the Music Building. However, throughout this year I have frequently been unable to find parking in either location, particularly when snow removal reduces available spaces.

I am increasingly concerned about the impact of the upcoming bridge construction and the potential loss of parking in the Talbot lot. Parking in this area is already strained due to the high volume of public traffic around the Music Building.

This issue has begun to affect the start of my instruction times. On multiple occasions, I have had to circle these closer lots to find a spot in order to reduce my musical instrument's cold exposure on the walk. I often carry a wooden and expensive instrument needed for teaching and needed at home and one that should be outdoors minimally. To put this in context, every year I have multiple students with instruments that crack over the winter. They are forever altered, require immediate temporary replacement and need a \$200-800 "repair" to prevent further cracking. As faculty, I must prevent cracking of my instruments because they are needed for my work and research activity.

To reduce cold exposure, sometimes I have had to temporarily park in the traffic circle, quickly drop off my instrument in my office and come back to the car to park further away. At times this has caused me to be late for teaching and one time, I received a parking ticket for the 3 minutes I needed. (although I pay for a core permit, I should have used Honk for those 3 minutes.)

On another occasion, after being unable to find a space, I parked at the end of a row in South Valley. Despite coming out and checking again during my only break, no spaces became available, and I ultimately received a ticket upon arrival to my car after a full day of teaching. Not only did I get a significant ticket, but it was troubling to know that when I couldn't find parking, I saw people coming out of their cars with gym bags and heading to the recreation center.

Parking is challenging for any large institution, but faculty and staff should have priority since they are providing the services needed for the campus to operate. And there are added complexities for the music faculty with professors who are required to carry sensitive, expensive instruments to and from parking lots in order to teach and the music buildings having relatively heavy public traffic compared to many other faculties.

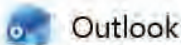
I understand accommodation for construction is necessary but on the recognition that parking is a real challenge, I encourage administration to arrange some type of accommodation for its employees, who not only pay for parking but face consequences with more distant parking.

Thanks,



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FW: interest in attending: inaccessibility to campus parking lot

From Steve Taylor <steven.taylor@bteng.ca>
Date Sun 2026-05-10 1:39 PM
To Brooke Finlay <brooke.finlay@bteng.ca>
Cc Trent Williams <twill53@uwo.ca>; Brenda Badham <brenda.badham@bteng.ca>; Tucker James Morton <tmorton4@uwo.ca>; Wasim Aldabbagh <wasim.aldabbagh@bteng.ca>

1 attachment (73 KB)
Provide your feedback University Drive Bridge.pdf

Brooke save this as a comment sheet requiring a response.

Brenda invite to the PIC.

Steve

Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
E-Mail: steven.taylor@bteng.ca
Ottawa: 613-228-4813
London: 519-672-2222
Toronto: 905-709-4554
FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

-----Original Message-----

From: [REDACTED]
Sent: Thursday, May 7, 2026 9:52 AM
To: westernubridge@uwo.ca
Subject: interest in attending: inaccessibility to campus parking lot
Importance: High

Hello,

I would like to know the extent to which the proposed University Drive bridge project will block my access to my campus parking lot (Middlesex) from my home (in the old north). If the car passage through the bridge is blocked, to drive to campus from home I would have to go through the Richmond-Windermere intersection, which is likely to be terribly jammed (as during the strike a while ago). While walking from home to campus is sometime feasible, my duties (teaching, administrative meetings,

hosting seminar guests, etc.) often requires me to come to campus with a car within a short time. I am afraid that the blockage of car access through the bridge would significantly undermine my daily work and life.

Thank you for the considerations. Attached is the email from Vice-President Logan that calls for feedback on this project.

--
[REDACTED]

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<https://outlook.office365.com/groups/groupsubscription?source=EscalatedMessage&action=leave&smtp=westernubridge%40uwo.ca&bO=true&GuestId=568c6376-2c4a-4496-ae14-b7a6173f43ca>



FW: Concerns regarding impact of new bridge on parking for Western Music events

From Steve Taylor <steven.taylor@bteng.ca>
Date Thu 2026-05-07 3:30 PM
To Brooke Finlay <brooke.finlay@bteng.ca>
Cc Kristine Dimoff <kristine.dimoff@bteng.ca>

Comment sheet.



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
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FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: [REDACTED]
Sent: Thursday, May 7, 2026 3:29 PM
To: westernubridge <westernubridge@uwo.ca>
Subject: Concerns regarding impact of new bridge on parking for Western Music events

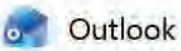
I am writing to let you know that I am concerned about the reduction in parking in the Talbot parking lot once the new bridge building project begins. There is already limited parking for concerts and other events at Western, and further reductions may reduce our audience numbers and make it harder for us to obtain revenues from tickets sales, and also create barriers to our ability to share the projects and performances from our talented students and faculty with the community at large.

Please consider these factors when you embark on further planning for this project.

Thank you,
[REDACTED]

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FW: Safety concerns with proposed bike routes

From Steve Taylor <steven.taylor@bteng.ca>
Date Tue 2026-05-12 7:57 PM
To Brooke Finlay <brooke.finlay@bteng.ca>; Brenda Badham <brenda.badham@bteng.ca>
Cc Wasim Aldabbagh <wasim.aldabbagh@bteng.ca>; Stephen Brook <stephen.brook@bteng.ca>; Kristine Dimoff <kristine.dimoff@bteng.ca>

Brooke save as a PIC comment
Brenda make sure he is invited.

Steve



Steve Taylor P.Eng., M.Eng., CVS LIFE, P.E.
Chief Executive Officer
E-Mail: steven.taylor@bteng.ca
Ottawa: 613 228 4813
London: 519 672 2222
Toronto: 905 709 4554
FAX: 1 613 248 4979
Toll Free: 1 866 218 1001
<https://bteng.ca/>

From: [REDACTED]
Sent: Tuesday, May 12, 2026 7:02 PM
To: westernubridge@uwo.ca
Cc: [REDACTED]
Subject: Safety concerns with proposed bike routes

Hello, I'm a community member, alumnus, part-time lecturer and a former administrator and member of the Board and Senate.

Setting aside the plans for the reimagined University Drive bridge itself, **I wanted to raise safety and functional concerns with the [plan](#) for the proposed bike path** along Lambton Drive that states:

- SOUTHBOUND CYCLISTS SHALL DISMOUNT AND CROSS LAMBTON DRIVE TO ACCESS EXISTING SHARROW-MARKED LANE
- These dedicated north-south bike paths appear to only exist for a short block, with much of that distance crossing multiple lanes of traffic and a parking lot entrance before requiring bicyclists to then dismount and walk their bike. **This is something that will almost never happen.** Cyclists will almost universally take one of three alternative actions:

- 1. Disregard any instruction or infrastructure and cross traffic on Lambton without dismounting, causing safety and liability issues to themselves, others, and the university.
- 2. Simply take the lane, as is their right, and proceed without having to cross lanes of traffic or dismount (probably the safest and simplest option).
- 3. Cut through the grass or pedestrian paths to the west side of the Faculty of Music buildings.

Additionally, this path appears to exist in place of sidewalks missing on the east side of Lambton Drive (unclear from the drawings). If so, I expect these paths may see more unintended pedestrian use than bicycle use, particularly given the location of the bus stop and parking amenities on the east side, which further increases my safety concern.

In the interest of safety and function, **I would suggest revisiting this design with at least one of the following options** (not mutually exclusive, and may be staged):

- 1. Remove the north-south bike paths entirely, for continuity with the low-speed shared infrastructure to the north and south of this block.
- 2. Replace this route with north-south dedicated or multi-use paths to the west of the music buildings that reconnect with Lambton at Huron Drive.
- 3. Keep the paths but extend the route to the south along the athletic fields to provide continuity without the need to dismount.

I believe that any combination of these options would not only increase safety, but also reduce the cost, road width, and complexity of the overall design (something I expect others to comment on). It seems that some of the cost and complexity exists only to accommodate this very short stretch of impractical two-way bike paths.

Normally I would not argue against a dedicated bike path, but in this case, I believe a improved implementation would also lead to stronger and safer adoption of cycling on campus.

Thank you,



FW: Talbot lot feedback

From Steve Taylor <steven.taylor@bteng.ca>
Date Tue 2026-05-12 8:01 PM
To Brooke Finlay <brooke.finlay@bteng.ca>; Brenda Badham <brenda.badham@bteng.ca>
Cc Stephen Brook <stephen.brook@bteng.ca>; Wasim Aldabbagh <wasim.aldabbagh@bteng.ca>; Kristine Dimoff <kristine.dimoff@bteng.ca>

Brooke
Log as a PIC comment

Brenda invite.

Steve



Steve Taylor P.Eng., M.Eng., CVS LIFE, P.E.
Chief Executive Officer
E-Mail: steven.taylor@bteng.ca
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<https://bteng.ca/>

From: [Redacted]
Sent: Monday, May 11, 2026 2:22 PM
To: westernubridge <westernubridge@uwo.ca>
Subject: Talbot lot feedback

To whom it may concern
Thanks for the recent Faculty of Music presentation.

- My comments and concerns:
- Parking is needed:
 - concert attendees/students with disabilities
 - students with large, heavy, cumbersome, and expensive instruments (euphoniums, tuba, string bass, etc.)
 - students with multiple instruments (principal instrument and guitar/secondary instrument or multiple primary instruments)
 - **Community outreach/recruitment activities**
 - OBA Intermediate Honour Band pick-up/drop off by parents (2-day event)
 - approximately 200 children (grades 8-12)

- We have students attending from over 5 hours away
- It's an important recruitment activity for the faculty
- Western Young Winds (10 Saturday mornings)
 - approximately 90 children (grades 6-9)
 - These are young children with large instruments
- Western Youth Wind Ensemble (10 Saturday mornings)
 - approximately 75 children (grades 10-12)
- Recruitment campus visits (these students come with instruments)
- During the campus strike closure, staff/faculty couldn't drop off large items
 - I couldn't return my Interprovincial Music Camp Supplies (box of music) for MONTHS.
 - Library music borrowed for this recruitment activity
 - Supplies drop off for outreach events
 - secondary and university owned instrument repairs happen on a regular basis
 - Commute changed from 20 minutes to 1 hour (I had to park past Ivy)
- Not enough staff spots if you arrive mid-day even if you have paid extra for reserved parking.
- If we relocate the tennis bubble and the skating rink, then our parking could be shifted.
 - This seems like a possible solution

Thanks for listening,

[Redacted]

[Redacted]

Don Wright Faculty of Music
Western University
Talbot College
London, Ontario
Canada
N6A 3K7

[Redacted]

I acknowledge that Western University is located on the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Attawandaron peoples, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum. This land continues to be home to diverse Indigenous peoples (e.g. First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors of our society.



FW: Feedback Re: Reimagining University Drive Bridge

From Steve Taylor <steven.taylor@bteng.ca>
Date Wed 2026-05-13 12:41 PM
To Brenda Badham <brenda.badham@bteng.ca>; Brooke Finlay <brooke.finlay@bteng.ca>



Steve Taylor P.Eng., M.Eng., CVS LIFE, P.E.
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FAX: 1 613 248 4979
Toll Free: 1 866 218 1001
<https://bteng.ca/>

From: [Redacted]
Sent: Wednesday, May 13, 2026 12:11 PM
To: westernubridge <westernubridge@uwo.ca>
Subject: Feedback Re: Reimagining University Drive Bridge

Good morning,

My feedback for the project comes as a Western employee in the Music Faculty who takes the bus regularly via Richmond to campus.

While the construction will add time to my commute to work and home, I am writing on the broader impact this will have on visitors to the Talbot College and Music Building facilities. The Talbot Lot serves as parking for audience members (including senior members of the community with limited mobility) to the 400+ events we have each year. In addition, there are several community groups who rent halls/rooms in both buildings who rely on this lot. If community groups are dissuaded due to the construction, the lack of rentals will have an impact on the earnings of the Faculty.

As a result, I am keen to better understand the plan to accommodate the significant volume of external visitors unique to the Music Faculty during the construction period and beyond should there be the removal of the Talbot Lot. This comment is in no way associated with the needs of current students, faculty, and/or staff accessing campus/the Talbot Lot.

Just an FYI about buses:

Each time construction/protests re-route the Richmond buses, there is a resulting increase in wait times for the LTC buses in addition to a longer commute. During the last construction period for the new residence I was consistently waiting 30-40 minutes at the stop on campus for any of the 6, 13, or 13a buses to show up (according to their usual schedule at least two should have been there in that time), often when they did arrive, they were heading the opposite direction (since all have to go to one stop). It is worth noting that the LTC has not met the needs of commuters during construction re-routes in the past; I am concerned about the service during a longer-term project like the University Drive Bridge.

Many thanks for offering feedback on the project,

[Redacted]

[Redacted]

Don Wright Faculty of Music, Western University

Talbot College, [Redacted]

[Redacted]

@westernuMusic

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FW: uwo bridge

From Steve Taylor <steven.taylor@bteng.ca>
Date Thu 2026-05-14 5:12 PM
To Brooke Finlay <brooke.finlay@bteng.ca>; Kristine Dimoff <kristine.dimoff@bteng.ca>

FYI



Steve Taylor P.Eng., M.Eng., CVS LIFE, P.E.
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Toll Free: 1 866 218 1001
<https://bteng.ca/>

From: westernubridge <westernubridge@uwo.ca>
Sent: Thursday, May 14, 2026 8:43 AM
To: [Redacted] <[Redacted]@uwo.ca>
Subject: Re: uwo bridge

Good morning,

You can access the presentation PDF at the direct link below:
<https://www.uwo.ca/fm/pdf/9M5173---PIC-2-Presentation-2026-05-01.pdf>

Comments will be accepted until end of the day on May 27th. Following this, all questions and answers will be posted along the right-hand side of the following website:
https://www.uwo.ca/fm/projects/capital_projects/ud_bridge.html

If there is any continued trouble with the links above, please let us know.

Thank you.

From: [Redacted]
Sent: Wednesday, May 13, 2026 3:36 PM
To: westernubridge <westernubridge@uwo.ca>
Cc: [Redacted]
Subject: uwo bridge

Hello,

Could we please get a copy of the PowerPoint presentation?

We had trouble joining the meeting because we thought the Zoom meeting link was the one posted here:

https://www.uwo.ca/fm/projects/capital_projects/ud_bridge.html

When we tried accessing it, we kept receiving this message:

"The page you are looking for may have been removed, had its name changed, has no access rights, or is temporarily unavailable."

If possible, could you also share any meeting notes or a recap along with the PowerPoint? That would be greatly appreciated.

Thank you very much.

[Redacted content]

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Outlook

FW: Provide your feedback: University Drive Bridge

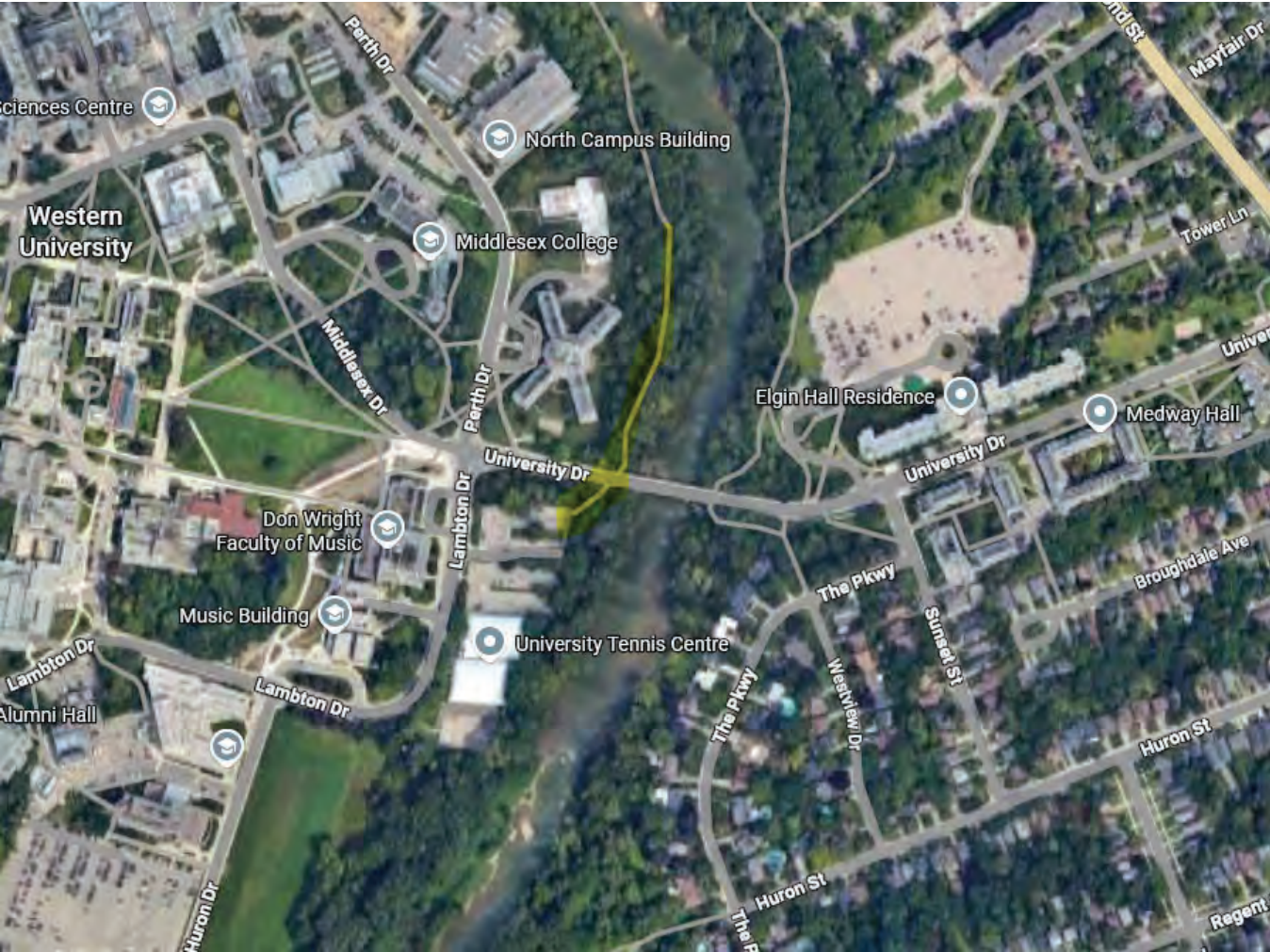
From Steve Taylor <steven.taylor@bteng.ca>
Date Thu 2026-05-14 5:54 PM
To Brooke Finlay <brooke.finlay@bteng.ca>
Cc Kristine Dimoff <kristine.dimoff@bteng.ca>

Add to comment log.
Steve

BT ENGINEERING
BTE
Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
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London: 519-672-2222
Toronto: 905-709-4554
FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: [Redacted]
Sent: Wednesday, May 13, 2026 2:47 PM
To: westernubridge <westernubridge@uwo.ca>
Subject: RE: Provide your feedback: University Drive Bridge

Will the entrance to this trail on the west side of the river be relocated?



[Redacted]
Office of Sustainability | Facilities Management
2301, Support Services Building | Western University
[Redacted]

From: westernubridge <westernubridge@uwo.ca>
Sent: May 4, 2026 1:56 PM
To: [Redacted]
Subject: Re: Provide your feedback: University Drive Bridge

Good afternoon,

Thank you for your email regarding the University Drive Bridge Class Environmental Assessment (EA). Your information was added to the Study's contact list, and you will receive a separate email with the online meeting invitation for the Public Information Centre (PIC) on May 13, 2026.

If you require additional information or wish to provide additional comments during the Class EA process, please contact us anytime at: westernubridge@uwo.ca.

Thank you

From: [Redacted]
Sent: Monday, May 4, 2026 1:39 PM
To: westernubridge <westernubridge@uwo.ca>
Subject: RE: Provide your feedback: University Drive Bridge

I'd be interested in attending the webinar. Thanks!

[Redacted]

Office of Sustainability | Facilities Management

[Redacted] | Western University

[Redacted]

[Redacted]

From: Lynn Logan, Vice-President (Operations & Finance) <westernubridge@uwo.ca>
Sent: May 4, 2026 10:37 AM
To: [Redacted]
Subject: Provide your feedback: University Drive Bridge

Dear Western community member,

As we move into the next phase of the University Drive Bridge project, we invite you to share your feedback at an upcoming Public Information Centre.

The University Drive Bridge was built in the early 1920's and is nearing the end of its service life for vehicular traffic.

Western initiated a Municipal Class Environmental Assessment (MCEA) Study to identify a solution that maintains connectivity, accommodates Western's active and vehicular transportation needs, protects the bridge's historic character, and limits impacts to the Thames River.

The solution under consideration would retain the existing bridge for pedestrian and cyclist use while constructing a parallel bridge for vehicular traffic.

Public Information Centre

The university is hosting an online Public Information Centre where you can learn more about this proposal and ask questions.

Date: May 13, 2026, from 1 – 3 p.m.

Location: Online Zoom Webinar

To register for the online meeting, please send an email to westernubridge@uwo.ca before May 13, 2026, identifying your interest in attending. The meeting link will be provided to you via email.

Provide Feedback Online

Until May 27, you can share comments about the University Drive Bridge by emailing westernubridge@uwo.ca at any time during the MCEA process.

A formal comment period for the Public Information Centre will take place from May 13 to May 27.

More information is available on the [project website](#).

Thank you, in advance, for your participation.

Lynn Logan
Vice-President (Operations & Finance)



FW: ACO London Request for Future Notices

From Steve Taylor <steven.taylor@bteng.ca>
Date Sun 2026-05-17 3:37 PM
To Brooke Finlay <brooke.finlay@bteng.ca>; Brenda Badham <brenda.badham@bteng.ca>
Cc Kristine Dimoff <kristine.dimoff@bteng.ca>

Add as a comment sheet.
Brenda add to contact list



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
E-Mail: steven.taylor@bteng.ca
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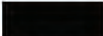
From: ACO London <info@acolondon.ca>
Sent: Saturday, May 16, 2026 3:08 PM
To: westernubridge@uwo.ca
Subject: ACO London Request for Future Notices

To:
Trent Williams Project Coordinator
Western University 1151 Richmond Street London, ON N6A 3K7
and
Steve Taylor, P.Eng., M.Eng. Project Manager BT Engineering Inc.
509 Talbot Street London, ON N6A 2S5

ACO London recently received a copy of the Notice for the PIC held regarding the University Bridge project on May 13th, 2026. It would be appreciated if any presentation such as a slide deck shown as this Zoom meeting be circulated to us. It is our understanding from the Notice that the current stone bridge is to be retained for non-vehicular traffic.

Also, if in future, you could please add ACO London to your circulation list for any further notice regarding the Municipal EA or other related approvals at this email address:
info@acolondon.ca.

Thanks!

 Communications Committee, London Region

www.acolondon.ca

[c/o Grosvenor Lodge, 1017 Western Road, London, ON N6G 1G5](#)



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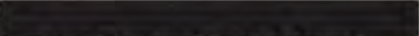
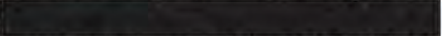
FW: University Drive Bridge MCEA - PIC 2 Notice

From Steve Taylor <steven.taylor@bteng.ca>
Date Tue 2026-05-19 2:08 PM
To Stephen Brook <stephen.brook@bteng.ca>; Brooke Finlay <brooke.finlay@bteng.ca>; Kristine Dimoff <kristine.dimoff@bteng.ca>

City comment.
Steve



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FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: 
Sent: Tuesday, May 19, 2026 10:50 AM
To: westernubridge <westernubridge@uwo.ca>
Cc: 
Subject: RE: University Drive Bridge MCEA - PIC 2 Notice

Good morning,

Thank you for circulating this notice and for providing Parks Long Range Planning & Design (PLRPD) the opportunity to comment.

- The Thames Valley Parkway (TVP) currently runs beneath the University Drive Bridge, and it is an essential linkage within our pathway network. It is important that this connection be maintained; therefore, adequate pathway width and head clearance under the bridge will be required.
- If any damage or repairs are required to the TVP please contact our Parks Long Range Planning & Design team to coordinate construction impacts.
- The existing TVP pathway connection east of the bridge is also an important link and should be retained.
- PLRPD should be consulted once a construction decision has been made regarding the rehabilitation or replacement of the bridge, so that appropriate TVP detours can be coordinated during the construction period.

Please let us know if further clarification is needed.

Thank you,



[Redacted]
Landscape Architect
Parks Long Range Planning & Design
Environment & Infrastructure
City of London

267 Dundas Street, 3rd Floor, London, ON, N6A 1H2
P: 519.661.CITY(2489) [Redacted] | F: 519.963.1483
[Redacted] | www.london.ca

From: westernubridge <westernubridge@uwo.ca>
Sent: Wednesday, April 29, 2026 1:46 PM
To: westernubridge <westernubridge@uwo.ca>
Subject: [EXTERNAL] University Drive Bridge MCEA - PIC 2 Notice

ATTENTION: This Message Is From an External Sender
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[Report Suspicious](#)

Good afternoon,

The second Public Information Centre (PIC) for the Municipal Class Environmental Assessment (MCEA) for the Western University Drive Bridge will be held virtually from May 13-27, 2026. The exhibits will be available on-line beginning on May 13, 2026. There will be an on-line meeting on May 13, 2026, held through Zoom which you can pre-register to attend. Anyone wishing to register can reply to this email.

The public advertisements will be placed in the London Free Press on May 6 and May 9.

If you have any comments, or require additional information, please contact us anytime at: westernubridge@uwo.ca.

Thank you



FW: feedback on the proposal

From Steve Taylor <steven.taylor@bteng.ca>
Date Wed 2026-05-20 9:27 AM
To Brooke Finlay <brooke.finlay@bteng.ca>
Cc Kristine Dimoff <kristine.dimoff@bteng.ca>

Add to log



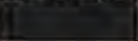
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Toronto: 905-709-4554
FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: [Redacted]
Sent: Tuesday, May 19, 2026 11:51 AM
To: westernubridge <westernubridge@uwo.ca>
Subject: feedback on the proposal

I attended the recent information session and my feedback is the following:

1. I am strongly concerned that the cut-through traffic on campus will be facilitated by the new twinned bridge, rather than discouraged. Further lane narrowing, raised intersections, and enforced speed limits should be imposed all along the corridor from Richmond St. through to Sarnia/Western Rd. to compensate for the added "convenience" of the new bridge.
2. I am concerned about the high flow of bicycle and pedestrian traffic that approaches along the Thames Valley Parkway from the south and heads west into campus. This is a major artery for both walking and cycling commuters to campus. To access the existing bridge, these pedestrians and bikes will need to cross the vehicular traffic flow between Richmond St. and the new bridge. Consistent with Western's long-term goals to reduce vehicular traffic and promote walking/cycling, the intersection of these two streams should be designed in a way that slows/inconveniences the vehicular traffic, not slows/inconveniences the bikes and pedestrians.

Thank you.





FW: PIC No. 2 comments

From Steve Taylor <steven.taylor@bteng.ca>
Date Thu 2026-05-21 10:27 AM
To Brooke Finlay <brooke.finlay@bteng.ca>; Kristine Dimoff <kristine.dimoff@bteng.ca>

Log comment in excel table and PIC report



Steve Taylor P.Eng., M.Eng., CVS LIFE, P.E.
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From: [REDACTED]
Sent: Thursday, May 21, 2026 9:51 AM
To: westernubridge <westernubridge@uwo.ca>
Subject: PIC No. 2 comments

Hello,
I'm writing to express my concerns about the proposed reconfiguration of University Bridge as part of the construction of a new bridge for vehicular traffic. I attended the public information session as part of PIC No. 2 on Wednesday 13 May 2026. I work on campus and walk, bicycle or take the bus to campus on a near-daily basis, crossing the old University Bridge twice a day.

Before outlining my concerns, I should state that the overall plan appears sound; the bridge design seems well-considered; the reasoning for recommending the southern alignment for the new bridge makes sense; and the decision to separate vehicular traffic from pedestrian/cyclist traffic is excellent.

However, I have some concerns that the proposed reconfiguration on the east side of the river will not realize the goals set out in Western's Open Space Strategy to prioritize pedestrian safety and encourage active transportation.

My concerns are threefold:

1. The reconfigured old University Bridge includes no physical separator between the bike lines and enlarged sidewalk. This is dangerous. Pedestrians will walk on the bike lines, meaning that cyclists travelling at 20 km/hour will be negotiating the same space as pedestrians travelling at 5 km/hour. Incidents are inevitable. I

appreciate the explanation that snow clearance prevents a permanent physical separator. I encourage you to consider a seasonal physical separator that could be installed between April-November each year, when there's almost no snow and bike usage is much greater.

2. The reconfigured east side of the bridge will have cyclist traffic from the old University Bridge rejoining University Drive and engaging with vehicular traffic at the intersection of Sunset Street and University Drive. I'm concerned about the safety of cyclists travelling southbound turning right onto Sunset Street. It isn't clear from the map included in the presentation how this safety issue will be mitigated.
3. As I mentioned at the public meeting, the reconfigured east side of the bridge will eliminate existing direct pedestrian access from the Parkway onto the old University Bridge. Asking pedestrians to loop under the two bridges or double back by walking to Sunset Street, waiting at the intersection and then walking back in the direction from whence they came may look fine on a map, but won't work on the ground. Pedestrians will seek to continue taking the same route they have taken for years. Adding a barrier on the south side of the realigned University Drive is a poor solution that doesn't encourage active transportation – it will add time to pedestrians' commute to campus. I encourage you to consider adding a pedestrian crosswalk over the realigned University Drive immediately to the east of the new bridge.

Thank you for considering my concerns.

[REDACTED]
Assistant Professor
Huron University College

You're receiving this message because you're a member of the westernubridge group from The University of Western Ontario. To take part in this conversation, reply all to this message.

[View group files](#) | [Leave group](#) | [Learn more about Microsoft 365 Groups](#)



FW: Bridge Plan --- Huron Drive

From Steve Taylor <steven.taylor@bteng.ca>
Date Fri 2026-05-22 10:30 AM
To Brooke Finlay <brooke.finlay@bteng.ca>; Kristine Dimoff <kristine.dimoff@bteng.ca>
Cc Wasim Aldabbagh <wasim.aldabbagh@bteng.ca>; Stephen Brook <stephen.brook@bteng.ca>

Add to the comment/response table

Steve



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
E-Mail: steven.taylor@bteng.ca
Ottawa: 613-228-4813
London: 519-672-2222
Toronto: 905-709-4554
FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: [REDACTED]
Sent: Friday, May 22, 2026 9:37 AM
To: westernubridge <westernubridge@uwo.ca>
Subject: Bridge Plan --- Huron Drive

Dear Bridge Team,

I went through your plan --- looks good, exciting project. The concrete arch bridge will definitely go better beside the existing one. Overall foot/ bike access should be improved on that side of campus.

I recall seeing that one alternative was build a traffic bridge at the end of Huron Street across to Sarnia --- does the current project moving forward mean that the Huron bridge is no longer going to be developed?



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[View group files](#) | [Leave group](#) | [Learn more about Microsoft 365 Groups](#)



FW: re Email list for the bridge

From Steve Taylor <steven.taylor@bteng.ca>
Date Sun 2026-05-24 4:11 PM
To Brooke Finlay <brooke.finlay@bteng.ca>; Kristine Dimoff <kristine.dimoff@bteng.ca>
Cc Shawn Taylor <shawn.taylor@bteng.ca>; Kyle Fleming <kyle@rootsenvironmental.ca>

Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
E-Mail: steven.taylor@bteng.ca
Ottawa: 613-228-4813
London: 519-672-2222
Toronto: 905-709-4554
FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

-----Original Message-----

From: [REDACTED]
Sent: Sunday, May 24, 2026 3:46 PM
To: westernubridge@uwo.ca
Subject: re Email list for the bridge

Many thanks for the information in your email regarding the bridge... so happy people are on top of this very important brige for Western...

I did have three females come up June 2025 to lay eggs and in September we had 32 baby turtles fight their way out of a tiny hole ... truly amazing

Many thanks [REDACTED] I would like to be on your email list...



FW: Comments on University Drive Bridge Proposal

From Steve Taylor <steven.taylor@bteng.ca>
Date Wed 2026-05-27 8:26 AM
To Brooke Finlay <brooke.finlay@bteng.ca>; Kristine Dimoff <kristine.dimoff@bteng.ca>

1 attachment (15 KB)
Comments on Western Bridge Proposal.docx;

Add to report and response table/
Steve



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
E-Mail: steven.taylor@bteng.ca
Ottawa: 613-228-4813
London: 519-672-2222
Toronto: 905-709-4554
FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: [REDACTED]
Sent: Tuesday, May 26, 2026 9:20 PM
To: westernubridge@uwo.ca
Subject: Comments on University Drive Bridge Proposal

Hello,

I am attaching my comments on the University Drive Bridge proposal (see attached Word document.
Please also add me to the contact list. Thank you.

I am also pasting my comments below, in case you encounter any issue with the document.

Best,
[REDACTED]

I strongly recommend against the PIC-2 proposal (the second bridge for vehicular traffic). This is a dangerously backwards step on Western’s part. It is embarrassing and shameful that Western continues to prioritize vehicular traffic and private vehicles on campus. Considering that Western claims to pride itself on its alleged sustainability and greenness, it is shocking that it is clinging to the notion that

motorized vehicles must drive through campus. We are at a point in . me when Western should be restricting vehicular traffic on campus and curtailing private vehicles from cutting through campus. Instead, in building a second bridge and (judging from the diagrams and drawings) widening the roads, Western would appear to be prioritizing the desires of drivers, not of its community.

On page 6, there is the comment that the present bridge has “insufficient width to suitably accommodate the number of vehicles, pedestrians and cyclists.” This is a false premise, as there is no need to increase the number of vehicles; instead of building a second bridge to accommodate this supposed need for additional vehicles, you should be making attempts to *reduce* vehicular traffic. Why is this not being considered by senior leadership?

You do say that “alternatives have been considered,” though the only alternatives that I see mentioned are different plans for the bridge itself in terms of location and structure (and those alternatives are then dismissed in any case). I do not see any alternatives that do not include a second bridge, nor do I see alternatives aimed at reducing or eliminating traffic.

On page 12, we see results of a study outlining the extremely high amount of traffic passing over the existing bridge onto campus. It is noted that 75% of motorists turn to/from Lambton Drive. This should be a frightening statistic, in this era of trying to reduce our carbon footprint. However, instead of searching for solutions to *reduce* the amount of vehicular traffic, Western appears to embrace this and simply proposes a plan to redirect traffic slightly down the road. Again, this is embarrassing.

I have heard arguments in the past from senior leaders at Western that it is not feasible to reduce or restrict vehicular traffic on campus. You are surely aware, I imagine, that in Europe, it is commonplace for vehicular traffic to be restricted in many areas of cities. This can include core areas, bridges, public and pedestrian areas, etc. Why has Western not studied solutions that would make campus a pedestrian and cyclist-friendly community? Instead, this proposal makes it seem as if vehicular traffic is only going to increase and we can expect even more traffic on the newly widened campus roads.

This note on page 22 is simply unacceptable: “Southbound cyclists shall dismount and cross Lambton Drive to access existing sharrow-marked lane.” In other words, vehicular traffic is being prioritized over cyclists. This is so tone-deaf that I do think it’s a fair question to ask if any of the senior leaders who are behind this proposal ever actually walk or cycle to campus. Or do they all drive to campus?

I note that the document already outlines that Phase 5 is “Implementation: Proceed to detail design, tendering and construction.” This strongly indicates that this decision has already been made and that this consultation is not genuine or serious. I do hope that I’m wrong and that Western is open to alternatives, but that does not come across in the document.

I would also like to voice my strong disapproval of the timing of this consultation, which seems to have been chosen strategically so that it coincides with a period when much of the campus community (most students certainly, and many faculty) is no longer present on campus or actively reading emails. In speaking to many groups on campus, I have the firm impression that much of the campus community feels as I do about this proposal. That is, they feel that it is contrary to what Western should be doing at this time of climate crisis. I have heard many students, in particular, express grave reservations about the proposal. My impression is that the majority of students feel that the administration should be restricting vehicular access to campus, not catering to it, or encouraging it.

I do know that optics are extremely important to the current administration—I would go so far as to suggest that it’s the main thing that they are concerned about—so if nothing else, I do hope that Western will consider the optics of this proposal, and how it will harm Western’s view of itself as a

champion of sustainability. Instead, Western will be seen, rightfully, as backwards-looking and as an institution with its head in the sand with regard to the climate crisis.

Thank you for your time.

Notice of Study Completion

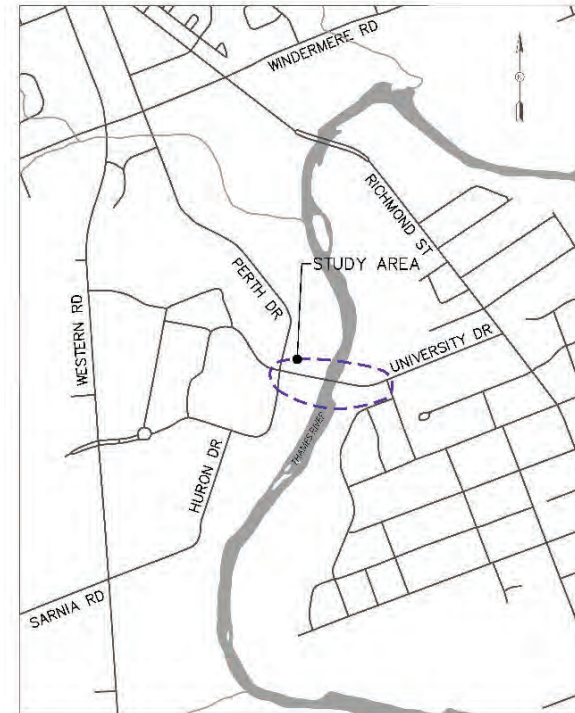
University Drive Bridge, Western University Municipal Class Environmental Assessment (EA)

Introduction

Western University retained Entuitive and BT Engineering Inc. to complete the Environmental Assessment (EA) and design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River in the City of London. The existing bridge is near the end of its service life for vehicular traffic. The Recommended Plan, presented at PIC No. 2, included retention of the existing bridge for active transportation plus construction of a new concrete arch bridge for vehicular traffic.

Study Process

The University Drive Bridge rehabilitation / replacement followed the process for a Schedule C project under the Municipal Class Environmental Assessment (MCEA) (2015). The study considered all reasonable alternatives with acceptable effects on the natural, social and cultural environments, and proactively consulted with the public, stakeholders and Indigenous Peoples. The last step in the process is publishing the Environmental Assessment findings and the recommended plan in an Environmental Study Report (ESR) for public review.



30-Day Public Review Period of the ESR

The ESR will be available online at: at the University's website at www.uwo.ca/fm/projects/capital_projects/ud_bridge.html.

It will also be available at the following locations:

- Western University, Support Services Building, 2nd Floor, Rm. 2301

The ESR will be available from September 23, 2026, until October 23, 2026 during business hours.

Outstanding Issues After ESR Review

After reviewing the ESR if there are still outstanding issues, a request to the Minister of the Environment, Conservation and Parks for an order imposing additional conditions or requiring an individual environmental assessment may be made on the grounds that the requested order may prevent, mitigate, or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests to both the Minister and Director should include your full name and contact information.

Minister Todd McCarthy
Ministry of the Environment, Conservation
and Parks
777 Bay Street, 5th Floor
Toronto, ON M7A 2J3
minister.mecp@ontario.ca

Director, Environmental Assessment Branch
Ministry of the Environment, Conservation and
Parks
135 St. Clair Avenue West, 1st Floor
Toronto, ON M4V 1P5
EABDirector@ontario.ca

Requests to the Minister of the Environment, Conservation and Parks should also be sent by mail or by email to the consultant EA Project Manager and University Project Manager (contact information at the end of this notice).

Please visit Ontario.ca for more information on requests for orders under section 16 of the Environmental Assessment Act at:

<https://www.ontario.ca/page/class-environmental-assessments-section-16-order>

If there are any other outstanding concern(s), they should be directed to the Consultant Project Manager or the University's Project Coordinator listed at the end of this notice, no later than October 23, 2026.

There is an opportunity at any time during the EA process for interested persons to provide comments. All information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act* (2009). With the exception of personal information, all comments will become part of the public record.

If you require additional information or wish to provide comments during the Class EA process, please contact us anytime at: westernubridge@uwo.ca

Trent Williams
Project Coordinator
Western University
1151 Richmond Street
London, ON N6A 3K7

Steve Taylor, P.Eng., M.Eng.
Project Manager
BT Engineering Inc.
509 Talbot Street
London, ON N6A 2S5

Appendix C

Indigenous Consultation

October 17, 2022

Nikki Orosz
Caldwell First Nation
nikki.orosz@caldwellfirstnation.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Study Commencement

Dear Ms. Orosz:

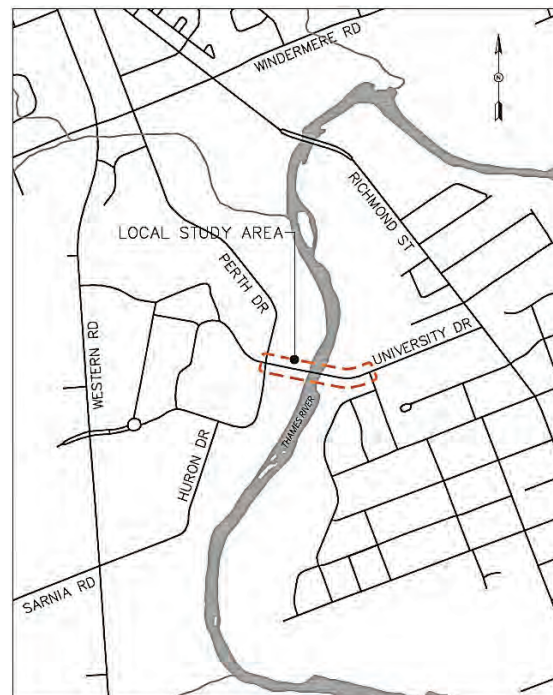
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- Rehabilitation of the existing bridge;
- Rehabilitation of the existing bridge plus structure widening;
- A new bridge on the existing alignment; or
- Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

Study Process

The University Drive Bridge rehabilitation/replacement will be completed as a Schedule C project under the Municipal Class Environmental Assessment (MCEA) (2015). The study will complete all necessary phases of the MCEA, including: establishing the need and justification for the project; documenting existing environmental conditions; documenting engineering considerations; considering alternatives; involving the public and regulatory agencies in developing the preferred solution for improvements; completing the related roadway design; and obtaining environmental clearance for construction. The study will also define the construction staging plan and traffic management plan.



This letter is also requesting background data or concerns that you may have related to this initiative. If you have information such as archaeological studies, reports, etc. that could assist us on this project, we welcome the opportunity to review with you.

Public Consultation

Public consultation is a key component of the Class EA, and we value your input during the planning process. There is an opportunity at any time during the EA process for interested persons to provide comments. All information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act* (2009). With the exception of personal information, all comments will become part of the public record.

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Yours truly,



Fred Janzen, B.E.S., P.M.P.,
Director (Capital Projects), Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Chathurika Gamage, M.Eng., P.Eng., Entuitive
Gord Bell, Consultant Environmental Planner



October 17, 2022

Chief Denise Stonefish
Delaware Nation
14760 School House Line, R.R #3
Thamesville, ON N0P 2K0
denise.stonefish@delawarenation.on.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Study Commencement

Dear Chief Stonefish:

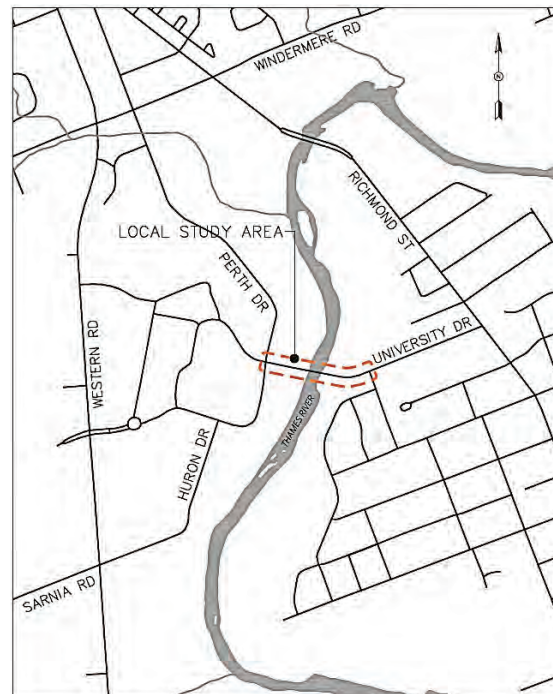
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Yours truly,

Fred Janzen, B.E.S., P.M.P.,
Director (Capital Projects), Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Chathurika Gamage, M.Eng., P.Eng., Entuitive
Gord Bell, Consultant Environmental Planner



October 17, 2022

Ms. Carole Antone
Munsee-Delaware Nation
289 Jubilee Road, R.R. #1
Muncey, ON N0L 1Y0
carol@munsee.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Study Commencement

Dear Ms. Antone:

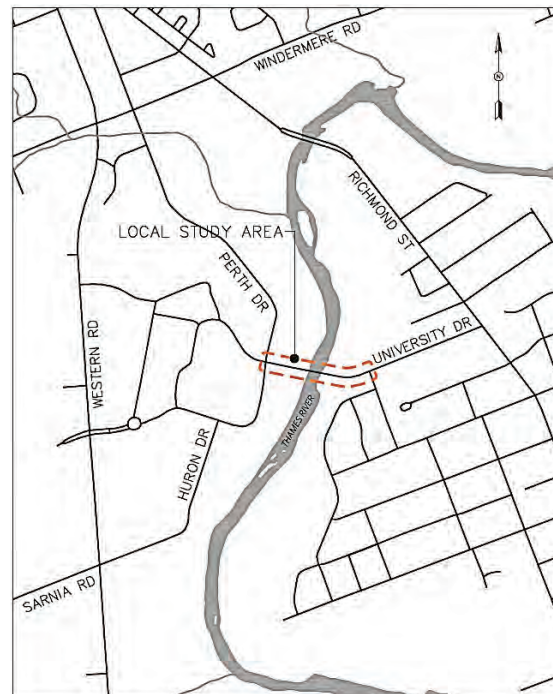
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Director (Capital Projects), Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Chathurika Gamage, M.Eng., P.Eng., Entuitive
Gord Bell, Consultant Environmental Planner



October 17, 2022

Chief Mark Peters
Munsee-Delaware Nation
289 Jubilee Road, R.R. #1
Muncey, ON N0L 1Y0
chief.peters@munsee.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Study Commencement

Dear Chief Peters:

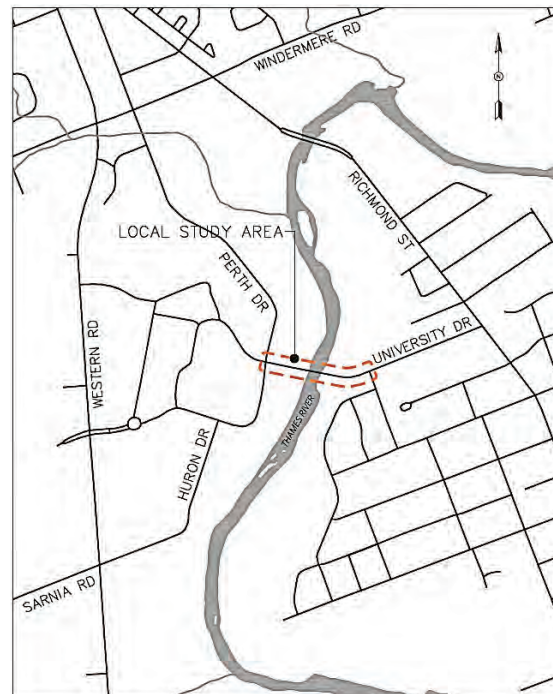
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Director (Capital Projects), Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Chathurika Gamage, M.Eng., P.Eng., Entuitive
Gord Bell, Consultant Environmental Planner

October 17, 2022

Stacey Phillips
Munsee-Delaware Nation
289 Jubilee Road, R.R. #1
Muncey, ON N0L 1Y0
consultation@munsee.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Study Commencement

Dear Sir/Madam:

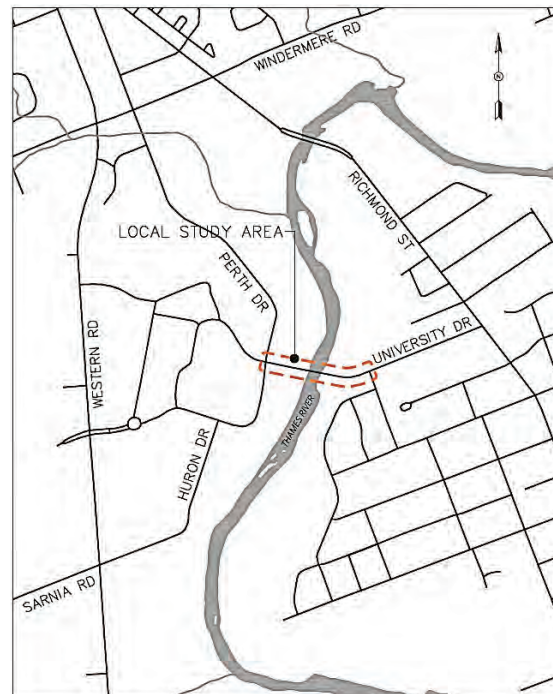
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Chathurika Gamage, M.Eng., P.Eng., Entuitive
Gord Bell, Consultant Environmental Planner



October 17, 2022

Chief Adrian Chrisjohn
Oneida Nation of the Thames
2212 Elm Avenue
Southwold, ON N0L 2G0
adrian.chrisjohn@oneida.on.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
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Dear Chief Chrisjohn:

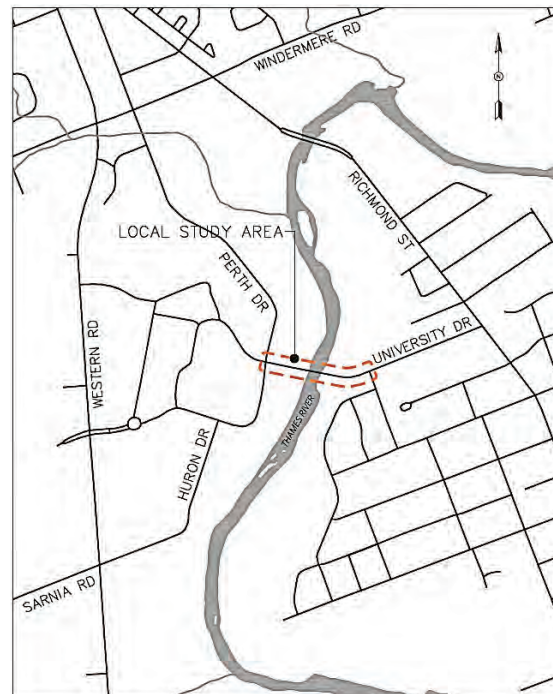
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Director (Capital Projects), Facilities Management
Western University

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Chathurika Gamage, M.Eng., P.Eng., Entuitive
Gord Bell, Consultant Environmental Planner

October 17, 2022

Oneida Nation of the Thames
environment@oneida.on.ca

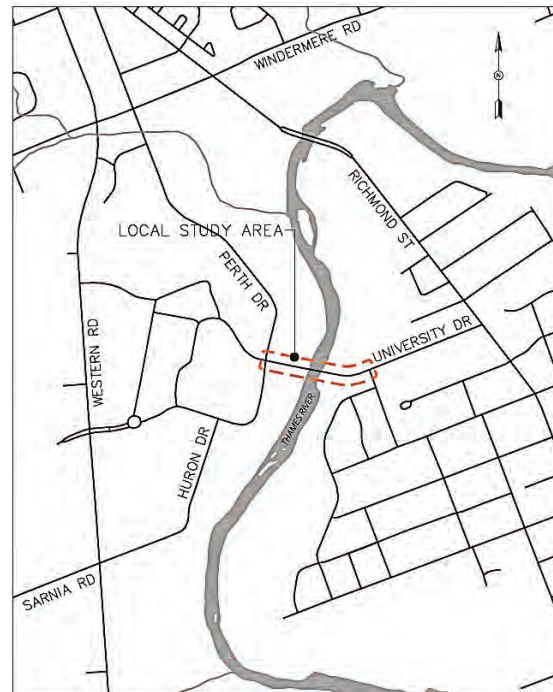
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Study Process

The University Drive Bridge rehabilitation/replacement will be completed as a Schedule C project under the Municipal Class Environmental Assessment (MCEA) (2015). The study will complete all necessary phases of the MCEA, including: establishing the need and justification for the project; documenting existing environmental conditions; documenting engineering considerations; considering alternatives; involving the public and regulatory agencies in developing the preferred solution for improvements; completing the related roadway design; and obtaining environmental clearance for construction. The study will also define the construction staging plan and traffic management plan.

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Yours truly,



Fred Janzen, B.E.S., P.M.P.,
Director (Capital Projects), Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Chathurika Gamage, M.Eng., P.Eng., Entuitive
Gord Bell, Consultant Environmental Planner

November 8, 2022

Ms. Cathleen O'Brien
Aamjiwnaang First Nation
cobrien@aamjiwnaang.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

Dear Ms. O'Brien:

Introduction

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Yours truly,

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Fred Janzen, B.E.S., P.M.P.,
Director (Capital Projects), Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

November 8, 2022

Chief Chris Plain
Aamjiwnaang First Nation
978 Tashmoo Avenue
Sarnia, ON N7T 7H5

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

Dear Chief Chris Plain:

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Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

November 8, 2022

Mr. Dean Jacobs
Bkejwanong Territory (Walpole Island First Nation)
dean.jacobs@wifn.org

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

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Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

November 8, 2022

Chief Charles Sampson
Bkejwanong Territory (Walpole Island First Nation)
117 Tahgahoning Road, R.R. #3
Walpole Island, ON N8K 4K9

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

Dear Chief Charles Sampson:

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Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

November 8, 2022

Nikki Orosz
Caldwell First Nation
nikki.orosz@caldwellfirstnation.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

Dear Nikki Orosz:

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Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

November 8, 2022

Chief Robyn Perkins
Caldwell First Nation
14 Orange Street
Leamington, ON N8H 1P5

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

Dear Chief Robyn Perkins:

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November 8, 2022

Ms. Valerie George
Chippewas of Kettle and Stony Point First Nation
valerie.george@kettlepoint.org

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

Dear Ms. Valerie George:

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valerie.george@kettlepoint.org

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November 8, 2022

Chief Jason Henry
Chippewas of Kettle and Stony Point First Nation
6247 Indian Lane
Lambton Shores, ON N0N 1J1

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
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Dear Chief Jason Henry:

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Public Consultation

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Date: November 17, 2022 from 6 to 8 pm

Location: Online Zoom Webinar

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Yours truly,



Fred Janzen, B.E.S., P.M.P.,
Director (Capital Projects), Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

November 8, 2022

Chief Jacqueline French
Chippewas of the Thames First Nation
320 Chippewa Road, R.R. #1
Muncey, ON N0L 1Y0

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

Dear Chief Jacqueline French:

Introduction

Western University has retained Entuitive and BT Engineering Inc., in joint venture, to complete the Environmental Assessment (EA) and detailed design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River in the City of London. The existing bridge is near the end of its service life for vehicular traffic and the University will define a plan for the Thames River crossing considering the need to make improvements for active transportation. The plan will consider a range of alternatives to address the University's needs, including:

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- A new bridge on the existing alignment; or
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Yours truly,



Fred Janzen, B.E.S., P.M.P.,
Director (Capital Projects), Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

November 8, 2022

Chippewas of the Thames First Nation
consultation@cottfn.com

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

Dear Sir/Madam:

Introduction

Western University has retained Entuitive and BT Engineering Inc., in joint venture, to complete the Environmental Assessment (EA) and detailed design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River in the City of London. The existing bridge is near the end of its service life for vehicular traffic and the University will define a plan for the Thames River crossing considering the need to make improvements for active transportation. The plan will consider a range of alternatives to address the University's needs, including:

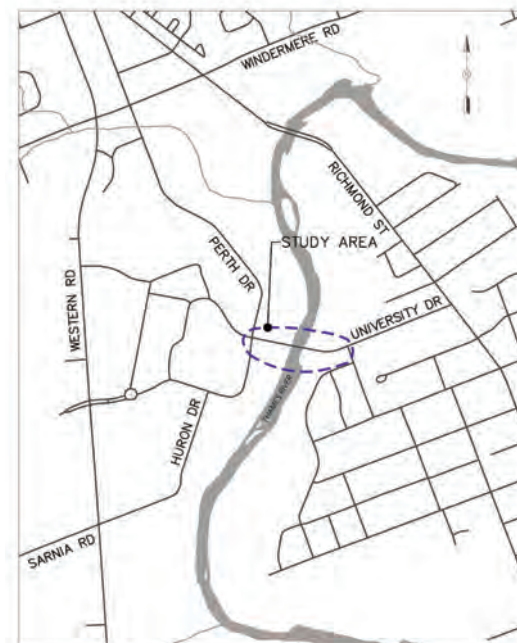
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Director (Capital Projects), Facilities Management
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cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

November 8, 2022

Chief Denise Stonefish
Delaware Nation
14760 School House Line, R.R #3
Thamesville, ON N0P 2K0

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

Dear Chief Denise Stonefish:

Introduction

Western University has retained Entuitive and BT Engineering Inc., in joint venture, to complete the Environmental Assessment (EA) and detailed design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River in the City of London. The existing bridge is near the end of its service life for vehicular traffic and the University will define a plan for the Thames River crossing considering the need to make improvements for active transportation. The plan will consider a range of alternatives to address the University's needs, including:

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cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
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November 8, 2022

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14760 School House Line, R.R #3
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Yours truly,

Fred Janzen, B.E.S., P.M.P.,
Director (Capital Projects), Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

November 8, 2022

Ms. Carole Antone
Munsee-Delaware Nation
289 Jubilee Road, R.R. #1
Muncey, ON N0L 1Y0

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

Dear Ms. Carole Antone:

Introduction

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Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

November 8, 2022

Stacey Phillips
Munsee-Delaware Nation
289 Jubilee Road, R.R. #1
Muncey, ON N0L 1Y0

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

Dear Stacey Phillips:

Introduction

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Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

November 8, 2022

Chief Adrian Chrisjohn
Oneida Nation of the Thames
2212 Elm Avenue
Southwold, ON N0L 2G0

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

Dear Chief Adrian Chrisjohn:

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Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

November 8, 2022

Oneida Nation of the Thames
environment@oneida.on.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 1

Dear Sir/Madam:

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cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

From: [Sheila Creighton](#)
To: lrosales@aamjiwnaang.ca; tms.maness@gmail.com
Cc: [Kristine Dimoff](#); [Steve Taylor \(London\)](#); [Matthew Beaudoin](#)
Subject: Stage 2 Archaeological Assessment – University Bridge, Western University, London
Date: Thursday, November 21, 2024 3:35:29 PM
Attachments: [image003.png](#)
[image002.png](#)
[Context_Aerial.jpg](#)
[Fieldmap.pdf](#)

Good afternoon Lynn and Wanda,

I hope you are doing well.

TMHC has been retained by BT Engineering (BTE) to complete a Stage 2 Archaeological Assessment of the area around University Drive Bridge at Western University, London, Ontario. The study area is located predominately south of University Drive – please see the attached project Field map and Context Aerial image.

I am reaching out on behalf of BTE to invite the participation of Aamjiwnaang First Nation in the Stage 2 archaeological assessment, and kindly request that an engagement agreement be sent to us.

Project details and contact information is provided below:

Project Name: Western University – University Drive Bridge Stage 2 Project Address: University Bridge at the Thames River	Archaeologists: PM/Licensee: Matthew Beaudoin, TMHC 1108 Dundas Street, Unit 105 London, ON N5W 3A7 Email: mbeaudoin@tmhc.ca Phone: 519-671-9029
---	---

TMHC is planning on completing one day of fieldwork in the next few weeks. Once an agreement is in place, I will reach out to coordinate fieldwork details.

Please let me know if you have any questions or concerns. We look forward to working with you on this project!

Best,
Sheila



Sheila Creighton
Communications Lead
screighton@tmhc.ca
226-785-3161

TMHC Inc.
1108 Dundas Street, Unit 105
London, ON | N5W 3A7
www.tmhc.ca
519-641-7222

The information contained in this email is privileged and/or confidential. It is intended solely for the use of the party to which it is addressed. Its dissemination, distribution, or copying is strictly prohibited. If you have received this email in error, please immediately notify the sender and also destroy any and all copies.

From: [Sheila Creighton](#)
To: ecd.manager@caldwellfirstnation.ca; ecd.assistant@caldwellfirstnation.ca
Cc: [Kristine Dimoff](#); [Steve Taylor \(London\)](#); [Matthew Beaudoin](#)
Subject: Stage 2 Archaeological Assessment – University Bridge, Western University, London
Date: Thursday, November 21, 2024 3:43:43 PM
Attachments: [image001.png](#)
[image002.png](#)
[Fieldmap.pdf](#)
[Context_Aerial.jpg](#)

Good afternoon Zack and Michael,

I hope you are doing well.

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From: [Sheila Creighton](#)
To: Jessica.Wakefield@threefires.com; Jana.George@threefires.com
Cc: [Kristine Dimoff](#); [Steve Taylor \(London\)](#); [Matthew Beaudoin](#)
Subject: Stage 2 Archaeological Assessment – University Bridge, Western University, London
Date: Thursday, November 21, 2024 3:46:39 PM
Attachments: [image003.png](#)
[image004.png](#)
[Fieldmap.pdf](#)
[Context_Aerial.jpg](#)

Good afternoon Jessica and Jana,

I hope you are doing well.

TMHC has been retained by BT Engineering (BTE) to complete a Stage 2 Archaeological Assessment of the area around University Drive Bridge at Western University, London, Ontario. The study area is located predominately south of University Drive – please see the attached project Field map and Context Aerial image.

I am reaching out on behalf of BTE to invite the participation of Chippewas of Kettle and Stony Point First Nation in the Stage 2 archaeological assessment, and kindly request that an engagement agreement be sent to us.

Project details and contact information is provided below:

Project Name: Western University – University Drive Bridge Stage 2 Project Address: University Bridge at the Thames River	Archaeologists: PM/Licensee: Matthew Beaudoin, TMHC 1108 Dundas Street, Unit 105 London, ON N5W 3A7 Email: mbeaudoin@tmhc.ca Phone: 519-671-9029
---	---

TMHC is planning on completing one day of fieldwork in the next few weeks. Once an agreement is in place, I will reach out to coordinate fieldwork details.

Please let me know if you have any questions or concerns. We look forward to working with you on this project!

Best,
Sheila



Sheila Creighton
Communications Lead
screighton@tmhc.ca
226-785-3161

TMHC Inc.
1108 Dundas Street, Unit 105
London, ON | N5W 3A7
www.tmhc.ca
519-641-7222

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From: [Sheila Creighton](#)
To: fburch@cottfn.com; calbert@cottfn.com
Cc: [Kristine Dimoff](#); [Steve Taylor \(London\)](#); [Matthew Beaudoin](#)
Subject: Stage 2 Archaeological Assessment – University Bridge, Western University, London
Date: Thursday, November 21, 2024 3:51:04 PM
Attachments: [image003.png](#)
[image004.png](#)
[Fieldmap.pdf](#)
[Context_Aerial.jpg](#)

Good afternoon Fallon and Carolyn,

I hope you are doing well.

TMHC has been retained by BT Engineering (BTE) to complete a Stage 2 Archaeological Assessment of the area around University Drive Bridge at Western University, London, Ontario. The study area is located predominately south of University Drive – please see the attached project Field map and Context Aerial image.

I am reaching out on behalf of BTE to invite the participation of Chippewas of the Thames First Nation in the Stage 2 archaeological assessment, and kindly request that an engagement agreement be sent to us.

Project details and contact information is provided below:

Project Name: Western University – University Drive Bridge Stage 2 Project Address: University Bridge at the Thames River	Archaeologists: PM/Licensee: Matthew Beaudoin, TMHC 1108 Dundas Street, Unit 105 London, ON N5W 3A7 Email: mbeaudoin@tmhc.ca Phone: 519-671-9029
---	---

TMHC is planning on completing one day of fieldwork in the next few weeks. Once an agreement is in place, I will reach out to coordinate fieldwork details.

Please let me know if you have any questions or concerns. We look forward to working with you on this project!

Best,
Sheila



Sheila Creighton
Communications Lead
screighton@tmhc.ca
226-785-3161

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From: [Sheila Creighton](#)
To: consultation@munsee.ca
Cc: [Kristine Dimoff](#); [Steve Taylor \(London\)](#); [Matthew Beaudoin](#)
Date: Thursday, November 21, 2024 3:54:20 PM
Attachments: [image003.png](#)
[image004.png](#)
[Fieldmap.pdf](#)
[Context_Aerial.jpg](#)

Good afternoon Stacey,

I hope you are doing well.

TMHC has been retained by BT Engineering (BTE) to complete a Stage 2 Archaeological Assessment of the area around University Drive Bridge at Western University, London, Ontario. The study area is located predominately south of University Drive – please see the attached project Field map and Context Aerial image.

I am reaching out on behalf of BTE to invite the participation of Munsee-Delaware Nation in the Stage 2 archaeological assessment, and kindly request that an engagement agreement be sent to us.

Project details and contact information is provided below:

Project Name: Western University – University Drive Bridge Stage 2	Archaeologists: PM/Licensee: Matthew Beaudoin, TMHC 1108 Dundas Street, Unit 105 London, ON N5W 3A7 Email: mbeaudoin@tmhc.ca Phone: 519-671-9029
Project Address: University Bridge at the Thames River	

TMHC is planning on completing one day of fieldwork in the next few weeks. Once an agreement is in place, I will reach out to coordinate fieldwork details.

Please let me know if you have any questions or concerns. We look forward to working with you on this project!

Best,
Sheila



Sheila Creighton
Communications Lead
screighton@tmhc.ca
226-785-3161

TMHC Inc.
1108 Dundas Street, Unit 105
London, ON | N5W 3A7
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From: [Sheila Creighton](#)
To: lutahawit@execulink.com; johnb_26@hotmail.com
Cc: [Kristine Dimoff](#); [Steve Taylor \(London\)](#); [Matthew Beaudoin](#)
Subject: Stage 2 Archaeological Assessment – University Bridge, Western University, London
Date: Thursday, November 21, 2024 4:00:43 PM
Attachments: [image001.png](#)
[image002.png](#)
[Fieldmap.pdf](#)
[Context_Aerial.jpg](#)

Good afternoon Al and Bear,

I hope you are doing well.

TMHC has been retained by BT Engineering (BTE) to complete a Stage 2 Archaeological Assessment of the area around University Drive Bridge at Western University, London, Ontario. The study area is located predominately south of University Drive – please see the attached project Field map and Context Aerial image.

I am reaching out on behalf of BTE to invite the participation of Oneida Nation Council of Chiefs in the Stage 2 archaeological assessment, and kindly request that an engagement agreement be sent to us.

Project details and contact information is provided below:

Project Name: Western University – University Drive Bridge Stage 2	Archaeologists: PM/Licensee: Matthew Beaudoin, TMHC 1108 Dundas Street, Unit 105 London, ON N5W 3A7 Email: mbeaudoin@tmhc.ca Phone: 519-671-9029
Project Address: University Bridge at the Thames River	

TMHC is planning on completing one day of fieldwork in the next few weeks. Once an agreement is in place, I will reach out to coordinate fieldwork details.

Please let me know if you have any questions or concerns. We look forward to working with you on this project!

Best,
Sheila



Sheila Creighton
Communications Lead
screighton@tmhc.ca
226-785-3161

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1108 Dundas Street, Unit 105
London, ON | N5W 3A7
www.tmhc.ca
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From: [Sheila Creighton](#)
To: [environment@oneida.on.ca](#)
Cc: [Kristine Dimoff](#); [Steve Taylor \(London\)](#); [Matthew Beaudoin](#)
Subject: Stage 2 Archaeological Assessment – University Bridge, Western University, London
Date: Thursday, November 21, 2024 3:58:54 PM
Attachments: [image003.png](#)
[image004.png](#)
[Fieldmap.pdf](#)
[Context_Aerial.jpg](#)

Good afternoon Jenelle,

I hope you are doing well.

TMHC has been retained by BT Engineering (BTE) to complete a Stage 2 Archaeological Assessment of the area around University Drive Bridge at Western University, London, Ontario. The study area is located predominately south of University Drive – please see the attached project Field map and Context Aerial image.

I am reaching out on behalf of BTE to invite the participation of Oneida Nation of the Thames in the Stage 2 archaeological assessment, and kindly request that an engagement agreement be sent to us.

Project details and contact information is provided below:

Project Name: Western University – University Drive Bridge Stage 2 Project Address: University Bridge at the Thames River	Archaeologists: PM/Licensee: Matthew Beaudoin, TMHC 1108 Dundas Street, Unit 105 London, ON N5W 3A7 Email: mbeaudoin@tmhc.ca Phone: 519-671-9029
--	---

TMHC is planning on completing one day of fieldwork in the next few weeks. Once an agreement is in place, I will reach out to coordinate fieldwork details.

Please let me know if you have any questions or concerns. We look forward to working with you on this project!

Best,
Sheila



Sheila Creighton
Communications Lead
screighton@tmhc.ca
226-785-3161

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From: [Matthew Beaudoin](#)
To: [Tucker James Morton](#); [Steve Taylor \(London\)](#)
Cc: [Jonathan Werner](#); [Kristine Dimoff](#); [Gord Bell](#)
Subject: Re: Western Stage 2 Archaeological
Date: Monday, April 28, 2025 9:13:58 AM
Attachments: [image001.jpg](#)
[image003.png](#)
[image005.png](#)
[image006.png](#)
[image007.png](#)
[2x90-1485790886851619557.png](#)
[90x90-9180032096516357112.png](#)

Hi Tucker,

For the fieldwork last week we had a representative from Oneida and one from Aamjiwnaang.

Thanks

Matt



Matthew Beaudoin, PhD, P324 (he/him)
Principal, Manager - Archaeological Assessments
Program
mbeaudoin@tmhc.ca
519-671-9029

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From: Tucker James Morton <tmorton4@uwo.ca>
Sent: Friday, April 25, 2025 3:05 PM
To: Steve Taylor (London) <stevenj.taylor@bteng.ca>; Matthew Beaudoin <mbeaudoin@tmhc.ca>
Cc: Jonathan Werner <jonathan.werner@entuitive.com>; Kristine Dimoff <kristine.dimoff@bteng.ca>; Gord Bell <gord.bell@bteng.ca>
Subject: RE: Western Stage 2 Archaeological

Hi Matthew,

That's good news – thanks for the update.

Did you have many Field Monitors present during the work?

Thanks,
Tucker



Tucker Morton, M.Eng., P.Eng.
Project Manager
Western University, Facilities Management
c: 519.860.7537 | e: tmorton4@uwo.ca

From: Steve Taylor (London) <stevenj.taylor@bteng.ca>
Sent: April 24, 2025 9:12 AM
To: Matthew Beaudoin <mbeaudoin@tmhc.ca>

Cc: Tucker James Morton <tmorton4@uwo.ca>; Jonathan Werner <jonathan.werner@entuitive.com>; Kristine Dimoff <kristine.dimoff@bteng.ca>; Gord Bell <gord.bell@bteng.ca>
Subject: Re: Western Stage 2 Archaeological

Thanks Matthew

Steve



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
509 Talbot Street
London, Ontario
N6A 2S5
E-Mail: stevenj.taylor@bteng.ca
Phone: 519-672-2222
Toll Free: 1-866-218-1001
[\[www.bteng.ca\]](http://www.bteng.ca)www.bteng.ca

From: Matthew Beaudoin <mbeaudoin@tmhc.ca>
Sent: April 24, 2025 8:44 AM
To: Steve Taylor (London) <stevenj.taylor@bteng.ca>
Cc: Tucker Morton <tmorton4@uwo.ca>; Jonathan Werner <jonathan.werner@entuitive.com>
Subject: Re: Western Stage 2 Archaeological

Hi all,

I wanted to update you to let you know that we managed to get this done yesterday and didn't find anything of archaeological concern. As such, we are not recommending any further archaeological work for the project.

We are working on the report now and will work to get it to you ASAP.

Thanks
Matt



Matthew Beaudoin, PhD, P324 (he/him)
Principal, Manager - Archaeological Assessments
Program
mbeaudoin@tmhc.ca
519-671-9029

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From: Matthew Beaudoin

Sent: Tuesday, April 22, 2025 3:37 PM
To: Steve Taylor (London) <stevenj.taylor@bteng.ca>
Cc: Tucker Morton <tmorton4@uwo.ca>; Jonathan Werner <jonathan.werner@entuitive.com>
Subject: RE: Western Stage 2 Archaeological

Hi All,

The weather has not been cooperating, but the ground looks like its dry enough to get it done tomorrow.

I'll keep you updated once they are done and hopefully there are no further weather delays.

Thanks
Matt



Matthew Beaudoin, PhD, P324 (he/him)
Principal, Manager - Archaeological Assessments
Program
mbeaudoin@tmhc.ca
519-671-9029

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London, ON | N5W 3A7
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From: Steve Taylor (London) <stevenj.taylor@bteng.ca>
Sent: April 9, 2025 1:04 PM
To: Matthew Beaudoin <mbeaudoin@tmhc.ca>
Cc: Tucker Morton <tmorton4@uwo.ca>; Jonathan Werner <jonathan.werner@entuitive.com>
Subject: Re: Western Stage 2 Archaeological

Matthew proceed

Tucker: I will gt the scope change request finalized.

Steve



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
509 Talbot Street
London, Ontario
N6A 2S5
E-Mail: stevenj.taylor@bteng.ca
Phone: 519-672-2222
Toll Free: 1-866-218-1001
[\[www.bteng.ca\]](http://www.bteng.ca)www.bteng.ca

From: Matthew Beaudoin <mbeaudoin@tmhc.ca>

Sent: April 9, 2025 1:01 PM
To: Steve Taylor (London) <stevenj.taylor@bteng.ca>
Cc: Brenda Badham <brenda.badham@bteng.ca>
Subject: Re: Western Stage 2 Archaeological

Hi Steve,

That's the correct amount.

We are looking that the weather next week might be good to finish the work. Is there any concerns if we schedule the work to get this done?

Thanks
Matt



Matthew Beaudoin, PhD, P324 (he/him)
Principal, Manager - Archaeological Assessments
Program
mbeaudoin@tmhc.ca
519-671-9029

TMHC Inc.
1108 Dundas Street, Unit 105
London, ON | N5W 3A7
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519-641-7222

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From: Steve Taylor (London) <stevenj.taylor@bteng.ca>
Sent: Thursday, March 27, 2025 3:34 PM
To: Matthew Beaudoin <mbeaudoin@tmhc.ca>
Cc: Brenda Badham <brenda.badham@bteng.ca>
Subject: Fw: Western Stage 2 Archaeological

Matthew

I just want to confirm the fees I am asking approval from the University.

Can you confirm

1. TMHC fees - \$6545 (as shown on your invoice)
2. The allowance for FN monitors (subject to actual costs received).

Confirm and I will send the SC request.

Steve



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.

Chief Executive Officer
509 Talbot Street
London, Ontario
N6A 2S5
E-Mail: stevenj.taylor@bteng.ca
Phone: 519-672-2222
Toll Free: 1-866-218-1001
[\[www.bteng.ca\]](http://www.bteng.ca)www.bteng.ca

From: Brenda Badham <brenda.badham@bteng.ca>
Sent: March 27, 2025 2:30 PM
To: Steve Taylor (London) <stevenj.taylor@bteng.ca>
Cc: Jonathan Werner <jonathan.werner@entuitive.com>
Subject: Re: Western Stage 2 Archaeological

Hi Steve,

You have asked Matthew (TMHC) to prepare an official quote for this work several times. So far, TMHC have not but they did start invoicing us for it, see attached invoice with a budget of \$6,545. This is just TMHC fees and does not include the FN Monitor fee (\$4,500).

We have not yet started a scope change letter but I can work on that. I just want confirmation from TMHC on they fees.
Can we get a fee proposal from them?

Brenda

April 29, 2026

Chippewas of Kettle and Stony Point First Nation
6247 Indian Lane
Lambton Shores, ON N0N 1J1
consultation@kettlepoint.org

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Sir/Madam:

Introduction

Western University retained Entuitive and BT Engineering Inc. to complete the Environmental Assessment (EA) and design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River, in the City of London. The existing bridge is near the end of its service life for vehicular traffic. The preliminary planning solution, presented at PIC No. 1, recommended rehabilitation of the existing bridge for active transportation, plus construction of a new bridge for vehicular traffic.

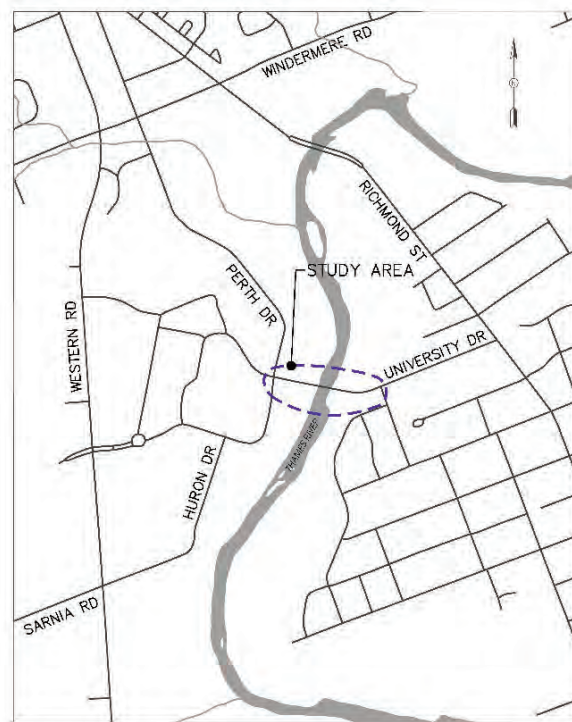
Study Process

The University Drive Bridge rehabilitation/ replacement is being completed as a Schedule C project under the Municipal Class Environmental Assessment (MCEA) (2015). The study includes all necessary phases of the MCEA and will also define the impacts of the proposed solution, including impacts during construction and how these impacts will be mitigated.

Following PIC No. 2, an Environmental Study Report will be prepared for a 30-day review period.

Public Consultation

Public consultation is a component of the Class EA, and we value your input during the planning process. Western has scheduled a second on-line PIC for this project. At PIC No. 2 the recommended bridge location, preferred bridge design, hydraulic performance of the bridge, repurposing of the existing bridge for active transportation, effects and mitigation, and next steps will be presented.



The PIC public review period will be for a two-week period from May 13 to 27, 2026. Exhibits will be available during this period online at the University's website at www.uwo.ca/fm/projects/capital_projects/ud_bridge.html.

In addition, a presentation will be held beginning at 1 p.m. with a Question-and-Answer session to follow.

This event is scheduled for:

Date: May 13, 2026, from 1 pm to 3 pm
Location: Online Zoom Webinar

To register for the online meeting, please send an email to westernubridge@uwo.ca before May 13, 2026, identifying your interest in attending.

PIC No. 2 comments can be submitted by emailing westernubridge@uwo.ca by May 27, 2026.

The process for consultation with Indigenous peoples is a key part of this Study, and the University is committed to ensuring that Indigenous communities have an opportunity to share their input.

We would like to extend an offer to meet separately with you to answer any questions you may have related to this project. Please contact westernubridge@uwo.ca to schedule a meeting.

There is an opportunity at any time during the EA process for interested persons to provide comments. All information will be collected in accordance with the Freedom of Information and Protection of Privacy Act (2009). With the exception of personal information, all comments will become part of the public record.

If you require additional information or wish to provide comments during the Class EA process, please contact us anytime at westernubridge@uwo.ca.

Yours truly,

Andrew Konowalchuk, BES, M.Arch, MAA, MRAIC
Associate Vice-President, Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Trent Williams, Project Coordinator, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

April 29, 2026

Chippewas of the Thames First Nation
Mr. Zack Hamm
14 Orange Street, PO Box 388
Leamington, ON N8H 1P5
NationsConnect.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Mr. Zack Ham :

Introduction

Western University retained Entuitive and BT Engineering Inc. to complete the Environmental Assessment (EA) and design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River, in the City of London. The existing bridge is near the end of its service life for vehicular traffic. The preliminary planning solution, presented at PIC No. 1, recommended rehabilitation of the existing bridge for active transportation, plus construction of a new bridge for vehicular traffic.

Study Process

The University Drive Bridge rehabilitation/ replacement is being completed as a Schedule C project under the Municipal Class Environmental Assessment (MCEA) (2015). The study includes all necessary phases of the MCEA and will also define the impacts of the proposed solution, including impacts during construction and how these impacts will be mitigated.

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Public Consultation

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April 29, 2026

Aamjiwnaang First Nation
Chief Janelle Nahmabin
978 Tashmoo Avenue
Sarnia, ON N7T 7H5
chief@aamjiwnaang.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Chief Janelle Nahmabin:

Introduction

Western University retained Entuitive and BT Engineering Inc. to complete the Environmental Assessment (EA) and design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River in the City of London. The existing bridge is near the end of its service life for vehicular traffic. The preliminary planning solution, presented at PIC No. 1, recommended rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

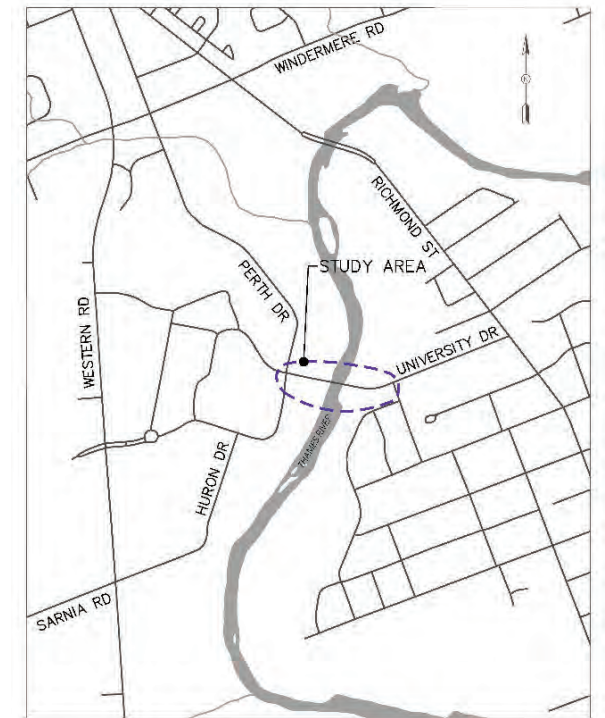
Study Process

The University Drive Bridge rehabilitation / replacement is being completed as a Schedule C project under the Municipal Class Environmental Assessment (MCEA) (2015). The study includes all necessary phases of the MCEA and will also define the impacts of the proposed solution including impacts during construction and how these impacts will be mitigated.

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Public Consultation

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In addition, a presentation will be held beginning at 1 p.m. with a Question-and-Answer session to follow.

This event is scheduled for:

Date: May 13, 2026, from 1 pm to 3 pm
Location: Online Zoom Webinar

To register for the online meeting, please send an email to westernubridge@uwo.ca before May 13, 2026, identifying your interest in attending.

PIC No. 2 comments can be submitted by emailing westernubridge@uwo.ca by May 27, 2026.

The process for consultation with Indigenous peoples is a key part of this Study, and the University is committed to ensuring that Indigenous communities have an opportunity to share their input.

We would like to extend an offer to meet separately with you to answer any questions you may have related to this project. Please contact westernubridge@uwo.ca to schedule a meeting.

There is an opportunity at any time during the EA process for interested persons to provide comments. All information will be collected in accordance with the Freedom of Information and Protection of Privacy Act (2009). With the exception of personal information, all comments will become part of the public record.

If you require additional information or wish to provide comments during the Class EA process, please contact us anytime at: westernubridge@uwo.ca.

Yours truly,

Andrew Konowalchuk, BES, M.Arch, MAA, MRAIC
Associate Vice-President, Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Trent Williams, Project Coordinator, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

April 29, 2026

Aamjiwnaang First Nation
Lynn Rosales
978 Tashmoo Avenue
Sarnia, ON N7T 7H5
lrosales@aamjiwnaang.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Lynn Rosales:

Introduction

Western University retained Entuitive and BT Engineering Inc. to complete the Environmental Assessment (EA) and design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River in the City of London. The existing bridge is near the end of its service life for vehicular traffic. The preliminary planning solution, presented at PIC No. 1, recommended rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

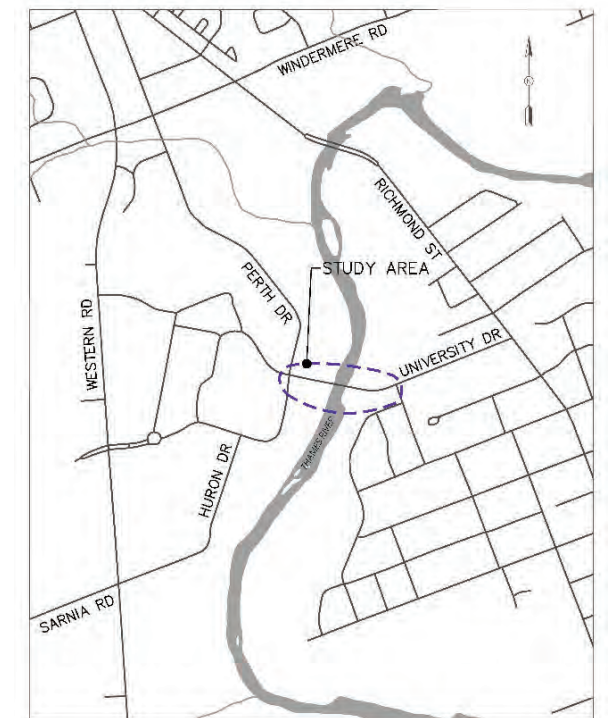
Study Process

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Public Consultation

Public consultation is a component of the Class EA, and we value your input during the planning process. Western has scheduled a second on-line PIC for this project. At PIC No. 2 the recommended bridge location, preferred bridge design, hydraulic performance of the bridge, repurposing of the existing bridge for active transportation, effects and mitigation and next steps will be presented.





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In addition, a presentation will be held beginning at 1 p.m. with a Question-and-Answer session to follow.

This event is scheduled for:

Date: May 13, 2026, from 1 pm to 3 pm
Location: Online Zoom Webinar

To register for the online meeting, please send an email to westernubridge@uwo.ca before May 13, 2026, identifying your interest in attending.

PIC No. 2 comments can be submitted by emailing westernubridge@uwo.ca by May 27, 2026.

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We would like to extend an offer to meet separately with you to answer any questions you may have related to this project. Please contact westernubridge@uwo.ca to schedule a meeting.

There is an opportunity at any time during the EA process for interested persons to provide comments. All information will be collected in accordance with the Freedom of Information and Protection of Privacy Act (2009). With the exception of personal information, all comments will become part of the public record.

If you require additional information or wish to provide comments during the Class EA process, please contact us anytime at: westernubridge@uwo.ca.

Yours truly,

Andrew Konowalchuk, BES, M.Arch, MAA, MRAIC
Associate Vice-President, Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Trent Williams, Project Coordinator, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

April 29, 2026

Aamjiwnaang First Nation
Joanne Rogers
978 Tashmoo Avenue
Sarnia, ON N7T 7H5
jrogers@aamjiwnaang.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Joanne Rogers:

Introduction

Western University retained Entuitive and BT Engineering Inc. to complete the Environmental Assessment (EA) and design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River in the City of London. The existing bridge is near the end of its service life for vehicular traffic. The preliminary planning solution, presented at PIC No. 1, recommended rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

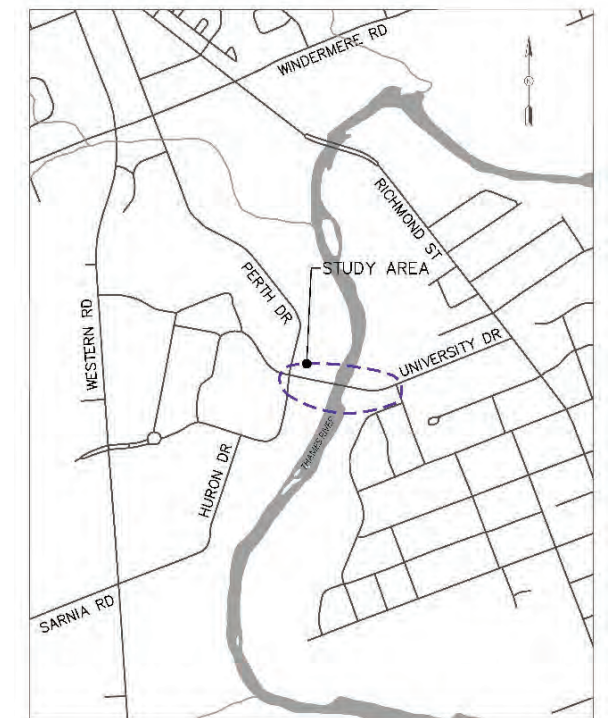
Study Process

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In addition, a presentation will be held beginning at 1 p.m. with a Question-and-Answer session to follow.

This event is scheduled for:

Date: May 13, 2026, from 1 pm to 3 pm
Location: Online Zoom Webinar

To register for the online meeting, please send an email to westernubridge@uwo.ca before May 13, 2026, identifying your interest in attending.

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cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
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Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

April 29, 2026

Walpole Island First Nation, Bkejwanong Territory
Chief Leela Thomas
117 Tahgahoning Road, R.R. #3
Walpole Island, ON N8K 4K9
leela.thomas@wifn.org
cc. alicia.blackeagle@wifn.org

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Chief Leela Thomas:

Introduction

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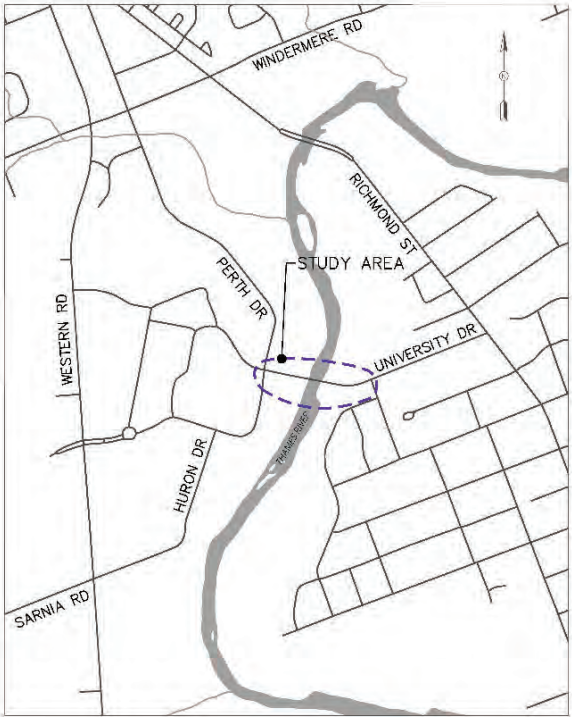
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April 29, 2026

Walpole Island First Nation, Bkejwanong Territory
Mr. Dean Jacobs
dean.jacobs@wifn.org

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Mr. Dean Jacobs:

Introduction

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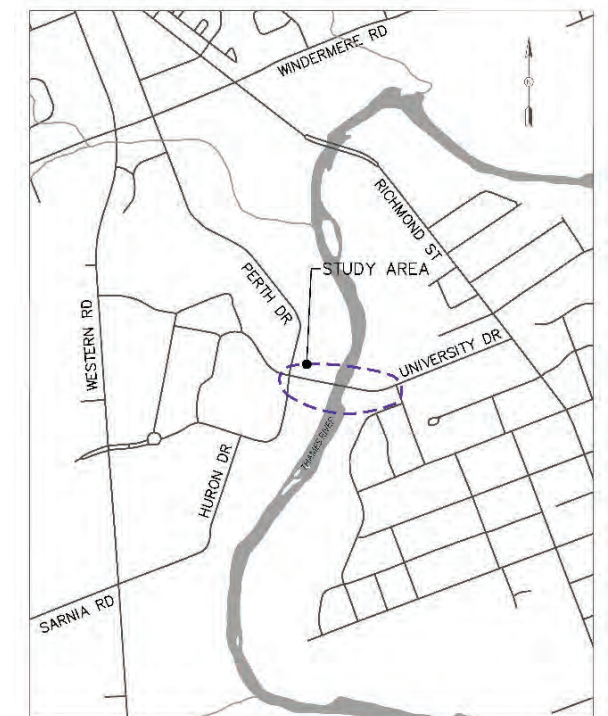
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April 29, 2026

Walpole Island First Nation, Bkejwanong Territory
Ms. Janet Macbeth
janet.macbeth@wifn.org

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Ms. Janet Macbeth:

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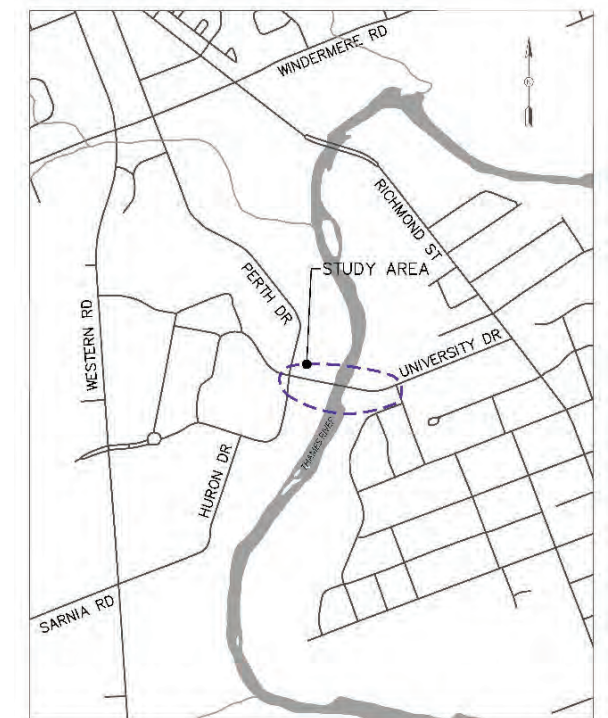
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April 29, 2026

Chippewas of Kettle and Stony Point First Nation
Chief Kimberly Bressette
6247 Indian Lane
Lambton Shores, ON N0N 1J1
Kimberly.Bressette@kettlepoint.org

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Chief Kimberly Bressette:

Introduction

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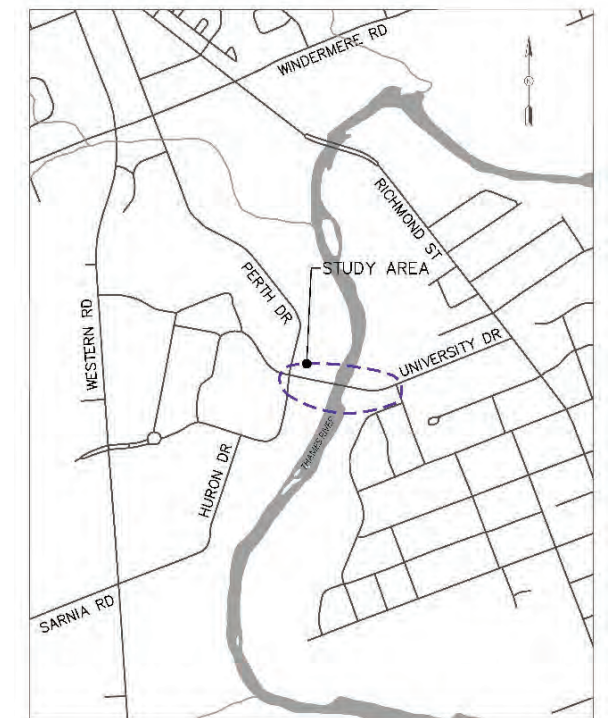
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cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
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Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

NationsConnect – BTE to Send

April 29, 2026

Chippewas of Kettle and Stony Point First Nation
6247 Indian Lane
Lambton Shores, ON N0N 1J1
consultation@kettlepoint.org

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Sir/Madam:

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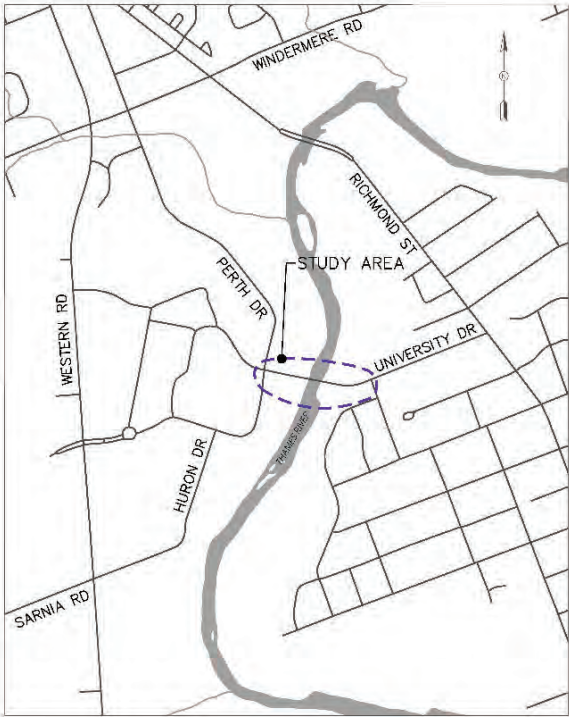
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Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

NationsConnect – BTE to Send

April 29, 2026

Chippewas of the Thames First Nation
Mr. Zack Hamm
14 Orange Street, PO Box 388
Leamington, ON N8H 1P5
NationsConnect.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Mr. Zack Ham :

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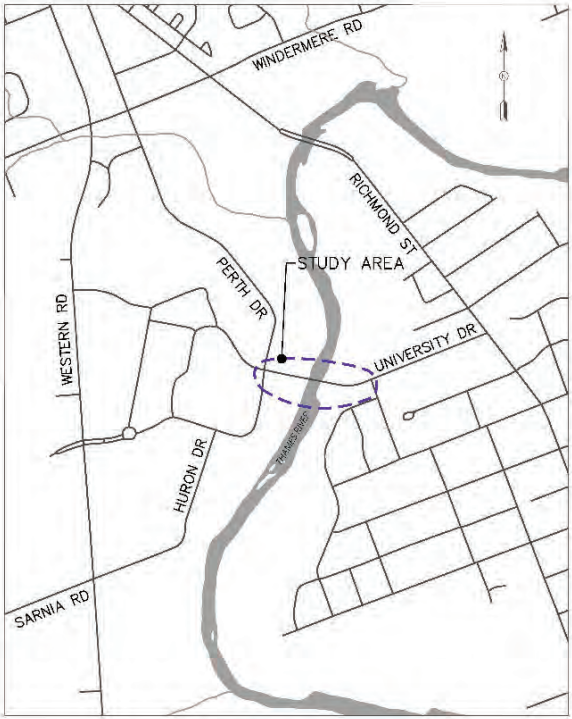
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April 29, 2026

Munsee-Delaware Nation
Chief Roger Thomas
289 Jubilee Road, R.R. #1
Muncey, ON N0L 1Y0
chief@munsee.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Chief Roger Thomas:

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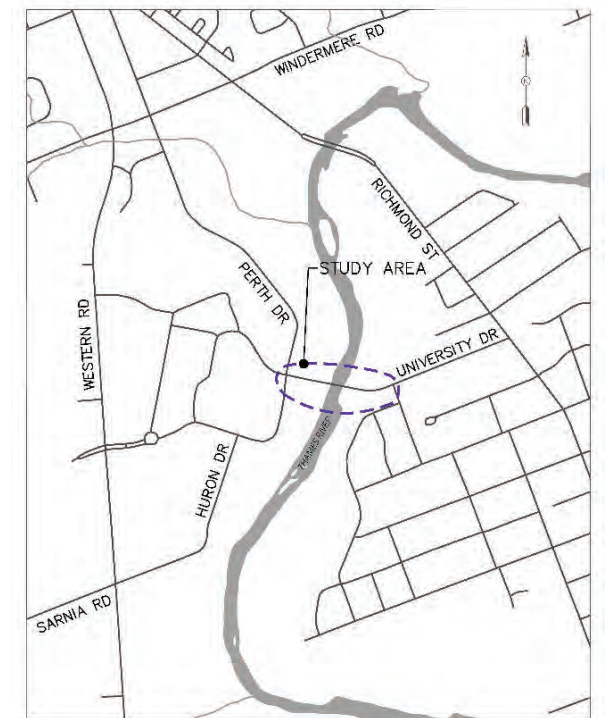
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April 29, 2026

Munsee-Delaware Nation
Stacey Phillips
289 Jubilee Road, R.R. #1
Muncey, ON N0L 1Y0
consultation@munsee.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
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Dear Stacey Phillips:

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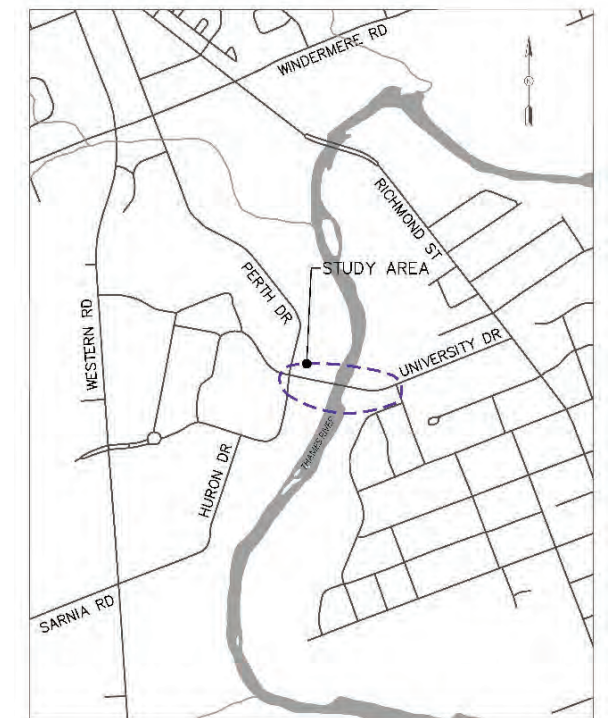
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The process for consultation with Indigenous peoples is a key part of this Study, and the University is committed to ensuring that Indigenous communities have an opportunity to share their input.

We would like to extend an offer to meet separately with you to answer any questions you may have related to this project. Please contact westernubridge@uwo.ca to schedule a meeting.

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If you require additional information or wish to provide comments during the Class EA process, please contact us anytime at: westernubridge@uwo.ca.

Yours truly,

Andrew Konowalchuk, BES, M.Arch, MAA, MRAIC
Associate Vice-President, Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Trent Williams, Project Coordinator, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

April 29, 2026

Oneida Nation of the Thames
Acting Chief Deborah Hill
2212 Elm Avenue
Southwold, ON N0L 2G0
councillor.deborah@oneida.on.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Acting Chief Deborah Hill:

Introduction

Western University retained Entuitive and BT Engineering Inc. to complete the Environmental Assessment (EA) and design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River in the City of London. The existing bridge is near the end of its service life for vehicular traffic. The preliminary planning solution, presented at PIC No. 1, recommended rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

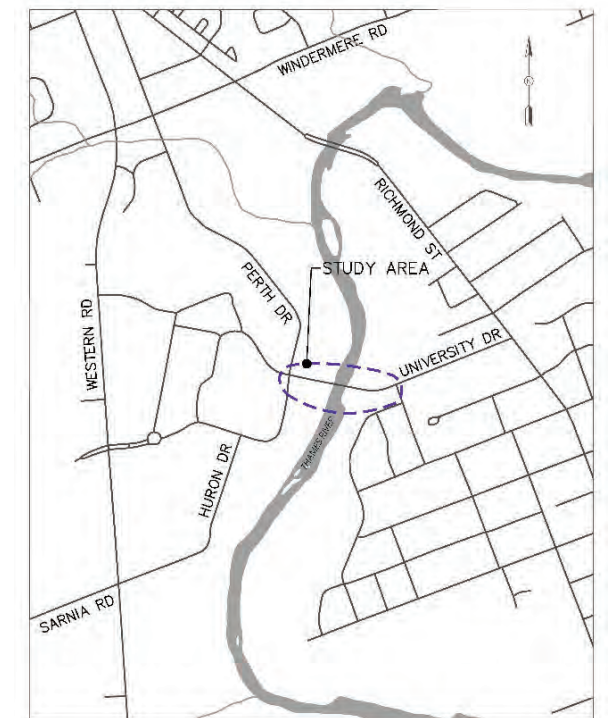
Study Process

The University Drive Bridge rehabilitation / replacement is being completed as a Schedule C project under the Municipal Class Environmental Assessment (MCEA) (2015). The study includes all necessary phases of the MCEA and will also define the impacts of the proposed solution including impacts during construction and how these impacts will be mitigated.

Following PIC No. 2, an Environmental Study Report will be prepared for a 30-day review period.

Public Consultation

Public consultation is a component of the Class EA, and we value your input during the planning process. Western has scheduled a second on-line PIC for this project. At PIC No. 2 the recommended bridge location, preferred bridge design, hydraulic performance of the bridge, repurposing of the existing bridge for active transportation, effects and mitigation and next steps will be presented.





The PIC public review period will be for a two-week period from May 13 to 27, 2026. Exhibits will be available during this period online at the University's website at www.uwo.ca/fm/projects/capital_projects/ud_bridge.html.

In addition, a presentation will be held beginning at 1 p.m. with a Question-and-Answer session to follow.

This event is scheduled for:

Date: May 13, 2026, from 1 pm to 3 pm
Location: Online Zoom Webinar

To register for the online meeting, please send an email to westernubridge@uwo.ca before May 13, 2026, identifying your interest in attending.

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Associate Vice-President, Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Trent Williams, Project Coordinator, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

April 29, 2026

Oneida Nation of the Thames
Brandon Doxtator
2212 Elm Avenue
Southwold, ON N0L 2G0
environment@oneida.on.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Brandon Doxtator:

Introduction

Western University retained Entuitive and BT Engineering Inc. to complete the Environmental Assessment (EA) and design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River in the City of London. The existing bridge is near the end of its service life for vehicular traffic. The preliminary planning solution, presented at PIC No. 1, recommended rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

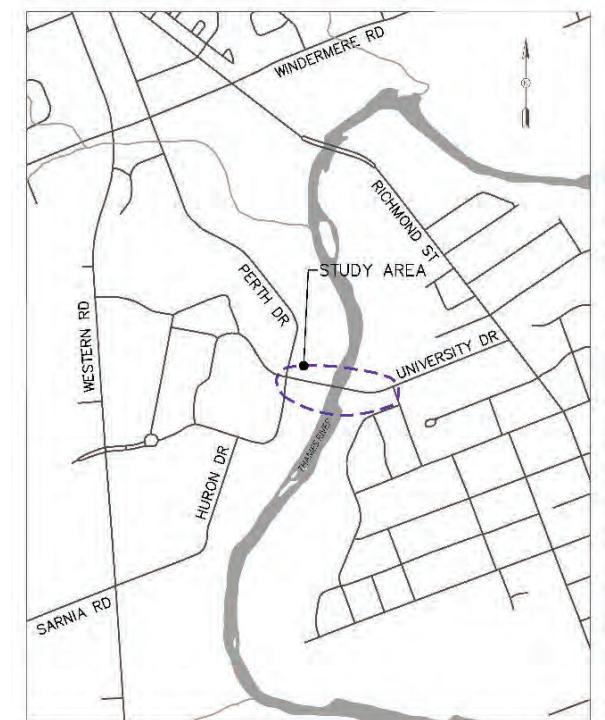
Study Process

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Yours truly,

Andrew Konowalchuk, BES, M.Arch, MAA, MRAIC
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Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Trent Williams, Project Coordinator, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

April 29, 2026

Delaware Nation at Monroviatown
Chief Justin Logan
14760 School House Line, R.R #3
Thamesville, ON N0P 2K0
justin.logan@delawarenation.on.ca

RE: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) –
Notice of Public Information Centre (PIC) No. 2

Dear Chief Justin Logan:

Introduction

Western University retained Entuitive and BT Engineering Inc. to complete the Environmental Assessment (EA) and design for the rehabilitation/ replacement of the University Drive Bridge over the North Branch of the Thames River in the City of London. The existing bridge is near the end of its service life for vehicular traffic. The preliminary planning solution, presented at PIC No. 1, recommended rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

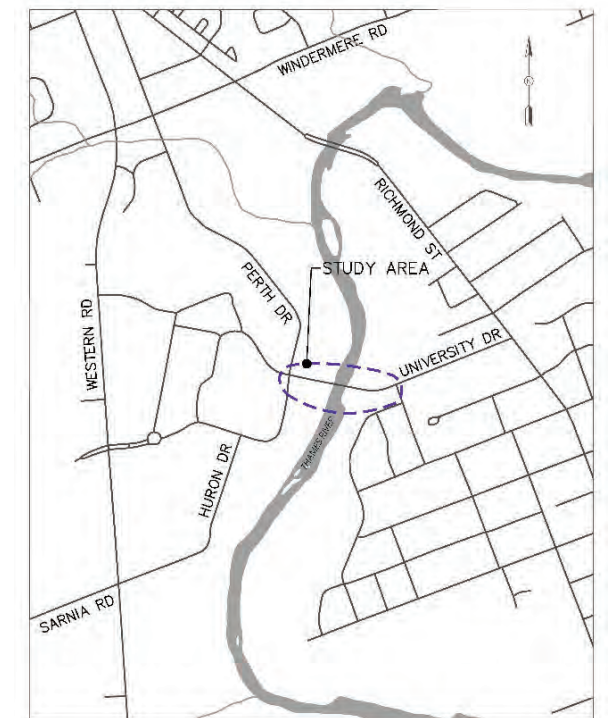
Study Process

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Yours truly,

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Associate Vice-President, Facilities Management
Western University

cc: Tucker Morton, P.Eng., M.Eng., Project Manager, Western University
Trent Williams, Project Coordinator, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

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Trent Williams, Project Coordinator, Western University
Steve Taylor, P.Eng., M.Eng., CVS-Life, Consultant Project Manager, BT Engineering Inc.
Gord Bell, Consultant Environmental Planner, BT Engineering Inc.

Appendix D

Select Correspondence



BT Engineering Inc.
509 Talbot Street
London, Ontario N6A 2S5

T. 519-672-2222

April 18, 2022

Ministry of the Environment, Conservation and Parks
Species at Risk Branch
By email: SAROntario@ontario.ca

Re: Western University, University Drive Bridge Replacement – Species at Risk Information Request

Dear Sir/Madam:

Western University has retained BT Engineering Inc. (BTE) and Entuitive in a joint venture to design a gateway bridge carrying University Drive over the North Thames River to Western University. A major component of this project is the completion of a Schedule C Municipal Class Environmental Assessment (MCEA). As a component of the MCEA, the natural environment will be assessed to document existing conditions, identify constraints and opportunities for enhancements, conduct an impact assessment and recommend mitigation measures. As the project may include works within a watercourse and in close proximity to woodlands, permits and approvals will be required from various environmental agencies.

This letter is to request any information you might have related to Species at Risk (SAR) within the Study Area. A figure is attached which identifies the University Drive crossing of the North Thames River, as well as the confluence point of Medway Creek and the River (**Attachment 1**). A Fisheries Information Request was submitted to the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF) and a response was received on April 11, 2022 (**Attachment 2**). Although fisheries data were received for the Study Area, no SAR information was included despite Department of Fisheries and Oceans (DFO) online SAR mapping showing Critical Habitat for Silver Shiner, Black Redhorse, Northern Sunfish and various mussel species. Online resources such as the Natural Heritage Information Centre (NHIC) database and the Ontario Geo Hub for Aquatic Resource Area Line Segments have been reviewed and have identified the potential for the following aquatic and terrestrial SAR to be present:

Common Name	Scientific Name	Provincial Listing	Federal Listing	Notes
Barn Swallow	<i>Hirundo rustica</i>	Threatened (THR)	THR	
Black Redhorse	<i>Moxostoma duquesnei</i>	THR	THR	DFO Critical Habitat
Butternut	<i>Juglans cinerea</i>	Endangered (END)	END	
Eastern False Rue-anemone	<i>Enemion biternatum</i>	THR	THR	

Common Name	Scientific Name	Provincial Listing	Federal Listing	Notes
Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR	
Green Dragon	<i>Arisaema dracontium</i>	Special Concern (SC)	-	
Northern Map Turtle	<i>Graptemys geographica</i>	SC	SC	
Northern Sunfish	<i>Lepomis peltastes</i>	SC	SC	
Painted Turtle	<i>Chrysemys picta</i>	-	SC	
Silver Shiner	<i>Notropis photogenis</i>	THR	THR	DFO Critical Habitat
Snapping Turtle	<i>Chelydra serpentina</i>	SC	SC	
Spiny Softshell	<i>Apalone spinifera</i>	END	END	
Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	THR	SC	

To inform the natural environment component of this MCEA, we would appreciate any information that you may have regarding the potential presence of SAR in the Study Area. Should confidentiality agreements be required in order to obtain this information, please contact the undersigned.

Please do not hesitate to contact me with any additional questions or comments.

Yours truly,

Zachery Wells, M.Sc.
BT Engineering Inc.

cc: Tucker Morton, M.Eng., P.Eng., Western University
Steven Taylor, P.Eng., M.Eng., BT Engineering Inc.
Chathurika Gamage, M.Eng., P.Eng., Entuitive

Attachments: 1 – Study Area Figure
2 – MNDMNRF Fisheries Information Request

RE: University Drive Bridge Replacement - Fisheries and Terrestrial Information Request

Webb, Jason (NDMNRF) <Jason.Webb@ontario.ca>

Mon 2022-04-11 2:39 PM

To: Zachery Wells <zachery.wells@bteng.ca>

Cc: tmorton4@uwo.ca <tmorton4@uwo.ca>; Steve Taylor (London) <stevenj.taylor@bteng.ca>; Megan Rhind <megan.rhind@entuitive.com>

1 attachments (501 KB)

NDMNRF Fisheries Info Request Table - Western University.docx;

Hi Zachery,

As requested please find the attached completed fisheries information table.

I have reviewed our information for supplemental natural heritage information and can confirm the following:

- The project is not located within proximity to a Provincially Significant Wetland Complex
- The project is not located within proximity to a provincially significant ANSI
- DFO should be contacted as there are SAR fish located in proximity to the project area

Let me know if you require anything else.

Thanks,

Jason Webb

Management Biologist

Ministry of Northern Development, Mines, Natural Resources and Forestry

Aylmer District

226-559-4906

Jason.webb@ontario.ca

Please Note: As part of providing [accessible customer service](#), please let me know if you have any accommodation needs or require communication supports or alternate formats.

From: Zachery Wells <zachery.wells@bteng.ca>

Sent: March-30-22 10:30 AM

To: Webb, Jason (NDMNRF) <Jason.Webb@ontario.ca>

Cc: tmorton4@uwo.ca; Steve Taylor (London) <stevenj.taylor@bteng.ca>; Megan Rhind <megan.rhind@entuitive.com>

Subject: University Drive Bridge Replacement - Fisheries and Terrestrial Information Request

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.
Hello Mr. Webb,

Please see a cover letter, study area figure and information request table attached for the University Drive Bridge Replacement at Western University in London, Ontario. Any information you may have regarding natural resources in the area would be greatly appreciated. A Word document has been included for ease of use.

Please advise if you have any questions related to this recently initiated project.



Thank you,

Zachery Wells



Zachery Wells, M.Sc.

Biologist

Kingston, Ont. K7P 2V5

E-Mail: zachery.wells@bteng.ca

Phone: 613-876-2863

www.bteng.cawww.bteng.ca



BT Engineering Inc.
509 Talbot Street
London, Ontario N6A 2S5

T. 519-672-2222

August 22, 2022

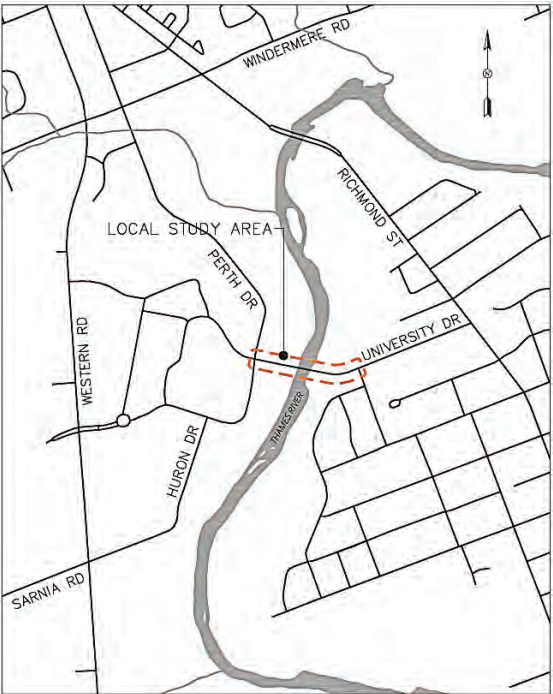
Re: Western University, University Drive Bridge Municipal Class Environmental Assessment (EA) – Notice of Study Commencement

Dear Stakeholder:

Introduction

Western University retained Entuitive and BT Engineering Inc., in joint venture, to complete the Environmental Assessment (EA) and detailed design for the rehabilitation/replacement of the University Drive Bridge over the North Branch of the Thames River in London, Ontario. The existing bridge is near the end of its service life for vehicular traffic and the University will define a plan for the Thames River crossing. The plan will consider a range of alternatives to address the University’s needs, including:

- Rehabilitation of the existing bridge;
- Rehabilitation of the existing bridge plus structure widening;
- A new bridge on the existing alignment; or
- Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.



Study Process

The University Drive Bridge rehabilitation/replacement will be completed as a Schedule C project under the Municipal Class Environmental Assessment (MCEA) (2015). The study will complete all necessary phases of the MCEA, including: establishing the need and justification for the project; documenting existing environmental conditions; documenting engineering considerations; considering alternatives; involving the public and regulatory agencies in developing the preferred solution for improvements; completing the related roadway design; and obtaining environmental clearance for construction. The study will also define the construction staging plan and traffic management plan.



BT Engineering Inc.
509 Talbot Street
London, Ontario, N6A 2S5

T. 519-672-2222

This letter is also requesting background data or concerns that you may have related to this initiative. If you have information such as reports, mapping, inventories, etc. that could assist us on this project, we would appreciate the opportunity to review this material.

Public Consultation

Public consultation is a key component of the Class EA, and we value your input during the planning process. There is an opportunity at any time during the EA process for interested persons to provide comments. All information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act* (2009). With the exception of personal information, all comments will become part of the public record.

If you require additional information or wish to provide comments during the Class EA process, please contact us anytime at: westernubridge@uwo.ca.

Yours truly,

Steve Taylor, P.Eng., M.Eng., CVS-Life
Consultant Project Manager, BT Engineering Inc.

cc: Tucker Morton, M.Eng., P.Eng., Western University
Chathurika Gamage, M.Eng., P.Eng., Entuitive
Gord Bell, Consultant Environmental Planner

March 30, 2022

Ministry of Northern Development,
Mines, Natural Resources and Forestry
Aylmer Office
615 John Street North
Aylmer, ON N5H 2S8
By email: MNRF.ayl@ontario.ca

Re: Application for a License to Collect Fish for Scientific Purposes
University Drive Bridge Replacement Municipal Class Environmental Assessment
Western University, London, Ontario

Dear Sir/Madam:

Western University has retained BT Engineering Inc. (BTE) and Entuitive in a joint venture to design a gateway bridge carrying University Drive over the North Thames River to Western University. A major component of this project is the completion of a Schedule C Municipal Class Environmental Assessment (MCEA). To complete all phases of the MCEA, the natural environment will be assessed to document existing conditions, identify constraints and opportunities for enhancements, conduct an impact assessment and recommend mitigation measures. As the work is proposed to take place within a watercourse and in close proximity to woodlands, permits and approvals will be required from various environmental agencies.

To conduct an assessment of existing conditions and potential impacts resulting from the works, a fish habitat assessment and fish community surveys will be required in the summer of 2022. Although a Fisheries and Terrestrial Information Request has been submitted to the NDMNRF Aylmer Office, this License to Collect (LTC) Fish for Scientific Purposes is being applied for to document existing conditions within the reach of the North Thames River and Medway Creek in the area of University Drive. Based on a review of online resources, the following aquatic species (in addition to standard cold/cool/warm-water species) have been documented in the North Thames River and Medway Creek approximately 550 m north:

Application for a Licence to Collect
Fish for Scientific Purposes

Personal information contained on this form is collected under the authority of the *Fish and Wildlife Conservation Act, 1997* and will be used for the purpose of licensing, identification, enforcement, resource management and customer service surveys. Please direct further enquiries to the District Manager of the MNRF issuing district.

☒ New Licence Application

☐ Licence Renewal

Current Licence Number

Applicant Information

Last Name

Wells

First Name

Zachery

Middle Initial

Name of Business/Organization/Affiliation

BT Engineering Inc.

Mailing Address of Applicant

Unit Number

Street Number

509

Street Name

Talbot Street

PO Box

City/Town

London

Province

Ontario

Postal Code

N6A 2S5

Physical Address of Applicant (if different from mailing address)

☐ If address is same as above

Unit Number

Street Number

1287

Street Name

Leyton Avenue

PO Box

City/Town

Kingston

Province

Ontario

Postal Code

K7P 2V5

Telephone Number

613 876-2863

ext.

Business Telephone Number

Fax Number

Assistant Last Name

Assistant First Name

Assistant Middle Initial

Warne

Rudi

Fleming

Kyle

Gear to be Used

1. Backpack electrofisher

2. Dipnets

3. Buckets

4. Aerators

Collection Information

Collection Period Start Date (yyyy/mm/dd)

2022/06/01

Collection Period End Date (yyyy/mm/dd)

2022/09/15

Species

Specify Size (eggs, fry, adults)

Numbers

MNR District

Name of Water Body

Common Name	Scientific Name	Provincial Listing	Federal Listing	Notes
Black Redhorse	<i>Moxostoma duquesnei</i>	Threatened (THR)	THR	DFO Critical Habitat
Eastern False Rue-anemone	<i>Enemion biterdatum</i>	THR	THR	
Northern Sunfish	<i>Lepomis peltastes</i>	Special Concern (SC)	SC	
Silver Shiner	<i>Notropis photogenis</i>	THR	THR	DFO Critical Habitat
Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	THR	SC	

Please find enclosed an application for a Licence to Collect Fish for Scientific Purposes (Attachment 1), a Study Area figure (Attachment 2) and VHS Risk Assessment Questionnaire (Attachment 3). Should you require any additional information please contact the undersigned at your convenience.

Yours truly,

Zachery Wells, M.Sc.
Fisheries Biologist, BT Engineering Inc.

Attachments:

1 – Application for a Licence to Collect Fish for Scientific Purposes

2 – Study Area Figure

3 – VHS Risk Assessment Questionnaire

2 Western University, University Drive Bridge Replacement

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Disponible en français

Page 1 of 2

Transfer of Viral Hemorrhagic Septicemia (VHS)
Risk Assessment Questionnaire

Note: The Best Management Practices for Collection of Fish for Scientific Purposes (FS Bulletin 2008-01 June 10, 2008) should be reviewed before completing this questionnaire.

Subject to a risk assessment conducted by MNR, a Licence to Collect Fish for Scientific Purposes **may be issued** for:

- Live fish to be collected from inside the VHS Management Zone and transported to facilities outside the VHS Management Zone, and/or
- Collection activities that will occur both inside and outside the VHS Management Zone with the same equipment.

Ministry staff will conduct the risk assessment based on this questionnaire and ensure appropriate control measures are agreed to before authorizing scientific collection activities inside and outside of the VHS Management Zone. The appropriate control measures, including the requirement to adhere to the practices outlined in the Best Management Practices for Collection of Fish for Scientific Purposes (FS Bulletin 2008-01 June 10, 2008), will be added as a condition of licence.

Definitions:

VHS Positive Waters: the waters of Lakes Ontario, Erie and Huron (including Georgian Bay), their connecting waterways and adjacent tributaries up to the first impassable barrier for all fish species. (Note: Where fish are manually transferred over barriers or pass through a fishway, that barrier will not be considered to be impassable. Low head lamprey weirs or dams that do not normally stop salmonid passage also are not considered impassable. Waters associated with the Rideau Lakes/Trent Severn waterways are not considered to be VHS positive at the current time).

VHS Management Zone includes the area bounded by the provincial road network which encompasses the waters defined as VHS Positive Waters (see map at <http://www.mnr.gov.on.ca/239480.pdf>).

Questions:

1. Location of collections.
 - a. Are any of the collection locations identified on the Application for a Licence to Collect Fish for Scientific Purposes in the VHS Management Zone?
 - i. YES X (high risk)
 - ii. NO
 - b. Will collections occur both inside the VHS Management Zone and outside the VHS Management Zone?
 - i. YES (high risk)
 - ii. NO X
2. Equipment (including clothing) used to collect and handle fish.
 - a. Will equipment or clothing used to collect fish be in contact with water from the VHS Management Zone and then used in waters not in the VHS Management Zone?
 - i. YES X (high risk, should be avoided)
 - ii. NO
 - b. If yes, will the equipment and clothing be disinfected prior to collecting in waters not in the VHS Management Zone?
 - i. YES X
 - ii. NO (higher risk - licence will not normally be issued unless suitable measures to mitigate the risk are put in place)
 - c. If yes, describe planned disinfection method, particularly if different from that outlined in the BMP.
All equipment/clothing is cleaned of any loose material/vegetation/mud at the site. Equipment/clothing is fully air dried/laundered before re-use at another job site. This is standard procedure at any site, regardless of management zone. Staff that may be handling equipment will also be circulated the FS Bulletin 2008-01.
3. Live transport of fish across the VHS Management Zone boundary.
 - a. Will any live fish collected from the VHS Management Zone be transported through an area not in the VHS Management Zone?
 - i. YES
 - ii. NO X
 - b. Describe the route to be followed to the research facility?
No fish will be collected. Captured specimens will be briefly handled for identification purposes and then immediately released to their location of capture.
 - c. What measures will be put in place to ensure that live fish will be contained during transport and not accidentally deposited near any waters (e.g., closed container)?
 N/A
4. Source of water used to transport live fish **N/A**
 - a. Is the source of water from the VHS Management Zone or waters connected to VHS Positive Waters?

- i. YES _____ (Licence will not be issued)
ii. NO _____
- b. Will the water to be used for transporting the live fish be treated (e.g., UV, ozone, Municipally treated)?
i. YES _____ (lower risk)
ii. NO _____
- c. What is the source of the water?

5. Research facility **N/A**

- a. Will any of the fish collected be transported live to a research facility?
i. YES _____ (higher risk)
ii. NO _____
- b. Is the research facility in the VHS Management Zone?
i. YES _____
ii. NO _____ (higher risk)
- c. Does the facility use treated water?
i. YES _____
ii. NO _____ (higher risk)
- d. If yes, describe how the water is treated

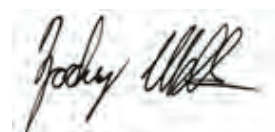
_____ Describe
how the fish will be held (e.g., aquaria, tanks with water, recirculation,
closed or open system - i.e., drains to municipal sewer, etc.).

_____ Describe
effluent treatment.

_____ Describe
how the fish will be disposed of.

6. Please describe any other measures that will be put in place to mitigate the risk of spreading VHS through the fish collection activities or the movement of live fish.

If fish collection for confirmation of identification purposes were to occur, a specimen would be immersed in alcohol for later identification. When the specimen is no longer needed, it would be disposed of in the household garbage. It would at no time leave the Management Zone.



Zachery Wells, March 17, 2022

Ministry of Tourism, Culture and Sport

Programs and Services Branch
400 University Ave, 5th Flr
Toronto, ON M7A 2R9
Tel: 613.242.3743

Ministère du Tourisme, Culture et Sport

Direction des programmes et des services
400, av. University, 5e étage
Toronto, ON M7A 2R9
Tél: 613.242.3743



September 23, 2022

EMAIL ONLY

Steve Taylor, P.Eng
BT Engineering Inc.
509 Talbot Street
London, Ontario N6A 2S5
stevenj.taylor@bteng.ca

MTCS File : 0017459
Proponent : Western University
Subject : Notice of Study Commencement – Schedule C – Municipal Class EA
Project : University Drive Bridge Municipal Class Environmental Assessment (EA)
Location : Western University, London

Dear Steve Taylor:

Thank you for providing the Ministry of Tourism, Culture and Sport (MTCS) with the Notice of Study Commencement for the above-referenced project. MTCS's interest in this environmental assessment (EA) project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- archaeological resources (including land and marine)
- built heritage resources (including bridges and monuments)
- cultural heritage landscapes

Under the EA process, the proponent is required to determine a project's potential impact on cultural heritage resources.

Project Summary

Western University retained Entuitive and BT Engineering Inc., in joint venture, to complete the Environmental Assessment (EA) and detailed design for the rehabilitation/replacement of the University Drive Bridge over the North Branch of the Thames River in London. The University Drive Bridge rehabilitation/replacement will be completed as a Schedule C project under the Municipal Class Environmental Assessment (MCEA) (2015).

Identifying Cultural Heritage Resources

While some cultural heritage resources may have already been formally identified, others may be identified through screening and evaluation. Indigenous communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Indigenous communities includes a discussion about known or potential cultural heritage resources that are of value to these communities. Municipal Heritage Committees, historical societies and other local heritage organizations may also have knowledge that contributes to the identification of cultural heritage resources.

Built Heritage Resources and Cultural Heritage Landscapes

A Cultural Heritage Evaluation Report (dated February 25, 2019, prepared by WSP for the City of London) found the University Drive bride to meet the criteria for determining cultural heritage value or interest under O. Reg. 9/06. A Heritage Impact Assessment is required to identify appropriate mitigation measures for the bridge.

Our Ministry’s [Info Sheet #5: Heritage Impact Assessments and Conservation Plans](#) outlines the scope of HIAs. HIAs are to be prepared by qualified consultants. Please send the HIA to MTCS for review and make copies available to local organizations or individuals who have expressed an interest in cultural heritage.

Archaeological Resources

The Municipal Engineers Association provides screening criteria for work on bridges that falls under the Municipal Class EA with a [checklist](#) and [background material](#) available online, developed in coordination with MTCS.

If Part D of the checklist establishes that an archaeological assessment is required, it is to be conducted by an archaeologist licenced under the *Ontario Heritage Act (OHA)*, who is responsible for submitting the report directly to MTCS for review. MTCS archaeological sites data are available at archaeology@ontario.ca.

Please provide all technical heritage studies to MTCS before issuing a Notice of Completion or commencing any of work on site.

Environmental Assessment Reporting

All technical cultural heritage studies and their recommendations are to be addressed and incorporated into EA projects. If the screening has identified no known or potential cultural heritage resources, or no impacts to these resources, please include the completed checklists and supporting documentation in the EA report or file.

Thank you for consulting MTCS on this project. Please continue to do so through the EA process, and contact me for any questions or clarification.

Sincerely,

Joseph Harvey
Heritage Planner
joseph.harvey@Ontario.ca

Copied to: Gord Bell, BT Engineering Inc.
Tucker Morton, Western University
Chathurika Gamage, Entuitive

It is the sole responsibility of proponents to ensure that any information and documentation submitted as part of their EA report or file is accurate. MTCS makes no representation or warranty as to the completeness, accuracy or quality of the any checklists, reports or supporting documentation submitted as part of the EA process, and in no way shall MTCS be liable for any harm, damages, costs, expenses, losses, claims or actions that may result if any checklists, reports or supporting documents are discovered to be inaccurate, incomplete, misleading or fraudulent.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with Ontario Regulation 30/11 the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Tourism, Culture and Sport should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

UTRCA Acceptance Western University, University Drive Bridge - Hydraulic Modelling Update

From: Tucker James Morton <tmorton4@uwo.ca>
Sent: Thursday, December 18, 2025 11:38 AM
To: Jessica Schnaithmann <Schnaithmannj@thamesriver.ca>
Cc: Joe Gordon <gordonj@thamesriver.on.ca>; Steve Taylor (London) <stevenj.taylor@bteng.ca>; Stephanie Schreiner <Schreiners@thamesriver.ca>; lsanchez@sanchezengineering.ca
Subject: RE: Western University, University Drive Bridge - Hydraulic Modelling Update

Hi Jessica,

That's great news – thank you for the review and confirmation. I really appreciate your support and feedback throughout this process.

We'll keep you posted as the Environmental Assessment progresses.

Wishing you a wonderful holiday as well, and all the best in the New Year.

Thanks again,
Tucker



Tucker Morton, M.Eng., P.Eng.
Project Manager
Western University, Facilities Management
c: 519.800.7537 | e: tmorton4@uwo.ca

From: Jessica Schnaithmann <Schnaithmannj@thamesriver.ca>
Sent: December 18, 2025 11:31 AM
To: Tucker James Morton <tmorton4@uwo.ca>
Cc: Joe Gordon <gordonj@thamesriver.on.ca>; Steve Taylor (London) <stevenj.taylor@bteng.ca>; Stephanie Schreiner <Schreiners@thamesriver.ca>; lsanchez@sanchezengineering.ca
Subject: Re: Western University, University Drive Bridge - Hydraulic Modelling Update

Hi Tucker,

Thank you for providing the updated Hydraulic Report incorporating UTRCA comments. We have reviewed the report and can confirm that our comments have been addressed. As such, we are able to accept the report.

Please continue to keep us informed as you progress through the Environmental Assessment process.

Hope you have a wonderful holiday and a Happy New Year!

Thank you,

Jessica



Jessica Schnaithmann (she/her)
Land Use Regulations Officer

1424 Clarke Road, London, Ontario N5V 5B9
519-451-2800 ext. 307
schnaithmannj@thamesriver.ca
www.thamesriver.ca

All UTRCA email addresses are changing from @thamesriver.on.ca to @thamesriver.ca. Please update your address book and any distribution lists to ensure emails from our new addresses reach you. We will continue to receive emails sent to our old email addresses.

From: [Steve Taylor](#)
To: [Brooke Finlay](#); [Kristine Dimoff](#)
Cc: [Gord Bell](#)
Subject: FW: University Drive Bridge MCEA - PIC 2 Notice
Date: Thursday, April 30, 2026 5:08:04 PM
Attachments: [image001.png](#)

Brooke see what we might need for a Transport Canada submission or permit.

Steve



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Executive Officer
E-Mail: steven.taylor@bteng.ca
Ottawa: 613-228-4813
London: 519-672-2222
Toronto: 905-709-4554
FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: ONT Environment / Environnement ONT <EnviroOnt@tc.gc.ca>
Sent: Wednesday, April 29, 2026 3:30 PM
To: [westernubridge](mailto:westernubridge@uwo.ca) <westernubridge@uwo.ca>
Subject: RE: University Drive Bridge MCEA - PIC 2 Notice

Hello,

Thank you for your correspondence. In addition to our general response below, please note that the Thames River is a Scheduled waterway (see [Canadian Navigable Waters Act](#)) and therefore potentially require an approval from Transport Canada.

Please note Transport Canada does not require receipt of all Individual or Class EA related notifications. We request that project proponents self-assess whether their project:

1. Will interact with a federal property and/or waterway by reviewing the Directory of Federal Real Property, available at www.tbs-sct.gc.ca/dfrp-rbif/; **and**
2. Will require approval and/or authorization under any Acts administered by Transport Canada* available at <http://www.tc.gc.ca/eng/acts->

[regulations/menu.htm](#).

Proposed projects that will occur on federal property (including reserve lands or lands owned by federal departments other than Transport Canada) will be subject to an Impact Assessment per **Section 82 of the *Impact Assessment Act, 2019*** prior to exercising a federal power (including full or partial funding), and/or performing a function or duty (e.g. regulatory approval or issuance of a lease) in relation to that project.

If the criteria above do not apply, Transport Canada's Environmental Assessment program should not be included in any further correspondence, and future notifications will not receive a response. If there is a role under the program, correspondence should be forwarded to: EnviroOnt@tc.gc.ca with a **brief description of Transport Canada's expected role**.

*Below is a summary of the most common Acts that apply to projects in an Environmental Assessment context:

- **Canadian Navigable Waters Act (CNWA)** – the Act applies primarily to works constructed or placed in, on, over, under, through, or across navigable waters set out under the Act. The Navigation Protection Program administers the CNWA through the review and authorization of works affecting navigable waters. Information about the Program, CNWA and approval process is available at: <http://www.tc.gc.ca/eng/programs-621.html>. Inquiries can be directed to NPPONT-PPNONT@tc.gc.ca or by calling (519) 383-1863.
- **Railway Safety Act (RSA)** – the Act provides the regulatory framework for railway safety, security, and some of the environmental impacts of railway operations in Canada. The Rail Safety Program develops and enforces regulations, rules, standards and procedures governing safe railway operations. Additional information about the Program is available at: <https://www.tc.gc.ca/eng/railsafety/menu.htm>. Inquiries can be directed to RailSafety@tc.gc.ca or by calling (613) 998-2985.
- **Transportation of Dangerous Goods Act (TDGA)** – the transportation of dangerous goods by air, marine, rail and road is regulated under the TDGA. Transport Canada, based on risks, develops safety standards and regulations, provides oversight and gives expert advice on dangerous goods to promote public safety. Additional information about the transportation of dangerous goods is available at: <https://www.tc.gc.ca/eng/tdg/safety-menu.htm>. Inquiries can be

directed to TDG-TMDOntario@tc.gc.ca or by calling (416) 973-1868.

- **Aeronautics Act** – this Act and the associated Canadian Aviation Regulations (CARs) govern civil aviation in Canada. Transport Canada should be notified of projects involving aerodromes and associated structures, or activities that could affect aviation safety. Elevated structures, such as wind turbines and communication towers, are examples of projects that must be assessed for lighting and marking requirements in accordance with the CARs. Transport Canada also has an interest in projects that have the potential to cause interference between wildlife and aviation activities. One example would be waste facilities, which may attract birds into commercial and recreational flight paths. Additional guidance can be found in the **Land Use In The Vicinity of Aerodromes** publication, available at: <https://www.tc.gc.ca/eng/civilaviation/publications/tp1247-menu-1418.htm>. Information about Transport Canada’s Civil Aviation program can be found at: <https://tc.canada.ca/en/aviation>. Inquires can be directed to aviation.ont@tc.gc.ca or by calling 1 (800) 305-2059 / (416) 952-0230.

Please advise if additional information is needed.

Thank you,

Environmental Assessment Program, Ontario Region
Transport Canada / Government of Canada / 4900 Yonge St., Toronto, ON M2N 6A5
EnviroOnt@tc.gc.ca

Programme d'évaluation environnementale, Région de l'Ontario
Transports Canada / Gouvernement du Canada / 4900, rue Yonge, Toronto, ON, M2N 6A5
EnviroOnt@tc.gc.ca

From: westernubridge <westernubridge@uwo.ca>
Sent: Wednesday, April 29, 2026 1:46 PM
To: westernubridge <westernubridge@uwo.ca>
Subject: University Drive Bridge MCEA - PIC 2 Notice

You don't often get email from westernubridge@uwo.ca. [Learn why this is important](#)
Good afternoon,

The second Public Information Centre (PIC) for the Municipal Class Environmental Assessment (MCEA) for the Western University Drive Bridge will be held virtually from May 13-27, 2026. The exhibits will be available on-line beginning on May 13, 2026. There will be an on-line meeting on May 13, 2026, held through Zoom which you can pre-register to attend. Anyone wishing to register can reply to this email.

The public advertisements will be placed in the London Free Press on May 6 and May 9.

If you have any comments, or require additional information, please contact us anytime at: westernubridge@uwo.ca.

Thank you



FW: University Drive Bridge MCEA - PIC 2 Notice

From Steve Taylor <steven.taylor@bteng.ca>
Date Tue 2026-05-19 2:08 PM
To Stephen Brook <stephen.brook@bteng.ca>; Brooke Finlay <brooke.finlay@bteng.ca>; Kristine Dimoff <kristine.dimoff@bteng.ca>

City comment.
Steve



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
Chief Execu. ve Officer
E-Mail: steven.taylor@bteng.ca
Ottawa: 613-228-4813
London: 519-672-2222
Toronto: 905-709-4554
FAX: 1-613-248-4979
Toll Free: 1-866-218-1001
<https://bteng.ca/>

From: Moffat, Nicola <nmoffat@london.ca>
Sent: Tuesday, May 19, 2026 10:50 AM
To: westernubridge <westernubridge@uwo.ca>
Cc: Michaud, Julie <jmichaud@London.ca>
Subject: RE: University Drive Bridge MCEA - PIC 2 Notice

Good morning,

Thank you for circulating this notice and for providing Parks Long Range Planning & Design (PLRPD) the opportunity to comment.

- The Thames Valley Parkway (TVP) currently runs beneath the University Drive Bridge, and it is an essential linkage within our pathway network. It is important that this connection be maintained; therefore, adequate pathway width and head clearance under the bridge will be required.
- If any damage or repairs are required to the TVP please contact our Parks Long Range Planning & Design team to coordinate construction impacts.
- The existing TVP pathway connection east of the bridge is also an important link and should be retained.
- PLRPD should be consulted once a construction decision has been made regarding the rehabilitation or replacement of the bridge, so that appropriate TVP detours can be coordinated during the construction period.

Please let us know if further clarification is needed.

Thank you,



Nicola Moffat, OALA, CSLA
Landscape Architect
Parks Long Range Planning & Design
Environment & Infrastructure
City of London

267 Dundas Street, 3rd Floor, London, ON, N6A 1H2
P: 519.661.CITY(2489) x 7158 | F: 519.963.1483
nmoffat@london.ca | www.london.ca

From: westernubridge <westernubridge@uwo.ca>
Sent: Wednesday, April 29, 2026 1:46 PM
To: westernubridge <westernubridge@uwo.ca>
Subject: [EXTERNAL] University Drive Bridge MCEA - PIC 2 Notice

ATTENTION: This Message Is From an External Sender

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[Report Suspicious](#)

Good afternoon,

The second Public Information Centre (PIC) for the Municipal Class Environmental Assessment (MCEA) for the Western University Drive Bridge will be held virtually from May 13-27, 2026. The exhibits will be available on-line beginning on May 13, 2026. There will be an on-line meeting on May 13, 2026, held through Zoom which you can pre-register to attend. Anyone wishing to register can reply to this email.

The public advertisements will be placed in the London Free Press on May 6 and May 9.

If you have any comments, or require additional information, please contact us anytime at: westernubridge@uwo.ca.

Thank you

From: [Steve Taylor \(London\)](#)
To: [Crinklaw, Drew \(OMAFRA\)](#)
Cc: [Tucker Morton](#); [Katherine Scott](#); [Gord Bell](#); [Chathurika Gamage](#)
Subject: Re: Western University - University Drive Bridge Municipal Environmental Assessment - Stakeholder/Agency Contact
Date: Tuesday, August 23, 2022 11:23:54 AM
Attachments: [image001.png](#)
[Outlook-cid_image0.png](#)

Thanks you Drew.

We will remove you from our contact list on this study.

Steve



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
President
509 Talbot Street
London, Ontario
N6A 2S5
E-Mail: stevenj.taylor@bteng.ca
Phone: 519-672-2222
FAX: 1-613-280-1305
Toll Free: 1-866-218-1001
[\[www.bteng.ca\]](http://www.bteng.ca)www.bteng.ca

From: Crinklaw, Drew (OMAFRA) <Drew.Crinklaw@ontario.ca>
Sent: August 23, 2022 9:49 AM
To: Steve Taylor (London) <stevenj.taylor@bteng.ca>
Subject: RE: Western University - University Drive Bridge Municipal Environmental Assessment - Stakeholder/Agency Contact

Hi Steve, given the location OMAFRA does not need to be involved in this EA; however, for future EA circulations from your firm could you please use our centralized email address? omafra.eanotices@ontario.ca

Kind regards,

Drew Crinklaw
Policy Advisor
Land Use Policy & Stewardship Unit
Ontario Ministry of Agriculture, Food & Rural Affairs
519-317-4493

Our working hours may be different. Please do not feel obligated to reply outside of your working hours. Let's work together to help foster healthy work-life boundaries.

As part of providing [accessible customer service](#), please let me know if you have any accommodation needs and/or would like access to communication supports or alternate formats.

From: Steve Taylor (London) <stevenj.taylor@bteng.ca>
Sent: Monday, August 22, 2022 9:43 AM
Cc: Tucker Morton <tmorton4@uwo.ca>; Katherine Scott <katherine.scott@bteng.ca>; Gord Bell <gord.bell@bteng.ca>; Chathurika Gamage <chathurika.gamage@entuitive.com>
Subject: Western University - University Drive Bridge Municipal Environmental Assessment - Stakeholder/Agency Contact

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Attached please find the study commencement notice for the environmental assessment that will define a bridge management plan for the existing bridge crossing of the Thames River on campus. The study is considering bridge replacements on the existing and new alignments and this letter is requesting any information on existing or planned infrastructure.

Please confirm your interest in the study and the correct contact for us to use.

Steve Taylor
BTE Project Manager



Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
President
509 Talbot Street
London, Ontario
N6A 2S5
E-Mail: stevenj.taylor@bteng.ca
Phone: 519-672-2222
FAX: 1-613-280-1305
Toll Free: 1-866-218-1001
[\[www.bteng.ca\]](http://www.bteng.ca)www.bteng.ca

Appendix E

Traffic and Transportation



Traffic Analysis Report
Western University -
University Drive Bridge Class Environmental
Assessment, Project No.: 9M5173

March 8, 2023

Prepared by: BT Engineering and
Entuitive Joint Venture
509 Talbot Street
London, ON N6A 2S5
BTE ENTUITIVE

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1.0 INTRODUCTION

Western University (Western) has retained BT Engineering in a joint venture with Entuitive to complete a Class Environmental Assessment (EA) Study and design for improvements to the University Drive Bridge located across the north branch of the Thames River in London, Ontario. The existing bridge is near the end of its service life for vehicular traffic and University Drive is recognized to be a major gateway to Western. Creating a more pedestrian friendly environment has been a common element in Western's vision of the future documented in previous planning documents.

The 2015 Campus Master Plan identified key initiatives related to transportation which included:

- Improving Campus connectivity with an emphasis on improving pedestrian/bicycle connectivity and the potential for rapid transit.
- Identification of Campus gateways, the sense of place and arrival at Western, augmented by the use of new developments, sites, open space and pedestrian improvements to emphasize the principal gateways.

Western's Open Space Strategy (April 2018) identified opportunities to accommodate future growth on campus, with an emphasis on opportunities to improve safety and better accommodate pedestrians and cyclists. Network recommendations from the Strategy include:

- Limit access to the University Drive bridge to bicycles, pedestrians, Bus Rapid Transit vehicles, and designated university vehicles.
- Create a dedicated pedestrian drop-off area at Sunset Street which provides access to the Medway parking lot but restricts public vehicle access across the bridge.

The Environmental Assessment (EA) project is structured to assist Western in defining a plan for the Thames River crossing. The EA is following a sequential decision-making process mandated by the Environmental Assessment Act in Ontario that includes mandatory public consultation. The initial public, agency and rights holders' consultation was initiated with a first Public Information Centre (PIC) in November 2022. At the initial PIC, a preliminary evaluation of planning solutions was presented that recommended retaining and rehabilitating the existing historic bridge, constructed in 1922 and currently a designated heritage structure, to be used for active transportation and twinning the existing bridge by constructing a new bridge for vehicular traffic as the Technically Preferred Alternative.

Since that preliminary assessment was completed, updated traffic volumes have been obtained to confirm current pedestrian and vehicular traffic demand. This has allowed a more detailed analysis of traffic conditions (existing and future) to be completed as documented in this report. The analysis has focused on the west side of the Thames River, the intersection of

University Drive and Perth /Lambton Drive which has the highest vehicular traffic demand and turning movements and active transportation. A review of preliminary alternatives for the east side of the river, associated with the less constrained intersection of University Drive and Sunset Street is also provided.

Although Western's Open Space Strategy had recommended limiting vehicle access to the University Drive Bridge a future decision whether or when to proceed with that recommendation will not be made until after the current Environmental Assessment is completed. Any alternative must therefore be capable of continuing to accommodate the current unrestricted use of University Drive. This scenario is reflected in the analysis provided in this report.

2.0 EXISTING CONDITIONS

University Drive carries an average two-way traffic volume of approximately 7,000 vehicles /day and is a major gateway to Western University for vehicular traffic (personal vehicles, trucks and emergency services), pedestrians, cyclists and transit riders. An updated count of existing traffic demands, summarized in **Figure 1**, was recorded over an 8-hour period on Tuesday November 29, 2022 at the intersection of University Drive and Lambton/Perth Drives. The highest traffic volumes were observed during the pm peak hour. A copy of the count is attached in **Appendix A**. The western leg of the intersection currently allows westbound through movements at the intersection. There is a plan to remove this movement for motor vehicles.

The intersection is focal point for Western with the total volume of pedestrians almost equal to the volume of vehicle traffic. Pedestrian safety is an issue of growing importance for Western and throughout the City of London. Observations at the existing intersection, as confirmed by the recorded traffic volumes, identify that the major movements for motorist crossing the University Drive structure are to and from the south (Lambton Drive). This is in direct conflict with the major movement of pedestrians, as displayed in **Figure 2**. The heavy westbound left-turn movement also conflicts with eastbound cyclists on Middlesex Drive. With no opposing motor vehicle traffic, left turning motorists are less aware of the opposing movement of cyclists. In an effort to help mitigate this, a sign was added to the intersection as shown in **Figure 3**.

We have no record of any collisions involving pedestrians or cyclists at the intersection and it is not possible to identify how many "close calls" might have occurred over the years at this location due to those existing conflicts. As the number of conflicts at an intersection (crossing paths of vehicles or vehicles/cyclists/pedestrians) increase in frequency the probability of collisions is increased.

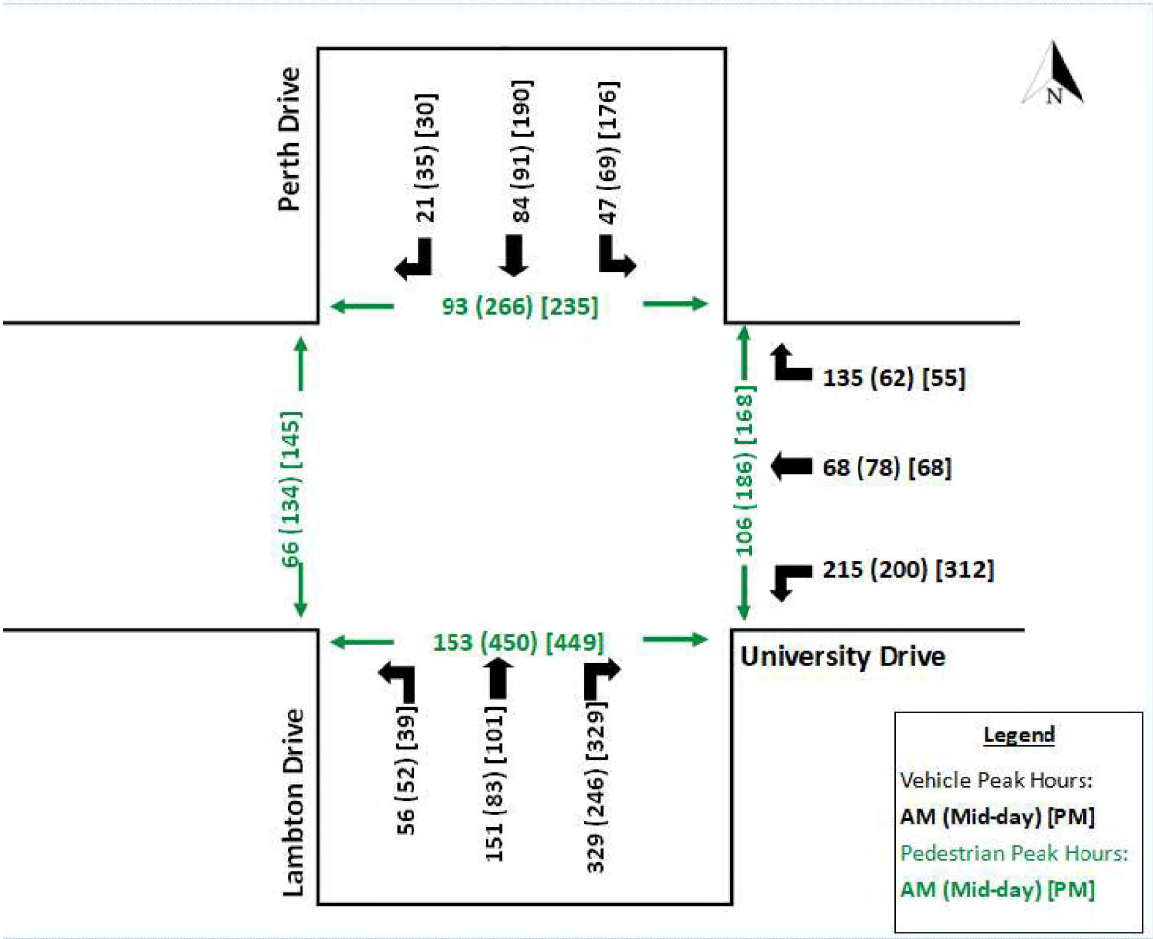


Figure 1: Existing Traffic Demands



Figure 2: Major Traffic Movements (Total 8-hour volumes)



Figure 3: Existing University Drive and Lambton/Perth/Middlesex Drive Intersection

At the intersection of University Drive and Sunset Street, a turning movement count was recorded on Tuesday February 28, 2023 during the critical pm peak period. A summary of the pm peak hour volumes is provided in **Figure 4**.

3.0 TRAFFIC OPERATIONS

An analysis of the existing intersection operations was completed using Synchro Version 11 as summarized in **Table 1**. Copies of the analysis reports are provided in **Appendix B**. The traffic operations were also examined by developing a micro-simulation of intersection operations during the pm peak hour.

The existing intersection was found to be capable of operating at Level of Service (LOS) B for vehicle traffic during the AM and Mid-day peak hours and LOS C during the PM peak hour. However, a multi-modal level of service was examined for pedestrians. This identified that for pedestrian movements a LOS D is provided with the existing intersection configuration. Level of Service is a measure of the operation of the intersection or specific movements. A LOS of A indicates low delay, and a LOS F represents a large delay (failure) with delays exceeding a single cycle of the traffic signals. Most campus intersections would be expected to operate at a LOS B or C.

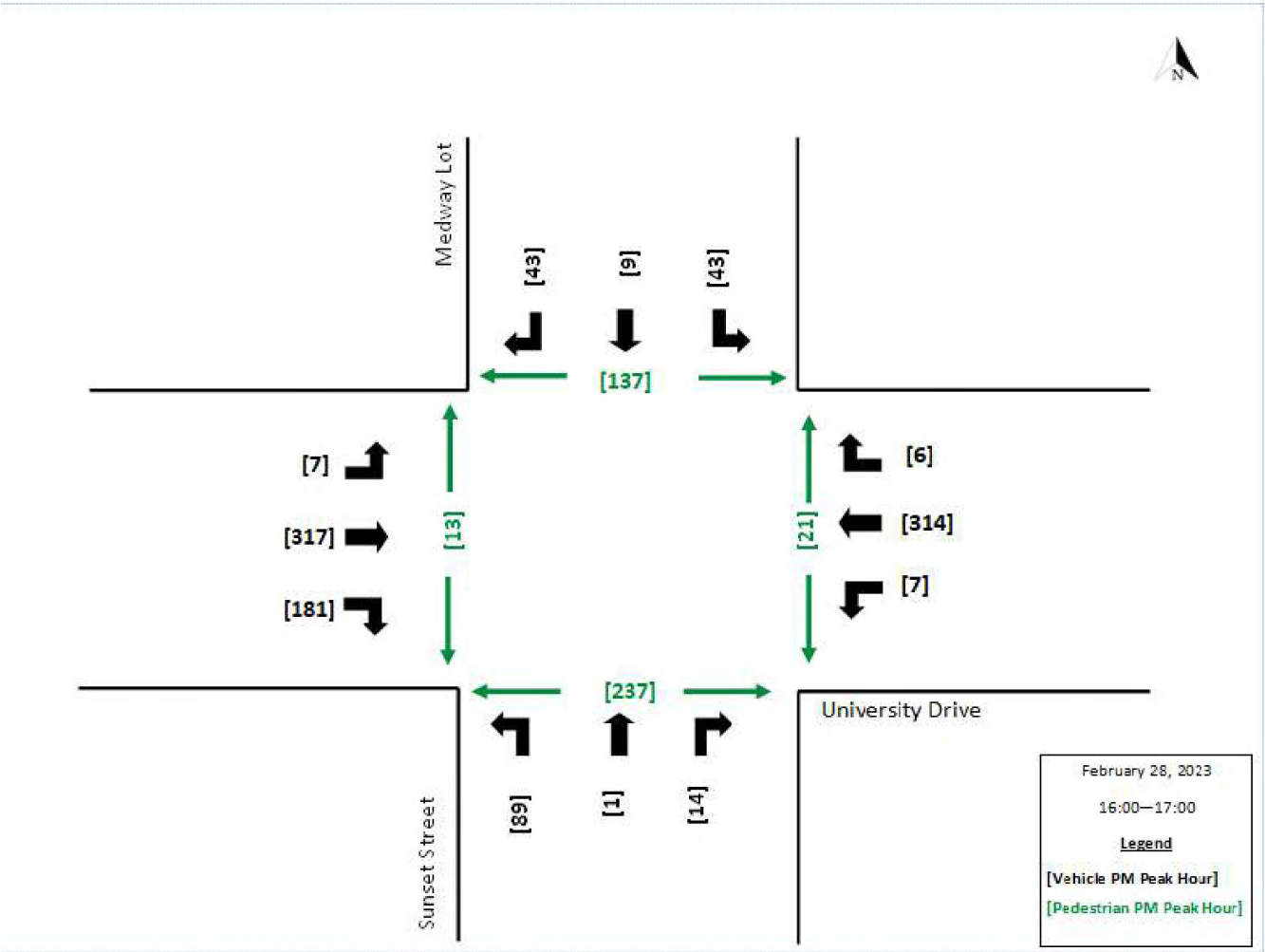


Figure 4: PM Peak Hour Traffic Demands (University Drive and Sunset Street)

Table 1: Existing University Drive and Lambton/Perth Drive Intersection Operations

Time Period	Movement	V/C	Delay (s)	Vehicle LOS	95th % Queue (m)
AM Peak Hour	WBL	0.43	17.1	B	42.8
	WBTR	0.30	8.4	A	25.7
	NBL	0.23	30.1	C	19.9
	NBT	0.38	31.6	C	44.0
	NBR	0.65	9.2	A	25.0
	SBL	0.17	20.6	C	13.9
	SBTR	0.22	19.5	B	25.3
	Overall		16.2	B	
Mid-day Peak Hour	WBL	0.50	18.7	B	39.5
	WBTR	0.22	11.6	B	23.8
	NBL	0.23	30.6	C	19.2
	NBT	0.20	28.8	C	26.1
	NBR	0.59	9.6	A	21.8
	SBL	0.23	21.1	C	18.6
	SBTR	0.25	18.9	B	28.8
	Overall		13.8	B	
PM Peak Hour	WBL	0.80	33.0	C	#82.6
	WBTR	0.20	10.6	B	20.7
	NBL	0.17	30.5	C	15.4
	NBT	0.27	31.4	C	32.0
	NBR	0.70	11.7	B	28.9
	SBL	0.59	31.4	C	44.2
	SBTR	0.42	25.6	C	55.0
	Overall		23.8	C	

- 95th percentile volume exceeds capacity, queue may be longer

Reducing the conflicts that exist between vehicles and pedestrians with the existing intersection configuration by introducing a pedestrian only phase to the traffic signal operation (often referred to as a Pedestrian Scramble or a Barnes Dance) was considered and found to not be feasible. The addition of a pedestrian phase would reduce the capacity that would be available for vehicular traffic. An analysis of the critical PM peak hour, summarized in **Table 2**, found that the overall intersection operations would be reduced to LOS E and the existing

demand would exceed the available roadway capacity for key vehicle movements at the intersection.

Table 2: University Drive and Lambton/Perth Drive Intersection Operations (with an exclusive Pedestrian Phase)

Time Period	Movement	V/C	Delay (s)	Vehicle LOS	95th Queue (m)
PM Peak Hour	WBL	1.13	128.7	F	#129.1
	WBTR	0.45	40.9	D	41.0
	NBL	0.17	32.3	C	15.4
	NBT	0.28	33.0	C	32.3
	NBR	1.08	111.6	F	#132.2
	SBL	0.48	27.1	C	43.2
	SBTR	0.43	27.2	C	56.2
	Overall		74.5	E	

- 95th percentile volume exceeds capacity, queue may be longer

As noted previously, the pm peak period represents the most critical time period for traffic operations. A Synchro analysis of the critical PM peak hour traffic operations at the intersection of University Drive and Sunset Street/Medway Parking Lot entrance is summarized in **Table 3**. During the PM peak hour the intersection was found to operate at a reasonable level of service (LOS C).

Table 3: Existing University Drive and Sunset Street/Medway Parking Lot Intersection Operations

Time Period	Movement	V/C	Delay (s)	Vehicle LOS	95th Queue (m)
PM Peak Hour	EBLT	0.40	19.4	B	76.9
	EBR	0.47	14.6	B	37.2
	WBLTR	0.40	19.6	B	78.1
	NBLTR	0.42	32.1	C	30.0
	SBLTR	0.39	23.4	C	22.1
	Overall		20.3	C	

4.0 FUTURE CONDITIONS

4.1 Intersection Geometry

If the TPA, constructing a new bridge across the Thames River, is implemented a preliminary layout of a future University Drive and Lambton/Perth Drive intersection is provided in **Figure 5**. Realigning University Drive south of the Welcome Plaza would eliminate the major pedestrian – vehicle conflicts at the intersection. At the Welcome Plaza, a wide raised pedestrian crosswalk would potentially be provided as a traffic calming measure to reduce travel speeds while improving accessibility for pedestrians.

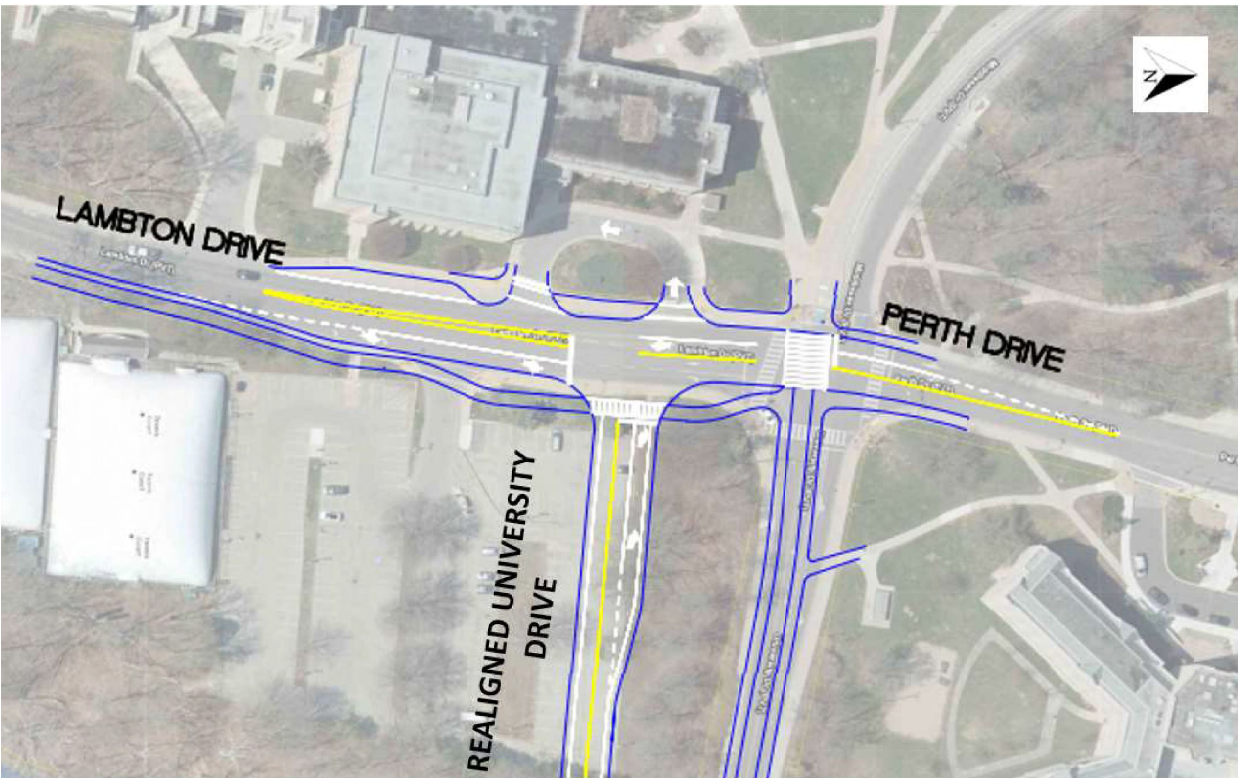


Figure 5: Preliminary Configuration – Realigned University Drive and Lambton/Perth Drive Intersection

4.2 Traffic Operations

To further promote a pedestrian friendly environment the traffic signals would remain in “walk” for pedestrians and cyclists using the raised crosswalk to/from the existing bridge until they are actuated by a vehicle at the intersection. This cannot be achieved with the existing intersection design. In addition to giving priority to pedestrians, the need for pedestrians in the Welcome Plaza to locate and activate a push button would also be eliminated. The traffic signals would always revert to the walk phase. These proposed operational improvements for vehicles,

pedestrians and cyclists are part of the preliminary recommended improvements presented at PIC 1. The benefits are a result of reducing conflicting movements that currently require separate green time in the intersection.

The Synchro analysis for the intersection operation with the proposed new intersection configuration is summarized in **Table 4**.

Table 4: Realigned University Drive and Lambton Drive Intersection Operations

Time Period	Movement	V/C	Delay (s)	Vehicle LOS	95th Queue (m)
AM Peak Hour	WBL	0.39	19.4	B	61.0
	WBR	0.51	9.5	A	9.7
	NBT	0.40	34.1	C	45.6
	NBR	0.39	2.2	A	9.8
	SBL	0.16	19.1	B	13.4
	SBT	0.15	19.1	B	21.1
	Overall		14.7	B	
Mid-day Peak Hour	WBL	0.40	20.3	C	60.0
	WBR	0.25	2.2	A	0.0
	NBT	0.21	27.2	C	24.0
	NBR	0.29	1.6	A	6.6
	SBL	0.25	17.6	B	15.8
	SBT	0.15	16.4	B	19.7
	Overall		13.4	B	
PM Peak Hour	WBL	0.54	21.4	C	#82.6
	WBR	0.22	1.9	B	20.7
	NBT	0.33	37.6	C	32.0
	NBR	0.41	2.0	B	28.9
	SBL	0.62	39.0	C	44.2
	SBT	0.36	26.3	C	55.0
	Overall		19.9	B	23.8

- 95th percentile volume exceeds capacity, queue may be longer

The vehicle delays at the proposed intersection would be marginally reduced in comparison to the existing intersection. The overall intersection was found to improve from LOS C to LOS B, for vehicle traffic, during the PM peak hour. However, the significant advantage of the new design is that a LOS A would be provided for pedestrians with proposed intersection, a

significant improvement over the existing conditions. The same benefit is provided for cyclists. A VISSIM simulation of the traffic operations during the critical pm peak period has also been provided.

4.3 University Drive and Sunset Street (Eastern Intersection)

Improvements to the intersection of University Drive and Sunset Street may be determined to be beyond the scope of this current study. Realignment of Sunset Street opposite the Medway parking lot, as recommended in the Open Space Strategy will eliminate the need for split northbound and southbound phasing achieving a more efficient signal operation and reducing delays to motorists and active transportation. Preliminary concept plans for the intersection with traffic signals or a roundabout are provided in **Figure 6** and **Figure 7** respectively.

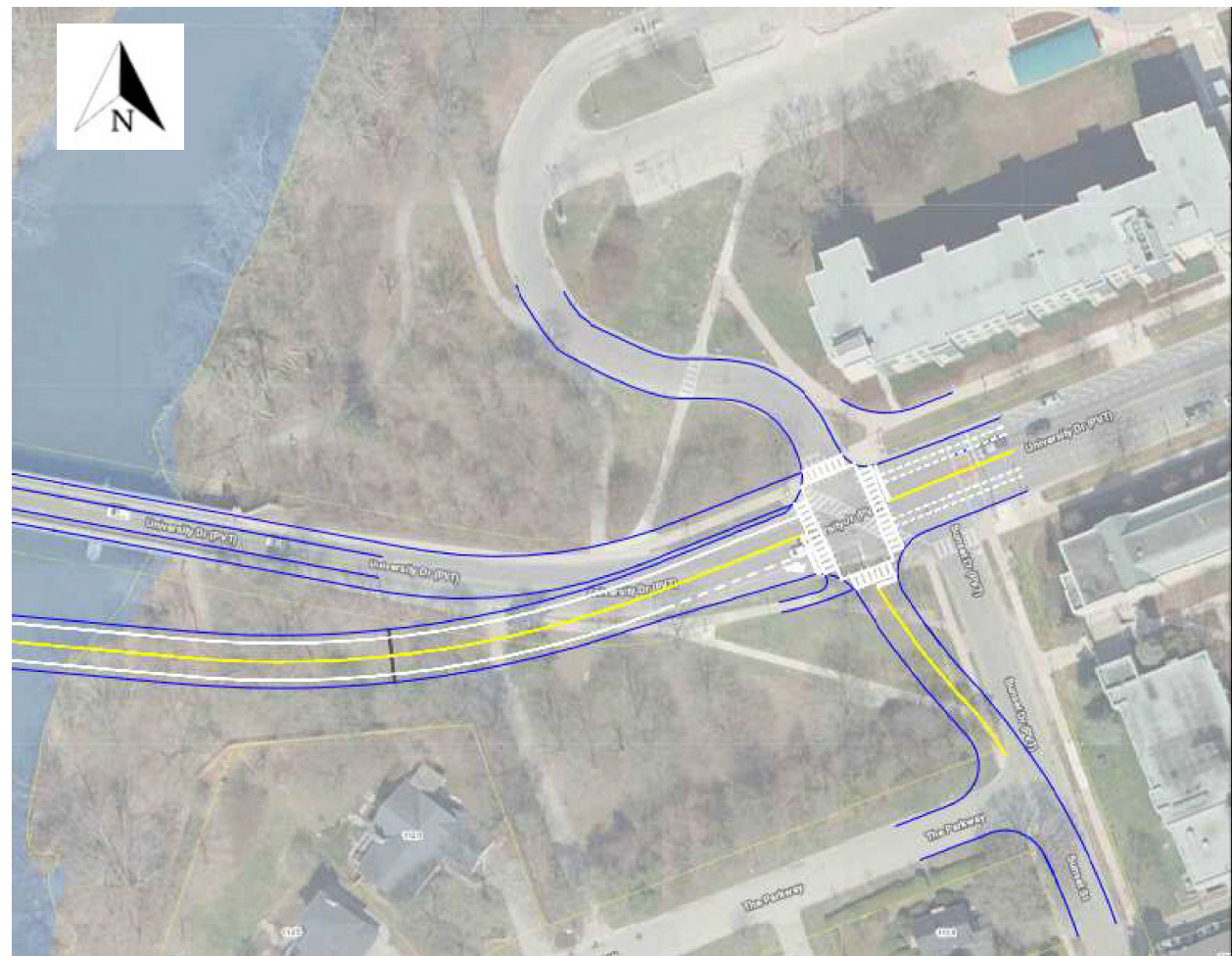


Figure 6: Preliminary University Drive and Sunset Street Signalized Alternative

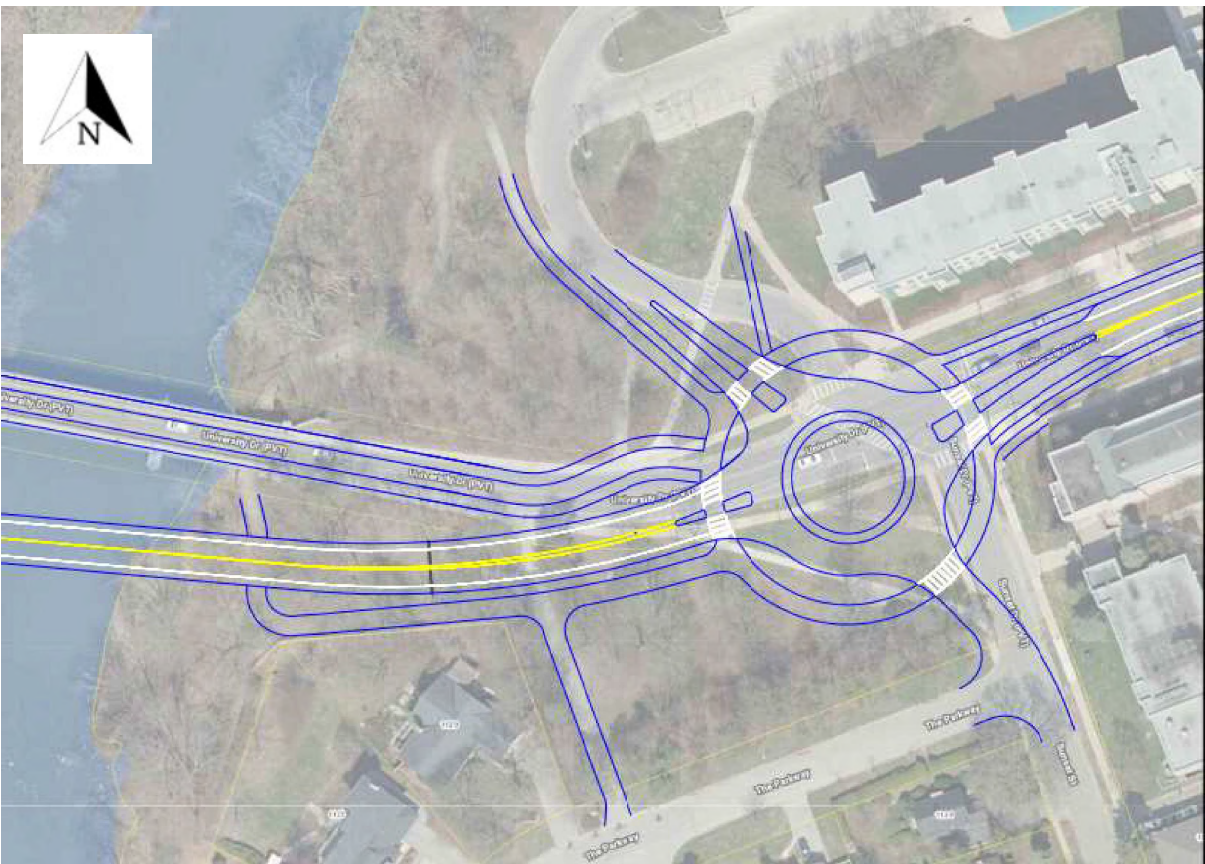


Figure 7: Preliminary University Drive and Sunset Street Roundabout Alternative

A realignment of Sunset Street would improve traffic operations at the intersection from LOS C to LOS B as summarized in **Table 5**. Delays at the intersection would be reduced to approximately half the existing conditions.

Table 5: University Drive and Realigned Sunset Street/Medway Parking Lot Intersection Operations

Time Period	Movement	V/C	Delay (s)	Vehicle LOS	95th % Queue (m)
PM Peak Hour	EBLT	0.34	8.9	A	43.8
	EBR	0.33	6.7	A	19.9
	WBLTR	0.35	9.0	A	44.3
	NBLTR	0.46	20.1	C	17.2
	SBLTR	0.35	12.7	B	12.6
	Overall		10.0	B	

Replacing the existing traffic signals with a roundabout would result in benefits that include:

- Traffic operations at the intersection would be further improved in comparison to traffic signals (LOS A);
- Provides an opportunity to create a pick-up and drop-off area in front of Elgin Hall and Sydenham Hall (proposed as part of Western’s Open Space Strategy) so that motorists are able to circulate back to Richmond Street without travelling through the campus;
- Better accommodates access to the Heritage Structure from University Drive for pedestrians and cyclists;
- Provides a traffic calming measure that would reduce the travel speed on University Drive;
- Provides additional opportunities for traffic management during construction of the new bridge if the roundabout is provided in advance; and
- Provides the opportunity for an additional gateway feature entering the University.

These alternatives and their evaluation will be presented at PIC No. 2.

5.0 CONCLUSIONS

The vision for a more pedestrian and bicycle friendly environment on campus has been identified consistently as part of previous Master Planning documents. The proposed realignment of University Drive at Lambton Drive should be recognised as an opportunity for Western to put those words into action, providing a more pedestrian and bicycle friendly environment within the campus.

Lambton Drive/Perth Drive/University Drive (West Intersection)

The realignment of University Drive to the south, as proposed by the Technically Preferred Alternative will best accommodate the movement of vehicles and pedestrians. This will provide a new bridge crossing the Thames River for vehicle traffic while maintaining the existing heritage structure for pedestrians and cyclists. It will allow traffic demands to continue to be accommodated while significantly improving safety and level of service for pedestrians and cyclists. The analysis in this report concludes that there are substantially improved operational (reduced delays) and safety (reduced conflicts) benefits associated with the plan to twin the existing bridge and create a separate active transportation spine across the existing bridge.

University Drive/Sunset Street/ Medway Parking Lot (East Intersection)

The provision of a roundabout at the intersection of University Drive and Sunset Street represents another opportunity to improve safety while enabling key elements of Western’s Vision for the future to be promoted including the creation of a drop-off area for the campus and reducing vehicular traffic on campus.

Appendix A

Turning Movement Count

University Dr @ Perth Dr/Lambton Dr

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 7:45:00

To: 8:45:00

Municipality: London
Site #: 0000000001
Intersection: Perth Dr/Lambton Dr & University Dr
TFR File #: 1
Count date: 29-Nov-2022

Weather conditions:

Overcast/Dry

Person(s) who counted:

Cam

**** Signalized Intersection ****

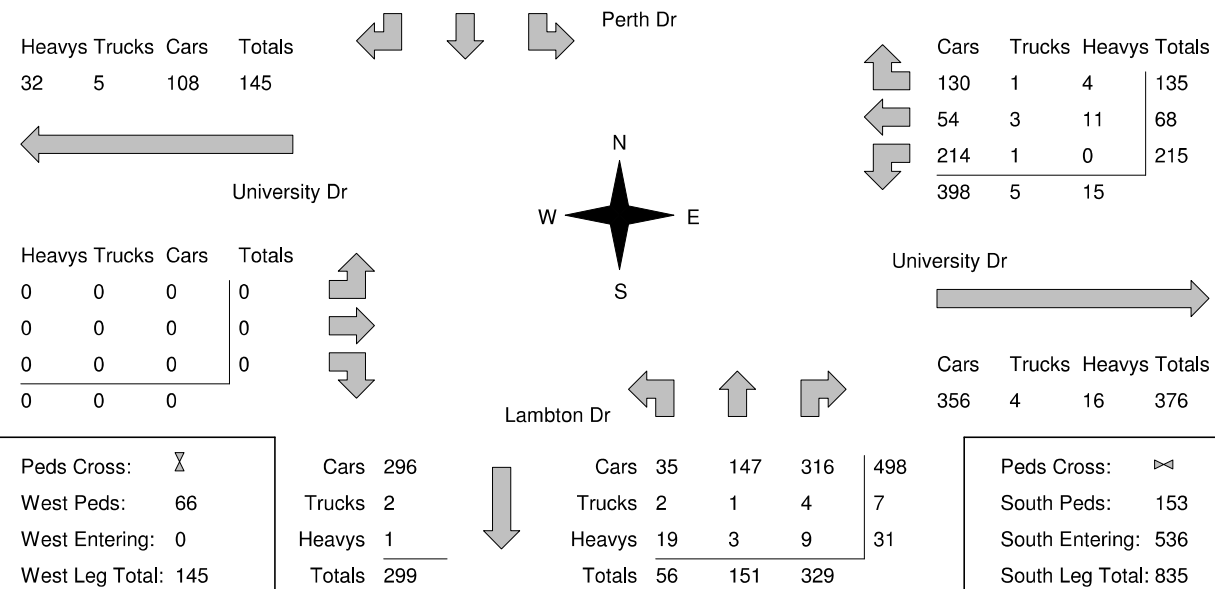
Major Road: Perth Dr/Lambton Dr runs N/S

North Leg Total: 438
North Entering: 152
North Peds: 93
Peds Cross: 

Heavys	2	1	7
Trucks	0	1	0
Cars	19	82	40
Totals	21	84	47

Heavys	7
Trucks	2
Cars	277
Totals	286

East Leg Total:	794
East Entering:	418
East Peds:	106
Peds Cross:	⌂



Comments

University Dr @ Perth Dr/Lambton Dr

Mid-day Peak Diagram

Specified Period

From: 11:00:00

To: 14:00:00

One Hour Peak

From: 12:30:00

To: 13:30:00

Municipality: London

Site #: 0000000001

Intersection: Perth Dr/Lambton Dr & University Dr

TFR File #: 1

Count date: 29-Nov-2022

Weather conditions:

Overcast/Dry

Person(s) who counted:

Cam

**** Signalized Intersection ****

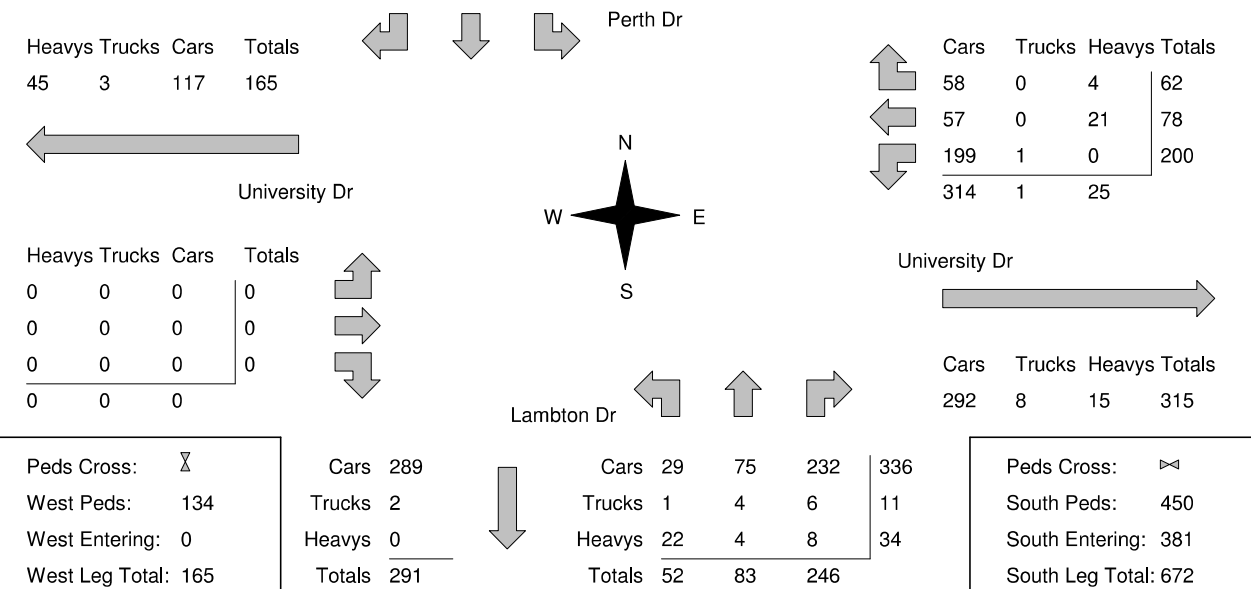
Major Road: Perth Dr/Lambton Dr runs N/S

North Leg Total: 340
North Entering: 195
North Peds: 266
Peds Cross: 

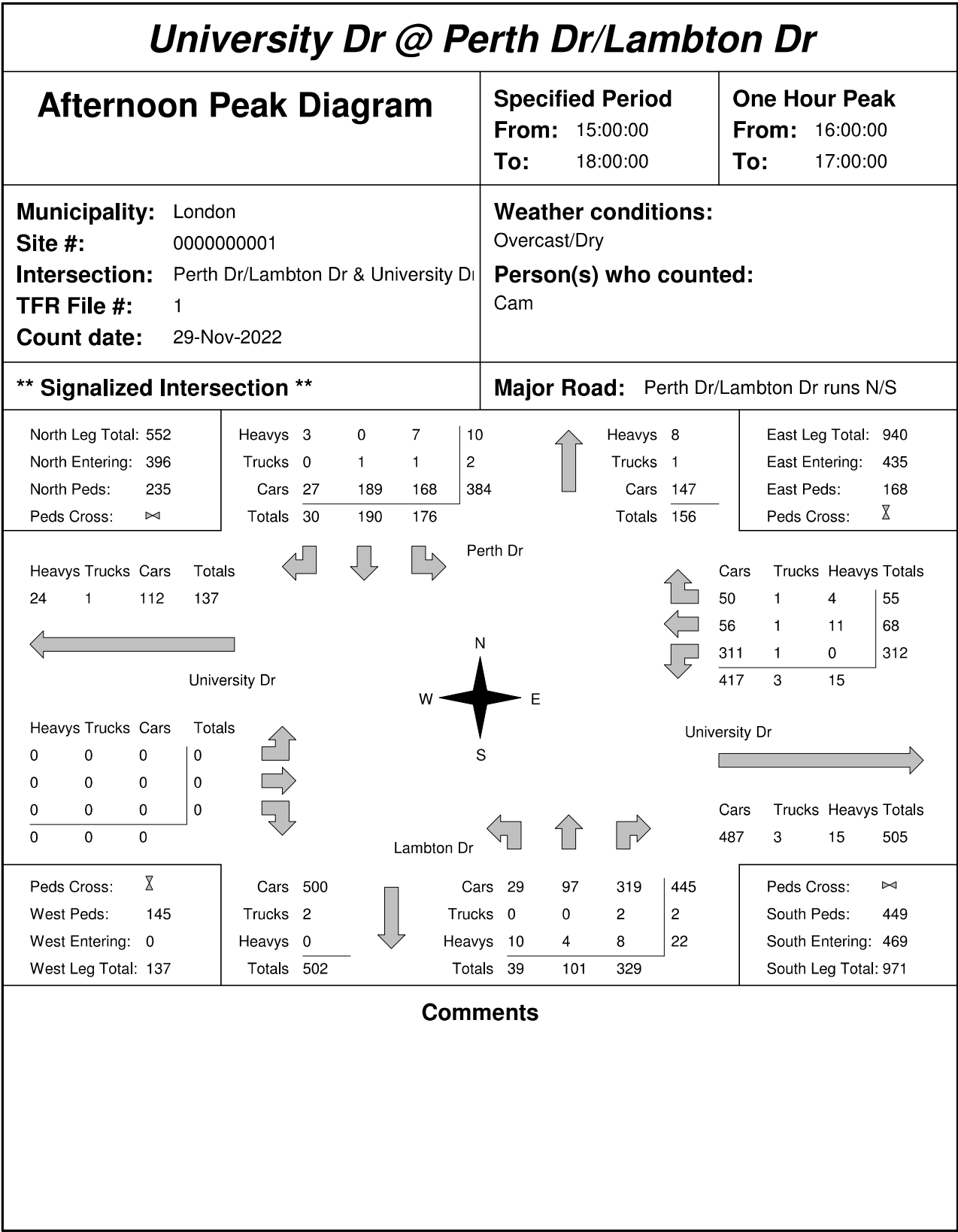
Heavys	2	0	7
Trucks	2	1	2
Cars	31	90	60
Totals	35	91	69

Heavys	8
Trucks	4
Cars	133
Totals	145

East Leg Total:	655
East Entering:	340
East Peds:	186
Peds Cross:	∅



Comments



Appendix B

Capacity Analysis Reports



Lanes, Volumes, Timings
4: Lambton Drive/Perth Drive & University Drive

EXISTING
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	215	68	135	56	151	329	47	84	21
Future Volume (vph)	0	0	0	215	68	135	56	151	329	47	84	21
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Storage Length (m)	0.0		0.0	30.0		0.0	15.0		50.0	30.0		0.0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.77	0.89		0.90		0.80	0.87	0.97	
Frt					0.900				0.850		0.970	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	1586	0	1507	1268	0	1507	1586	1348	1507	1498	0
Flt Permitted				0.680			0.684			0.534		
Satd. Flow (perm)	0	1586	0	827	1268	0	980	1586	1080	735	1498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					123				358		14	
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		167.2			247.1			101.9			121.4	
Travel Time (s)		15.0			22.2			9.2			10.9	
Confl. Peds. (#/hr)				153		93	66		106	106		66
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	234	74	147	61	164	358	51	91	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	234	221	0	61	164	358	51	114	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type				pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		7.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.0	40.0		11.0	40.0		38.0	38.0	38.0	9.5	38.0	
Total Split (s)	40.0	40.0		18.0	58.0		42.4	42.4	42.4	9.6	52.0	
Total Split (%)	36.4%	36.4%		16.4%	52.7%		38.5%	38.5%	38.5%	8.7%	47.3%	
Maximum Green (s)	34.0	34.0		14.0	52.0		36.4	36.4	36.4	5.1	46.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.5	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0		4.0	6.0		6.0	6.0	6.0	4.5	6.0	
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	

Lanes, Volumes, Timings
4: Lambton Drive/Perth Drive & University Drive

EXISTING
AM Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	None		Min	Min		None	None	None	None	Min	
Walk Time (s)	15.0	15.0			15.0		12.0	12.0	12.0		12.0	
Flash Dont Walk (s)	19.0	19.0			19.0		20.0	20.0	20.0		20.0	
Pedestrian Calls (#/hr)	200	200			200		100	100	100		100	
Act Effct Green (s)				53.6	51.5		26.7	26.7	26.7	35.3	33.8	
Actuated g/C Ratio				0.55	0.53		0.27	0.27	0.27	0.36	0.35	
v/c Ratio				0.43	0.30		0.23	0.38	0.65	0.17	0.22	
Control Delay				17.1	8.4		30.1	31.6	9.2	20.6	19.5	
Queue Delay				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay				17.1	8.4		30.1	31.6	9.2	20.6	19.5	
LOS				B	A		C	C	A	C	B	
Approach Delay					12.9			17.7			19.8	
Approach LOS					B			B			B	
Queue Length 50th (m)				26.7	10.7		9.3	26.1	0.0	6.3	13.1	
Queue Length 95th (m)				42.8	25.7		19.9	44.0	25.0	13.9	25.3	
Internal Link Dist (m)		143.2			223.1			77.9			97.4	
Turn Bay Length (m)				30.0			15.0		50.0	30.0		
Base Capacity (vph)				554	752		376	610	635	307	735	
Starvation Cap Reductn				0	0		0	0	0	0	0	
Spillback Cap Reductn				0	0		0	0	0	0	0	
Storage Cap Reductn				0	0		0	0	0	0	0	
Reduced v/c Ratio				0.42	0.29		0.16	0.27	0.56	0.17	0.16	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 97.7

Natural Cycle: 100

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 16.2

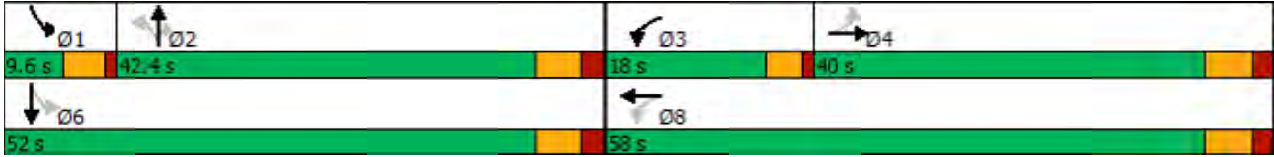
Intersection LOS: B

Intersection Capacity Utilization 75.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 4: Lambton Drive/Perth Drive & University Drive



Lanes, Volumes, Timings
4: Lambton Drive/Perth Drive & University Drive

Existing
Mid-day Peak

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↖	↗		↖	↗	↖	↗	↖	↗
Traffic Volume (vph)	0	0	0	200	78	62	52	83	246	69	91	35
Future Volume (vph)	0	0	0	200	78	62	52	83	246	69	91	35
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Storage Length (m)	0.0		0.0	30.0		0.0	15.0		50.0	30.0		0.0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.49	0.81		0.81		0.67	0.74	0.93	
Frt				0.934					0.850		0.958	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	1685	0	1601	1268	0	1601	1685	1432	1601	1504	0
Flt Permitted				0.680			0.669			0.598		
Satd. Flow (perm)	0	1685	0	557	1268	0	913	1685	955	743	1504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					49				267		22	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		167.2			247.1			101.9			121.4	
Travel Time (s)		12.5			18.5			7.6			9.1	
Confl. Peds. (#/hr)	266		450	450		266	134		186	186		134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	217	85	67	57	90	267	75	99	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	217	152	0	57	90	267	75	137	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type				pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		7.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.0	40.0		11.0	40.0		38.0	38.0	38.0	9.5	38.0	
Total Split (s)	40.0	40.0		18.0	58.0		41.6	41.6	41.6	10.4	52.0	
Total Split (%)	36.4%	36.4%		16.4%	52.7%		37.8%	37.8%	37.8%	9.5%	47.3%	
Maximum Green (s)	34.0	34.0		14.0	52.0		35.6	35.6	35.6	5.9	46.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.5	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0		4.0	6.0		6.0	6.0	6.0	4.5	6.0	
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	

Lanes, Volumes, Timings
4: Lambton Drive/Perth Drive & University Drive

Existing
Mid-day Peak

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	None		Min	Min		None	None	None	None	None	
Walk Time (s)	15.0	15.0			15.0		12.0	12.0	12.0		12.0	
Flash Dont Walk (s)	19.0	19.0			19.0		20.0	20.0	20.0		20.0	
Pedestrian Calls (#/hr)	200	200			200		100	100	100		100	
Act Effct Green (s)				53.3	51.2		26.6	26.6	26.6	35.9	34.4	
Actuated g/C Ratio				0.54	0.52		0.27	0.27	0.27	0.37	0.35	
v/c Ratio				0.50	0.22		0.23	0.20	0.59	0.23	0.25	
Control Delay				18.7	11.6		30.6	28.8	9.6	21.1	18.9	
Queue Delay				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay				18.7	11.6		30.6	28.8	9.6	21.1	18.9	
LOS				B	B		C	C	A	C	B	
Approach Delay					15.8			16.6			19.7	
Approach LOS					B			B			B	
Queue Length 50th (m)				24.6	11.5		8.7	13.7	0.0	9.4	15.2	
Queue Length 95th (m)				39.5	23.8		19.2	26.1	21.8	18.6	28.8	
Internal Link Dist (m)		143.2			223.1			77.9			97.4	
Turn Bay Length (m)				30.0			15.0		50.0	30.0		
Base Capacity (vph)				457	717		342	632	525	325	741	
Starvation Cap Reductn				0	0		0	0	0	0	0	
Spillback Cap Reductn				0	0		0	0	0	0	0	
Storage Cap Reductn				0	0		0	0	0	0	0	
Reduced v/c Ratio				0.47	0.21		0.17	0.14	0.51	0.23	0.18	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 98

Natural Cycle: 100

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 17.0

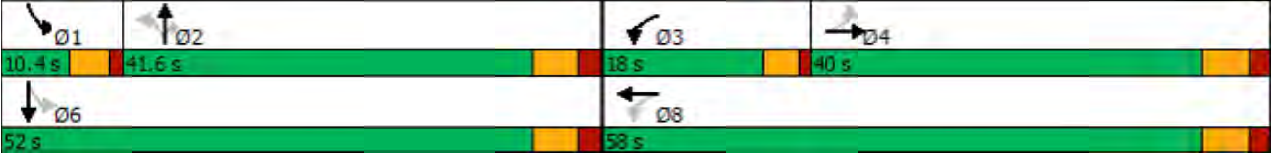
Intersection LOS: B

Intersection Capacity Utilization 78.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 4: Lambton Drive/Perth Drive & University Drive



Lanes, Volumes, Timings
4: Lambton Drive/Perth Drive & University Drive

EXISTING
PM Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↖	↗		↖	↗	↖	↗	↖	↗
Traffic Volume (vph)	0	0	0	312	68	55	39	101	329	176	190	30
Future Volume (vph)	0	0	0	312	68	55	39	101	329	176	190	30
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Storage Length (m)	0.0		0.0	30.0		0.0	15.0		50.0	30.0		0.0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.49	0.82				0.70	0.77		
Frt				0.933					0.850		0.979	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	1586	0	1507	1220	0	1507	1586	1348	1507	1553	0
Flt Permitted				0.679			0.610			0.588		
Satd. Flow (perm)	0	1586	0	524	1220	0	967	1586	940	718	1553	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					52				358		9	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		167.2			247.1			101.9			121.4	
Travel Time (s)		12.5			18.5			7.6			9.1	
Confl. Peds. (#/hr)				449		235			168	168		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	339	74	60	42	110	358	191	207	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	339	134	0	42	110	358	191	240	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type				pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		7.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.0	40.0		11.0	40.0		38.0	38.0	38.0	9.5	38.0	
Total Split (s)	40.0	40.0		20.0	60.0		39.0	39.0	39.0	11.0	50.0	
Total Split (%)	36.4%	36.4%		18.2%	54.5%		35.5%	35.5%	35.5%	10.0%	45.5%	
Maximum Green (s)	34.0	34.0		16.0	54.0		33.0	33.0	33.0	6.5	44.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.5	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0		4.0	6.0		6.0	6.0	6.0	4.5	6.0	
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	

Lanes, Volumes, Timings
4: Lambton Drive/Perth Drive & University Drive

EXISTING
PM Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	None		Min	Min		None	None	None	None	Min	
Walk Time (s)	15.0	15.0			15.0		12.0	12.0	12.0		12.0	
Flash Dont Walk (s)	19.0	19.0			19.0		20.0	20.0	20.0		20.0	
Pedestrian Calls (#/hr)	200	200			200		100	100	100		100	
Act Effct Green (s)				55.6	53.6		27.0	27.0	27.0	39.7	38.2	
Actuated g/C Ratio				0.54	0.52		0.26	0.26	0.26	0.38	0.37	
v/c Ratio				0.80	0.20		0.17	0.27	0.70	0.59	0.42	
Control Delay				33.0	10.6		30.5	31.4	11.7	31.4	25.6	
Queue Delay				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay				33.0	10.6		30.5	31.4	11.7	31.4	25.6	
LOS				C	B		C	C	B	C	C	
Approach Delay					26.7			17.5			28.2	
Approach LOS					C			B			C	
Queue Length 50th (m)				43.4	9.1		6.6	17.7	0.0	27.1	34.5	
Queue Length 95th (m)				#82.6	20.7		15.4	32.0	28.9	44.2	55.0	
Internal Link Dist (m)		143.2			223.1			77.9			97.4	
Turn Bay Length (m)				30.0			15.0		50.0	30.0		
Base Capacity (vph)				433	666		310	509	545	324	670	
Starvation Cap Reductn				0	0		0	0	0	0	0	
Spillback Cap Reductn				0	0		0	0	0	0	0	
Storage Cap Reductn				0	0		0	0	0	0	0	
Reduced v/c Ratio				0.78	0.20		0.14	0.22	0.66	0.59	0.36	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 103.9

Natural Cycle: 100

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 23.8

Intersection LOS: C

Intersection Capacity Utilization 76.8%

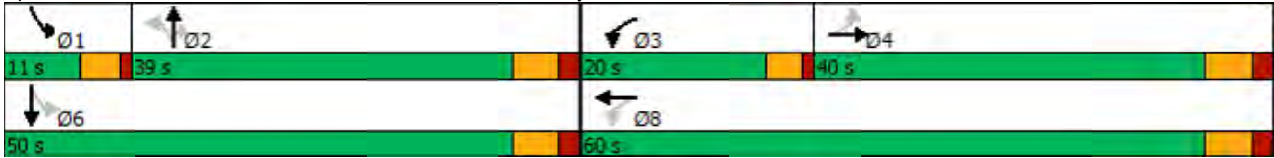
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Lambton Drive/Perth Drive & University Drive



Lanes, Volumes, Timings
4: Lambton Drive/Perth Drive & University Drive

EXISTING PM PEAK
With Pedestrian Phase

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↗		↖	↗	↖	↗	↖	↗
Traffic Volume (vph)	0	0	0	312	68	55	39	101	329	176	190	30
Future Volume (vph)	0	0	0	312	68	55	39	101	329	176	190	30
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Storage Length (m)	0.0		0.0	30.0		0.0	15.0		50.0	30.0		0.0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.933				0.850			0.979
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	0	0	1507	1480	0	1507	1586	1348	1507	1553	0
Flt Permitted				0.950			0.610			0.590		
Satd. Flow (perm)	0	0	0	1507	1480	0	967	1586	1348	936	1553	0
Right Turn on Red				No		No			No			No
Satd. Flow (RTOR)												
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		167.2			247.1			101.9			121.4	
Travel Time (s)		15.0			22.2			9.2			10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	339	74	60	42	110	358	191	207	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	339	134	0	42	110	358	191	240	0
Turn Type				Split	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases				3	3			2		1	6	
Permitted Phases							2		2	6		
Detector Phase				3	3		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)				7.0	7.0		12.0	12.0	12.0	7.0	12.0	
Minimum Split (s)				11.0	11.0		18.0	18.0	18.0	11.5	18.0	
Total Split (s)				24.0	24.0		30.5	30.5	30.5	11.5	42.0	
Total Split (%)				24.0%	24.0%		30.5%	30.5%	30.5%	11.5%	42.0%	
Maximum Green (s)				20.0	20.0		24.5	24.5	24.5	7.5	36.0	
Yellow Time (s)				3.0	3.0		4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)				1.0	1.0		2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)				4.0	4.0		6.0	6.0	6.0	4.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				None	None		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)				20.0	20.0		24.5	24.5	24.5	38.0	36.0	
Actuated g/C Ratio				0.20	0.20		0.24	0.24	0.24	0.38	0.36	
v/c Ratio				1.13	0.45		0.18	0.28	1.08	0.48	0.43	
Control Delay				128.7	40.9		32.3	33.0	111.6	27.1	27.2	
Queue Delay				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay				128.7	40.9		32.3	33.0	111.6	27.1	27.2	

Lanes, Volumes, Timings
4: Lambton Drive/Perth Drive & University Drive

EXISTING PM PEAK
With Pedestrian Phase

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (m)	
Storage Lanes	
Taper Length (m)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	18.0
Minimum Split (s)	34.0
Total Split (s)	34.0
Total Split (%)	34%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Max
Walk Time (s)	18.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	500
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings
4: Lambton Drive/Perth Drive & University Drive

EXISTING PM PEAK
With Pedestrian Phase

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
LOS				F	D		C	C	F	C	C	
Approach Delay					103.8			88.1			27.2	
Approach LOS					F			F			C	
Queue Length 50th (m)				~76.4	23.0		6.4	17.4	~78.2	25.9	34.7	
Queue Length 95th (m)				#129.1	41.0		15.5	32.3	#132.2	43.2	56.2	
Internal Link Dist (m)		143.2			223.1			77.9			97.4	
Turn Bay Length (m)				30.0			15.0		50.0	30.0		
Base Capacity (vph)				301	296		236	388	330	398	559	
Starvation Cap Reductn				0	0		0	0	0	0	0	
Spillback Cap Reductn				0	0		0	0	0	0	0	
Storage Cap Reductn				0	0		0	0	0	0	0	
Reduced v/c Ratio				1.13	0.45		0.18	0.28	1.08	0.48	0.43	

Intersection Summary	
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Natural Cycle:	100
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.13
Intersection Signal Delay:	74.8
Intersection LOS:	E
Intersection Capacity Utilization:	57.9%
ICU Level of Service:	B
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 4: Lambton Drive/Perth Drive & University Drive



Lanes, Volumes, Timings
4: Lambton Drive/Perth Drive & University Drive

EXISTING PM PEAK
With Pedestrian Phase

Lane Group	Ø9
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
7: Sunset Street/Medway Parking Lot & University Drive

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	317	181	7	314	6	89	1	14	43	9	43
Future Volume (vph)	7	317	181	7	314	6	89	1	14	43	9	43
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Storage Length (m)	0.0		5.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.48		0.99			0.97			0.96	
Frt			0.850		0.997			0.982			0.939	
Flt Protected		0.999			0.999			0.959			0.978	
Satd. Flow (prot)	0	1684	1432	0	1668	0	0	1573	0	0	1514	0
Flt Permitted		0.991			0.991			0.959			0.978	
Satd. Flow (perm)	0	1665	693	0	1645	0	0	1539	0	0	1486	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		1			8			42	
Link Speed (k/h)		30			30			30			30	
Link Distance (m)		90.5			128.5			157.9			100.6	
Travel Time (s)		10.9			15.4			18.9			12.1	
Confl. Peds. (#/hr)	137		237	237		137	13		21	21		13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	345	197	8	341	7	97	1	15	47	10	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	353	197	0	356	0	0	113	0	0	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA		Split	NA	
Protected Phases		4			8		2	2		6	6	
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0		26.0	26.0		26.0	26.0	
Total Split (s)	38.0	38.0	38.0	38.0	38.0		26.0	26.0		26.0	26.0	
Total Split (%)	42.2%	42.2%	42.2%	42.2%	42.2%		28.9%	28.9%		28.9%	28.9%	
Maximum Green (s)	32.0	32.0	32.0	32.0	32.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	

Lanes, Volumes, Timings

7: Sunset Street/Medway Parking Lot & University Drive

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	Max	Max	Max	Max	Max		None	None		None	None	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	120	120	120	120	120		20	20		20	20	
Act Effct Green (s)		39.2	39.2		39.2			12.2			11.3	
Actuated g/C Ratio		0.54	0.54		0.54			0.17			0.15	
v/c Ratio		0.40	0.47		0.40			0.42			0.39	
Control Delay		19.4	14.6		19.6			32.1			23.4	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay		19.4	14.6		19.6			32.1			23.4	
LOS		B	B		B			C			C	
Approach Delay		17.7			19.6			32.1			23.4	
Approach LOS		B			B			C			C	
Queue Length 50th (m)		28.4	6.4		28.8			12.4			7.4	
Queue Length 95th (m)		76.9	37.2		78.1			30.0			22.1	
Internal Link Dist (m)		66.5			104.5			133.9			76.6	
Turn Bay Length (m)			5.0									
Base Capacity (vph)		891	421		880			453			461	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.40	0.47		0.40			0.25			0.23	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 73.2

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 20.3

Intersection LOS: C

Intersection Capacity Utilization 65.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 7: Sunset Street/Medway Parking Lot & University Drive



Lanes, Volumes, Timings

4: Lambton Drive & Realigned University Drive

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	283	0	135	0	151	329	47	84	0
Future Volume (vph)	0	0	0	283	0	135	0	151	329	47	84	0
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Storage Length (m)	0.0		0.0	30.0		0.0	15.0		50.0	30.0		0.0
Storage Lanes	0		0	1		1	0		1	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.78	0.85		
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1601	0	1432	0	1685	1432	1601	1685	0
Flt Permitted				0.950						0.468		
Satd. Flow (perm)	0	0	0	1601	0	1432	0	1685	1122	672	1685	0
Right Turn on Red				Yes		Yes			Yes			Yes
Satd. Flow (RTOR)						188			358			
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		167.2			247.1			101.9			121.4	
Travel Time (s)		12.5			18.5			7.6			9.1	
Confl. Peds. (#/hr)						246			106	106		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	308	0	147	0	164	358	51	91	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	308	0	147	0	164	358	51	91	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type				custom		Prot		NA	pm+ov	pm+pt	NA	
Protected Phases				3		4		2	3	1	6	
Permitted Phases				4					2	6		
Detector Phase				3		4		2	3	1	6	
Switch Phase												
Minimum Initial (s)				7.0		7.0		12.0	7.0	7.0	12.0	
Minimum Split (s)				36.0		16.0		35.0	36.0	16.0	32.0	
Total Split (s)				36.0		21.0		37.0	36.0	16.0	53.0	
Total Split (%)				32.7%		19.1%		33.6%	32.7%	14.5%	48.2%	
Maximum Green (s)				32.0		12.0		28.0	32.0	7.0	44.0	
Yellow Time (s)				3.0		4.0		4.0	3.0	4.0	4.0	
All-Red Time (s)				1.0		5.0		5.0	1.0	5.0	5.0	
Lost Time Adjust (s)				0.0		0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)				4.0		9.0		9.0	4.0	9.0	9.0	
Lead/Lag				Lead		Lag		Lag	Lead	Lead		
Lead-Lag Optimize?				Yes		Yes			Yes			
Vehicle Extension (s)				3.0		3.0		3.0	3.0	3.0	3.0	

Lanes, Volumes, Timings
4: Lambton Drive & Realigned University Drive

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode				Min		Min		None	Min	None	Min	
Walk Time (s)				15.0				12.0	15.0			
Flash Dont Walk (s)				14.0				14.0	14.0			
Pedestrian Calls (#/hr)				250				100	250			
Act Effct Green (s)				46.4		7.6		22.8	57.5	34.8	34.8	
Actuated g/C Ratio				0.49		0.08		0.24	0.61	0.37	0.37	
v/c Ratio				0.39		0.51		0.40	0.39	0.16	0.15	
Control Delay				19.4		9.5		34.1	2.2	19.1	19.1	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				19.4		9.5		34.1	2.2	19.1	19.1	
LOS				B		A		C	A	B	B	
Approach Delay					16.2			12.2			19.1	
Approach LOS					B			B			B	
Queue Length 50th (m)				39.5		0.0		26.1	0.0	5.8	10.6	
Queue Length 95th (m)				61.0		9.7		45.6	9.8	13.4	21.1	
Internal Link Dist (m)		143.2			223.1			77.9			97.4	
Turn Bay Length (m)				30.0					50.0	30.0		
Base Capacity (vph)				768		349		510	955	318	801	
Starvation Cap Reductn				0		0		0	0	0	0	
Spillback Cap Reductn				0		0		0	0	0	0	
Storage Cap Reductn				0		0		0	0	0	0	
Reduced v/c Ratio				0.40		0.42		0.32	0.37	0.16	0.11	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 94.5

Natural Cycle: 105

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 14.7

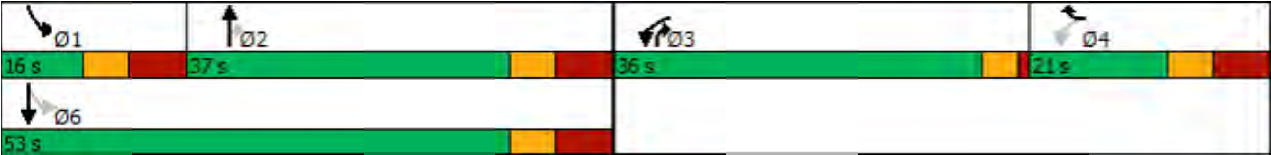
Intersection LOS: B

Intersection Capacity Utilization 63.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Lambton Drive & Realigned University Drive



Lanes, Volumes, Timings
4: Lambton Drive & Realigned University Drive

Mid-day Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	278	0	62	0	83	246	69	91	0
Future Volume (vph)	0	0	0	278	0	62	0	83	246	69	91	0
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Storage Length (m)	0.0		0.0	30.0		0.0	15.0		50.0	30.0		0.0
Storage Lanes	0		0	1		1			1	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.63	0.71		
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1601	0	1432	0	1685	1432	1601	1685	0
Flt Permitted				0.950						0.498		
Satd. Flow (perm)	0	0	0	1601	0	1432	0	1685	909	598	1685	0
Right Turn on Red				Yes		Yes			Yes			Yes
Satd. Flow (RTOR)						188			267			
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		167.2			247.1			101.9			121.4	
Travel Time (s)		12.5			18.5			7.6			9.1	
Confl. Peds. (#/hr)						716			186	186		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	302	0	67	0	90	267	75	99	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	302	0	67	0	90	267	75	99	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type				custom		Prot		NA	pm+ov	pm+pt		NA
Protected Phases				3		4		2	3	1	6	
Permitted Phases				4					2	6		
Detector Phase				3		4		2	3	1	6	
Switch Phase												
Minimum Initial (s)				7.0		5.0		10.0	7.0	5.0	10.0	
Minimum Split (s)				34.0		22.5		36.0	34.0	14.0	32.0	
Total Split (s)				34.0		22.5		38.5	34.0	15.0	53.5	
Total Split (%)				30.9%		20.5%		35.0%	30.9%	13.6%	48.6%	
Maximum Green (s)				30.0		18.0		29.5	30.0	6.0	44.5	
Yellow Time (s)				3.0		3.5		4.0	3.0	4.0	4.0	
All-Red Time (s)				1.0		1.0		5.0	1.0	5.0	5.0	
Lost Time Adjust (s)				0.0		0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)				4.0		4.5		9.0	4.0	9.0	9.0	
Lead/Lag				Lead		Lag		Lag	Lead	Lead		
Lead-Lag Optimize?				Yes		Yes			Yes			
Vehicle Extension (s)				3.0		3.0		3.0	3.0	3.0	3.0	

Lanes, Volumes, Timings
4: Lambton Drive & Realigned University Drive

Mid-day Peak

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode				Min		None		None	Min	None	None	
Walk Time (s)				15.0				12.0	15.0			
Flash Dont Walk (s)				14.0				14.0	14.0			
Pedestrian Calls (#/hr)				500				140	500			
Act Effct Green (s)				41.0		5.6		22.3	60.8	33.6	33.6	
Actuated g/C Ratio				0.47		0.06		0.25	0.69	0.38	0.38	
v/c Ratio				0.40		0.25		0.21	0.29	0.25	0.15	
Control Delay				20.3		2.2		27.2	1.6	17.6	16.4	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				20.3		2.2		27.2	1.6	17.6	16.4	
LOS				C		A		C	A	B	B	
Approach Delay					17.0			8.0			16.9	
Approach LOS					B			A			B	
Queue Length 50th (m)				37.7		0.0		12.3	0.0	7.7	10.2	
Queue Length 95th (m)				60.0		0.0		24.0	6.6	15.8	19.7	
Internal Link Dist (m)		143.2			223.1			77.9			97.4	
Turn Bay Length (m)				30.0					50.0	30.0		
Base Capacity (vph)				705		447		575	920	298	869	
Starvation Cap Reductn				0		0		0	0	0	0	
Spillback Cap Reductn				0		0		0	0	0	0	
Storage Cap Reductn				0		0		0	0	0	0	
Reduced v/c Ratio				0.43		0.15		0.16	0.29	0.25	0.11	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 87.8

Natural Cycle: 110

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.40

Intersection Signal Delay: 13.4

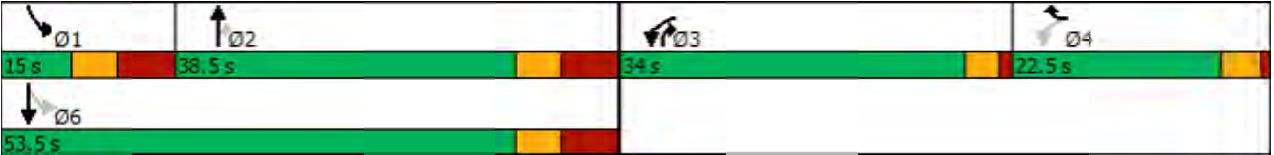
Intersection LOS: B

Intersection Capacity Utilization 49.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Lambton Drive & Realigned University Drive



Lanes, Volumes, Timings
4: Lambton Drive & Realigned University Drive

PM Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖		↗		↑	↗	↖	↑	
Traffic Volume (vph)	0	0	0	380	0	55	0	101	329	176	190	0
Future Volume (vph)	0	0	0	380	0	55	0	101	329	176	190	0
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Storage Length (m)	0.0			0.0		0.0	15.0		50.0	30.0		0.0
Storage Lanes	0			0		1		0	1	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.64	0.67		
Frt						0.850			0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1507	0	1348	0	1586	1348	1507	1586	0
Flt Permitted				0.950						0.686		
Satd. Flow (perm)	0	0	0	1507	0	1348	0	1586	862	726	1586	0
Right Turn on Red				Yes		Yes			Yes			Yes
Satd. Flow (RTOR)						173			358			
Link Speed (k/h)		30			30			30			30	
Link Distance (m)		167.2			247.1			101.9			121.4	
Travel Time (s)		20.1			29.7			12.2			14.6	
Confl. Peds. (#/hr)						674			168	168		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	413	0	60	0	110	358	191	207	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	413	0	60	0	110	358	191	207	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Turning Speed (k/h)	15		9	15		9	15		9	15		9
Turn Type				custom		Prot		NA	pm+ov	pm+pt	NA	
Protected Phases				3		4		2	3	1	6	
Permitted Phases				4					2	6		
Detector Phase				3		4		2	3	1	6	
Switch Phase												
Minimum Initial (s)				20.0		8.0		5.0	20.0	5.0	5.0	
Minimum Split (s)				42.0		17.0		41.0	42.0	14.0	40.0	
Total Split (s)				42.0		17.0		41.0	42.0	20.0	61.0	
Total Split (%)				35.0%		14.2%		34.2%	35.0%	16.7%	50.8%	
Maximum Green (s)				38.0		8.0		32.0	38.0	11.0	52.0	
Yellow Time (s)				3.0		4.0		4.0	3.0	4.0	4.0	
All-Red Time (s)				1.0		5.0		5.0	1.0	5.0	5.0	
Lost Time Adjust (s)				0.0		0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)				4.0		9.0		9.0	4.0	9.0	9.0	
Lead/Lag				Lead		Lag		Lead	Lead	Lag		
Lead-Lag Optimize?				Yes		Yes			Yes			
Vehicle Extension (s)				3.0		3.0		3.0	3.0	3.0	3.0	

Lanes, Volumes, Timings
4: Lambton Drive & Realigned University Drive

PM Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode				Max		None		None	Max	None	None	
Walk Time (s)				15.0				12.0	15.0			
Flash Dont Walk (s)				14.0				14.0	14.0			
Pedestrian Calls (#/hr)				500				100	500			
Act Effct Green (s)				51.7		8.2		21.4	65.6	36.9	36.9	
Actuated g/C Ratio				0.51		0.08		0.21	0.64	0.36	0.36	
v/c Ratio				0.54		0.22		0.33	0.41	0.62	0.36	
Control Delay				21.4		1.9		37.6	2.0	39.0	26.3	
Queue Delay				0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay				21.4		1.9		37.6	2.0	39.0	26.3	
LOS				C		A		D	A	D	C	
Approach Delay					18.9			10.4			32.4	
Approach LOS					B			B			C	
Queue Length 50th (m)				57.1		0.0		19.1	0.0	28.6	31.2	
Queue Length 95th (m)				91.3		0.0		35.7	4.6	46.6	49.9	
Internal Link Dist (m)		143.2			223.1			77.9			97.4	
Turn Bay Length (m)				30.0					50.0	30.0		
Base Capacity (vph)				764		267		511	867	384	831	
Starvation Cap Reductn				0		0		0	0	0	0	
Spillback Cap Reductn				0		0		0	0	0	0	
Storage Cap Reductn				0		0		0	0	0	0	
Reduced v/c Ratio				0.54		0.22		0.22	0.41	0.50	0.25	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 102

Natural Cycle: 115

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 19.9

Intersection LOS: B

Intersection Capacity Utilization 57.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Lambton Drive & Realigned University Drive



Lanes, Volumes, Timings
7: Sunset Street/Medway Parking Lot & University Drive

Realigned Sunset Street
PM Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↖	↗		↖	↗
Traffic Volume (vph)	7	317	181	7	314	6	89	1	14	43	9	43
Future Volume (vph)	7	317	181	7	314	6	89	1	14	43	9	43
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Storage Length (m)	0.0		5.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.63		0.99			0.98			0.97	
Frt			0.850		0.997			0.982			0.939	
Flt Protected		0.999			0.999			0.959			0.978	
Satd. Flow (prot)	0	1684	1432	0	1671	0	0	1576	0	0	1520	0
Flt Permitted		0.991			0.991			0.685			0.801	
Satd. Flow (perm)	0	1666	905	0	1650	0	0	1110	0	0	1230	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		2			15			47	
Link Speed (k/h)		30			30			30			30	
Link Distance (m)		90.5			128.5			157.9			100.6	
Travel Time (s)		10.9			15.4			18.9			12.1	
Confl. Peds. (#/hr)	137		237	237		137	13		21	21		13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	345	197	8	341	7	97	1	15	47	10	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	353	197	0	356	0	0	113	0	0	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0		26.0	26.0		26.0	26.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (%)	51.7%	51.7%	51.7%	51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	

Lanes, Volumes, Timings

7: Sunset Street/Medway Parking Lot & University Drive

Realigned Sunset Street

PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	Max	Max	Max	Max	Max		None	None		None	None	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	120	120	120	120	120		20	20		20	20	
Act Effct Green (s)		30.3	30.3		30.3			10.4			10.4	
Actuated g/C Ratio		0.62	0.62		0.62			0.21			0.21	
v/c Ratio		0.34	0.33		0.35			0.46			0.35	
Control Delay		8.9	6.7		9.0			20.1			12.7	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay		8.9	6.7		9.0			20.1			12.7	
LOS		A	A		A			C			B	
Approach Delay		8.1			9.0			20.1			12.7	
Approach LOS		A			A			C			B	
Queue Length 50th (m)		14.4	3.7		14.5			7.1			3.9	
Queue Length 95th (m)		43.8	19.9		44.3			17.2			12.6	
Internal Link Dist (m)		66.5			104.5			133.9			76.6	
Turn Bay Length (m)			5.0									
Base Capacity (vph)		1029	595		1020			531			604	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.34	0.33		0.35			0.21			0.17	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 49.1

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 10.0

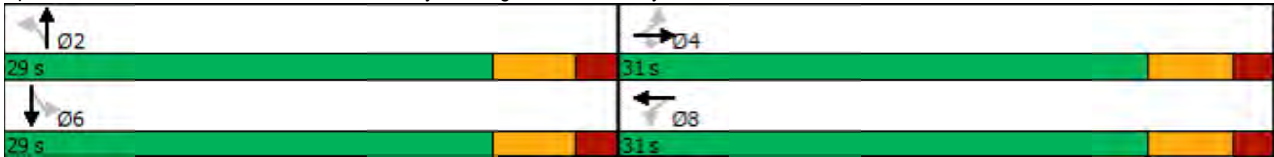
Intersection LOS: B

Intersection Capacity Utilization 65.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 7: Sunset Street/Medway Parking Lot & University Drive



Appendix F

Environmental Investigations

MEMORANDUM

TO: File

DATE: February 29, 2024, Rev. 1

FROM: Zachery Wells and Ryan Coady, BT Engineering Inc.

PROJECT #: 22-013

PROJECT: University Drive Bridge Improvements (Western University)

SUBJECT: 2022 Natural Environment Reconnaissance Memorandum

1.0 INTRODUCTION

Reconnaissance investigations of the University Drive Bridge crossing over the North Thames River were conducted on April 14 and September 15, 2022 by BT Engineering Inc. (BTE), Roots Environmental (Roots) and Burgess Gleason Environmental (BGE). The purpose of these visits was to identify existing natural heritage features and key environmental constraints. The Study Area is shown on **Figure 1**.

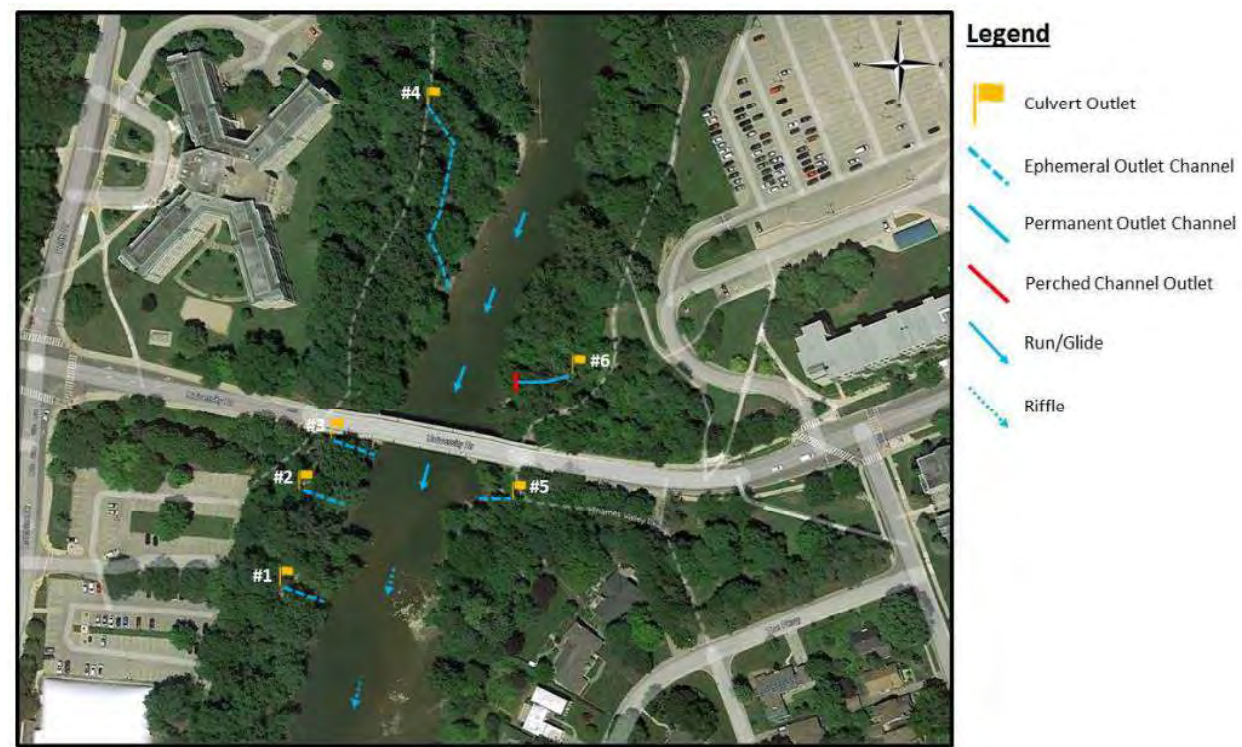


Figure 1 – Study Area

2.0 EXISTING CONDITIONS

The assessed limits were from approximately 150 m north of the bridge crossing to 100 m south along the east and west shorelines of the Thames River. A 30-40 m riparian zone buffer exists along the banks of the river in the immediate vicinity of the bridge.

Subject: 2022 Natural Environment Reconnaissance Memorandum
Project: University Drive Bridge Improvements (Western University)
Date: February 29, 2024, Revision 1

ENTUITIVE
BTE

2.1 Terrestrial

A desktop review was completed for the Study Area prior to site investigations to identify any known natural heritage features. This review included the:

- Natural Heritage Information Centre (NHIC) Make-a-Map: Natural Areas; and
- City of London Official Plan and interactive maps.

The NHIC documents occurrences for Species at Risk (SAR) and rare species within the 1-km square that includes the Study Area. These occurrences include the Spiny Softshell (*Apalone spinifera*) (Endangered) (END), Barn Swallow (*Hirundo rustica*) (Threatened) (THR), Butternut (*Juglans cinerea*) (END), Northern Map Turtle (*Graptemys geographica*) (Special Concern) (SC) and Snapping Turtle (*Chelydra serpentina*) (SC). No wetlands (evaluated or unevaluated) or Areas of Natural and Scientific Interest (ANSIs) were mapped within the Study Area.

The City of London Official Plan Map Five – Natural Heritage identifies the presence of the North Thames River and an associated Significant Valleyland feature along both sides.

Woodland and riparian communities within the valleyland on both sides of the North Thames River were found to be heavily impacted by urban uses, including an active trail system, passive trails, University Drive Bridge and associated roadways (see **Attachment 1** – Representative Photographs). Woodland cover was found to be a mix of largely deciduous species, including Sycamore (*Platanus occidentalis*), Basswood (*Tilia americana*), Silver Maple (*Acer saccharinum*), Hard Maple (*Acer saccharum*), Green Ash (*Fraxinus pennsylvanica*), Black Walnut (*Juglans nigra*), Black Maple (*Acer nigrum*), Crack Willow (*Salix fragilis*) and Northern Catalpa (*Catalpa speciosa*).

A potential Butternut or Black Walnut tree was identified on the east side of the North Thames River during the site investigation in September 2022. This specimen was a small seedling and presented hybrid characteristics of both a Butternut and Black Walnut. GPS coordinates were taken and dependant on the selected alternative for a potential new bridge crossing. It is recommended that this tree be genetically tested to determine if it is a true Butternut and if there are any requirements for protection or registration/permitting under the *Endangered Species Act* (ESA).

No other rare or SAR species were observed during the site investigations. During information sessions for the project, specimens of the American Chestnut (*Castanea dentata*) (Endangered) were noted in the Study Area and specifically, in the southwest corner of the bridge. Upon site review, these trees were found to be Horsechestnut (*Aesculus hippocastanum*).

The existing bridge has the potential to support nesting Barn Swallow (identified through the desktop review) and SAR bat species (Little Brown Myotis and Northern Myotis). Further assessment will be required for any significant alternations to the existing bridge that could impact use by these species.

Within the North Thames River, observations were made for the Snapping Turtle and Midland Painted Turtle. The Snapping Turtle is listed as a species of Special Concern under the ESA. The river likely provides a corridor function for turtle and other herptiles in the area.

Recommendations to minimize impacts to wildlife (i.e. timing of works, exclusion fencing, etc.) will form part of mitigation measures for any future works.

2.2 Arborist Report

A site inspection was completed of the Study Area on September 15, 2022. The preliminary site evaluation was undertaken with Roots Environmental and representatives from BTE. In general, the

purpose of the site assessment was to identify any trees that may be considered 'significant'. 'Significant' as it relates to arboriculture typically includes those trees that may be considered endangered or threatened under the ESA or as having a high heritage value. Usually, heritage trees have been designated under the *Ontario Heritage Act* (OHA) based on a unique value. A Heritage Tree is a large individual tree that would be irreplaceable based on age, rarity, and size, in addition to historical, ecological, botanical, and aesthetic value.

The results of the preliminary site evaluation showed that there are no significant heritage trees in the Study Area that are or would be designated under the OHA. Further, it appears that there are no definitive trees such as White Walnut, Butternut or American Chestnut in the Study Area that would be subject to the ESA. It should be noted that one juvenile Black Walnut was observed within the forest unit on the east side of the bridge (see **Section 2.1**). While it appears that this specimen is Black Walnut, it may be prudent to test the genetics of this tree to confirm that it is indeed not a Butternut. Other tree species within the Study Area include a variety of ornamental plantings and numerous Sycamore trees.

In summary, there appears to be no 'significant' trees within the Study Area that would prevent the implementation of any of preliminary proposed undertakings based on a preliminary analysis. It should be noted that this preliminary evaluation is based on a single site inspection and that more detailed evaluations will occur through the Environmental Assessment process. The more detailed assessments will be fully integrated with the ecological results of the natural environment report or environmental impact study.

2.3 Aquatic

An assessment of aquatic habitat was completed from 150 m upstream to 150 m downstream of the University Drive Bridge along the west and east shorelines. A 30-40 m wide riparian zone buffer exists along the banks of the river in the Study Area, dominated by Manitoba Maple (*Acer negundo*), Sycamore (*Platanus occidentalis*), Silver Maple (*Acer saccharinum*) and Basswood (*Tilia americana*). This riparian corridor has been heavily impacted through human activity (i.e. trails), wind blown trees from a lack of adjacent woodlands to buffer this area, and invasive species such as Common Buckthorn (*Rhamnus cathartica*). The riverbanks are nearly at grade with the water level encountered during the spring site visit, resulting in a large floodplain containing scattered trees, many of which are damaged from beaver activities. The floodplain extends approximately 20 m inland from the edge of the river. Moderate erosion is present along the river shoreline, likely the result of fluctuating water levels during storm events and tree clearing resulting from beaver activities and windthrow. Six (6) stormwater outlets were observed along the shorelines of the river, each showing signs of erosion and channel instability as indicated by the placement of riprap and cobble in an attempt to stabilize the failing outlet channels.

Upstream Morphology

The river extends as a flat or large ponded area with minimal visible flow from 150 m upstream southward to the bridge crossing. The width of the upstream channel ranges from 35 to 50 m and is variable depending on the time of year. Depths range from an average of 0.4 m to an observed local maximum of 0.8 m near the centre of the channel (i.e. the thalweg). Substrate is predominantly cobble and gravel covered by a thin layer of silty sand and algal growth. Woody debris and overhanging limbs offer good quality aquatic habitat along both the east and west upstream banks. Save for woody debris, no in-water refugia were observed (e.g. large cobble, boulders, stumps, submerged logs) throughout this reach. Schools of *Leuciscidae* spp. and Darters (Tessellated or Johnny) were observed along the shorelines, predominantly in areas of accumulated woody debris. Fish were not visible beyond the

shoreline due to naturally occurring (in the context of surrounding stormwater outlets and developed lands) turbid conditions in the river.

Bridge Crossing Morphology

River channel morphology is much the same at the bridge crossing as it is upstream. The west and east abutments sit back (>20 m) from the water's edge during both the spring and summer site visits. The west pier, although not entirely surrounded by water, sits within the wetted shoreline of the river where water is an average depth of 0.3 m. The east pier is entirely within the river channel, regardless of season, where water is an average depth of 0.5 m. The width of the channel between the east edge of the east pier and the rock-protected shoreline is approximately 8 m. Schools of Darters were observed around the west pier.

Downstream Morphology

The river extends from the bridge downstream as a flat for approximately 45 m before transitioning to a riffle/run which continues beyond the remainder of the assessed zone (105 m). Depths are shallower in this reach, with exposed cobble, boulders and rocky shoals creating small pools between segments of riffles. A review of historical satellite imagery of the Study Area appears to show an infrequent seasonal barrier forming due to low water levels and subsequent exposure of the rocky shoal.

Fish Communities and Species at Risk

A Fisheries Information Request was submitted to MNRF on March 30, 2022, and a response was received on April 11, 2022. Historical fish community data were available for the North Thames River in 2015 and for Medway Creek in 2013; a coolwater creek approximately 550 m north of the bridge crossing. Data are included in **Table 1** below.

Table 1 – Results of the MNRF Fisheries Information Request – North Thames River and Medway Creek

Common Name	Scientific Name	Waterbody Observed
Blackside Darter	<i>Percina maculata</i>	North Thames River and Medway Creek
Bluegill	<i>Lepomis macrochirus</i>	Medway Creek
Bluntnose Minnow	<i>Pimephales notatus</i>	Medway Creek
Brook Stickleback	<i>Culaea inconstans</i>	North Thames River
Central Stoneroller	<i>Campostoma anomalum</i>	Medway Creek
Fantail Darter	<i>Etheostoma flabellare</i>	Medway Creek
Golden Redhorse	<i>Moxostoma erythrurum</i>	North Thames River and Medway Creek
Greenside Darter	<i>Etheostoma blennioides</i>	North Thames River and Medway Creek
Johnny Darter	<i>Etheostoma nigrum</i>	North Thames River and Medway Creek
Logperch	<i>Percina caprodes</i>	North Thames River
Longnose Dace	<i>Rhinichthys cataractae</i>	North Thames River and Medway Creek
Mimic Shiner	<i>Notropis volucellus</i>	North Thames River and Medway Creek

Common Name	Scientific Name	Waterbody Observed
Redhorse species	<i>Moxostoma sp.</i>	North Thames River
Northern Hog Sucker	<i>Hypentelium nigricans</i>	North Thames River and Medway Creek
Quillback	<i>Carpiodes cyprinus</i>	Medway Creek
Rainbow Darter	<i>Etheostoma caeruleum</i>	North Thames River and Medway Creek
River Chub	<i>Nocomis micropogon</i>	North Thames River and Medway Creek
Rock Bass	<i>Ambloplites rupestris</i>	North Thames River and Medway Creek
Rosyface Shiner	<i>Notropis rubellus</i>	North Thames River
Silver Redhorse	<i>Moxostoma anisurum</i>	Medway Creek
Smallmouth Bass	<i>Micropterus dolomieu</i>	North Thames River and Medway Creek
Spotfin Shiner	<i>Cyprinella spiloptera</i>	North Thames River and Medway Creek
Stonecat	<i>Noturus flavus</i>	Medway Creek
Striped Shiner	<i>Luxilus chrysocephalus</i>	North Thames River and Medway Creek
White Sucker	<i>Catostomus commersonii</i>	North Thames River and Medway Creek

None of the above species are listed under the ESA or the federal *Species at Risk Act* (SARA). Due to the direct connection of Medway Creek to the North Thames River, it is likely that fish community composition at the bridge has the potential to include all Medway Creek fishes. Records of aquatic SAR in the vicinity of the Study Area were obtained from the Department of Fisheries and Oceans’s (DFO) online SAR mapping and are included below in **Table 2**. Species of Special Concern (SC), THR and END species are included.

Table 2 – DFO Online SAR Mapping

Common Name	Scientific Name	Listing (Federal / Provincial)	Notes
Black Redhorse	<i>Moxostoma duquesnei</i>	THR / THR	Critical Habitat
Northern Sunfish	<i>Lepomis peltastes</i>	SC / SC	-
Silver Shiner	<i>Notropis photogenis</i>	THR / THR	Critical Habitat
Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	SC / THR	-

The entire aquatic environment within the Study Area is identified by DFO as protected habitat under the SARA and areas within which Critical Habitat is found for the Black Redhorse and Silver Shiner.

The Upper Thames Conservation Authority (UTCA) confirmed the capture of an individual Black Redhorse in Fish Creek in September 2023. Additionally, UTCA has recently conducted thorough aquatic sampling and identified Black Redhorse at ten different locations within the Fish Creek Watershed. The recent discovery of this rare and endangered fish in the Thames River marks the first sighting in over two decades, as reported by CBC News. The UTCA issued a media release on February 13, 2024, to confirm the discovery of Black Redhorse within the Fish Creek Watershed.

According to the DFO habitat needed for species survival must be designated as critical habitat. The smaller headwater tributaries within Fish Creek have cooler, cleaner water, with reduced levels of contaminants, sediment, and road salt than in the mainstem of the Thames. Sampling has now demonstrated that cold water habitat is suitable for Black Redhorse in smaller headwater tributaries. The Fish Creek Watershed Report Card available on the UTCA's website, identifies Fish Creek as a sub-watershed of the Northern Thames River, situated north of London and closer to Lucan.

The Thames River mainstem at Western University is unlikely to be suitable habitat for Black Redhorse because of the river size, warmer temperature, and high silt loads and turbidity than in a headwater tributary. The proposed University Drive bridge improvements will not involve in water works and will not impact fish habitat. We believe that the recent discoveries of Black Redhorse in Fish Creek are unlikely to impact plans for the University Drive bridge, but we anticipate heightened discussions surrounding this finding, from regulatory agencies or the public.

There is potential for the Wavy-rayed Lampmussel and Northern Sunfish within the Study Area. Due to the potential presence of these SAR and due to the extent of information available online, fish community sampling was not undertaken within the Study Area. Existing conditions in the Study Area appear to be suitable for the Black Redhorse, Northern Sunfish, Silver Shiner and the Wavy-rayed Lampmussel based on habitat requirements for each species. Although these species are generally intolerant of siltation (an existing condition in the Study Area), other features including depth of water, thermal regime and presence of host-fish (in the case of the Wavy-rayed Lampmussel) are enough to satisfy a screening for these species.

Schools of one or more unknown Darter species, likely Tessellated, Johnny or a hybrid, were observed along the shorelines and around the west pier. Predated shells of the Eastern Elliptio (*Elliptio complanata*) were observed, discarded along the shorelines.

3.0 PERMITS AND APPROVALS

The extent of permits and approvals related to the natural environment will depend on the design alternatives associated with the bridge. Any in-water works will require review by DFO under the Request for Review process. Depending on the extent of in-water works, their potential impacts and associated mitigation measures, DFO will determine the potential for the death of fish or Harmful Alteration, Disruption or Destruction (HADD) of fish habitat. Should the potential for HADD be identified, an Authorization application will need to be submitted under the federal *Fisheries Act*. This will require the preparation of an Offsetting Plan including pre-construction, construction and post-construction monitoring, Indigenous Consultation to be completed by both the consultant and DFO, and a Letter of Credit by Western University to be held by DFO until the project is complete. This includes post-construction monitoring, which may be in the range of 2-3 years. As the Study Area is identified as Critical SAR Habitat for multiple aquatic SAR, any in-water work will also require that one or more SARA permits be applied for. As one or more of these SAR are also listed under the provincial ESA, one or more ESA permits or species registrations will also need to be obtained prior to construction proceeding. In the event that any terrestrial SAR (i.e. bats, birds, vegetation) are found, permitting or species registrations may also be required. Provincial SAR permitting is applied for through the Ministry of the Environment, Conservation and Parks (MECP). All works will require a permit from the Upper Thames River Conservation Authority under Ontario Regulation 157/06 for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. Should a design alternative require the permanent use of new lands, a *Public Lands Act* permit may need to be obtained from the Ministry of Natural Resources and Forestry (MNRF).

Representative photographs are included in **Attachment 1** and the culvert outlet locations are identified on **Figure 1**.

Attachment 1 – Representative Photographs



View of the University Drive Bridge crossing over the North Thames River looking southwest (above). View of the tree-lined road and bridge looking west (below).



View from the bridge deck looking north (above) and south (below).



Attachment 1 – Representative Photographs



The underside of the bridge (typical, above) may provide habitat for nesting birds and bats. One bird nest was observed (below), though additional nests are likely present.



One of numerous bridge deck drains (above) outletting below onto the banks of the river (below).



Attachment 1 – Representative Photographs



View of Culvert Outlet No. 1 (above) as shown on the Study Area figure. The outlet channel conflues with the river approximately 10 m downstream (below).



Riprap material appears to have been placed along the banks of the outlet channel in an attempt to reduce erosion (above). However, erosion issues persist (below).



Attachment 1 – Representative Photographs



Shoreline erosion and windthrow are apparent throughout the Study Area (above and below). Summer field work will identify areas for additional riparian plantings.



View of Culvert Outlet No. 2 (above) and its connection to the river (below).



Attachment 1 – Representative Photographs



As with Culvert Outlet No. 1, this outlet channel appears to have been partially stabilized with cobble and riprap, likely in an attempt to reduce erosion (above and below).



Culvert Outlet No. 3 (above) does not have a particularly well-defined channel (below). Riprap and cobble have been placed as an interim repair method. Standing water was grey and likely untreated upstream.



Attachment 1 – Representative Photographs



An ephemeral channel and outlet into the river (above and below) were noted. Subsequent investigations upstream found the outlet of Culvert No. 4.



View approaching Culvert Outlet No. 3 (above) and close-up of the outlet itself, below. Note that stone walls line the outlet channel in this area (above and below).



Attachment 1 – Representative Photographs



The east shoreline has been partially stabilized with rock protection in the vicinity of the pier and abutment (above). Culvert Outlet No. 5 is shown below and is immediately south of the bridge.



The culvert appears to have at one time had a concrete spillway (above) which is now partially damaged and showing signs of erosion (below).



Attachment 1 – Representative Photographs



Culver Outlet No. 6 (above) is located approximately 20 m north of the bridge. The outlet shows signs of severe erosion, appears to contain water year-round, and bisects the trail without a formal crossing structure (below).



The outlet channel is perched approximately 1.5 m above the river (above) and has formed a plunge pool below. This is likely the only thermal refuge pool in the Study Area.



Attachment 1 – Representative Photographs



River substrate is comprised primarily of sand and gravel, with a layer of vegetative/algal growth on top (above). Predated mussel shells were observed (below), all of which are Eastern elliptio.



The majority of the river is a run/glide within the Study Area, with the exception of the portion of the river southeast of the bridge where riffles, boulders and vegetative cover are abundant (above and below).



Attachment 1 – Representative Photographs



Riparian woodland overhanging the North Thames River (above). General treed community (below).



Sycamore trees are present throughout the Study Area.

Appendix G

Cultural Heritage Impact Assessment

Cultural Heritage Impact Assessment
Western University – University Drive Bridge
Class Environmental Assessment
Project No.: 9M5173



Prepared for BT Engineering Inc./Entuitive Joint Venture

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February 15, 2023

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Appendix A Cultural Heritage Evaluation Report: University Bridge (WSP, February 2019)

1.0 INTRODUCTION

Western University (Western) is conducting a Class Environmental Assessment (EA) Study for improvements to the University Drive Bridge located across the north branch of the Thames River in London, Ontario. The existing bridge is near the end of its service life for vehicular traffic and Western will define a plan for the Thames River crossing. The plan will consider a range of alternatives to address Western’s needs, including:

- Rehabilitation of the existing bridge;
- Rehabilitation of the existing bridge plus structure widening;
- A new bridge on the existing alignment; or
- Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

This Report documents the heritage background, history of the area, and the analysis and evaluation of design alternatives from a heritage perspective.

A Heritage Impact Assessment (HIA) evaluates the impact of a proposal development, building alteration or site alteration on a built heritage resource(s) or a cultural heritage landscape(s) and recommends mitigative measures or alternative development approaches to conserve the heritage attributes of that resource/landscape. This report is in accordance with the *Ontario Planning Act* (RSO 1990).

1.1 Completed Reports

A Cultural Heritage Evaluation Report (CHER) was completed by WSP in February 2019 for the Western University Bridge, as part of the Transit Project Assessment Process (TPAP) for the proposed London Bus Rapid Transit (BRT) system. The TPAP study area, which includes the Western University Bridge and approaches, was identified as a cultural heritage resource in the Cultural Heritage Screening Report (October 2018). University Bridge spans the north brand of the Thames River, providing vehicular, pedestrian and cyclist traffic across the river to Western University. The *Ontario Heritage Act* Regulation 9/06 was used to evaluate the TPAP study area to determine the University Drive Bridge’s cultural heritage value.

Based on archival research, a review of background information, site investigation, and application of criteria from Ontario Regulation 9/06, the University Drive Bridge was determined to demonstrate significant cultural heritage value or interest.

The CHER recommendations included the following:

1. The University Drive Bridge was determined to demonstrate cultural heritage value or interest. As such, a Heritage Impact Assessment is required for this resource to identify appropriate mitigation measures.
2. A Cultural Heritage Evaluation Report should be undertaken following the completion of the TPAP for the Western University property including all structures and landscape features at 1151 Richmond Street (beyond this study).
3. The final version of this report will incorporate feedback from the London Advisory Committee on Heritage (LACH), City of London Heritage Planner, and the Ministry of

Tourism, Culture and Sport (MTCS), and will be forwarded to the Heritage Planner and LACH for their records.

The University Bridge is included in the City of London Heritage Register listed property of 1151 Richmond Street, which represents Western University campus. A property listed on the Heritage Register requires that an HIA be prepared and reviewed by the City of London. The property was listed on March 26, 2007.

1.2 Study Area

The Local Study Area is located on Western University’s campus in London, Ontario and is illustrated on **Figure 1**. The existing bridge crosses the Thames River, a Canadian Heritage River.

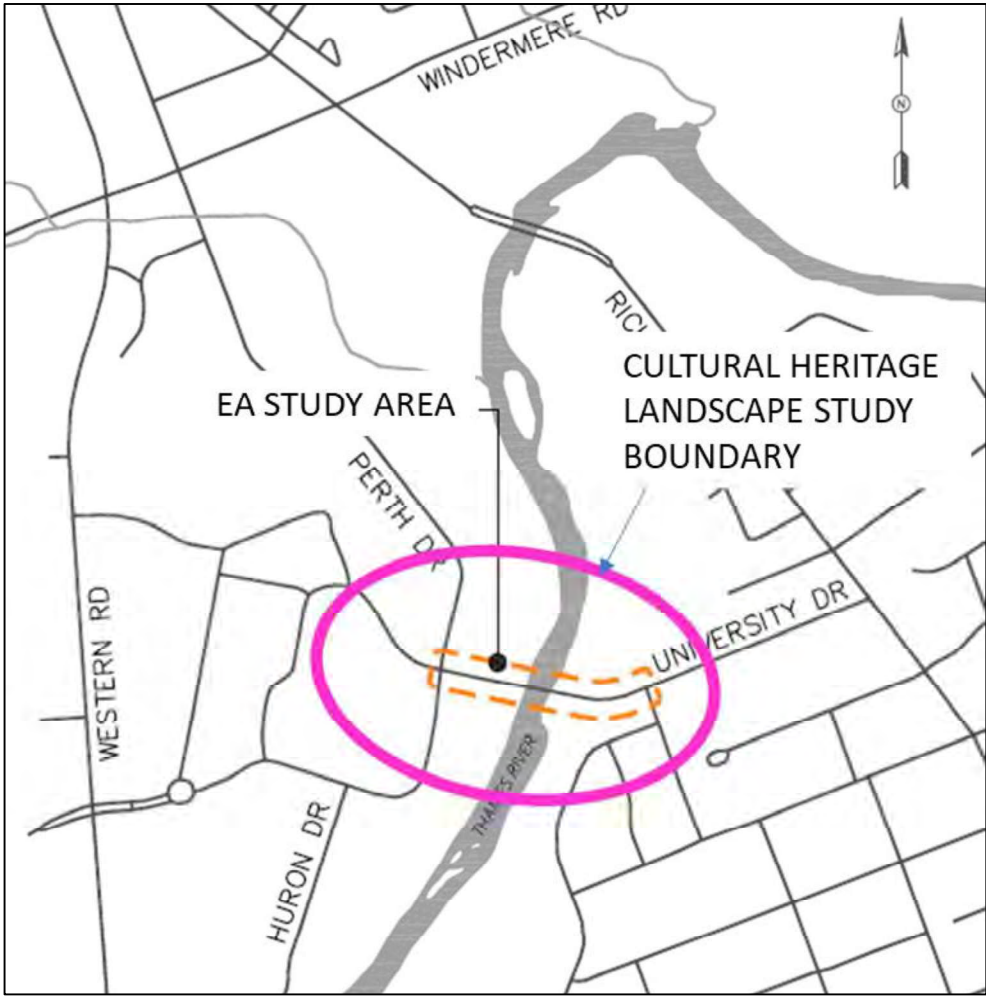


Figure 1: Study Area

2.0 HERITAGE POLICIES AND GUIDELINES

2.1 Heritage Impact Assessments (HIA) and Mitigation of Adverse Impacts

One of the key ways to evaluate the degree of change that may adversely impact on the recognized heritage attributes of a designated property is to complete a comprehensive Heritage Impact Assessment (HIA) report.

The HIA Table of Contents should include a description of the property, photos of the property including those taken to and from the key elevations, a site plan showing the footprints of all structures in and around the subject structure, the topography, drainage patterns and existing vegetation. It should also include background historic research describing the evolution of the property from pre-settlement times including key people associated with the property. Using this information with confirmation by a site visit, a list of the heritage values, both tangible and intangible, should be developed.

A Cultural Heritage Evaluation Report (CHER) was completed as per the criteria provided with Regulation 9/06 of the *Ontario Heritage Act* which outlines the mechanism for determining cultural heritage value or interest. The regulation sets forth categories of criteria and several sub-criteria. A detailed historical context of Western University, including the University Drive Bridge, can be found in the CHER: University Bridge (WSP, 2019), see **Appendix A**.

The completed CHER contains the required information and was used as a foundation for this HIA. The HIA includes a discussion of the heritage attributes or character-defining elements and how the proposed changes will impact them.

OHA Regulation 9/06 identifies three types of heritage values: physical or historical, associative, or contextual.

The Standards and Guidelines for the Conservation of Historic Places in Canada (S and G) provide this additional definition of Heritage Value: “The aesthetic, historic, scientific, cultural, social, or spiritual importance or significance for past, present or future generations. The heritage value of an historic place is embodied in its character-defining materials, forms, location, spatial configurations, uses and cultural associations or meanings.”

Heritage attributes are the physical evidence of the identified heritage values and are those features that must be safeguarded in any proposed changes. In order to evaluate if the proposed change is appropriate, alternatives were developed and evaluated to determine if their impacts are acceptable or preferable from a heritage conservation perspective.

A variety of mitigation strategies were considered to lessen adverse impacts. These strategies included avoidance, screening, or setbacks to reduce the visual intrusion on the historic place. Impacts were also assessed as to whether they are temporary (such as during construction) or short term. Other impacts may be long term or permanent (such as the removal of heritage attributes). The completed HIA includes a description of the potential impacts and how the preferred alternative addresses the recommended mitigation strategy.

The completed HIA enables the conclusion that the degree of change to the designated property is acceptable from the perspective of heritage conservation and that consideration has been given to lessening or avoiding negative impacts.

2.2 Heritage Planning Terminology

There is guidance for the use correct of terminology in dealing with heritage issues. The S and G outlines the current definitions of different approaches for the treatment heritage fabric. The S and G also includes the theoretical basis for the recommendations and specific guidance on how to conserve various buildings, engineering works and cultural heritage landscapes and their materials.

2.3 Conservation

The definitions include the overall approach, **Conservation**. This umbrella term includes a variety of interventions but in general aims to ensure that heritage features and tangible and intangible heritage values are safeguarded and respected in caring for historic places. No matter which intervention is selected, it is recommended that **interpretation** of the heritage value of the historic place be shared with the public.

Under the Conservation approach there are three potential approaches; preservation, restoration and rehabilitation or a combination of all that are appropriate.

Preservation. This term is used to indicate that changes that affect the heritage resources are generally not allowed or are limited to minor repairs and maintenance. This is appropriate for heritage resources that demonstrate integrity and authenticity since it aims at keeping the heritage resource in its current state.

The second approach under the Conservation definition that may be appropriate is **Restoration**. This approach involves returning a resource to an earlier state by adding back missing elements based on evidence such as historic photos or plans. This approach is appropriate where the heritage resource has outstanding heritage details or value.

The third approach is **Rehabilitation** or **Adaptive Reuse**. This approach is most common where the original use of a historic place has changed but there is value remaining in the heritage fabric that can be repurposed to a contemporary use. The guidance of the S and G calls for planning the rehabilitation in such a way that the original heritage resource is integrated in a sensitive manner respecting its original form and details.

In many cases, a combination of all three approaches is appropriate depending on the condition and heritage values associated with the heritage resource. This will ensure that appropriate consideration is given to the range of potential interventions.

The overall purpose of the S and G guidance is to ensure that heritage resources continue to make their important contribution to the special character of the University campus and in particular the important arrival experience of crossing the University Avenue bridge. This objective can be achieved by selecting the correct approach or approaches to safeguard the identified heritage resources. The evaluation of the alternative designs for the bridge improvements was based on the application of the definitions to the proposed solutions in order to select a preferred design.

Demolition or removal of heritage fabric is a situation that is in direct opposition to heritage conservation. It results in a permanent loss of the evidence of past activities and uses. The S and G recommend against demolition, removal, or relocation. The latter severs the connection between the heritage resource and its setting so that the heritage value associated with the place is lost. This consideration of setting has been a more recent development in heritage

planning in contrast with the early years of heritage conservation when the focus was mainly on buildings and architecture details and their preservation or restoration. An alternative involving demolition was reviewed using criteria considering why the resource is fundamentally significant to the local heritage character. These criteria include a description of the resource and its contribution to the cultural heritage landscape of the University, and how the loss of it will affect the heritage values associated with the historic place. Mitigation strategies to compensate for the demolition would be required and should include considerable public benefits. Demolition is not a recommended intervention for this heritage structure.

The value of the cultural heritage landscape component of the heritage resource is recognized in Section 4.1 of the S and G. There is a description of the many components that may contribute to the overall heritage and visual character of the landscape. The component features include evidence of land use and traditional practices, land patterns, spatial organization, visual relationships (views and viewsheds), circulation, ecological features, vegetation, landforms, water features, and built features.

As part of the current project, field work to review the cultural landscape setting of the University Avenue bridge was undertaken with particular attention being paid to the surrounding landforms, water features, visual relationships, circulation, and vegetation patterns. This information was added in the description of the heritage values and attributes of the bridge.

Rehabilitation and Adaptive Reuse

The current trend is not only to add to heritage fabric with new additions but to repurpose the existing heritage structure if the original use is no longer valid. This approach requires finding a new use and rehabilitating a structure considering the values represented by the structure and its contribution to the context as well as its architectural details. While heritage conservation generally focuses on the visual aspects of a structure that are evident to public view, it is important to guide changes in use so that modifications to the structure such as for improved accessibility are planned to protect the authenticity of the heritage fabric as much as possible.

New Additions or Design

The S and G, in addition to providing guidance on how to conserve the existing bridge, provides direction for the alternative solution that was developed proposing a second bridge to be located south of the existing bridge. The new bridge would be part of the cultural landscape context of the heritage bridge and presents an opportunity to add a new component to that setting. The S and G in Standard 11 provides three key words to describe the recommended goal for new additions in historic contexts. The design should be “compatible, subordinate and distinguishable.” These words mean that the new design should not be a replica or copy of the original design since it is important that the new feature represents good design in our age (just as the 1922 design represented the goal and style of that era). It also means that the new addition should not compete with the original structure or overwhelm it either in scale or detailing. It should be sympathetic to the original bridge and result in a harmonious composition of old and new within a cultural landscape.

3.0 HISTORICAL SUMMARY

This section provides a summary of the historical context of the University Drive Bridge. A detailed local history of the City of London is in the City of London Cultural Heritage Screening Report: London Bus Rapid Transit System (WSP, 2018). A detailed historical context of Western University can be found in the Cultural Heritage Evaluation Report: University Bridge (WSP, 2019), see **Appendix A**.

3.1 Historical Context

Western University was founded on March 7, 1878 by Diocese of Huron Bishop Isaac Hellmuth. The first campus buildings, and the new University Bridge, were designed by John M. Moore & Co. Architects, a local firm. The University Drive Bridge was the first structure constructed on the new campus and was completed in November 1923. The buildings and the bridge Collegiate Gothic style was influenced by Oxford and Cambridge Universities in England and the Ivy League colleges in the United States. The bridge was an integral part of the primary entrance to the campus, deliberately sighted in alignment to the Middlesex Memorial Tower.

In 1934, the services of Mr. Gordon Culham of Toronto, a graduate of landscape architecture and planning at the University of Harvard, were retained to cultivate the natural setting. The recommendations included: improvements to the riverbanks by clearing, filling and strengthening to prevent erosion; prune the existing trees and remove dead wood; and plant 12,000 new trees.

Prior to the construction of the campus, the area adjacent to the location of the University Drive Bridge was largely rural and agricultural. The bridge is along the north branch of the Thames River and south of a former mill race, in a location that did not previously have a natural crossing.

3.2 History of the Bridge

A detailed history of the bridge, and the alterations that have been made in the last 100 years, is described in detail in the WSP report. The bridge remained largely unaltered since its construction until 1973 when the top rail and spindles on the south side of the bridge, and a portion of those on the north side, were replaced due to damage. Extensive repairs were made in 2003 including:

- Replacing the decorative balustrade with a steel railing
- Reducing the size and rebuilding the end pylons,
- Replacement of the light standards
- Resurfacing the asphalt road
- Active transportation modifications including adding cycling lanes and replacing the sidewalks.

The University Drive Bridge EA Study offers the opportunity to address these previous changes that may not now represent best practices.

3.3 History of the Thames River

The Thames River was formally designed a Canadian Heritage River on August 14, 2000. Canadian Heritage Rivers are “recognized for their outstanding contributions to the country’s

cultural heritage, natural heritage, and recreational opportunities.¹ This is an honorific recognition, without a formal review and approval process.

The Thames River is a major river in Southern Ontario. Its watershed encompasses a significant portion of the extreme southwest of Ontario. The river is within one of the most productive agricultural areas in Canada, with distinctive rural farm and village landscapes. The Thames River Watershed: A Heritage Landscape Guide, was written in 2009 to describe the Thames and Lake Erie watersheds.

The University Drive Bridge EA recommendations do not diminish the heritage value of this Canadian Heritage River.

4.0 HERITAGE ATTRIBUTES AND VALUES

The following sections describe the heritage attributes and values of the bridge, as well as a summary of the existing conditions of the cultural heritage landscape setting. The Cultural Heritage Evaluation Report: University Bridge (WSP, 2019) was reviewed by the Ministry of Citizenship and Multiculturalism (MCM) and the City of London.

4.1 CHER Attributes and Values

As described in the WSP 2019 CHER, the following describes the attributes and values of the bridge:

- Three-span length;
- Concrete, sandstone and limestone clad abutments;
- Cut and dressed sandstone and limestone knee walls including stone shields and bull-nosed hipped stone coping;
- Sandstone and limestone clad pylons and light standards including stone shields, buttress-like features and concrete cap;
- Concrete, sandstone and limestone clad piers and stone shields;
- Metal substructure including riveted steel plate girders, steel stringers, cross-girders and cross-bracing;
- Concrete cladding on exterior of steel plate girders;
- Reinforced concrete brackets supporting the sidewalks;
- Unobstructed north and south views to the Thames River from the University Bridge;
- Unobstructed view from the east approach towards the University Bridge framing the University College Building’s Middlesex Memorial Tower; and
- Location crossing the north branch of the Thames River and on the University of Western’s campus.

4.2 Additional Attributes, including Cultural Heritage Landscape Setting

Wendy Shearer and Darcie Dillon conducted a site visit on June 6, 2022 and reviewed the collection of historic photos and plans.

The list of heritage attributes, as prepared in the CHER (2019) is inclusive, although it represents the form of the bridge in 2019. Historic photographs reveal that some of the

¹ <https://thamesriver.on.ca/about-us/thames-heritage-river/#:~:text=The%20Thames%20River%20was%20formally,several%20years%20in%20the%20making.>

elements were altered, reducing their size and design, or were entirely removed and replaced with new elements, such as:

- The ornamental balustrade composed of turned balusters, poured in place concrete coping, see **Figure 2**;
- The ornamental light fixtures, see **Figure 3**;
- The large scale end pylons , see **Figure 3**; and
- The arched concrete skirting to hide the steel girders, adding a decorative element to the utilitarian bridge.

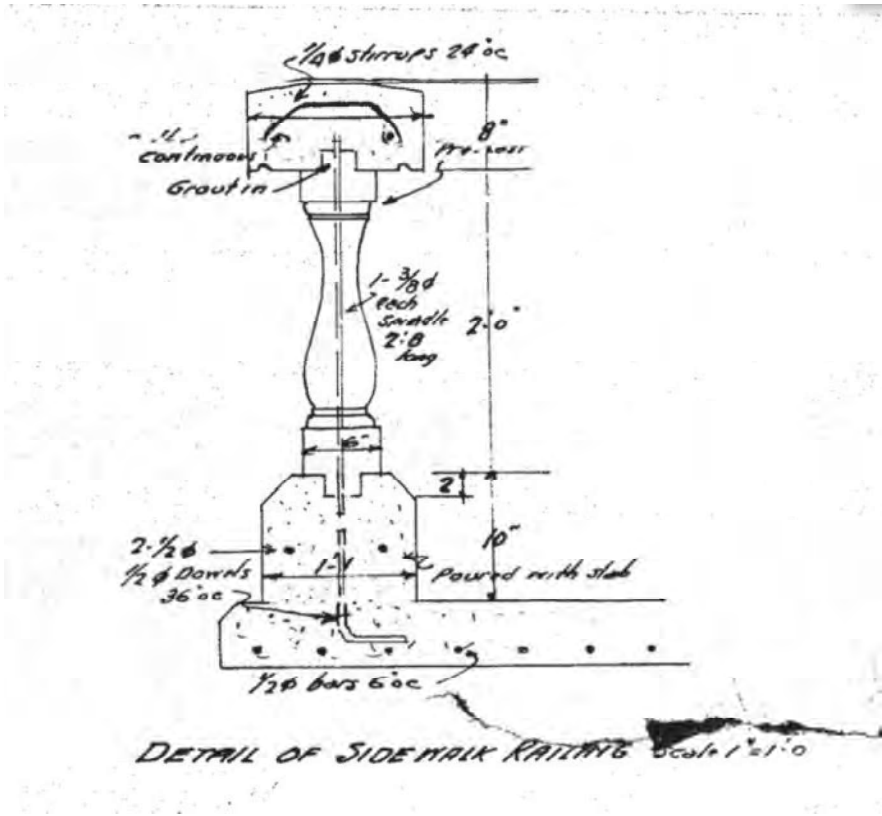


Figure 2: Spindles or Balusters Original Drawing

The original material of the spindles or balusters is unclear. They were identified by WSP as turned stone but may have been precast concrete. The above detail does not clarify the material but is useful as to the original detailing.



Figure 3: Historical Photo of the Opening of the University Drive Bridge, 1924

The field work identified several components of the cultural heritage landscape setting, including:

- Unobstructed views of the Thames River from the University Bridge, both north and south. The view of the river is framed by overhanging, naturalized vegetation. See **Figure 4** for the view looking north and **Figure 5** for the naturalized vegetation.
- Informal footpaths through the landscape under the bridge on the west side of the bridge, see **Figure 6**.
- Deliberately planted trees, defining the limit of the parking lot on the west side, see **Figure 7**.
- Existing major utilities travel along the substructure of the bridge, see **Figure 8**.
- The Thames Valley Pathway is a paved multi-use path on the east side, crossing under the bridge, see **Figure 9**.
- The view afforded from the river pathways of the underside of the bridge, showing sensitive modifications to add new cantilevered sidewalks, see **Figure 10** and **Figure 11**.
- The bridge is at a higher level than the river, with significant steep grades from the bridge deck level to the riverbanks.



Figure 4: View from University Bridge looking North



Figure 5: Informal Footpaths and Naturalized Vegetation on west side of bridge



Figure 6: Informal Footpaths Descend the Slope and Lead under the Bridge



Figure 7: Deliberately Planted Trees line the Northern Edge of the Parking Lot on West Side of Bridge



Figure 8: Major Utilities on the Underside of the Bridge



Figure 9: A paved Multi-use Path is Located under the East Side of the Bridge



Figure 10: Sidewalk Extension on the North Side of the Bridge



Figure 11: View of University Drive Bridge from Below Illustrating Decorative Concrete on the Outside of the Steel Girders

The existing view from the bridge to the University offers an unobstructed view to the University College (Arts Building) and the Middlesex Memorial Tower. The building sits on top of UC hill. The University is currently putting together plans for improvements to the Welcome Plaza, which will be in front of the University College on UC hill. The landing at the west end of the bridge will be enhanced with a new welcome plaza.

5.0 CURRENT PROJECT CHALLENGES

The purpose of the University Bridge EA is to plan for improvements to the University Drive Bridge since the bridge is near the end of its service life for use by vehicular traffic. The existing bridge provides access across the North Thames River for vehicular traffic, transit, pedestrians and cyclists. It also provides a crossing for municipal infrastructure, including a major watermain.

The EA considered a range of alternatives (Alternative Planning Solutions) to address Western’s needs, including:

- Rehabilitation of the existing bridge;
- A new bridge on the existing alignment; or
- Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

From a heritage perspective, the first two Alternative Planning Solutions were not acceptable because of the impact on the heritage attributes. The evaluation of Alternative Planning Solutions recommended the most reasonable alternative that addresses the Problem and Opportunity Statement.

Based on the preliminary review of Alternative Planning Solutions, New Bridge (New Alignment) and Conserve Existing Structure was recommended to be carried forward in the EA process. This Planning Solution addresses the problem statement by conserving the existing structure and providing an adjacent structure to accommodate vehicular traffic. Conserving the existing structure follows best management practices for heritage structures and minimizes the need for temporary works to accommodate active transportation and infrastructure. This technical recommendation was presented at the first Public Information Centre (PIC) for public and stakeholder feedback.

6.0 DESIGN ALTERNATIVES

A number of Alternative Planning Solutions were assessed as part of the overall Class EA Study. The Alternative Planning Solutions include:

1. Do Nothing – The “Do Nothing” strategy must be considered as mandated by the Class EA. It represents a baseline to which other approaches can be compared. This alternative would maintain the existing 2-lane bridge in its current location without any rehabilitation or repairs.
2. Rehabilitate Existing Bridge – The “Rehabilitate Existing Bridge” strategy would conserve the existing structure by making required repairs/restorations.
3. New Bridge on the Existing Alignment – The “New Bridge on the Existing Alignment” strategy would construct a new bridge on the existing alignment and remove the existing structure. Sub-alternatives for this Planning Solution include:
 - 3A. Signature Structure on the Existing Alignment (see **Figure 12**) - Elegant, landmark structure that frames the view while approaching campus, with an architectural connection to campus as well as a distinct symbolism of its own.

- 3B. Historic Reimagination Structure on the Existing Alignment (see **Figure 13**) - Reimagination of the existing structure using the same spans and abutment location but with the necessary added width to provide the vehicle and active transportation space.
4. New Bridge on a New Alignment – The “New Bridge on New Alignment” strategy would construct a new bridge on a different alignment. Sub-alternatives for this Planning Solution include:
 - 4A. New Bridge and Abandonment/Demolition of Existing Structure – This alternative would construct a new signature or historically reimaged structure on an adjacent alignment and would abandon the existing bridge.
 - 4B. New Signature Bridge and Conserve Existing Structure (see **Figure 14**) - This alternative would construct a new signature structure on an adjacent alignment and would conserve the existing structure through preservation, restoration or rehabilitation.

The evaluation of Alternative Planning Solutions selects the most reasonable alternative that addresses the University’s objective of providing a safe and reliable crossing of the Thames River for traffic generated by the University, while supporting the heritage character of the campus. Alternatives 1, 2 and 4A were coarse screened from the evaluation process and will not be considered for further review. Alternatives 3A, 3B and 4B were carried forward to be evaluated by the Project Team. The following sections describe the heritage review of the three alternatives carried forward.

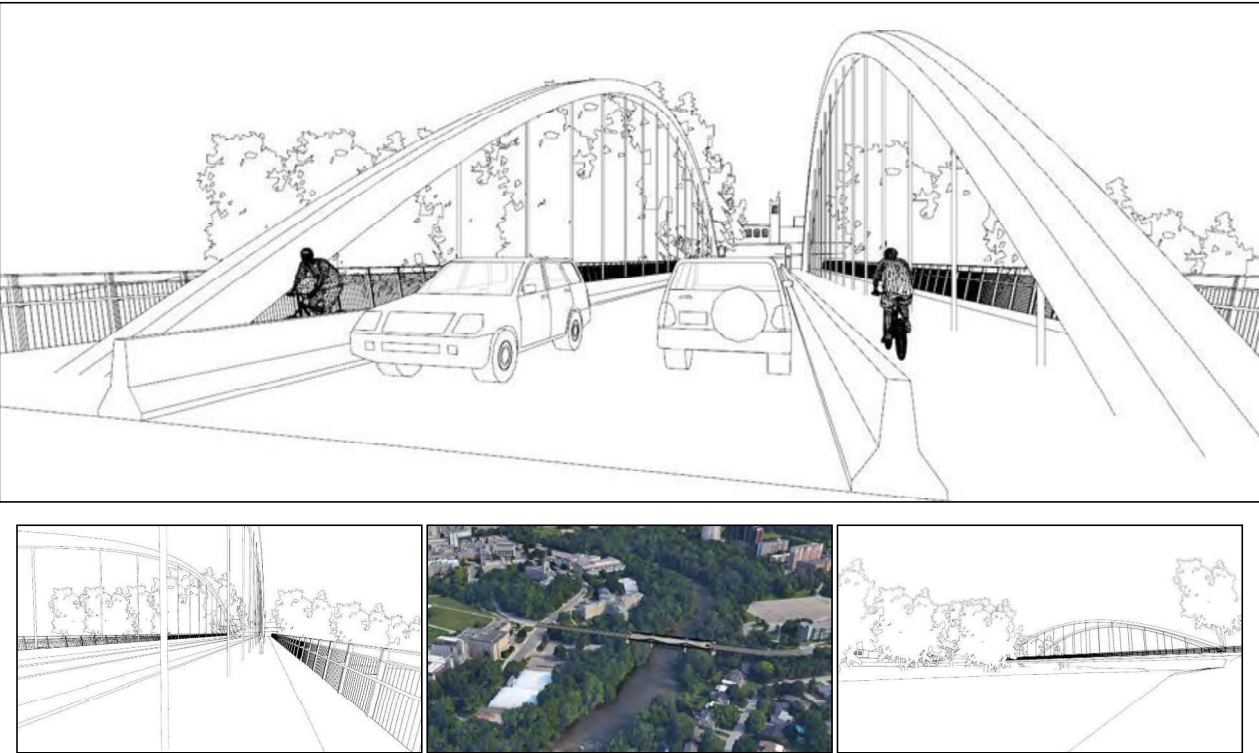


Figure 12: Signature Structure on the Existing Alignment

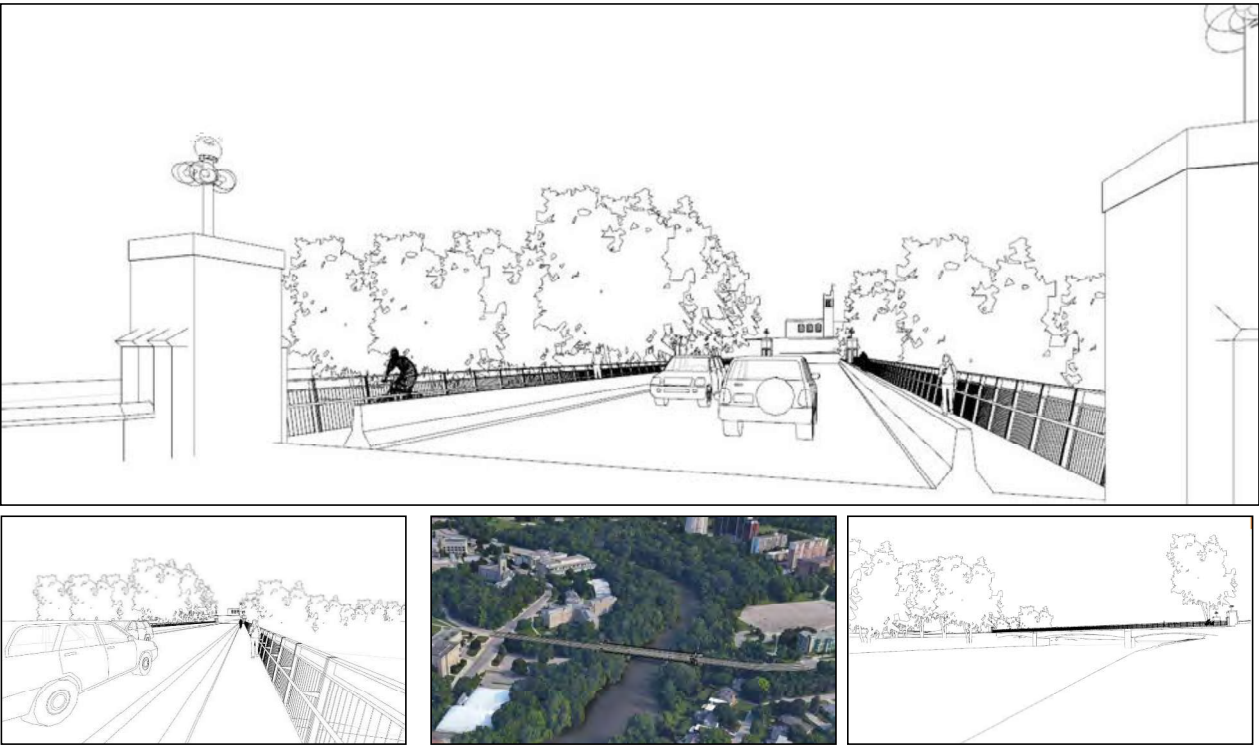


Figure 13: Historic Reimagination Structure on the Existing Alignment

7.0 POTENTIAL IMPACTS TO THE UNIVERSITY DRIVE BRIDGE

An evaluation exercise has been completed by the Project Team to select the best balanced solution for addressing the Alternative Planning Solution. Alternative 4B: New Bridge on a New Alignment was selected as the preferred Alternative Planning Solution.

Additionally, significant temporary works would be required during construction of the new bridge on the existing alignment, resulting in increased costs and constructability issues/risks. The alternatives carried forward to be evaluated include:

- Alternative 3A: Signature Structure on the Existing Alignment (see **Figure 12**) - Elegant, landmark structure that frames the view while approaching campus, with an architectural connection to campus as well as a distinct symbolism of its own.
- Alternative 3B: Historic Reimagination Structure on the Existing Alignment (see **Figure 13**) - Reimagination of the existing structure using the same spans and abutment location but with the necessary added width to provide the vehicle and active transportation space.
- Alternative 4B: New Signature Bridge and Conserve Existing Structure (see **Figure 14**) - This alternative would construct a new signature structure on an adjacent alignment and would conserve the existing structure through preservation, restoration or rehabilitation.

Conservation of the existing structure involves several approaches to safeguard the heritage attributes and values associated with the existing bridge. Conservation includes preserving the existing elements below the bridge deck (including the piers, arched concrete spans, and cantilevered sidewalk supports). It also involves restoring the decorative stone plinths, knee walls, balustrade and ornamental lights using documentary and photographic evidence of the original bridge to guide the works.

7.1 Description of Impacts

Alternatives 3A, 3B and 4B all address the Problem Statement and were carried forward for evaluation. The potential impacts of the alternatives on the cultural heritage attributes and values that were carried forward are in **Table 1**, **Table 2** and **Table 3**.

From a heritage perspective, the recommended alternative is Alternative 4B: Conserve Existing and Twin with a New Bridge. Conservation of the existing structure and construction of a new bridge on an adjacent alignment will:

- Safely accommodate all modes of transportation.
- Comply with University planning objectives.
- Follow conservation best practices for the heritage structure.
- Reduce costs and risks associated with construction.
- Provide opportunities to enhance trail connectivity.

This approach utilizes the value of the existing structure for:

- Cultural heritage.
- Reuse for utilities.
- Significantly reducing the overall cost of the new structure.

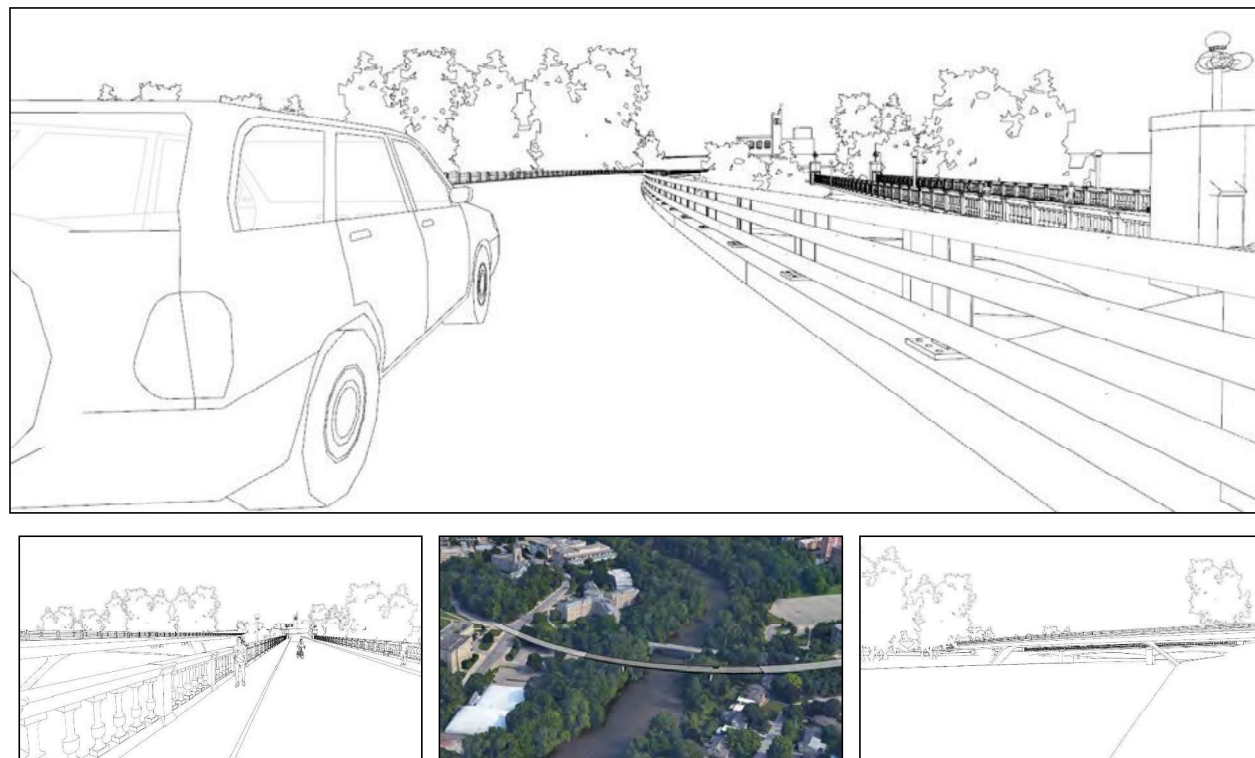


Figure 14: New Bridge and Conserve Existing Structure

The new structure can salvage the space available on the existing bridge for active transportation focused uses, allowing the new bridge cross section to be narrower.

Table 1: Destruction of any, or part of any, cultural heritage resource or attribute			
Heritage Attribute	Alternative 3A Signature Structure	Alternative 3B Reimagined Heritage Structure	Alternative 4B New Signature Bridge and Conserve Existing Bridge
Three-span length	No impact. The original bridge spans will be maintained.	No impact. The original bridge spans will be maintained.	No impact. The original bridge spans will be maintained.
Concrete, sandstone and limestone clad abutments	No major impact. The original bridge abutments will be maintained and repaired, as necessary.	No major impact. The original bridge abutments will be maintained and repaired, as necessary.	No major impact. The original bridge abutments will be maintained and repaired, as necessary.
Cut and dressed sandstone and limestone knee walls including stone shields and bull-nosed hipped stone coping	No impact. The knee walls, shields and bull-nosed hipped stone coping will be maintained.	No impact. The knee walls, shields and bull-nosed hipped stone coping will be maintained.	Major impact. Restoration of heritage features that were previously removed.
Sandstone and limestone clad pylons and light standards including stone shields, buttress-like features and concrete cap	No impact. These elements will be maintained.	No impact. These elements will be maintained.	Major impact. Restoration of heritage features that were previously removed.
Concrete, sandstone and limestone clad piers	No major impact. These elements will be maintained and repaired, as necessary.	No major impact. These elements will be maintained and repaired, as necessary.	No impact. These elements will be maintained. and repaired, as necessary
Metal substructure including riveted steel plate girders, steel	No major impact.	No major impact.	No major impact.

Table 1: Destruction of any, or part of any, cultural heritage resource or attribute			
Heritage Attribute	Alternative 3A Signature Structure	Alternative 3B Reimagined Heritage Structure	Alternative 4B New Signature Bridge and Conserve Existing Bridge
stringers, cross-girders and cross-bracing	These elements will be maintained and repaired, as necessary.	These elements will be maintained and repaired, as necessary.	These elements will be maintained and repaired, as necessary.
Concrete cladding on exterior of steel plate girders	No major impact. These elements will be maintained and repaired, as necessary.	No major impact. These elements will be maintained and repaired, as necessary.	No major impact. These elements will be maintained and repaired, as necessary.
Reinforced concrete brackets supporting the sidewalks	No major impact. These elements will be maintained and repaired, as necessary.	No major impact. These elements will be maintained and repaired, as necessary.	No major impact. These elements will be maintained and repaired, as necessary.
Unobstructed north and south views to the Thames River from the University Bridge	May have a direct impact. The view for pedestrians using the sidewalk may be obstructed, depending on the signature structure type.	No impact. The bridge will be maintained with no change to the views from the bridge.	Direct impact. The new bridge to the south will alter the view to the south from the bridge.
Unobstructed view from the east approach towards the University Bridge framing the Middlesex Memorial Tower	May have a direct impact. The view for pedestrians using the sidewalk may be obstructed, depending on the signature structure type.	No impact. The bridge will be maintained with no change to the views from the bridge.	Positive direct impact. The view will be framed by the restored decorative plinths/pylons and lighting.
Location crossing the north branch of the Thames River	No impact.	No impact.	No impact.

Table 1: Destruction of any, or part of any, cultural heritage resource or attribute			
Heritage Attribute	Alternative 3A Signature Structure	Alternative 3B Reimagined Heritage Structure	Alternative 4B New Signature Bridge and Conserve Existing Bridge
and on the University of Western's campus	The existing bridge location does not change.	The existing bridge location does not change.	The existing bridge location does not change.

Table 2: Alteration that is not sympathetic to, or is incompatible with, the historic fabric and appearance			
Heritage Attribute	Alternative 3A Signature Structure	Alternative 3B Reimagined Heritage Structure	Alternative 4B New Signature Bridge and Conserve Existing Bridge
Original location of the bridge	No impact. The existing bridge is maintained on the existing alignment.	No impact. The existing bridge is maintained on the existing alignment.	No impact. The existing bridge is maintained on the existing alignment.
Original collegiate gothic style	Direct negative impact. Significant alteration to the bridge to create a signature structure type.	Some impact. The existing bridge is to be maintained in the original collegiate gothic style for elements below the bridge deck.	Direct positive impact. The bridge will be restored with decorative pylons, balustrades, and lighting in the collegiate gothic style.

Table 3: Direct or Indirect Obstruction of Significant Views or Vistas within, from or of Built and Natural Features			
Heritage Attribute	Alternative 3A Signature Structure	Alternative 3B Reimagined Heritage Structure	Alternative 4B New Signature Bridge and Conserve Existing Bridge
Unobstructed north and south views to the Thames River from the University Bridge	May have a direct impact. The view for pedestrians using the sidewalk may be obstructed, depending on the signature structure type.	No impact. The bridge will be maintained with no change to the views from the bridge.	Direct impact. The new bridge to the south will alter the view to the south from the bridge.
Unobstructed view from the east approach towards the University Bridge framing the Middlesex Memorial Tower	May have a direct impact. The view for pedestrians using the sidewalk may be obstructed, depending on the signature structure type.	No impact. The bridge will be maintained with no change to the views from the bridge.	Positive direct impact. The view will be framed by the restored decorative pylons and lighting.

8.0 RECOMMENDATIONS

The recommended alternative is Alternative 4B: Conserve Existing and Twin with a New Bridge. Conservation of the existing structure and construction of a new bridge on an adjacent alignment will also provide an opportunity to:

- Restore decorative pylons, balustrade and lighting;
- Retain or replant large, planted trees; and
- Conduct landscape restoration of disturbed area: naturalize river edges and transition into designed landscape of campus.

The new structure can salvage the space available on the existing bridge for active transportation focused uses, allowing the new bridge cross section to be narrower.

Design guidance for the new bridge should follow Standard 11 to ensure that the new bridge is respecting the cultural heritage setting and attributes of the built form. The new structure will be subordinate to, compatible with and distinguishable from the heritage structure.

As well, by restoring the heritage bridge and constructing a new bridge, there is an opportunity to document the evolution of the river crossing at this location.

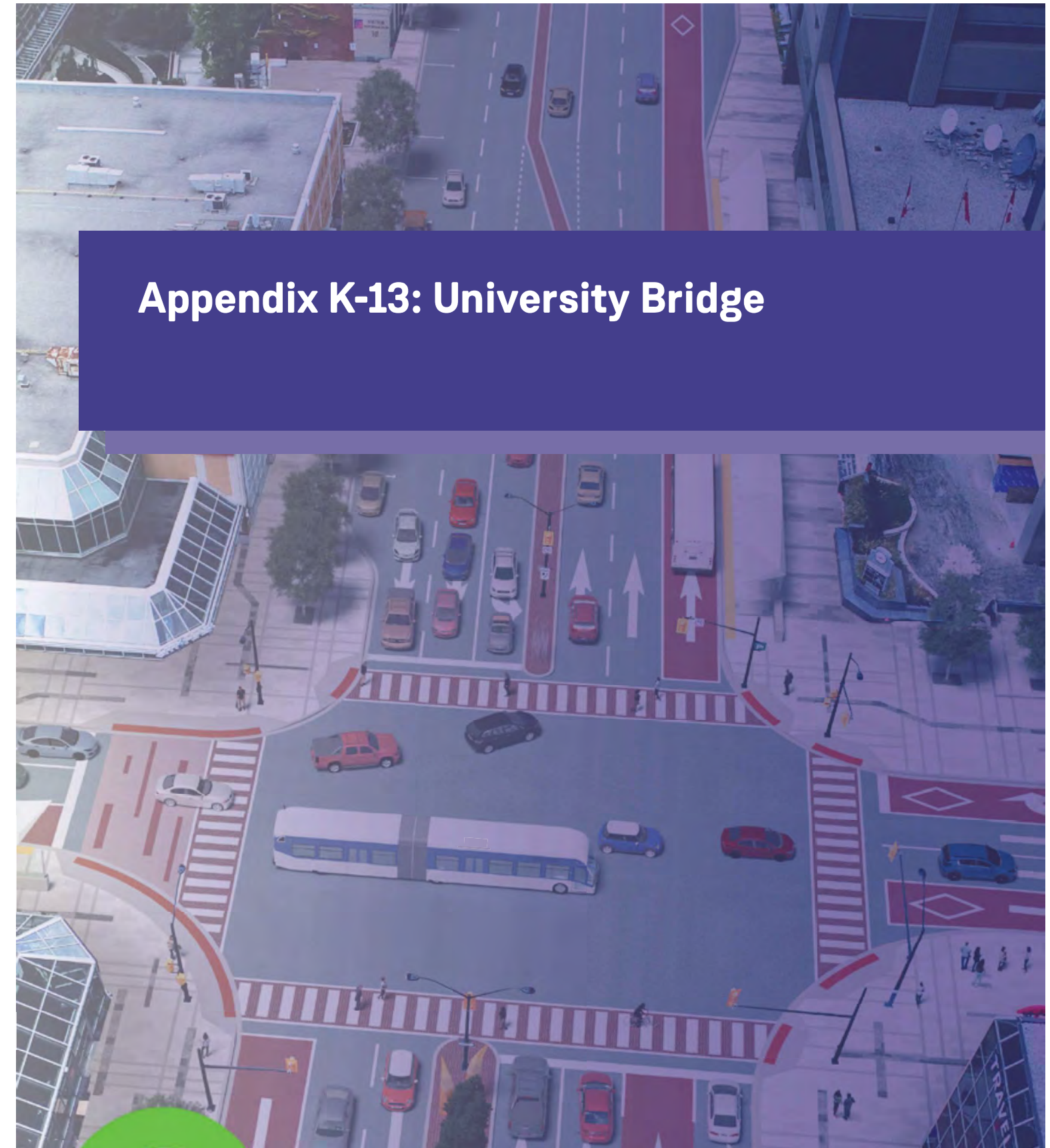
From a heritage perspective, the recommended alternative complies with best practices in heritage conservation.

Appendix A

Cultural Heritage Evaluation Report: University Bridge (WSP,
February 2019)



Appendix K-13: University Bridge



LONDON BUS RAPID TRANSIT
TRANSIT PROJECT ASSESSMENT PROCESS
ENVIRONMENTAL PROJECT REPORT

March 2019



PREPARED BY



FINAL REPORT – FEBRUARY 25, 2019

CULTURAL HERITAGE EVALUATION REPORT

TRANSIT PROJECT ASSESSMENT PROCESS
LONDON BUS RAPID TRANSIT

UNIVERSITY BRIDGE
CITY OF LONDON
PROVINCE OF ONTARIO





CULTURAL HERITAGE EVALUATION REPORT

UNIVERSITY BRIDGE

CITY OF LONDON
PROVINCE OF ONTARIO

REPORT

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SIGNATURES

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EXECUTIVE SUMMARY

WSP Canada Inc. (WSP) was retained by the City of London to complete a Cultural Heritage Evaluation Report (CHER) for University Bridge as part of the Transit Project Assessment Process (TPAP) for the proposed London Bus Rapid Transit (BRT) system. The study area, which includes University Bridge and approaches, was identified by WSP as a cultural heritage resource in the Cultural Heritage Screening Report (October 2018) completed for the London BRT TPAP. University Bridge spans the north branch of the Thames River bringing traffic across University Drive, providing access to Western University. The purpose of this report is to evaluate the study area using *Ontario Heritage Act* Regulation 9/06 to determine its cultural heritage value and provide a Statement of Cultural Heritage Value or Interest and list of attributes, if appropriate.

Based on archival research, review of background information, site investigation, and application of criteria from Ontario Regulation 9/06, University Bridge was determined to demonstrate significant cultural heritage value or interest.

The completion of the study has resulting in the following recommendations:

- 1 The University Bridge was determined to demonstrate cultural heritage value or interest. As such, a Heritage Impact Assessment is required for this resource to identify appropriate mitigation measures.**
- 2 A Cultural Heritage Evaluation Report should be undertaken following the completion of TPAP for the Western University property including all structures and landscape features at 1151 Richmond Street.**
- 3 The final version of this report will incorporate feedback from the LACH, City of London Heritage Planner, and MTCS, and will be forwarded to the Heritage Planner and LACH for their records.**



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1 INTRODUCTION

1.1 DEVELOPMENT CONTEXT

WSP Canada Inc. (WSP) was retained by the City of London to complete a Cultural Heritage Evaluation Report (CHER) as part of the Transit Project Assessment Process (TPAP) for the proposed London Bus Rapid Transit (BRT) system to establish the cultural heritage value of the study area encompassing University Bridge and its approaches (Figure 1). The BRT system is comprised of four segments, combined into two operational routes: the north/east corridor and the south/west corridor. The BRT network was approved by City Council through the Rapid Transit Master Plan in July 2017.

The study area encompassing University Drive is part of the property known as Western University (1400 Western Road) which was identified as a listed cultural heritage property in the City of London Cultural Heritage Screening Report (CHSR) (WSP, October 2018) as being directly impacted. The CHSR was completed as part of the Transit Project Assessment Process for the London Bus Rapid Transit project. The TPAP is regulated by the *Environmental Assessment Act* (EAA) under Ontario Regulation 231/08: Transit Projects and Metrolinx Undertakings (O. Reg. 231/08). This CHER form part of the Environmental Project Report (EPR) completed under the TPAP.

The following report has been prepared utilizing the CHER Terms of Reference prepared for the London BRT TPAP process, which was prepared in consultation with the City of London Heritage Planning staff and the Ministry of Tourism, Culture and Sport (MTCS) and has been received by the London Advisory Committee on Heritage (LACH).

2 LEGISLATION AND POLICY CONTEXT

2.1 PROVINCIAL AND MUNICIPAL CONTEXT AND POLICIES

2.1.1 PROVINCIAL POLICY CONTEXT

The *Ontario Heritage Act* (2006) provides the framework for managing cultural heritage resources in Ontario. The *Ontario Heritage Act* works with other legislation to support an integrated provincial framework for the identification and conservation of the province's cultural heritage resources. Other provincial land use planning and resource development legislation and policies include provisions to support heritage conservation including:

- Planning Act and Provincial Policy Statement 2014, in which cultural heritage identified as a 'matter of provincial interest' requiring that land use planning decisions conserve cultural heritage; and
- Environmental Assessment Act, which defines 'environment' to include cultural heritage and ensures that governments and public bodies consider potential impacts in infrastructure planning.

The Ministry of Tourism, Culture and Sport is charged under Section 2 of the *Ontario Heritage Act* (2006) with the responsibility to determine policies, priorities and programs for the conservation, protection and preservation of the heritage of Ontario and has published guidelines to assist in assessing cultural heritage resources as part of an environmental assessment. The following guidelines have been utilized in the preparation of this CHER:

- Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments (1992),
- Guidelines on the Man-Made Heritage Component of Environmental Assessments (1981), and
- The Ontario Heritage Toolkit (2006)
- MTO's Environmental Guide for Built Heritage and Cultural Heritage Landscapes (2007)

An Environmental Assessment is required for all large-scale projects that have potential impact on the environment. These projects require approval from the Government of Ontario. Certain projects, such as transit projects, have more predictable environmental impacts or effects, and are more readily managed. There is a specific streamlined Environmental Assessment process for transit projects, which is known as the Transit Project Assessment Process (TPAP). This approach protects the environment, but shortens the study period timeline to six months for commencement, review and approval.

TPAP provides a framework for focused consultation and objection processes. Through TPAP, the proponent may initiate a Time Out period if a potential for a negative impact on a matter of provincial importance that relates to the natural environment or has cultural heritage value or interest, or on a constitutionally protected Aboriginal or treaty right (TPAP Guide to Environmental Assessment Requirements for Transit Projects, 2014).

Additionally, the Planning Act (1990) and related Provincial Policy Statement (PPS) (2014) provide guidance for the assessment and evaluation of potential heritage resources. Subsection 2.6 of the Provincial Policy Statement, Cultural Heritage and Archaeological Resources, states that:

2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.

Criteria for determining significance for the resources are recommended by the Province in Ontario Regulation 9/06 of the *Ontario Heritage Act*.

2.1.2 ONTARIO REGULATION 9/06

Ontario Regulation 9/06 (O. Reg 9/06) provides the Criteria for Determining Cultural Heritage Value or Interest under the *Ontario Heritage Act*. This regulation was created to ensure a consistent approach to the designation of heritage properties in Ontario under the *Ontario Heritage Act*. All designations under the *Ontario Heritage Act* (2006) after 2006 must meet the minimum criteria outlined in the regulation.

Criteria

A property may be designated under Section 29 (Designation of Properties by Municipalities) of the *Ontario Heritage Act* if it meets one or more of the following criteria for determining whether it is of cultural heritage value or interest:

1. The property has design value or physical value because it,
 - i. is a rare, unique, representative or early example of a style, type, expression, material or construction method,
 - ii. displays a high degree of craftsmanship or artistic merit, or
 - iii. demonstrates a high degree of technical or scientific achievement.
2. The property has historical value or associative value because it,
 - i. has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community,
 - ii. yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or
 - iii. demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.
3. The property has contextual value because it,
 - i. is important in defining, maintaining or supporting the character of an area,

- ii. is physically, functionally, visually or historically linked to its surroundings, or
- iii. is a landmark. O. Reg. 9/06, s. 1 (2).

2.1.3 MUNICIPAL POLICIES

In addition to provincial legislation, policies, and guiding documents, municipal policies regarding cultural heritage have also been considered as a part of this CHER.

The London Plan is the City of London's new Official Plan which was consolidated August 27, 2018. *The London Plan* focuses on three areas of cultural heritage planning: general policies for the protection and enhancement of cultural heritage resources; specific policies related to the identification of cultural heritage resources including individual heritage resources, heritage conservation districts, cultural heritage landscapes, and archaeological resources; and specific policies related to the protection and conservation of these cultural heritage resources. The criteria outlined in *The London Plan* for the identification and designation of individual properties of cultural heritage value or interest reflect the criteria defined in O. Reg 9/06 and are listed on pages 572-574 of the document.

2.1.4 METHODOLOGY

This bridge CHER examines the University Bridge structure in isolation from the rest of the Western University. The recommendations of the report are based on an understanding of the physical values of the structure alone, a documentation of its history through research, an analysis of its social context, comparisons with similar properties and mapping. A complete CHER for the Western University Property should be completed to understand the cultural heritage value of the property as a whole.

This CHER is guided by key documents such as the *Reference Guide on Physical and Cultural Heritage Resources* (Canadian Environmental Assessment Agency, 1996), the *Ontario Heritage Toolkit* (Ministry of Tourism Culture and Sport (MTCS), 2006), and the *Guidelines for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (Ministry of Culture and Communications, 1992). This report follows the Terms of Reference prepared for the London BRT TPAP process, which has been received by the London Advisory Committee on Heritage (LACH) and the MTCS (Appendix A).

2.2 CONSULTATION

Consultation for the London BRT project has been conducted with the LACH. A draft CHSR report (dated February 6, 2018) was provided for their review and comment. Upon their review LACH recommended that 104 of the properties identified as having potential cultural heritage value in the CHSR did not have cultural heritage value or interest. The LACH also recommended 30 properties not identified by the CHSR be evaluated for their potential cultural heritage value. Further, the remaining properties flagged by the draft CHSR requiring further cultural heritage work were added to the

Register (Inventory of Heritage Resources) pursuant to Section 27 of the *Ontario Heritage Act* (2006) by resolution of Municipal Council on March 27, 2018.

The CHSR was also provided to the MTCS for review and comments were received in July 2018. In response to MTCS comments, the CHSR was expanded to a fulfil the requirements of a CHAR, including additional information on impacted properties, and a preliminary impact assessment. Ongoing communications with MTCS have continued as a part of the TPAP process.

The updated CHSR report (Dated October 8, 2018) was provided to the LACH on October 10, 2018. The Draft Terms of Reference for CHERs was also received and referred to the LACH Stewardship Sub-Committee for review. The updated CHSR was submitted and reviewed by the LACH Stewardship Sub-Committee at their meeting on November 5, 2018. The LACH Stewardship Sub-Committee had no further concerns regarding the updated CHSR, and communicated this to the LACH at their meeting on November 14, 2018. A review timeline for Pre-TPAP CHERs, including the University Bridge, was proposed and received by the LACH on November 14, 2018. This report is scheduled to be reviewed by the LACH at their meeting on February 13, 2019.

3 HISTORICAL CONTEXT

3.1 LOCAL CONTEXT AND SETTLEMENT HISTORY

City of London

For a detailed local history of the City of London, please refer to the City of London Cultural Heritage Screening Report: London Bus Rapid Transit System (WSP, 2018).

Western University

The Western University of London Ontario was founded on March 7, 1878 by Diocese of Huron Bishop Isaac Hellmuth (An Act to incorporate The Western University and College of London, Ontario 1878, as amended 1882). Huron's College (established 1863) was Western University's founding college and in 1881 Western University and Huron College established a faculty of arts. When the first classes were opened in 1881, to study Arts, Divinity, Law or Medicine, students met in at Huron College's Rough Park campus (Western University, n.d.). In that same year, the students, faculty and library were moved to Hellmuth Boys' College (located on the block bound by St. James, Waterloo, Oxford and Wellington Streets) (Western University, n.d.). In 1885 Western University had to close the Faculty of Arts due to financial constraints and Huron College withdrew its affiliation and returns to its Rough Park campus. Ten years later, Western University was able to revive its Faculty of Arts as well as its affiliation with Huron College. In 1908 the University became nondenominational.

For a number of years, the University's Board of Governors envisioned a separate campus for the University and a property committee was established find land in 1910. In 1916, the farm known as "Bellevue" was purchased from the Kingsmill family, and in 1923 the university was renamed The University of Western Ontario (Tausky and Distefano, 1986:376-377; Talman, 1953; Gwynne-Timothy, 1978). The choice of location was ridiculed at the time, as the campus grounds were located just outside of the City of London's limits, a seemingly remote location. The property committee continued to acquire more land and by 1920 had approximately 230 acres of land intended to service the University over the next two centuries (Gwynne-Timothy, 1978). Public funding for the construction of the campus included \$100,000 from the County of Middlesex, \$250,000 from the City of London, and an initial capital grant of \$850,000 from the Province of Ontario (Tausky and Distefano, 1986:376-377).

Frederick H. Spier, a prominent Detroit architect drew up the first ground plan for the campus and the tentative floor plans for the main buildings (Tausky and Distefano, 1986:376-377; Talman, 1953). Thomas Adams, a well known Scottish architect and planner from Scotland was also invited to view the university plans (Noon, 2003; Gwynne-Timothy, 1978). It was Adams that identified that access to the University should be across a bridge over the Thames River, that would frame the views to the Memorial Tower of the University College building (Gwynne-Timothy, 1978).

The Board began to gather the necessary funds to construct the buildings and in 1921 the County of Middlesex decided to contribute \$100,000 towards the construction of a Memorial Tower to honour those who served and died in the first World War (Talman, 1953). Following the recommendation of the Cody commission, the Ontario Government provided \$800,000, later adding another \$200,000 for the construction of the campus buildings (Talman, 1953).

The University hired local firm, John M. Moore & Co. Architects to design the first campus buildings and the University Bridge. The University Bridge was the first structure built on the new campus completed in November 1923. The three buildings which followed were the Arts Building (now known as the University College Building, containing Convocation Hall, a library and administrative offices for the University, the Natural Sciences Building (including a cafeteria), and the power plant. Influenced by Oxford and Cambridge Universities in England, and Ivy League colleges in the United States, the style adopted for these buildings was Collegiate Gothic (Tausky and Distefano, 1986:376-377, Gwynne-Timothy, 1978). The buildings used Credit Valley sandstone from a quarry at Rockwood near Guelph and were faced with Indiana limestone (Gwynne-Timothy, 1978). The inclusion of sculptural grotesques on many of the campus buildings evoke medieval architecture and are demonstrative of the Collegiate Gothic style.

The Board of Governors understood the importance of cultivating the natural beauty of the setting in addition to building in pleasing architectural styles. As such the services of Mr. Gordon Culham of Toronto, a graduate of landscape architecture and planning at the University of Harvard, were acquired in 1934. Under Mr. Culham's direction the river banks were cleared, filled and strengthened to prevent erosion; existing trees pruned and dead wood removed; and twelve thousand new trees were planted (Gwynne-Timothy, 1978).

Following construction of the first three buildings, the J.W. Little Memorial Stadium was the next to be completed in 1929. Designed by Fielding Yost, who was the well-respected Football Coach at the University of Michigan, the stadium allowed Western University to join the senior intercollegiate football league (Gwynne-Timothy, 1978). The construction of the Lawson Memorial Library followed in 1934, the Hume Cronyn Memorial Observatory in 1940 and the McIntosh Memorial Art Galley in 1942. Expansion of the campus accelerated in the 1950s and 1960s with new buildings constructed on the east side of the Thames River and south of Phillip Aziz/Sarnia Road. Additions to existing buildings were prevalent in the 1990s and 2000s (Campus Master Plan, 2015).

3.1.1 HISTORICAL MAPPING REVIEW

The 1863 Map of the Township of London, Canada West, depicts the area adjacent to the location of the University Bridge as largely rural, with the agricultural development of Broughdale to the south (Figure 2). The future location of University Bridge is along the north branch of the Thames River, south of a former mill race, within the farm of Thos. Ball. No crossing currently exists at this location. The 1878 Illustrated Historical Atlas of

the County of Middlesex reveals that the rural property is now owned by the Kingsmille family (Figure 3).

The 1915 and 1923 Topographic Map depict the area as still largely rural, with the adjacent area being identified as Broughdale (Figure 4, Figure 5 and Figure 7). No crossing exists, but the mill race is once again noted on the map.

The 1926 Geodetic Survey of London depicts the University Bridge is present labelled as "University Bridge", the area northwest of the bridge including the University campus is not included, likely as it was outside of the City's boundaries at the time (Figure 6).

The 1930 Topographic Map outlines the Western University campus, including the bridge, and several university buildings (Figure 8). The area remains relatively unchanged in the 1936 Topographic Map (Figure 9).

The bridge is depicted in the 1957 Geodetic Survey, however significant institutional development has occurred within the University on lands adjacent to the bridge (Figure 10). This development is also visible in the 1967 Aerial Image, as well as in the 1998 Aerial Image (Figure 11 and Figure 12). In the 2018 aerial imagery, additional institutional development to the east of the bridge has been constructed (Figure 1).

3.2 EARLY BRIDGE BUILDING IN ONTARIO

Bridges have been an early necessity in Ontario due to the many waterways that required fording by roads and railways. Eighteenth-century bridges were typically of a simple wood slab design and construction was crude (Bradford, 2015; 10). There was little appetite by the government of Upper Canada to take on road and bridge construction and the first Parliament of Upper Canada focussed instead on building military and trading outposts connected by water routes (Bradford, 2015; 11). As a result, early bridges were typically constructed by land-owners and local governments and consisted of timber felled from local forests to produce makeshift crossings along primitive roads

Early engineered bridges were constructed using timber, with covered bridges used for road passage and timber trestle bridges for railway crossings. Timber bridges dominated the rural landscape between 1780-1880 and continued into the early twentieth century (Cumming, 1983). Railway expansion in the second half of the nineteenth century led to significant advances in civil infrastructure to construct structures strong enough to support trains across longer spans (Bradford, 2015; 28).

Wrought iron was briefly used in bridge construction, and most notably on the bridge crossings along the Grand Trunk Railway between Montreal and Toronto and the Blackfriars Bridge of London, Ontario. (Legget, 2017). However, by the end of the nineteenth century steel was the material of choice for bridge construction as it had a greater tensile strength than iron and was more durable than timber. The truss design, characterized by a framework of supporting members, was the most common bridge type in the late-nineteenth century, with steel members replacing wood members generally by the 1890s (Cleary 2007; 127-128). Truss designs proliferated in the final

decades of the nineteenth century, though these structures are generally separated into three categories: deck truss (where the deck rests wholly upon the truss); through truss (where the truss extends above the deck and is joined above the deck); and half-truss or pony-truss (where the truss extends above the deck but the top members are not connected). The use of steel in bridge construction decreased during the early twentieth century as a result of steel shortage during The Second World War, innovations in concrete fabrication, and the subsequent favouring of that material by bridge engineers. However, steel is still used on Ontario's roads for some girder and steel box girder bridges and, less often, cable-stayed or suspension bridges.

Advancements in concrete production and bridge design in the first half of the twentieth century led to the general movement away from steel bridge construction by mid-century (Cleary 2007; 54-63). Rigid frame bridges, those that were entirely cast in place, appeared on Ontario's roads in the first decades of the twentieth century. These structures are defined by their monolithic casting (where the superstructure and substructure are continuous) and commonly utilized steel rebar reinforcement within the concrete for greater strength (Cleary 2007; 54-63). Simple concrete slab bridges, characterized by a single superstructure resting atop substructure components (such as piers and abutments) were developed during the mid-twentieth century. Advancements in concrete engineering in the 1950s led to the development of pre-cast, pre-stressed concrete, which was widely adopted for bridge construction during the second half of the twentieth century. Using this design, concrete girders are typically cast off-site and compressed to ensure predictable tensile strength under load (Cleary 2007; 54-63). At present, most roads and highways in Ontario use reinforced concrete bridges, and increasingly with prefabricated components (Legget, 2017).

3.2.1 HISTORY OF PLATE GIRDER BRIDGES

Steel plate girder bridges are characterized by the connection of steel plates, by rivets, bolts, or welds, to create a continuous girder. Plate girders became popular in the late nineteenth century, most commonly used in the construction of railway bridges (Unterman McPhail, 2011: 13). As a plate girder bridge could be assembled onsite it allowed for more convenient transportation of materials. This bridge design proliferated in the first half of the twentieth century and comprised most of Canada's railway crossings by 1914. The technology was used to construct road bridges by the 1920s and 1930s, though steel shortages during World War II resulted in a reduction of structures constructed at this time (Unterman McPhail 2011: 13). By the 1950s, welded plate girders replaced riveted and bolted plate girders and innovations in concrete bridge design resulted in a proliferation of concrete beam bridges on Ontario's roads.

3.3 CONSTRUCTION AND HISTORY OF UNIVERSITY BRIDGE

The land use history for the University Bridge was produced using historical mapping, bridge drawings, archival research, and secondary sources where available. This

section has generally been divided into periods of significant changes or alterations. The subject property is located on former Lot 16, Concession 3 in London Township.

3.3.1 1863-1916

The 1863 map of the Township of London, Canada West, identifies the lands on which the bridge sits as belonging to Thomas Ball with no building footprints (Figure 2). Several smaller lots owned by Thomas Ball are identified south of the Thames River and north of the University Bridge's location.

The 1878 *Illustrated Historical Atlas of Middlesex County* identifies the land as vacant, though owned by the Kingsmille (sic. Kingsmill) family (Figure 3). There is no Kingsmille family identified in the Census data in 1881 and 1891, however, there is a Kingsmill family (Schedule 1, District No.167 East Riding of Middlesex, Sub District No. 6 London Township, Page 38-39 and Schedule 1, District No. 90 East Middlesex, Sub District C London Township, Page 27). Given that spelling mistakes in historical maps and historical census records were common, it is likely that the Kingsmill family identified in the Census data were the same as the Kingsmille family identified on the 1878 Middlesex County map. The Kingsmill family recorded in the 1881 and 1891 Census Records identifies Thomas Fraser as the husband and father, Ann as his wife, and Ann, Aliy as their daughters and Thomas, Henry and Arthur as their sons. Thomas Fraser Kingsmill is recorded as a merchant and was the founder of the Kingsmill Department Store which began as a 1,800 square foot general store that operated on Dundas Street until its eventual closing in 2014 (*Kingsmill History*, 2014). The "Bellevue" Farm was sold by the owner Miss Ann Kingsmill to the University in 1916 (Talman, 1953; Gwynne-Timothy, 1978).

3.3.2 1917-1923

The bridge crossing the Thames River from Richmond Street along what was to become University Drive was the first structure built on the new university campus in 1923 (Figure 5). The new bridge was constructed over the north branch of the Thames River, linking Richmond Street with the university grounds. The bridge was specifically designed with a low setting to provide an unobstructed view of University College. (The Journal Royal Architectural Institute of Canada 1925:128) According to John R. W. Gwynne-Timothy in his book *Western's First Century* (1978) it was Thomas Adams, a well known Scottish architect and planner from Scotland that proposed reversing the siting of University College to face east rather than west (Gwynne-Timothy, 1978). Adams identified the key to the plan as building a bridge across the river, leading to the Memorial Tower of the University College building that would be straight ahead above the crest of the hill (Gwynne-Timothy, 1978). The university adopted Adams' suggestion.

The Canadian Institute of Planners describes Thomas Adams as the "godfather of Canadian urban planning". Adams came from humble beginnings being born on a farm just outside of Edinburgh, Scotland in 1871. He went on to become the first president of the British Town Planning Institute, founder of the Town Planning Institute of Canada

and a founding member of the American City Planning Institute, forerunner of the American Institute of Planners, making Adams not only the godfather of Canadian urban planning but arguably instrumental in the establishment of urban planning in Britain and the United States, including London.

Alan Noon provides a slightly different account of the planning and design of the University Bridge in the Fall 2012 edition of the *Alumni Gazette*, suggesting that the Detroit Architect Frederick Spier, who is credited with the first campus concept for Western University's current campus, came up with the idea to connect the campus to Richmond Street by crossing the Thames River. Noon suggests that Thomas Adams disagreed with Spiers organization of the campus buildings in block formation and rather advocated for a circular layout with the central campus as open space. However, Noon does indicate that Thomas Adams precisely fixed the location of the present-day University Bridge.

While a completely steel bridge would have been a less expensive endeavor, the University opted for the more ornate steel girder bridge covered in stone and concrete, providing an early emphasis on design. The firm John M. Moore & Co. Architects designed the steel girder bridge disguised as a concrete and stone arch bridge. The piers were of poured concrete and outside faces of the girders were and still are encased in concrete, which appears to be a very rare practice in Ontario bridge building (Holth, 2013). The bridge design included stone clad abutment walls, stone clad pylons, stone wingwalls, ornate wrought iron light standards and carved stone railing and spindles. The stone included Cut Indiana Limestone and Credit Valley Sandstone (The Journal Royal Architectural Institute of Canada 1925:128). John M. Moore & Co. Architects were active in London from 1857 to 1930 and designed the other original buildings on the current Western University campus and many institutional and residential buildings in the City of London such as St. Luke the Evangelist Anglican Church (1204 Richmond Street) and Elsie Perrin Williams Estate (101 Windermere Road). However, the University Bridge is the only known bridge attributed to John M. Moore's firm.

London contractor John Putherbough began construction of the bridge in August 1922 and finished in November 1923 (Figure 12). Putherbough was an pioneer with new ways to mix and pour concrete that allowed him to pour record amounts of concrete in a single day (Noon, 2012). He was also the first contractor in the City of London to use a steam powered shovel, which he used to excavate the bridge footings to 16 feet below the river bed (Noon, 2012). Putherbough was also awarded the construction contract for the University's Science Building, JW Little Stadium, Lawson Memorial Library and the Cronyn Observatory.

3.3.3 1924-PRESENT

The bridge remained largely unaltered from its construction until 1973 when Vandals were blamed for \$12,000 worth of damage to the bridge caused by pushing the south railing of the University Bridge, including 60 linear feet of stone railing and 75 stone spindles, into the Thames River (*London Free Press*, 1974). As a result, the top rail and

spindles on the south side of the bridge and a portion of those on north side of the bridge were replaced with new varied colour Indiana limestone in 1974.

In 2003, extensive repairs were undertaken to the bridge, including replacing the stone balusters and railings with steel, removing the pylons except for those located at the entrances to the bridge which were rebuilt, replacing the light standards, repaving the asphalt road, adding cycling lanes, and replacing the sidewalks.

4 EXISTING CONDITIONS

4.1 DESCRIPTION OF STUDY AREA AND LANDSCAPE CONTEXT

The study area consists of the University Bridge located on the Western University campus, City of London, and includes the approaches to the bridge. The structure was built in 1923 to carry two lanes of east-west University Drive traffic over the north branch of the Thames River. University Drive is temporarily closed to vehicular travel at the bridge, though pedestrian and cyclist traffic is still permitted.

Located within the Western University Campus, the bridge is surrounded by the Thames River on the north and south and naturalized treed areas with walking paths, including an informal walking path that travels underneath the bridge on the east side of the Thames River and the Thames Valley Parkway on the west side. Several campus buildings, including Sydenham Hall and Elgin Hall are located to the east of the structure, beyond Sunset Street. Delaware Hall is located across the Thames River on the west side of the bridge along with a parking lot and tennis courts. The University College Building, including the Memorial Tower, is framed when looking west from the bridge and is notable as one of the original buildings designed in the modern gothic style (Image 1).

4.2 ARCHITECTURAL DESCRIPTION

The University Bridge is a three-span, riveted plate girder bridge with concrete cladding covering the exterior of the north and south girders. The structure measures 296 feet (90.2 metres), with the centre span 130 feet (39.5 metres) and the other two spans 83 feet (25.3 metres) long.

4.2.1 APPROACHES

Both approaches are level and consistent with the grade of the road at the bridge. On the east side of the Thames River, University Drive approaches the bridge on a slight horizontal curve just west of Sunset Street (Images 2 and 3). Black painted metal spear-top fences are located immediately adjacent to each wingwall and extend approximately four metres from the wingwalls.

4.2.2 WINGWALLS, ABUTMENTS AND PIERS

The wingwalls on the west and east sides of the bridge are built into the abutment and are of cut stone featuring cut stone in the shape of shields facing University Drive and a stone coping in a hipped shape with a bull-nose (Image 4 to Image 6). The footings at both abutments are cast-in-place concrete and above ground the abutments are stone faced (Image 5 to Image 7). Each abutment features a projecting portion that supports a stone clad pylon (see Section 4.2.3 for further description). A solid band of stone is set

at grade, below which cut and dressed stone extends to the embankments (Image 4 and Image 5).

Two piers are located on concrete footings in the Thames River (Image 8 and Image 9). The base of each pier is comprised of cast-in-place concrete and flares out towards the bottom with metal ice floe protection located on the north side of each pier. The concrete portion of each pier ends generally where the steel girders rest on their bearings, with rectangular stone pylons extending to meet the top of the steel plate girder and cantilevered portion of the bridge deck. Decorative shield shaped stones adorn the exterior elevations of the stone portion of the piers (Image 10).

4.2.3 GIRDERS/DECK/RAILINGS/PYLONS

The bridge deck is supported on three spans of arched steel plate girders to form an overall span of 296 feet long (90.2 metres) (Image 11 to Image 13). Steel vertical stiffener plates are riveted to the main plate girder to keep the girder from twisting. Steel stringers and cross-girders support the deck. There is also metal cross bracing riveted to the main plate girder. Concrete cladding covers the exterior elevations of the steel plate girders. From the underside of the bridge, reinforced concrete brackets support the sidewalks. Various utilities also run underneath the bridge. Metal mesh protects the first few metres of the bridge soffit on the western and eastern spans.

The road surface consists of paved asphalt painted for two-way automobile and bicycle traffic and there are concrete sidewalks on both sides of the bridge (Image 14).

The railing on the outer side of the bridge consists of an open design with a mixture of narrow metal pickets and wide metal balustrades designed to be reminiscent of the stone balustrades existing before 2002 (Image 15). The railing separating traffic from the sidewalk is a utilitarian steel design consisting of a steel panel with two horizontal steel box beams bolted to vertical steel posts on the lower half and a simple open steel design on the upper half (Image 16).

Decorative stone clad pylons are located at each corner of the bridge (Image 7). They have buttress features on three sides with the side facing University Drive featuring a shield shaped stone. Each pylon supports a metal light standard. While not the original pylon design or metal light standard, the existing pylon replaced in 2003 is reminiscent of the original design and used the original stone. Together, the stone clad pylons and light standards create a striking entrance feature on each side of the bridge.

Tall light standards are located at each pier along the bridge, and are installed on the outside of the bridge, supported by a cantilevered concrete pad (Image 16 and Image 17).

5 HERITAGE EVALUATION

5.1 ONTARIO REGULATION 9/06 EVALUATION

Table 1: Ontario Regulation 9/06 Evaluation

CATEGORY	CRITERIA	Y/N	COMMENTS
Design/ Physical Value	Is a rare, unique, representative or early example of a style, type, expression, material or construction method	Y	The University Bridge is an early example of a three-span, steel plate-girder bridge that exhibits a rare design, particularly in its use of stone and concrete cladding in the City of London. Use of stone in bridge construction was rare during the early twentieth century in Ontario, primarily due to the lack of local availability and high cost of installation. The use of stone cladding on the abutments, upper portion of the piers, and stone shields reflects the Collegiate Gothic style which was also rare for bridge design. Concrete cladding used to obscure the steel plate girder construction is also unique and was likely designed to create a sense of consistency in colour, if not material, in the bridge's substructure.
	Displays a high degree of craftsmanship or artistic merit	Y	The University Bridge displays a high degree of artistic merit in the design and execution of the bridge. The concrete cladding design demonstrates an unusual approach that was intended to achieve architectural continuity with other elements of the campus. Therefore, the University Bridge meets this criterion.
	Demonstrates a high degree of technical or scientific achievement	Y	Accounts of the bridge construction emphasize the "record braking" speed John Putherborough displayed in pouring and setting the concrete for the piers. As such, the University Bridge meets this criterion.
Historical/ Associative Value	Has direct associations with a theme, event, belief, person, activity, organization or institution that is	Y	The University Bridge has direct associations with the establishment of the Western University campus which moved to the current site that was originally bounded by the Thames River to the east and was the first structure built on the new campus in 1923.

	significant to a community		
	Yields, or has the potential to yield, information that contributes to an understanding of a community or culture	N	The University Bridge does not yield or have the potential to yield an understanding of a community or culture.
	Demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community	Y	The University Bridge demonstrates the ideas of John M. Moore & Co. Architects who designed the bridge in 1922 to reflect the Collegiate Gothic style that would complement the future campus buildings. John M. Moore is responsible for the design of many buildings across Ontario and many of his designs are held at the University of Western Ontario's D.B. Weldon Library. This is the only known bridge attributed to John M. Moore. The bridge demonstrates the work of contractor John Putherborough who was known for his innovation in concrete application and mixing. Putherboroough was also responsible for construction of many of Western University's early buildings on the current campus.
Contextual Value	Is important in defining, maintaining or supporting the character of an area	Y	The University Bridge defines, maintains, and the supports the character of the Western University campus. It acts as an entrance feature to the original campus grounds (1924) and supports the Collegiate Gothic style of the original and some subsequent campus buildings. As the original architectural component of the present Western University campus, the University Bridge is a physical anchor for the property and maintains a visual relationship with the surrounding buildings, many of which support the campus' Collegiate Gothic architecture. Therefore, the University Bridge meets this criterion.
	Is physically, functionally, visually or	Y	The University Bridge is visually and historically linked to the Western University Campus which was designed to evoke a

	historically linked to its surroundings		Collegiate Gothic style. The form and location of the bridge supports a visual relationship with the University College Building in particular, and the view west along the bridge toward the campus was devised as a defining viewshed. As such, the University Bridge meets this criterion.
	Is a landmark	Y	The bridge was designed as a gateway to Western University's original campus (1924). As the University's only eastern entrance to the original campus, the bridge provides a recognizable point of reference on the University's campus.

5.2 COMPARATIVE ANALYSIS

A comparative analysis was undertaken to establish a baseline understanding of similar structures within the City of London, and to determine if the property *“is a rare, unique, representative or early example of a style, type, expression, material or construction method”* as described in O. Reg. 9/06. Comparative examples were drawn from the City of London Bridge Inventory (January 2019) which included information about bridge type, age and materials, of bridges owned by the City of London. The City of London Bridge Inventory is not a comprehensive list of bridges in the City of London, but rather a list of bridges owned by the City of London. Comparative examples were also drawn from the Ministry of Transportation's (MTO) West Region inventory of bridges (2013), selecting for the type of structure to compare the number of spans and length of similar bridges as this information was not included in the City of London's Bridge Inventory. This additional comparative data is included to establish the heritage value of the University Bridge within a regional context.

Of the 102 bridges in the City of London's Bridge inventory, five are identified as girder bridges, three of which are box girders, one of which is a T-girder bridge, and one is a continuous slab on girder. As such, the University Bridge may be the only steel girder bridge in London. Furthermore, it is one of the oldest girder bridges in London (second to the Dundas Street East Bridge located over Pottersburg Creek and constructed in 1911).

Furthermore, of 102 bridges owned by the City of London, there are only three that include a mixture of masonry and concrete materials and they are Blackfriars Bridge, Dundas Street East Bridge and Victoria Bridge. It is not clear from the inventory whether the stone on each bridge is structural or cladding.

The MTO inventory of bridges revealed that there are 178 girder bridges in the West Region in southern Ontario. Of the 178, 28 of them are steel girder bridges.

Of the 28 steel girder bridges identified in West Region, two were constructed in 1950s, 21 in the 1960s, three in the 1970s and two in the 1990s. This supports the findings that

University Bridge is an early example of a steel girder bridge in the City of London and the MTO's West Region.

The majority of MTO's steel girder bridges have four spans (11), with the following breakdown for the remaining structures: three spans (6), six spans (4), one span (4) and one six and one ten span bridge. The longest structure of this type on the MTO West Region inventory measures 252 metres. As such, the University Bridge with three spans for a total span of 91.5m is not considered significant in terms of number of spans, individual spans length or overall length.

In summary, the University Bridge appears to be an early example of steel girder bridge and one of the only structures in the City of London and MTO West Region to include a mixture of masonry and concrete materials.

5.3 DISCUSSION OF INTEGRITY

According to the Ontario Heritage Toolkit, Heritage Property Evaluation (MTCS 2006), *“Integrity is a question of whether the surviving physical features (heritage attributes) continue to represent or support the cultural heritage value or interest of the property.”* The following discussion of integrity was prepared to consider the ability of the structure to represent and retain its value over time. It does not consider the structural integrity of the structure, or the overall condition of the structure. Observations have been made from the public right-of-way. Structural integrity, should it be identified as a concern, should be determined by a qualified heritage engineer, building scientist, or architect.

Original plans of the bridge from 1922 were examined against the bridge's current condition to determine the degree of integrity that remains (Appendix B).

The bridge has been through two major repairs. The first in 1974 as a result of vandalism to the south stone railing that rendered the bridge unsafe. Consequently, the top rail and spindles on the south side of the bridge and a portion of the north side of the bridge replicated with varied colour Indiana limestone (Appendix C).

In 2003, extensive repairs to the bridge were undertaken, including a replacement of the stone balusters and railings with steel, removing the pylons located above the piers, and replacing the pylons at the east and west side of the bridge (Appendix D). The pylons at the east and west side of the bridge of the bridge were rebuilt using material from the original pylons. While the new design is similar to the original pylon, it is narrower with a taller cap stone and some of the details such as the stone shields on the buttress-like features that were identified in the bridge drawings were not incorporated into the final design (see original pylons in Figure 13). Additionally, new light standards were installed that did not reflect the same design as the original cast iron light standards. Unfortunately, these repairs resulted in the removal of portions of this bridge that would have likely been identified as heritage attributes such as the stone railings and light standards, if such work had not occurred. While the new pylon design does maintain the Collegiate Gothic style, it does not continue to reflect the original design.

Notwithstanding these repairs, the bridge still retains sufficient original materials as a whole to continue to reflect the ideas of John M. Moore & Co. Architects.

Repairs to the expansion joints were undertaken in 1985 and 1994, though these are not considered to affect the integrity of the bridge as their replacement is considered a typical requirement of bridge maintenance.

The bridge is currently closed to vehicular access as a result of an engineering report that noted damage to bearings that allow the bridge to flex under traffic load and temperature changes. As of the latest update provided by Western University on January 3rd, repair work commenced on January 7, 2019 and is expected to be completed by March 1, 2019.

The integrity of the University Bridge is considered fair given that the repairs in 2003 have resulted in alteration and/or removal of elements what would have been cultural heritage attributes. However, there remains sufficient heritage attributes that reflect the value of the University Bridge as a unique and rare example of a Collegiate Gothic styled steel plate girder bridge clad in concrete and stone.

6 CONCLUSIONS

Based on the evaluation of background historical research, site investigation, and application of criteria from *Ontario Regulation 9/06*, the University Bridge was determined to have significant cultural heritage value or interest. Accordingly, the following Statement of Cultural Heritage Value or Interest and list of heritage attributes have been prepared.

6.1 STATEMENT OF CULTURAL HERITAGE VALUE OR INTEREST

6.1.1 DESCRIPTION OF UNIVERSITY BRIDGE

Spanning the north branch of the Thames River in the City of London, in 1923 the University Bridge was the first structure constructed on the new Western University campus. The riveted plate girder bridge now serves as a landmark providing the only eastern entrance to the original part of Western University campus.

6.1.2 CULTURAL HERITAGE VALUE

As the first structure built on the new Western University campus in 1923, the University Bridge established the University’s vision of Collegiate Gothic design. It was specifically oriented across the Thames River in such a way as to frame the view from Richmond Street towards the University College building and its Memorial Tower that sit prominently upon a hill. Sitting in the middle of Western University campus, the bridge is a landmark that depicts the original eastern entrance of campus. As such, University Bridge is also historically linked to its surroundings and is important in defining, maintaining and supporting the character and architectural aesthetic of the University’s campus.

The University retained a local team of professionals to design and construct the bridge. John M. Moore, architect, was retained to design the structure and John Putherborough, contractor, was awarded the contract to construct the bridge. The University Bridge is the only bridge attributed to John M. Moore and reflects his interpretation of the Collegiate Gothic style applied to a bridge design. Moore was a significant local architect, responsible for a number of buildings in London, including early buildings on the Western University’s campus, numerous places of worship such as St. Luke the Evangelist Anglican Church (1204 Richmond Street), and residential buildings such as the Elsie Perrin Williams Estate (101 Windermere Road). The University Bridge also reflects the work of local contractor John Putherborough, who demonstrated a high degree of technical achievement using a new concrete mixing technique which allowed him to pour a record amount of concrete per day. John Putherborough was also awarded the contract to construct many of the other early University buildings including the University’s Science Building, Boiler House, J.W. Little Stadium, Lawson Memorial Library, and the Cronyn Observatory.

The riveted plate girder bridge is largely camouflaged by the use of concrete and stone cladding. While construction of a completely steel bridge may have been a more economical choice, the aesthetics of the bridge were important to the University's vision for the campus. As such, the University Bridge provides a rare example of a Collegiate Gothic styled bridge and a rare example of the use of stone and concrete as cladding. The use of stone cladding on the abutments, upper portion of the piers, and in the stone shields reflects the Collegiate Gothic style. Concrete cladding used to obscure the steel plate girder construction is also unique and was likely undertaken to create a sense of consistency in colour, if not material, in the bridge's substructure. It is the application of Collegiate Gothic style to a bridge that also speaks to the University Bridge's high degree of artistic merit.

6.2 DESCRIPTION OF HERITAGE ATTRIBUTES

The heritage attributes that reflect the cultural heritage value of the University Bridge include:

- Three-span length
- Concrete, sandstone and limestone clad abutments;
- Cut and dressed sandstone and limestone wingwalls including stone shields and bull-nosed hipped stone coping;
- Sandstone and limestone clad pylons and light standards including stone shields, buttress-like features and concrete cap;
- Concrete, sandstone and limestone clad piers and stone shields;
- Metal substructure including riveted steel plate girders, steel stringers, cross-girders and cross-bracing;
- Concrete cladding on exterior of steel plate girders;
- Reinforced concrete brackets supporting the sidewalks;
- Unobstructed north and south views to the Thames River from the University Bridge;
- Unobstructed view from the east approach towards the University Bridge framing the University College Building's Memorial Tower; and,
- Location crossing the north branch of the Thames River and on the University of Western's campus.

7 RECOMMENDATIONS

WSP Canada Inc. (WSP) was retained by the City of London to complete a Cultural Heritage Evaluation Report (CHER) of the University Bridge as part of the Transit Project Assessment Process (TPAP) for the proposed London Bus Rapid Transit (BRT) system. The University Bridge, which includes the structure and approaches, was identified by WSP as a potential cultural heritage resource in the Cultural Heritage Screening Report (October 2018) completed for the London BRT TPAP. The purpose of this report is to evaluate the University Bridge using *Ontario Heritage Act* Regulation 9/06 to determine its cultural heritage value and provide a Statement of Cultural Heritage Value or Interest and list of attributes, if appropriate.

The study area consists of the University Bridge and the approaches to the bridge. Based on the results of the background historical research, site investigation, and application of criteria from *Ontario Regulation 9/06*, the study area was determined to demonstrate cultural heritage value or interest.

The completion of the study has resulting in the following recommendation:

- 1 The University Bridge was determined to demonstrate cultural heritage value or interest. As such, a Heritage Impact Assessment is required for this resource to identify appropriate mitigation measures.
- 2 A Cultural Heritage Evaluation Report should be undertaken following the completion of TPAP for the Western University property including all structures and landscape features at 1151 Richmond Street.
- 3 The final version of this report will incorporate feedback from the LACH, City of London Heritage Planner, and MTCS, and will be forwarded to the Heritage Planner and LACH for their records.

8 IMAGES



Image 1: View of towards University College building including Memorial Tower from eastern bridge approach, looking west (WSP, 2018).



Image 2: East approach to University Bridge, looking west (WSP, 2018).



Image 3: View of University Drive east of the Thames River, looking west at Sunset Street (WSP, 2018).



Image 4: View of north east wingwall, looking north west, note stone shields (WSP, 2018).



Image 5: View toward south east abutment, looking north (WSP, 2018).



Image 6: View of toward south east abutment; note projecting buttresses on pylon (WSP, 2018).



Image 7: View of north east pylon, light standard and wing wall, looking north (WSP, 2018).



Image 8: View of south side of bridge, looking north; note steel cross bracing visible from open barrel arch (WSP, 2018).



Image 10: Detail of concrete and stone pier, looking south, note shield shaped stone (WSP, 2018).



Image 9: View of the western most pier of bridge, looking east (WSP, 2018).



Image 11: View of the eastern most span of the bridge, looking west (WSP, 2018).



Image 11: Detail of underside of the bridge, western most span (WSP, 2018).



Image 13: Detail of reinforced concrete brackets supporting sidewalk on underside of west end of bridge, looking west (WSP, 2018).



Image 14: View of road surface across bridge, looking east (WSP, 2018).



Image 15: Detail of the railing between the sidewalk and Thames River on the bridge, looking south (WSP, 2018).



Image 16: View looking northwest on bridge, note railing between sidewalk and road surface's design (WSP, 2018).



Image 17: Detail of light standard base (WSP, 2018).

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Provincial Standards and Resources

Ontario Heritage Tool Kit
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APPENDIX

A TERMS OF REFERENCE FOR CULTURAL HERITAGE EVALUATIONS

Terms of Reference:

Cultural Heritage Evaluation Report

A Cultural Heritage Evaluation Report will be prepared by a qualified heritage consultant as required by the recommendations of the Cultural Heritage Screening Report.

The Cultural Heritage Evaluation Report will include:

- an executive summary, describing a summary of the outcome of the cultural heritage evaluation;
- an introduction providing context for the report and providing a brief overview of how and why the research was undertaken;
- a general description of the history of the immediate context, considering the unique setting of the property, which may consist of a village, neighborhood, commercial district, and/or street the property is located within;
- a land use history of the property parcel describing key transfers of land and milestones, informed by Land Registry records and additional archival research into prominent owners or tenants, including but not limited to the use of tax assessments or City Directories, if identified;
- a description of the character of the immediate landscape context, including views and/or vistas;
- a description of the exterior of a resource visible from the public right-of-way for a building, and if an engineering work, a description of its structural design and materials;
- representative photographs of the exterior of a building or structure, character-defining architectural details taken during a site visit from the public right-of-way, or, of a structure, representative photographs of the elevations and structural details of a bridge or engineering work;
- a comparative analysis, using resources of a similar age, style, typology, context and/or history, informed by a search of the City of London Inventory of Heritage Resources
- a qualified statement about integrity, including observations from the public right-of-way, description of limitations, and recommendations for future work by a qualified heritage engineer, building scientist, or architect;
- evaluation under O. Reg. 9/06, guided by the Ontario Heritage Toolkit (2006) and the Ministry of Tourism, Culture and Sport's Standards and Guidelines for the Conservation of Provincial Heritage Properties (2014);
- a statement of cultural heritage value or interest (if applicable);
- a description of the heritage attributes (if applicable);
- historical mapping, photographs of the property if available;
- a location plan;
- a description of consultation undertaken;
- recommendations for further work; and
- sources cited.

Group Cultural Heritage Evaluation Report

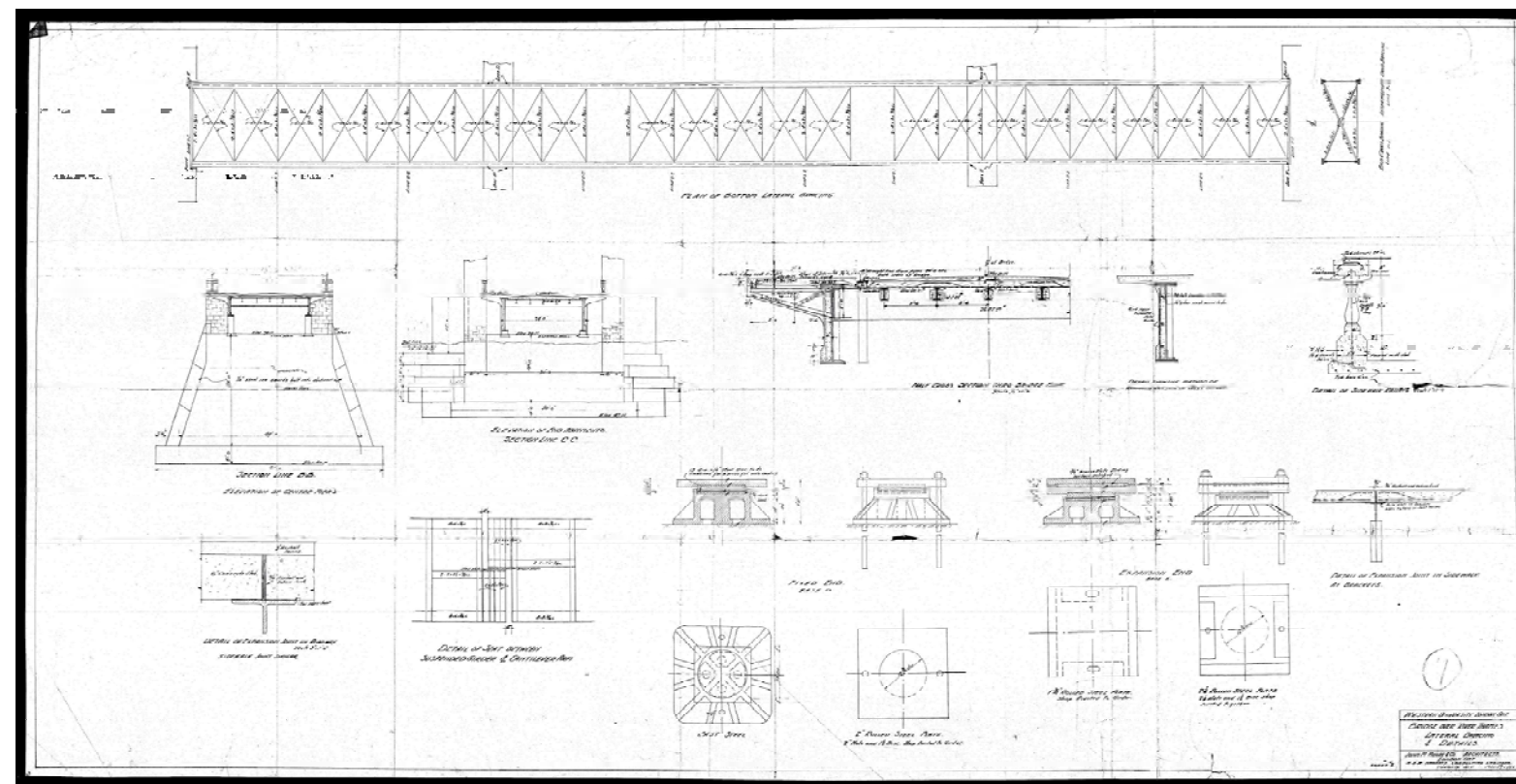
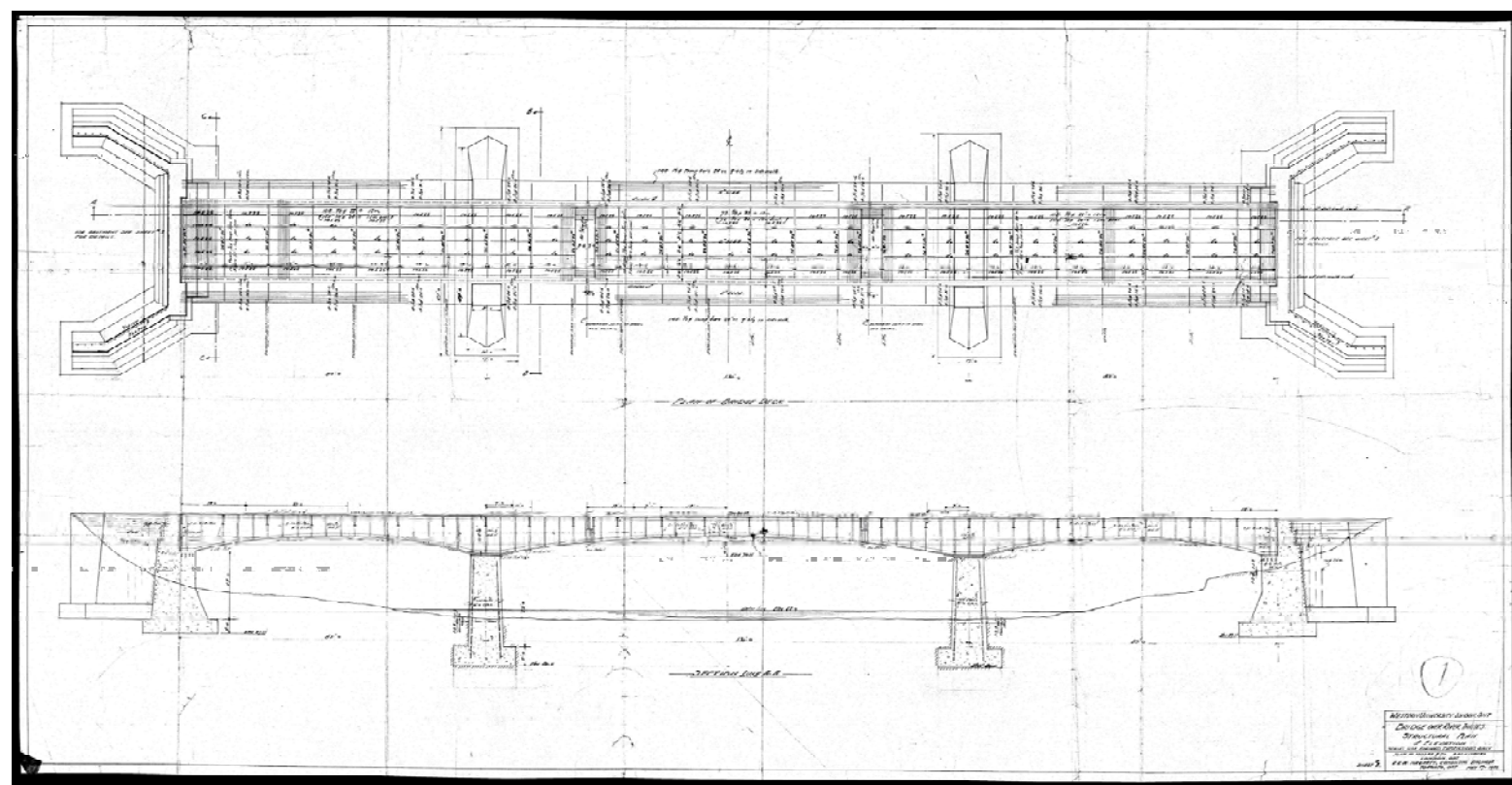
A group Cultural Heritage Evaluation Report will be prepared by a qualified heritage consultant as required by the recommendations of the Cultural Heritage Screening Report for contiguous properties which share a geography, style, age, use and typology.

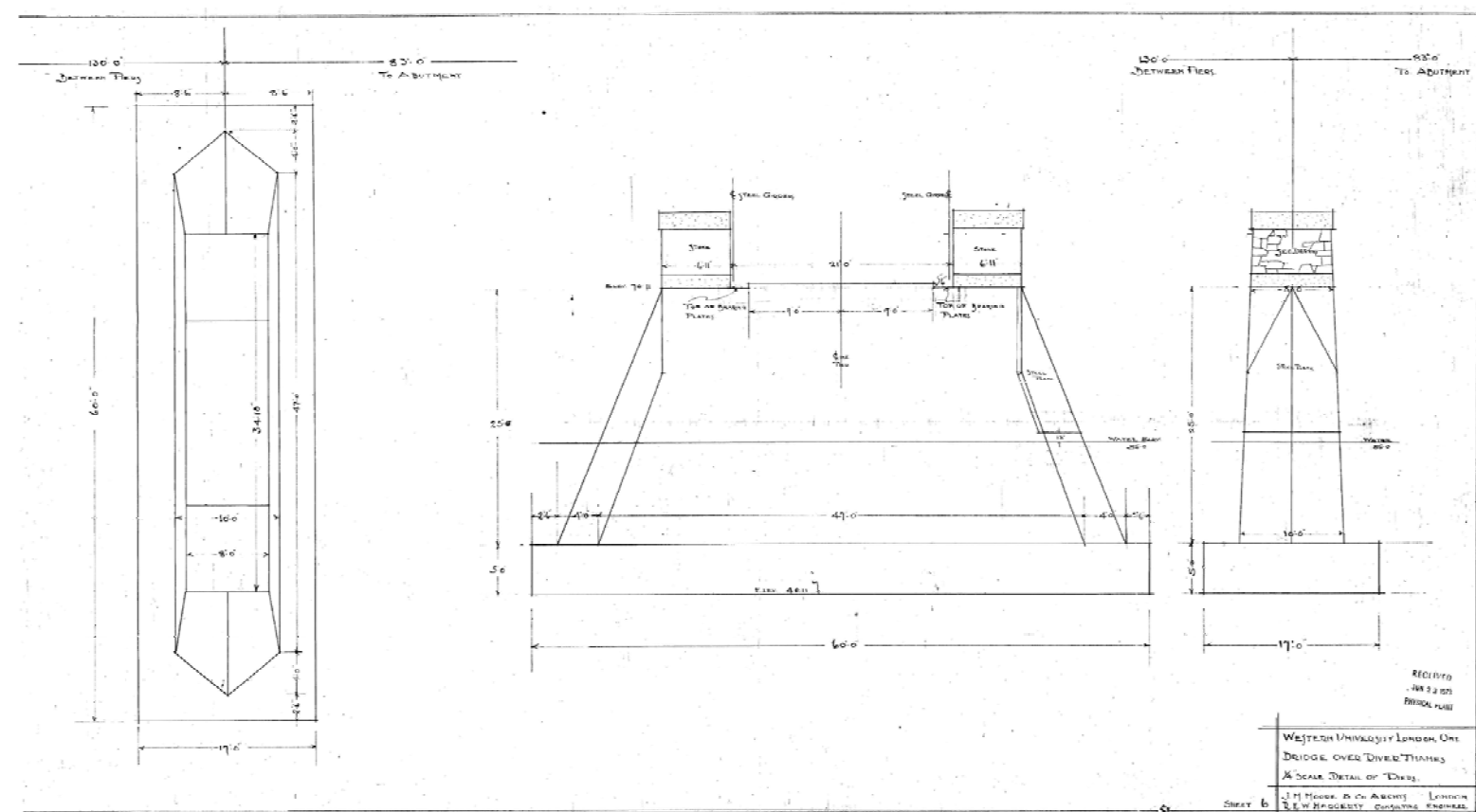
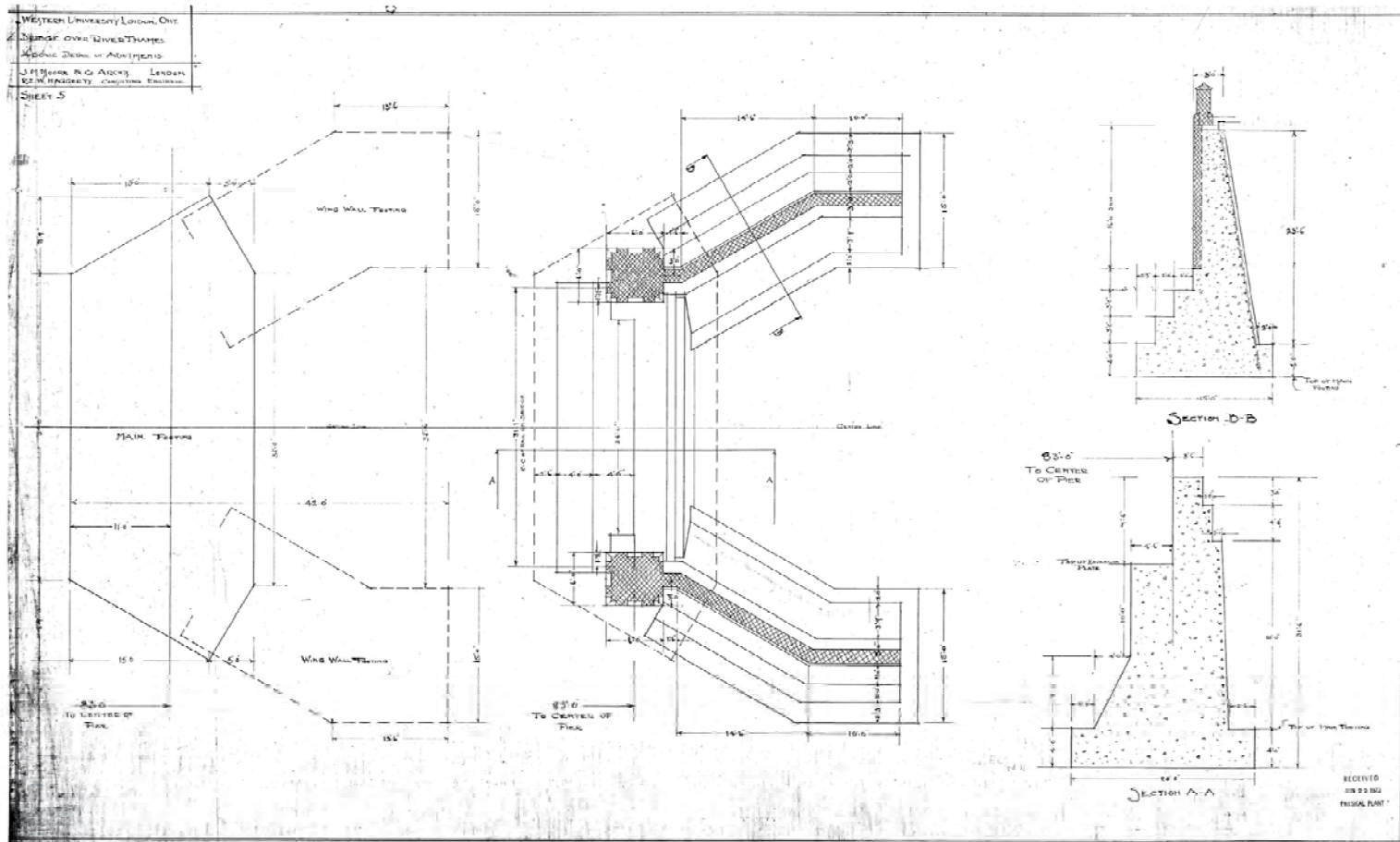
A Grouped Cultural Heritage Evaluation Report will include:

- an executive summary, describing a summary of the outcome of the cultural heritage evaluation(s);
- an introduction providing context for the report and providing a brief overview of how and why the research was undertaken;
- a shared general description of the history of the of the immediate context, considering the unique setting of the property, which may consist of the village, neighborhood, commercial district, and/or street the properties are located within;
- a shared description of the character of the immediate landscape context, including views and/or vistas;
- a land use history of the property parcel describing key transfers of land and milestones, informed by Land Registry records and additional archival research into prominent owners or tenants, including but not limited to the use of tax assessments or City Directories, if identified;
- a description of the exterior of each resource visible from the public right-of-way for a building, and if an engineering work, a description of its structural design and materials;
- representative photographs of the exterior of each resource, including architectural details, taken during a site visit from the public right-of-way, or, of a structure, representative photographs of the elevations and structural details of a bridge or engineering work;
- a comparative analysis for each resource, using resources of a similar age, style, typology, context and/or history, informed by a search of the City of London Inventory of Heritage Resources;
- a qualified statement about integrity for each resource, including observations from the public right-of-way, description of limitations, and recommendations for future work by a qualified heritage engineer, building scientist, or architect;
- evaluation under O. Reg. 9/06 for each property, guided by the Ontario Heritage Toolkit (2006) and the Ministry of Tourism, Culture and Sport's Standards and Guidelines for the Conservation of Provincial Heritage Properties (2014);
- a statement of cultural heritage value or interest for each property that meets O. Reg. 9/06 (if applicable);
- a description of the heritage attributes for each property that meets O. Reg. 9/06 (if applicable);
- historical mapping, photographs of the property if available;
- a location plan;
- a description of consultation undertaken; and
- recommendations for further work; and
- sources cited.

APPENDIX

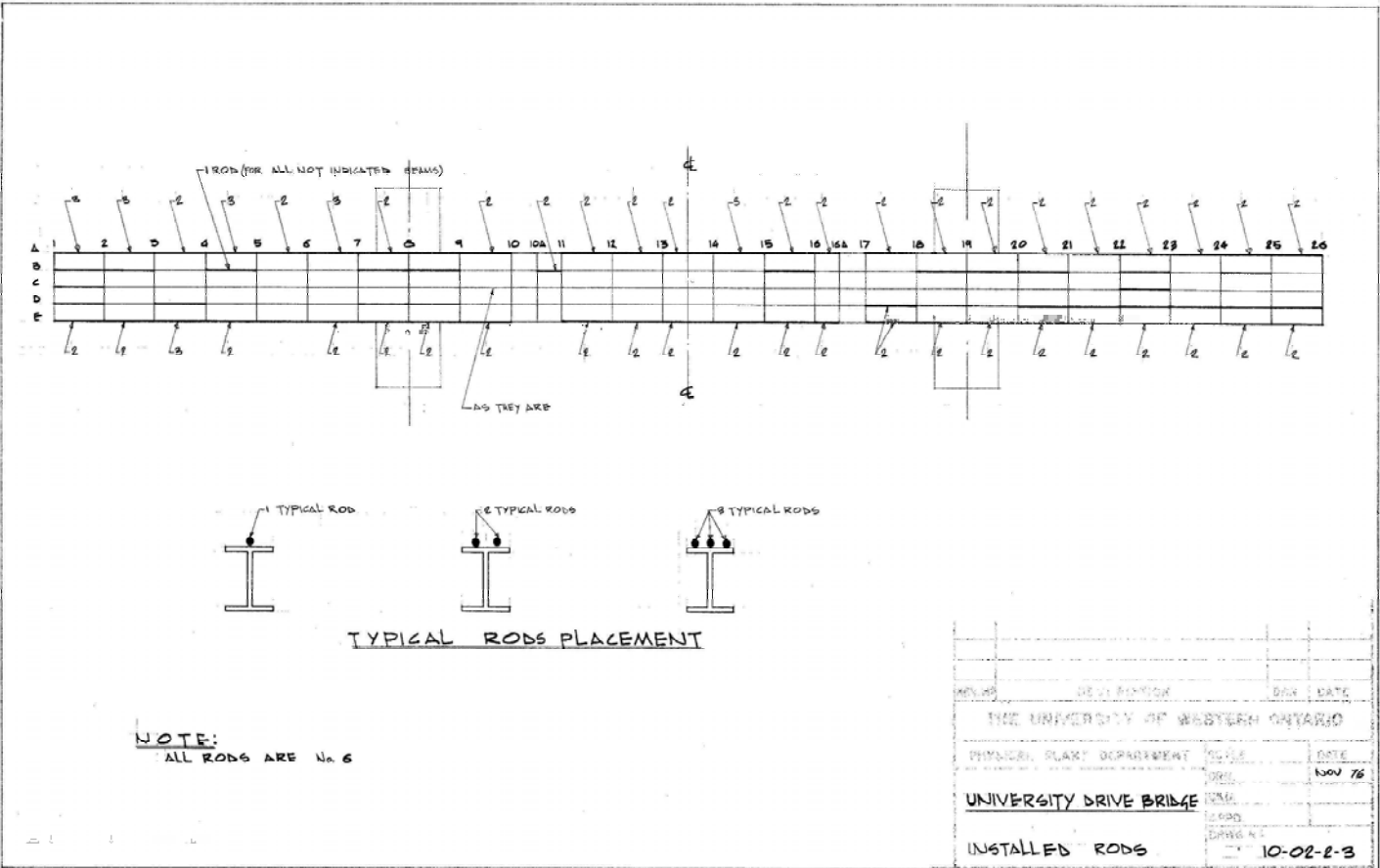
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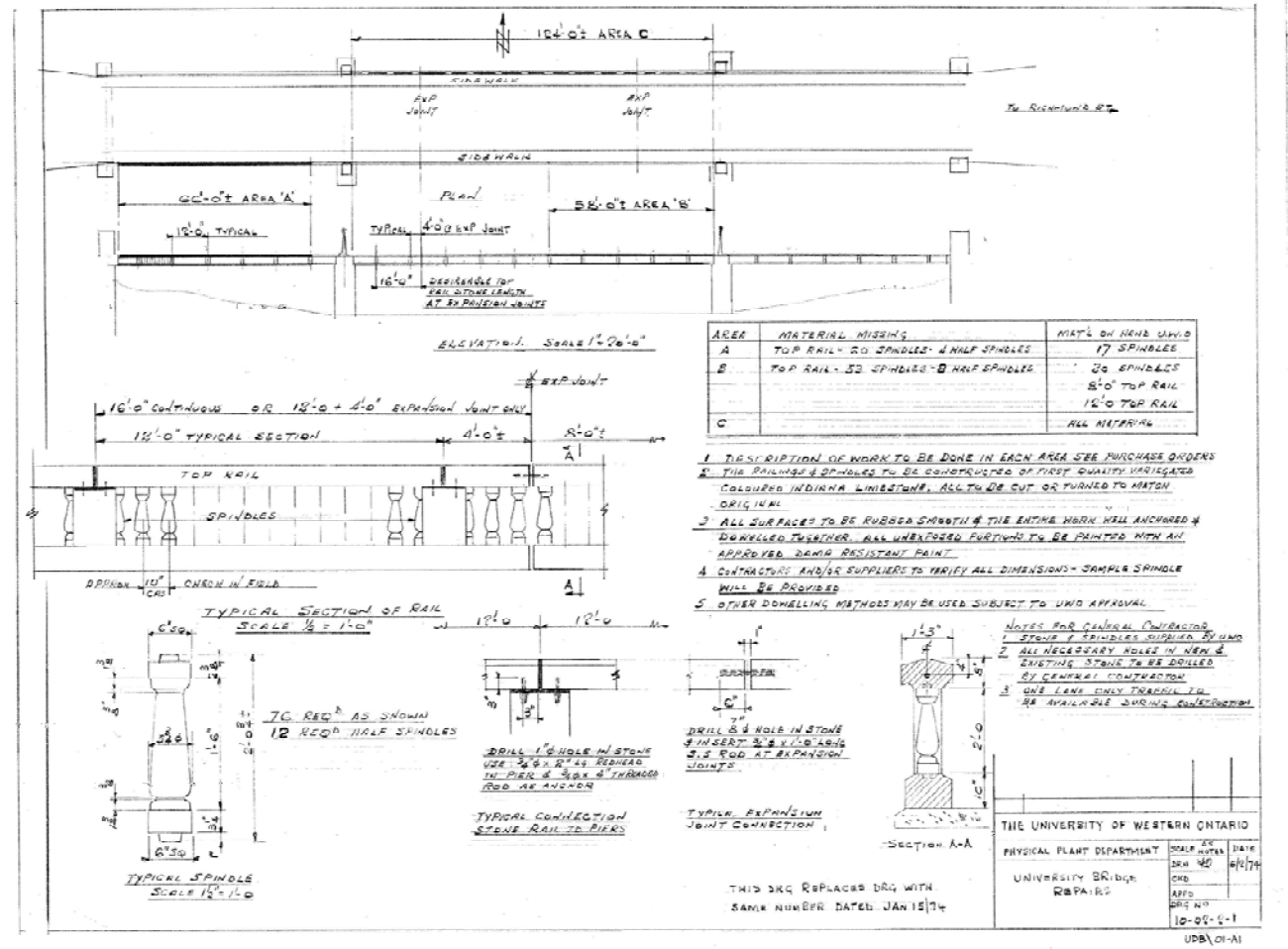
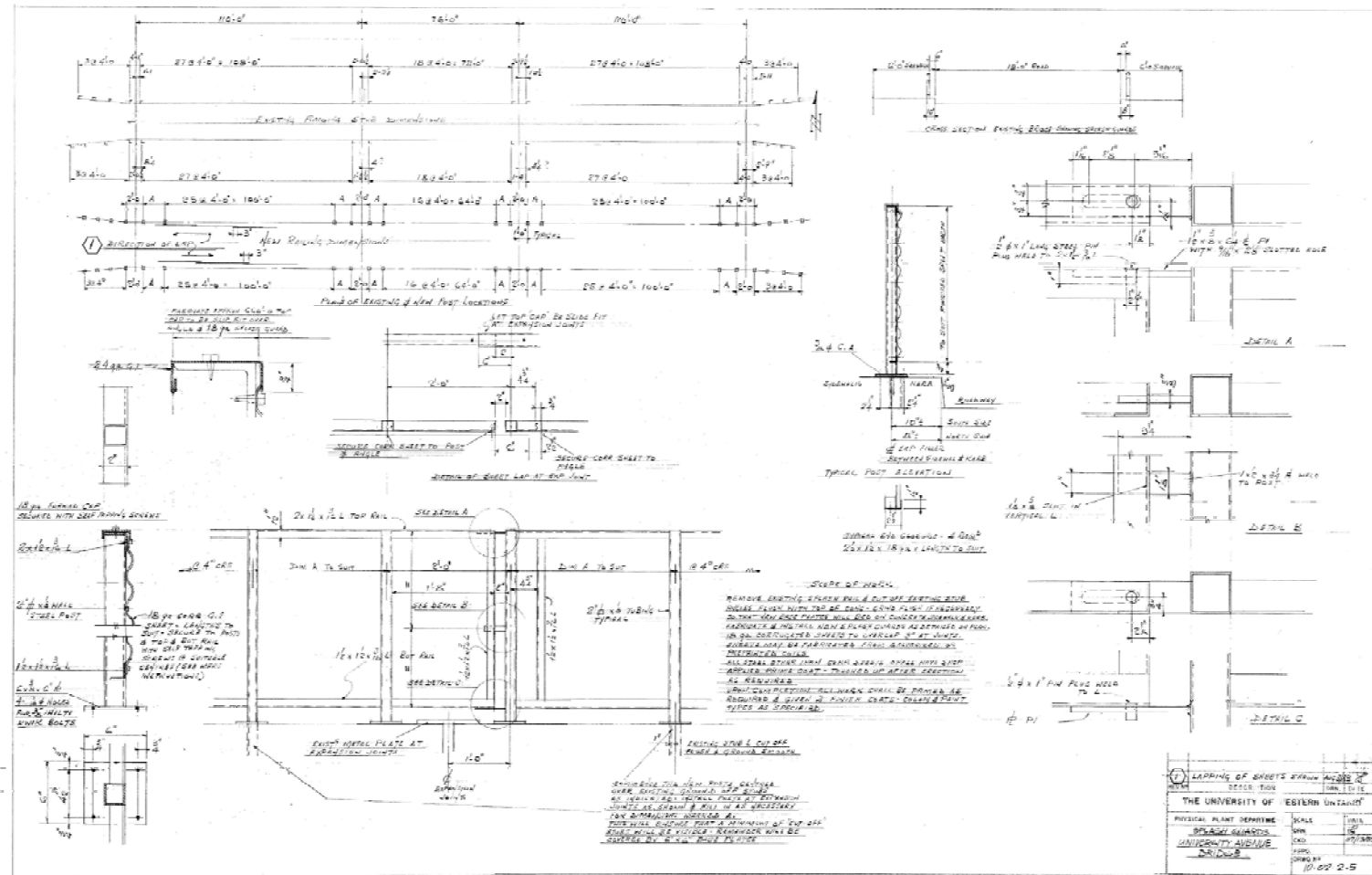


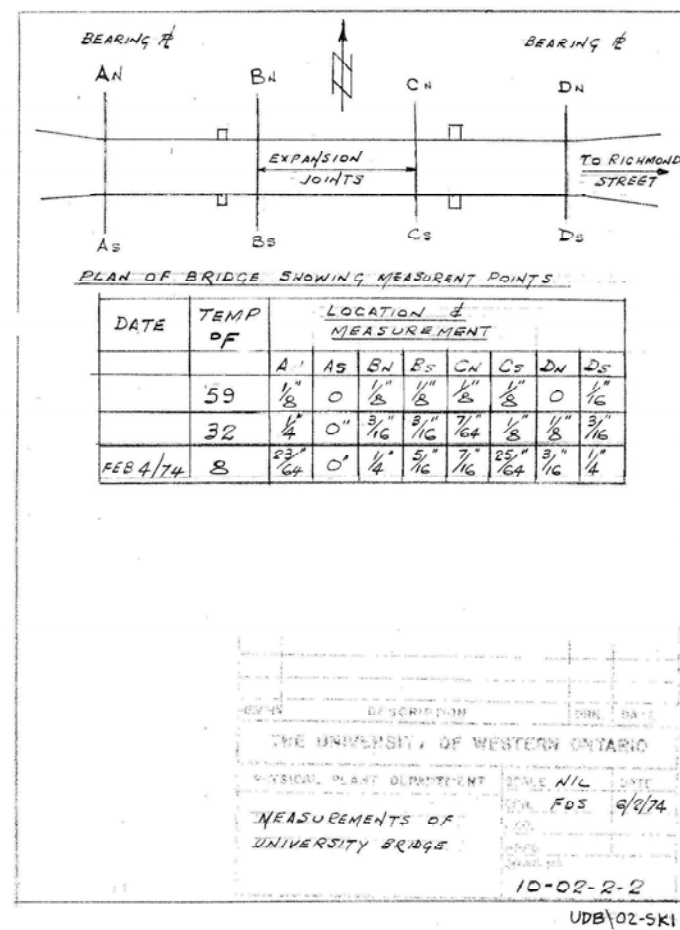


APPENDIX

C BRIDGE
DRAWINGS, 1974
REPAIRS

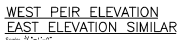


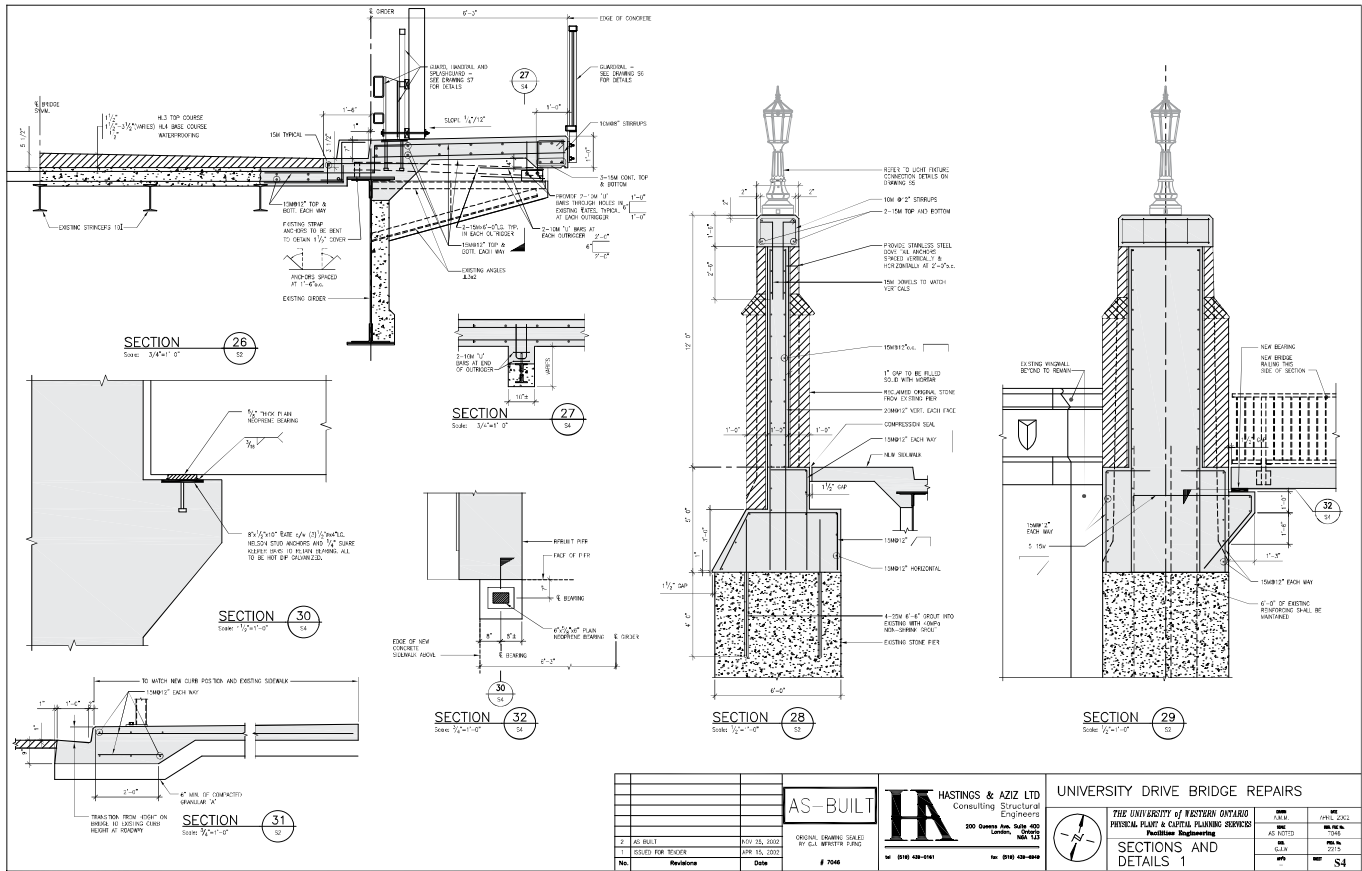




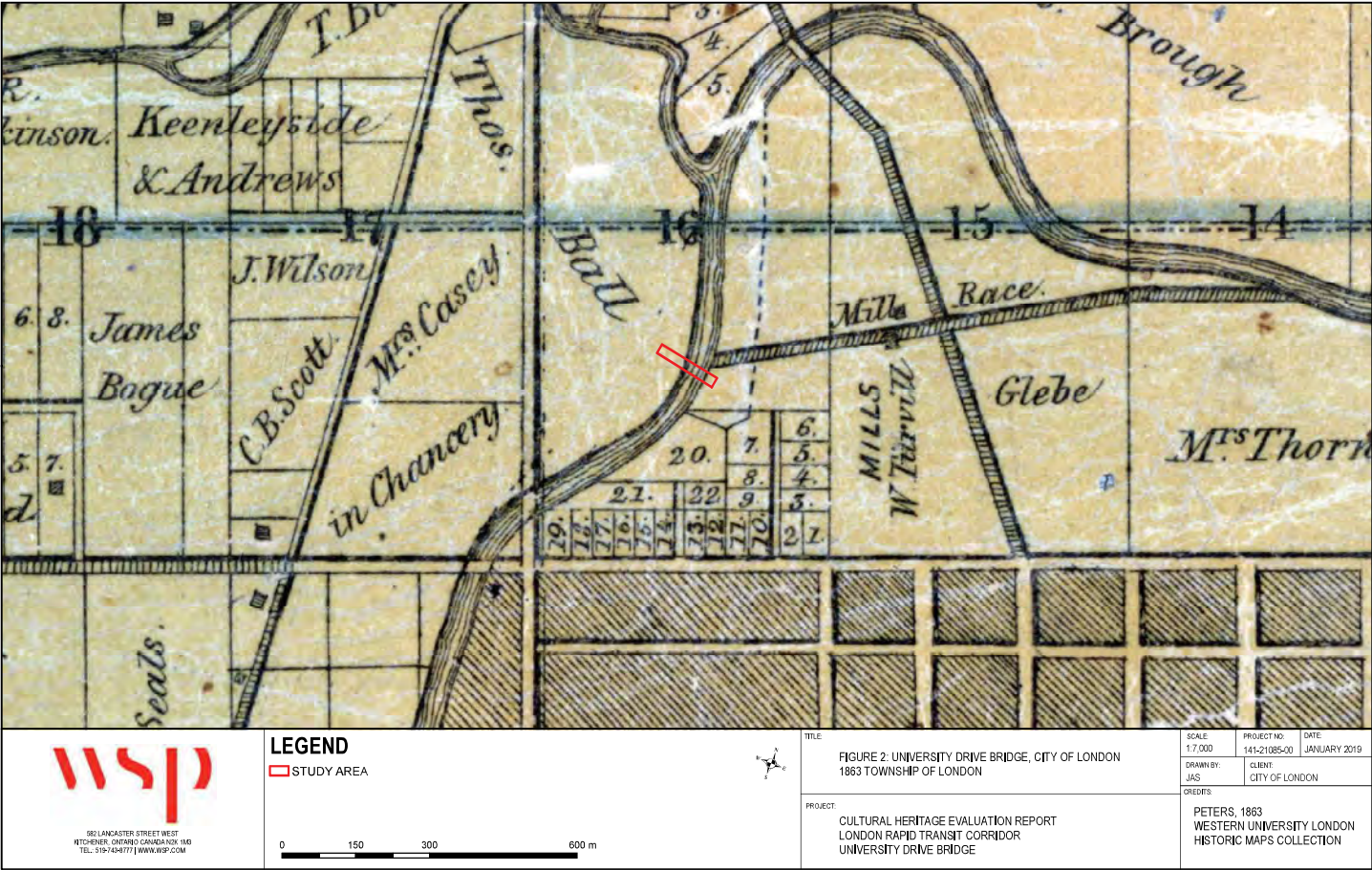
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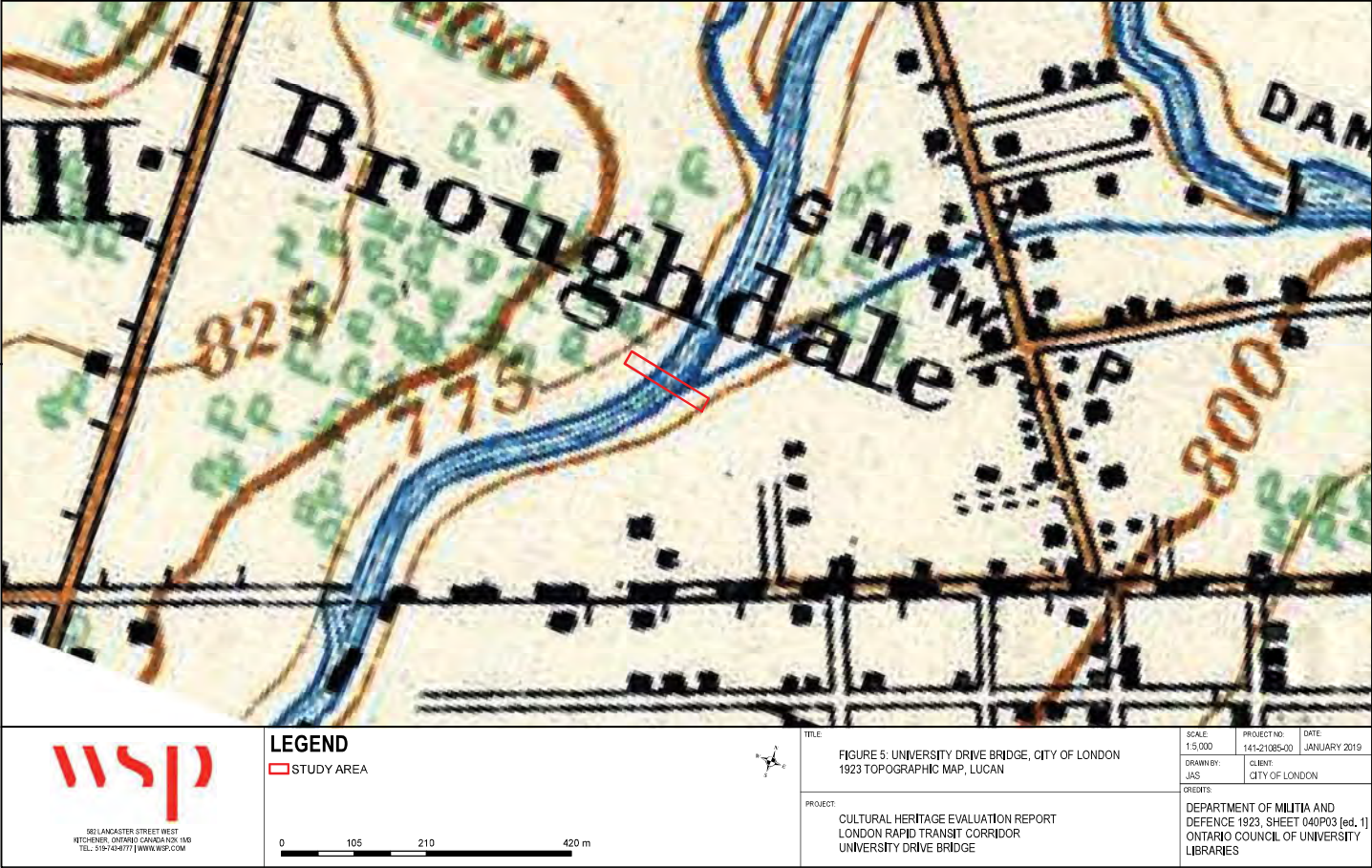
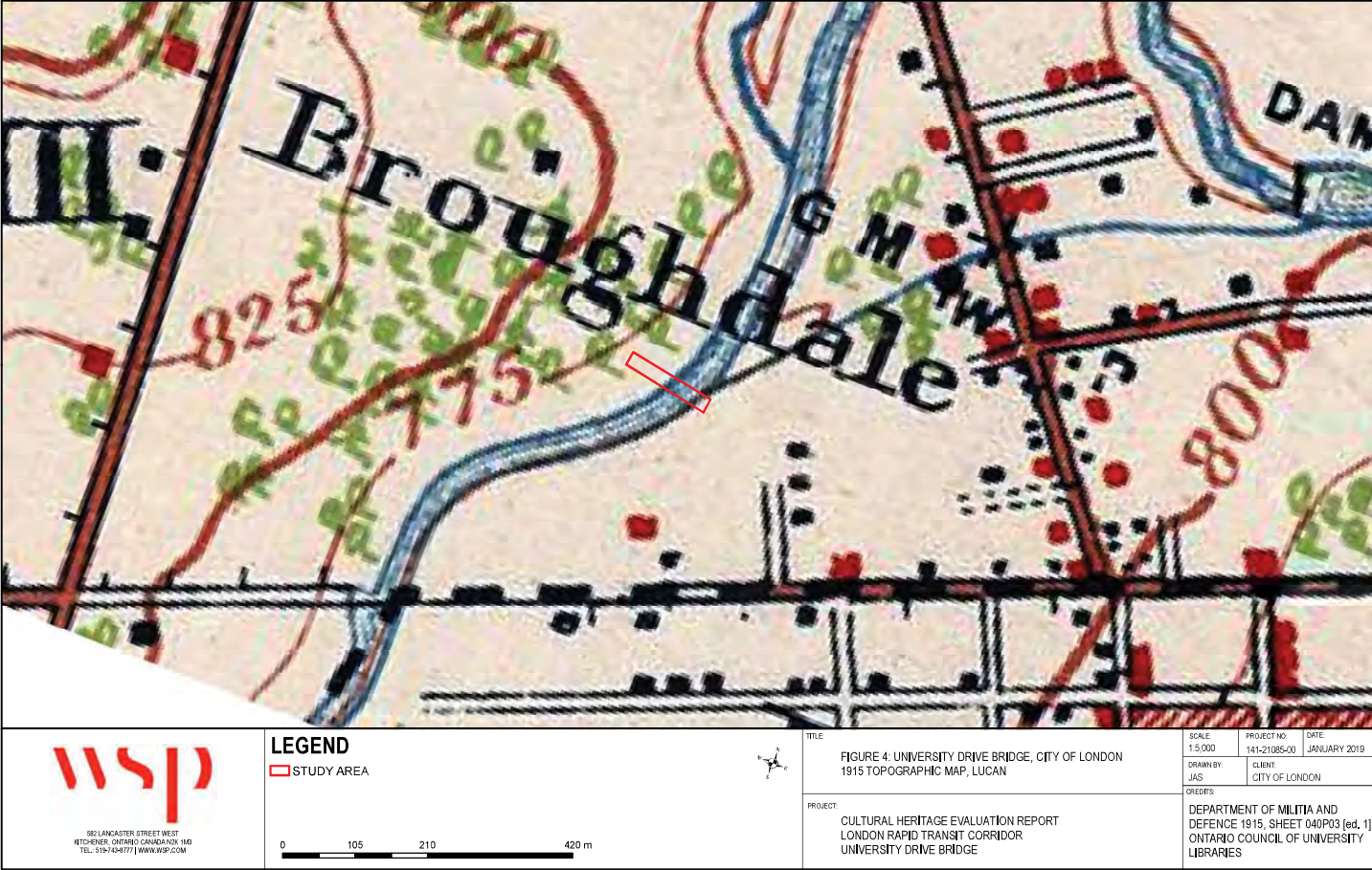
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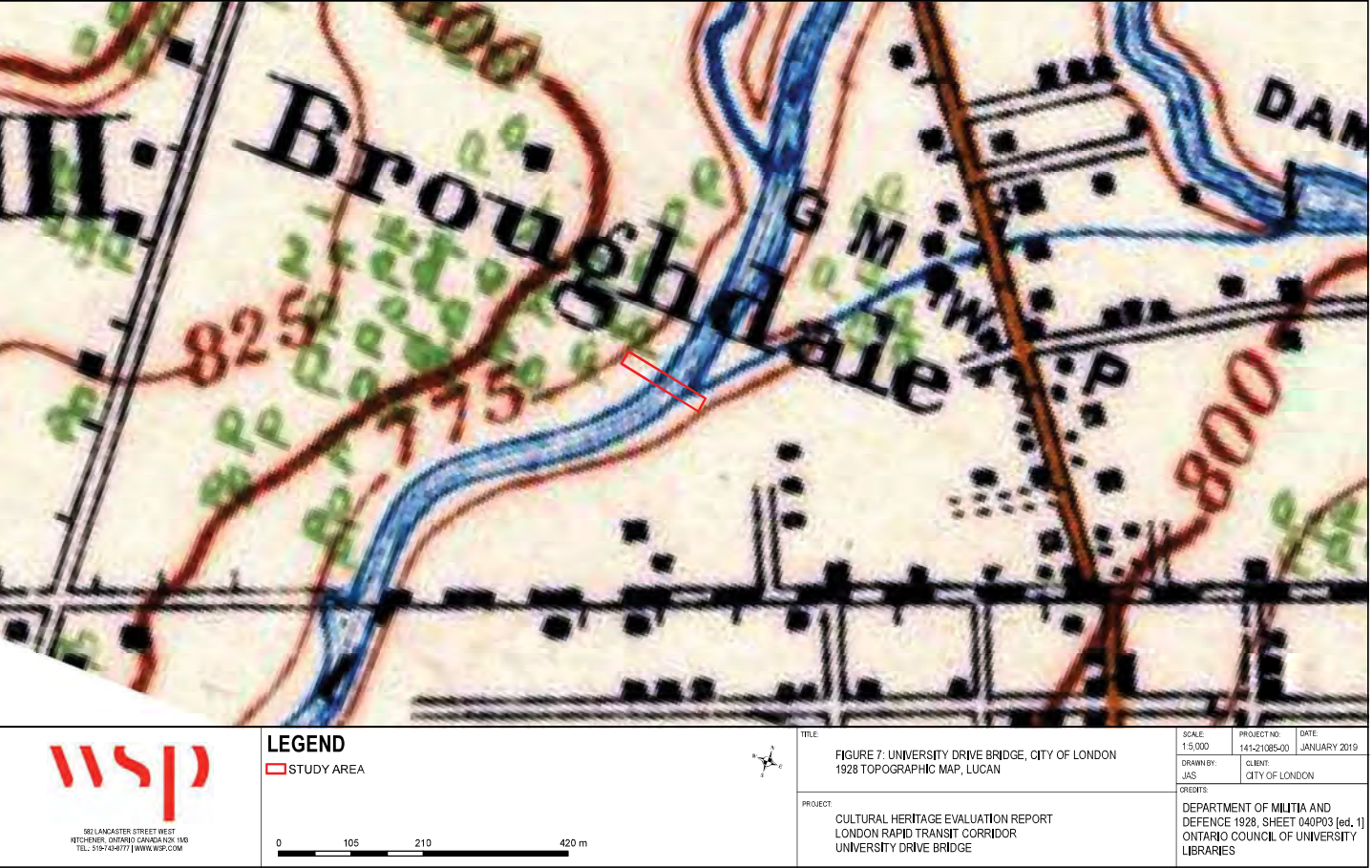
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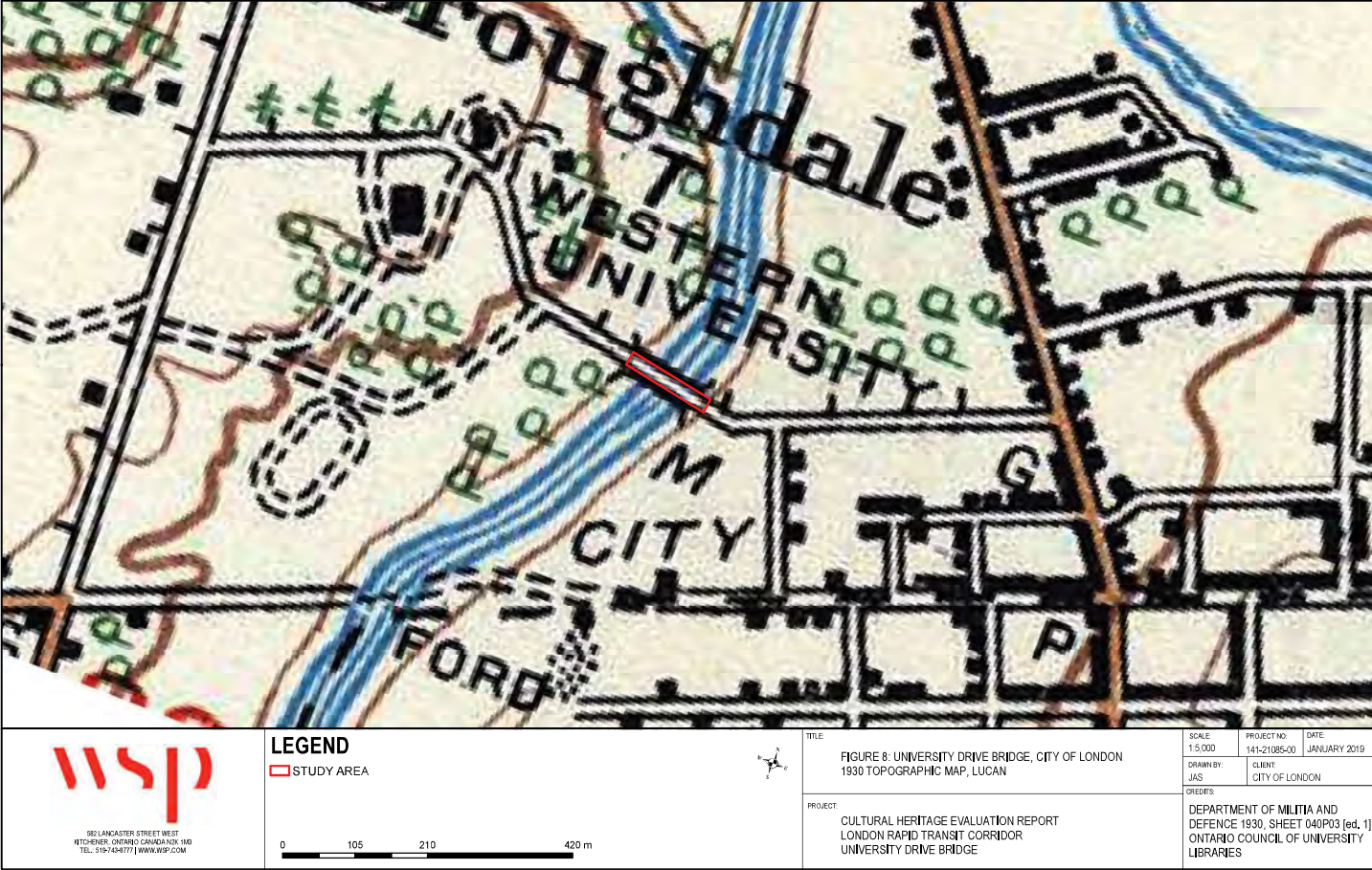




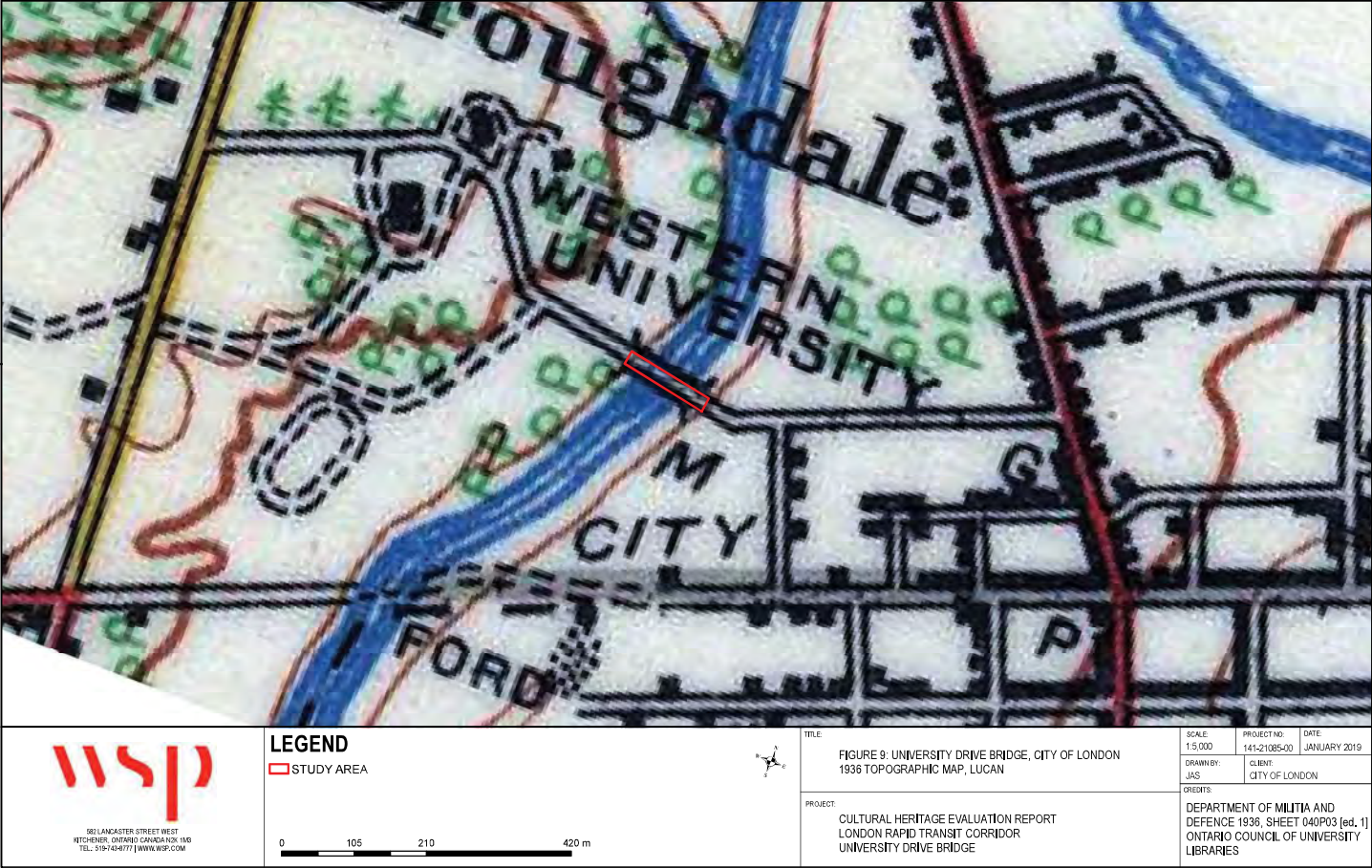
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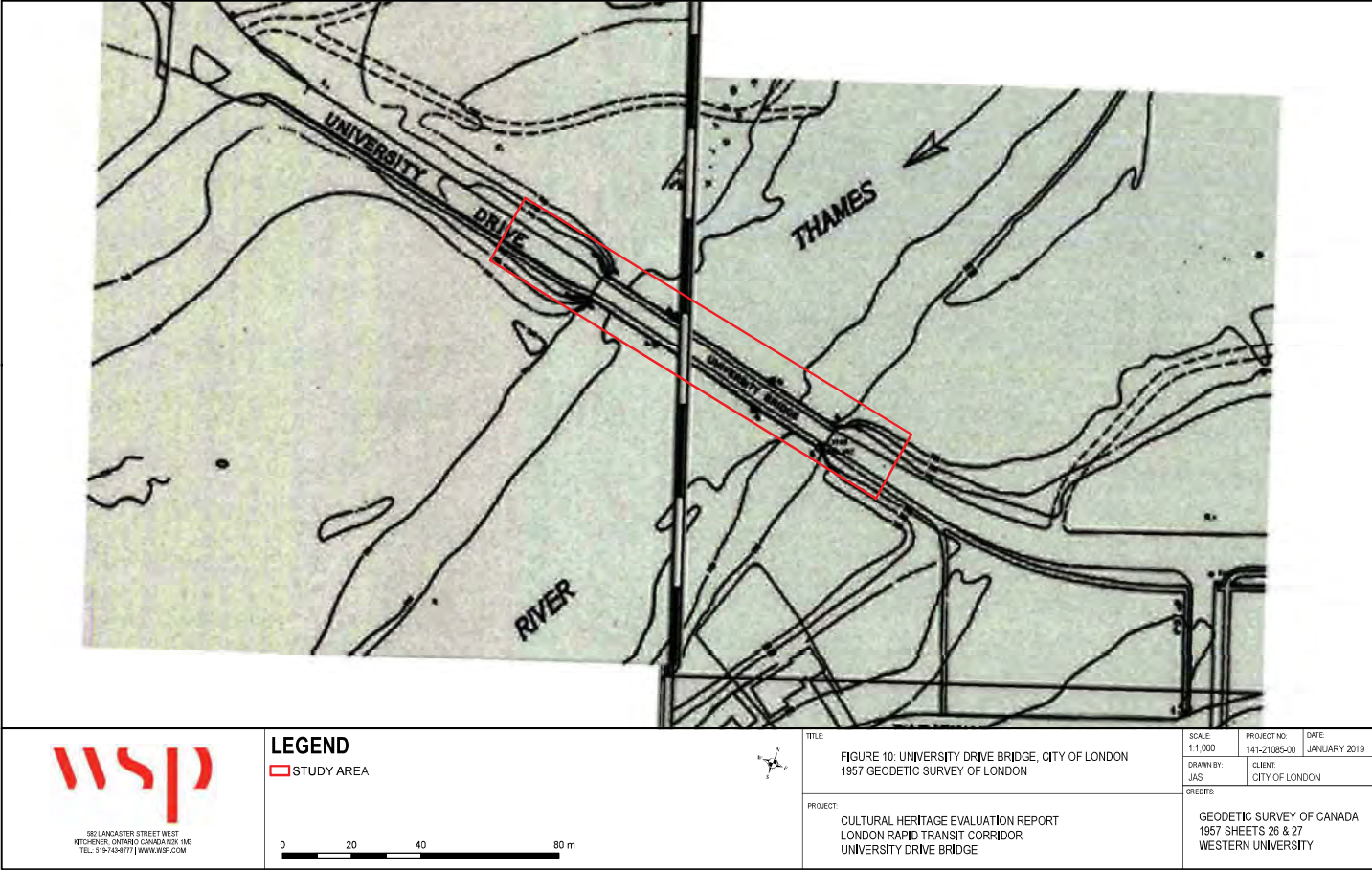
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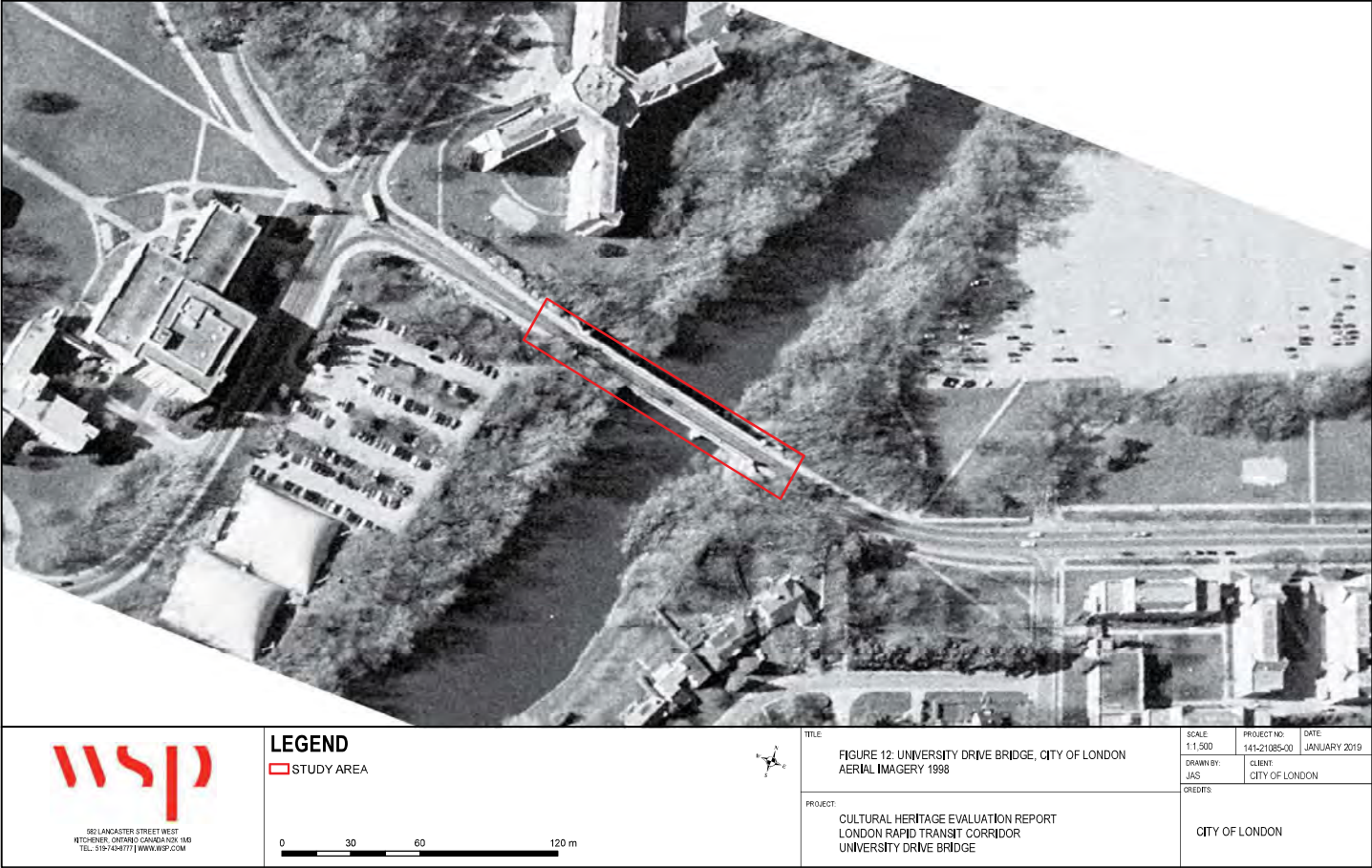




Figure 14: The first students cross University Bridge from Richmond Street for summer school classes in 1924. Note width and design details of original entrance pylons

Appendix H

Stage 1 and 2 Archaeological Assessments

**Stage I Archaeological Assessment
Environmental Assessment
University Drive Bridge Replacement Project (No: 9M5173)
Western University
1151 Richmond Street
City of London
Part of Lots 15 and 16, Concession 3
Geographic Township of London
Middlesex County, Ontario**

Original Report

Submitted to:
Ministry of Tourism, Culture, and Sport

Prepared for:
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Prepared by:
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London, ON N5W 3A7
519-641-7222
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Licensee: Matthew Beaudoin, PhD, P324
PIF No: P324-0786-2022
Project No: 2022-015
Dated: October 24, 2022



Stage I Archaeological Assessment
University Drive Bridge Replacement Project, Part of Lots 15 and 16, Con 3, London, ON

EXECUTIVE SUMMARY

A Stage I archaeological assessment was conducted for an Environmental Assessment (EA) for the University Drive Bridge Replacement Project located at 1151 Richmond Street, within Western University's main Campus, in London Ontario. The project area is roughly 3.6 ha (8.9 ac) in size and is located within part of Lots 15 and 16, Concession 3, in the Geographic Township of London, Middlesex County, Ontario. The project area is focused on the existing University Drive Bridge and adjacent portions of University Drive from Lambton Drive and Perth Drive in the west to Sunset Street in the east. It is understood that the project area covers the maximum impact area, which includes the new alignment alternative. The project area includes the existing University Drive Bridge, which crosses over the North Thames River and associated embankments, roadways (Lambton Drive, Perth Drive, University Drive, Sunset Street, and The Parkway), parking lots and affiliated laneways, paved and dirt pathways, and grassed or treed areas. In 2022 TMHC Inc. (TMHC) was contracted by Katherine Scott of BT Engineering (BTE) to conduct the assessment on behalf of Western University (Project No. 9M5173). The assessment was conducted in accordance with the provisions of the *Environmental Assessment Act* and the *Provincial Policy Statement*. The work was also in keeping with the City of London's *Archaeological Management Plan* (ASI et al. 2017), a guide for assessing potential archaeological impacts in land use planning in the City of London. The purpose of the assessment was to determine whether there was potential for the discovery of archaeological resources present within the project area.

The Stage I background study included a review of current land use, historic and modern maps, past settlement history for the area and a consideration of topographic and physiographic features, soils and drainage. It also involved a review of previously registered archaeological resources within 1 km of the project area and previous archaeological assessments within 50 m. The background study indicated that the project area had potential for the recovery of archaeological resources due to the proximity (i.e., within 300 m) of features that signal archaeological potential, namely:

- registered archaeological sites (AgHh-72);
- the proximity to a primary water source (North Thames River);
- mapped 19th-century transportation routes (Richmond Street, Huron Street, Regent Street);
- mapped 19th-century structures (grist mill);
- listed cultural and heritage sites (Western University, University Drive Bridge); and
- the City of London's *Archaeological Management Plan* identifies the project area as having archaeological potential.

As the project area was in proximity to features that signal archaeological potential, a Stage I property inspection was conducted to evaluate the current conditions of the property area and its integrity. The Stage I property inspection visually confirmed that the majority of the project area contains areas of previous disturbance (paved roads and ROWs, parking lots, buildings, paved pathways, and built-up berm) (0.72 ha; 20.0%). It also determined that portions along the bridge and roadways were steeply sloped (0.22 ha; 6.1%). However, portions of the project area that are grassed and treed are not obviously disturbed and retain archaeological potential (1.08 ha; 30.0%) and would require Stage 2 assessment. A portion of the current project area has already been assessed (1.26 ha; 35.0%) and determined to have no further archaeological potential. Areas within the North Thames River (0.32 ha; 8.9%) require marine assessment if they are to be impacted.



Based on the Stage I background research and property inspection, the following recommendations are made:

- A portion of the project area was previously assessed (1.26 ha; 35.0%; VSP 2018; Map 5); no further assessment work is recommended for these areas (Map 14).
- The grassed and wooded areas within the project area, as shown on Map 14 (1.08 ha; 30.0%), are not obviously disturbed, retain archaeological potential and are recommended for Stage 2 assessment. As these lands are non-ploughable, the Stage 2 assessment should consist of a standard test pit survey at a 5 m transect interval, in keeping with provincial standards.
- Portions of the project area have been previously disturbed (0.72 ha; 20.0%) and are considered to no longer retain archaeological potential (Map 14). These areas have been photo documented and no further assessment work is recommended.
- The areas of slope (0.22 ha; 6.1%) within the project area are considered not to retain archaeological potential (Map 14). These areas have been photo documented and no further assessment work is recommended.
- No in-water impacts are planned for the University Drive Bridge Replacement. If in-water impacts are planned, the areas within the North Thames River (0.32 ha; 8.9%) require marine assessment and the Marine Archaeology Checklist must be completed.

Our recommendations are subject to the conditions laid out in Section 7.0 of this report and to the MTCS' review and acceptance of this report into the provincial registry.



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PROJECT PERSONNEL

Project Manager	Matthew Beaudoin, PhD (P324)
Project Administrators	Kellie Theaker, CHRP
	Breanne Reibl, MSc (R1292)
Health and Safety Coordinator	Wendi Jakob, CTech, CAPM
Field Director	Matthew Beaudoin, PhD (P324)
GIS Mapping Technician	John Moody, PhD
Report Writer	Katherine Bishop, PhD (R407)
Researcher	Katherine Bishop, PhD (R407)
Senior Review	Matthew Beaudoin, PhD (P324)



TERRITORIAL ACKNOWLEDGEMENT

The project area is located on the traditional lands of the Anishinaabek (Ah-nish-in-a-bek), Haudenosaunee (Ho-den-no-show-nee), Lūnaapéewak (Len-ahpay-wuk), and Attawandaron (Add-a-won-da-run) peoples, on lands connected with the London Township Treaty of 1796 and the Dish with One Spoon Covenant Wampum. This land continues to be home to diverse Indigenous peoples (e.g., First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors of our society.



ABOUT TMHC

Established in 2003 with a head office in London, Ontario, TMHC Inc. (TMHC) provides a broad range of archaeological assessment, heritage planning and interpretation, cemetery, and community consultation services throughout the Province of Ontario. We specialize in providing heritage solutions that suit the past and present for a range of clients and intended audiences, while meeting the demands of the regulatory environment. Over the past two decades, TMHC has grown to become one of the largest privately-owned heritage consulting firms in Ontario and is today the largest predominately woman-owned CRM business in Canada.

Since 2004, TMHC has held retainers with Infrastructure Ontario, Hydro One, the Ministry of Transportation, Metrolinx, the City of Hamilton, and Niagara Parks Commission. In 2013, TMHC earned the Ontario Archaeological Society's award for Excellence in Cultural Resource Management. Our seasoned expertise and practical approach have allowed us to manage a wide variety of large, complex, and highly sensitive projects to successful completion. Through this work, we have gained corporate experience in helping our clients work through difficult issues to achieve resolution.

TMHC is skilled at meeting established deadlines and budgets, maintaining a healthy and safe work environment, and carrying out quality heritage activities to ensure that all projects are completed diligently and safely. Additionally, we have developed long-standing relationships of trust with Indigenous and descendent communities across Ontario and a good understanding of community interests and concerns in heritage matters, which assists in successful project completion.

TMHC is a Living Wage certified employer with the [Ontario Living Wage Network](#) and a member of the [Canadian Federation for Independent Business](#).



KEY STAFF BIOS

Matthew Beaudoin, PhD – Principal

Matthew received a PhD in Anthropology from Western University in 2013 and has a professional archaeological license with the Province of Ontario (P324). During his archaeological career, Matthew has conducted extensive field research and artifact analysis in Labrador and Ontario, and has taught the Field Methods Course and Principals of archaeology courses as a part-time faculty member at Western University. Matthew has also conducted ethnographic projects in Labrador, and has volunteered with the OAS to provide archaeological training to several Indigenous communities throughout the province.

Over the course of his career, Matthew has supervised over 600 archaeological assessments in Ontario, including Stages 1-4, under a variety of regulatory triggers including provincial and municipal Environmental Assessments, Green Energy projects, development projects under the *Planning Act*, and as due diligence process. Matthew has extensive experience managing large and complex archaeological projects in conjunction with other disciplines, specialists, and Indigenous communities including Enbridge Line 10 Westover Segment, Imperial Oil from Waterdown to Finch, and Highway 3 Widening in Kingsville. Since joining TMHC in 2008, Matthew has also been involved with several notable projects, such as the archaeological assessment of Stoney Point/Camp Ipperwash. For these and other projects, Matthew works closely with heritage staff at TMHC and with heritage staff employed by clients and stakeholder communities.

Matthew is an active member of the Canadian Archaeological Association, the Ontario Archaeological Association, the Society for American Archaeology, and the Society for Historical Archaeology.



STATEMENT OF QUALIFICATIONS AND LIMITATIONS

The attached Report (the “Report”) has been prepared by TMHC Inc. (TMHC) for the benefit of the Client (the “Client”) in accordance with the agreement between TMHC and the Client, including the scope of work detailed therein (the “Agreement”).

The information, data, recommendations and conclusions contained in the Report (collectively, the “Information”):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the “Limitations”);
- represents TMHC’s professional judgment in light of the Limitation and industry standards for the preparation of similar reports;
- may be based on information provided to TMHC which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context; and
- was prepared for the specific purposes described in the Report and the Agreement.

TMHC shall be entitled to rely upon the accuracy and completeness of information that was provided to it and has no obligation to update such information. TMHC accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

TMHC agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but TMHC makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

Except (1) as agreed to in writing by TMHC and Client; (2) as required by-law; or (3) to the extent used by governmental reviewing agencies for the purpose of obtaining permits or approvals, the Report and the Information may be used and relied upon only by Client.

TMHC accepts no responsibility, and denies any liability whatsoever, to parties other than Client who may obtain access to the Report or the Information for any injury, loss or damage suffered by such parties arising from their use of, reliance upon, or decisions or actions based on the Report or any of the Information (“improper use of the Report”), except to the extent those parties have obtained the prior written consent of TMHC to use and rely upon the Report and the Information. Any injury, loss or damages arising from improper use of the Report shall be borne by the party making such use.

This Statement of Qualifications and Limitations is attached to and forms part of the Report and any use of the Report is subject to the terms hereof.



QUALITY INFORMATION

Report prepared by:

Katherine Bishop, PhD (R407)
Report Writer and Staff Archaeologist

Report reviewed by:

Matthew Beaudoin, PhD (P324)
Principal/Manager of Archaeological Assessment



I PROJECT CONTEXT

I.1 Development Context

I.1.1 Introduction

A Stage I archaeological assessment was conducted for an Environmental Assessment (EA) for the University Drive Bridge Replacement Project located at 1151 Richmond Street, within Western University's main Campus, in London Ontario. The project area is roughly 3.6 ha (8.9 ac) in size and is located within part of Lots 15 and 16, Concession 3, in the Geographic Township of London, Middlesex County, Ontario. The project area is focused on the existing University Drive Bridge and adjacent portions of University Drive from Lambton Drive and Perth Drive in the west to Sunset Street in the east. It is understood that the project area covers the maximum impact area, which includes the new alignment alternative. The project area includes the existing University Drive Bridge, which crosses over the North Thames River and associated embankments, roadways (Lambton Drive, Perth Drive, University Drive, Sunset Street, and The Parkway), parking lots and affiliated laneways, paved and dirt pathways, and grassed or treed areas. In 2022 TMHC Inc. (TMHC) was contracted by Katherine Scott of BT Engineering (BTE) to conduct the assessment on behalf of Western University (Project No. 9M5173). The assessment was conducted in accordance with the provisions of the *Environmental Assessment Act* and the *Provincial Policy Statement*. The work was also in keeping with the City of London's *Archaeological Management Plan* (ASI et al. 2017), a guide for assessing potential archaeological impacts in land use planning in the City of London. The purpose of the assessment was to determine whether there was potential for the discovery of archaeological resources present within the project area.

All archaeological assessment activities were performed under the professional archaeological license of Matthew Beaudoin, PhD (P324) and in accordance with the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011, "Standards and Guidelines"). Permission to enter the property and carry out all required archaeological activities, including photo-documentation, was given by Katherine Scott of BT Engineering.



1.1.2 Purpose and Legislative Context

The *Ontario Heritage Act* (R.S.O. 1990) makes provisions for the protection and conservation of heritage resources in the Province of Ontario. Heritage concerns are recognized as a matter of provincial interest in Section 2.6.2 of the *Provincial Policy Statement* (PPS 2020) which states:

development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved.

In the PPS, the term conserved means:

the identification, protection, management and use of *built heritage resources, cultural heritage landscapes and archaeological resources* in a manner that ensures their cultural heritage value or interest is retained. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment and/or heritage impact assessment that has been approved, accepted or adopted by the relevant planning authority and/or decision-maker. Mitigative measures and/or alternative development approaches can be included in these plans and assessments.

The *Environmental Assessment Act* (EA) provides for the protection and conservation of the environment. In this case, the environment is widely defined to cover “cultural heritage” resources. Section 5(3)(c) of the Act stipulates that heritage resources to be affected by a proposed undertaking be identified during the environmental screening process. Within the EA process, the purpose of a Stage 1 background study is to determine if there are known cultural resources within the proposed Project area, or potential for such resources to exist. Subsequently, it can act as a planning tool by identifying areas of concern that, where possible, could be avoided to minimize environmental impact. It is also used to determine the need for a Stage 2 field assessment involving the search for archaeological sites.

The City of London's *Archaeological Management Plan* (ASI et al. 2017) is a planning tool developed to implement these requirements by identifying areas where there is potential for archaeological sites to exist. If properties are deemed to have potential for archaeological sites, a Stage 1 and 2 archaeological assessment is required.



2 STAGE 1 BACKGROUND REVIEW

2.1 Research Methods and Sources

A Stage 1 overview and background study was conducted to gather information about known and potential cultural heritage resources within the project area. According to the *Standards and Guidelines*, a Stage 1 background study must include a review of:

- an up-to-date listing of sites from the Ministry of Tourism, Culture, and Sport's (MTCS) PastPortal for 1 km around the property;
- reports of previous archaeological fieldwork within a radius of 50 m around the property;
- topographic maps at 1:10,000 (recent and historical) or the most detailed scale available;
- historical settlement maps (e.g., historical atlas, survey);
- archaeological management plans or other archaeological potential mapping when available; and,
- commemorative plaques or monuments on or near the property.

For this project, the following activities were carried out to satisfy or exceed the above requirements:

- a database search was completed through MTCS' PastPortal system that compiled a list of registered archaeological sites within 1 km of the project area (completed October 11, 2022);
- a review of known prior archaeological reports for the property and adjacent lands;
- Ontario Base Mapping (1:10,000) was reviewed through ArcGIS and mapping layers under the Open Government Licence – Canada and the Open Government Licence- Ontario;
- detailed mapping provided by the client was also reviewed;
- a series of historic maps and photographs was reviewed related to the post-1800 land settlement; and
- the City of London's *Archaeological Management Plan* (ASI et al. 2017).

Additional sources of information were also consulted, including modern aerial photographs, local history accounts, soils data provided by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), physiographic data provided by the Ontario Ministry of Northern Development and Mines, and detailed topographic data provided by Land Information Ontario.

When compiled, background information was used to create a summary of the characteristics of the project area, in an effort to evaluate its archaeological potential. The Province of Ontario (MTC 2011; Section 1.3.1) has defined the criteria that identify archaeological potential as:

- previously identified archaeological sites;
- water sources;
 - primary water sources (e.g., lakes, rivers, streams, creeks);
 - secondary water sources (e.g., intermittent streams and creeks, springs, marshes, swamps);
 - features indicating past water sources (e.g., glacial lake shorelines, relic river or stream channels, shorelines of drained lakes or marshes, cobble beaches);
 - accessible or inaccessible shorelines (e.g., high bluffs, sandbars stretching into a marsh);
- elevated topography (e.g., eskers, drumlins, large knolls, plateau);
- pockets of well-drained sandy soils;



- distinctive land formations that might have been special or spiritual places (e.g., waterfalls, rock outcrops, caverns, mounds, promontories and their bases);
- resource areas, including:
 - food or medicinal plants (e.g., migratory routes, spawning areas, prairies);
 - scarce raw materials (e.g., quartz, copper, ochre, or chert outcrops);
 - early Settler industry (e.g., fur trade, logging, prospecting, mining);
- areas of early 19th-century settlement, including:
 - early military locations;
 - pioneer settlement (e.g., homesteads, isolated cabins, farmstead complexes);
 - wharf or dock complexes;
 - pioneer churches;
 - early cemeteries;
- early transportation routes (e.g., trails, passes, roads, railways, portage routes);
- a property listed on a municipal register, designated under the *Ontario Heritage Act*, or that is a federal, provincial, or municipal historic landmark or site; and,
- a property that local histories or informants have identified with possible archaeological sites, historical event, activities, or occupations.

In Southern Ontario (south of the Canadian Shield), any lands within 300 m of any of the features listed above are considered to have potential for the discovery of archaeological resources.

Typically, a Stage I assessment will determine potential for Indigenous and 19th-century period sites independently. This is due to the fact that lifeways varied considerably during these eras, so the criteria used to evaluate potential for each type of site also varies.

It should be noted that some factors can also negate the potential for discovery of intact archaeological deposits. The *Standards and Guidelines* (MTC 2011; Section 1.3.2) indicates that archaeological potential can be removed in instances where land has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources. Major disturbances indicating removal of archaeological potential include, but are not limited to:

- quarrying;
- major landscaping involving grading below topsoil;
- building footprints; and,
- sewage and infrastructure development.

Some activities (agricultural cultivation, surface landscaping, installation of gravel trails, etc.) may result in minor alterations to the surface topsoil but do not necessarily affect or remove archaeological potential. It is not uncommon for archaeological sites, including structural foundations, subsurface features and burials, to be found intact beneath major surface features like roadways and parking lots. Archaeological potential is, therefore, not removed in cases where there is a chance of deeply buried deposits, as in a developed or urban context or floodplain where modern features or alluvial soils can effectively cap and preserve archaeological resources.



2.2 Project Context: Archaeological Context

2.2.1 Project area: Overview and Physical Setting

The project area is located within the eastern section of Western University's main campus at 1151 Richmond Street in the City of London, Ontario, which is situated east of Western Road and west of Richmond Street. The project area focuses on a roughly 420 m stretch of University Drive that includes the parking lot area fronting Lambton Drive (southwest); intersection of Middlesex Drive, Lambton Drive, Perth Drive, and University Drive (northwest); parking lot laneway and sidewalks fronting Elgin Hall Residence (northeast), sidewalks fronting Sydenham Hall (east); and the pathways and greenspace fronting The Parkway and Sunset Street (southeast) (Maps 1-2). The overall project area is roughly 3.6 ha (8.9 ac) in size and contains the existing University Drive Bridge, North Thames River and embankments, paved parking lots, paved roadways and sidewalks, paved and dirt pathways, and grassed and lightly treed areas. Buried utilities exist within the grassed areas, paved parking lots, and along major laneways.

The project area falls within the Stratford Till Plain physiographic region, as defined by Chapman and Putnam (1984; Map 3). The Stratford Till Plain is a broad clay plain of 1,370 square miles stretching from London in the south to Blyth and Listowel in the north (Chapman and Putnam 1984:210). It is a large ground moraine interrupted by terminal moraines, composed of brown calcareous silty clay till (Chapman and Putnam 1984:210). Along the Thames River, the region is characterized by gravel terraces. These have provided a valuable source of sand and gravel, as evident in the large number of aggregate pits and quarries in the area.

Formal soil surveys for Middlesex County do not map the soils in this area as they are defined as "urban." According to generalized soils mapping for the City of London (1995), the predominant soil type of the project area is sandy loam (Map 4).

The project area lies within the Thames River drainage. The North Branch of the Thames River flows through the project area (Map 1).



2.2.2 Summary of Registered or Known Archaeological Sites

According to PastPortal (accessed October 11, 2022) there are 13 registered archaeological sites within 1 km of the project area (Table 1). AgHh-72 is roughly the closest registered site to the project area, being roughly 300 m east. AgHh-72 consists of a scatter of materials potentially affiliated with a 19th-century tavern or hotel fronting Richmond Street. Many of the sites located within 1 km of the project area were discovered during preliminary survey of the area in the 1980s and 1990s prior to construction activities related to expansion of the University and transit systems (MTCS 2022).

Table 1: Registered Archaeological Sites within 1 km of the Project Area

Borden Number	Site Name	Time Period	Affinity	Site Type	Status
AgHh-10	Ronto	Post-Contact; Woodland	19 th -Century; Neutral	Hamlet, House	
AgHh-22					
AgHh-49		Pre-Contact	Indigenous	Findspot	
AgHh-72		Post-Contact	19 th -Century	Scatter	
AgHh-74		Woodland, Early	Indigenous	Findspot	
AgHh-94	Thornwood	Woodland, Late	Iroquoian	Other Camp, Campsite	
AgHh-260		Post-Contact	19 th -Century	Cabin	Further CHVI
AgHh-261		Archaic, Early	Indigenous	Findspot	No Further CHVI
AgHh-265		Pre-Contact	Indigenous	Camp, Campsite	Further CHVI
AfHh-321	North Branch Mills	Post-Contact	19 th -Century	Other Building	
AfHh-914	Grosvenor	Post-Contact	19 th -Century	Homestead	Further CHVI
AfHh-933		Post-Contact		Unknown	Further CHVI
AfHh-934		Post-Contact		Unknown	Further CHVI



2.2.3 Summary of Past Archaeological Investigations within 50 m

During the course of this study, records were found for one archaeological assessment within 50 m of the project area. However, it should be noted that the MTCS currently does not provide an inventory of archaeological assessments to assist in this determination.

2.2.3.1 London Bus Rapid Transit System – WSP (2018), Map 5

In 2018, WSP Canada conducted a Stage 1 and 2 archaeological assessment for the London Bus Rapid Transit System, which included four segments of two operational routes, in London, Ontario. Part of the current project area is within the 2018 assessment area (Map 5). While there were previous reports associated with this project (WSP 2016), the 2018 report is the cumulative results of this work. Previously assessed portions include: the entirety of Lambton Drive, part of the entrance to the western parking lot, the intersection of Lambton Drive/Middlesex Drive/Perth Drive/University Drive, University Drive and the associated University Drive Bridge and right-of-way (ROW), a section of the northeast (Elgin Hall Residence) parking lot entrance, and a segment southeast of University Drive, west of Sunset Street and including part of The Parkway. These areas were all considered to be disturbed and no further assessment was recommended for these areas. Portions of the grassed and forested area adjacent to these segments were considered to have archaeological potential and required Stage 2 test pit survey. No archaeological materials were recovered as a result of the Stage 2 assessment of these areas. The results of this assessment are presented in a report entitled *Stage 1-2 Archaeological Assessment London Bus Rapid Transit System* (WSP 2018; Licensee Douglas Yahn; PIF P365-0127-2017).

2.2.4 Dates of Archaeological Fieldwork

The Stage 1 fieldwork was conducted on October 11, 2022, in sunny and cool weather conditions under the direction of Matthew Beaudoin, PhD (P324) (Table 2).

Table 2: Dates of Fieldwork, Weather Conditions and Field Director

Dates of Fieldwork	Weather Conditions	Field Director
October 11, 2022	Sunny and cool	M. Beaudoin, PhD (P324)



2.3 Project Context: Historical Context

2.3.1 Indigenous Settlement in City of London

This portion of the City of London attracted considerable Indigenous settlement in the past. The City of London is home to numerous archaeological sites, including several Iroquoian villages, hamlets and cabins. In recent years, our archaeological knowledge of the area has improved greatly, at the hands of various cultural resource management surveys and archaeological research projects that have accompanied the industrial and residential expansion of the city. Using existing data and regional syntheses, it is possible to propose a generalized model of Indigenous settlement in the London area. The general themes, time periods and cultural traditions of Indigenous settlement, based on archaeological evidence, are provided below and in Table 3.

Table 3: Chronology of Indigenous Settlement in the London Area

Period	Time Range	Diagnostic Features	Archaeological Complexes
Early Paleo	9000-8400 BCE	fluted projectile points	Gainey, Barnes, Crowfield
Late Paleo	8400-8000 BCE	non-fluted and lanceolate points	Holcombe, Hi-Lo, Lanceolate
Early Archaic	8000-6000 BCE	serrated, notched, bifurcate base points	Nettling, Bifurcate Base Horizon
Middle Archaic	6000-2500 BCE	stemmed, side & corner notched points	Brewerton, Otter Creek, Stanly/Neville
Late Archaic	2000-1800 BCE	narrow points	Lamoka
Late Archaic	1800-1500 BCE	broad points	Genesee, Adder Orchard, Perkiomen
Late Archaic	1500-1100 BCE	small points	Crawford Knoll
Terminal Archaic	1100-950 BCE	first true cemeteries	Hind
Early Woodland	950-400 BCE	expanding stemmed points, Vinette pottery	Meadowood
Middle Woodland	400 BCE-500 CE	dentate, pseudo-scallop pottery	Saugeen/Couture
Transitional Woodland	500-900 CE	first corn, cord-wrapped stick pottery	Princess Point/Riviere au Vase
Late Woodland	900-1300 CE	first villages, corn horticulture, longhouses	Glen Meyer/Young
Late Woodland	1300-1400 CE	large villages and houses	Uren, Middleport/Springwell
Late Woodland	1400-1650 CE	tribal emergence, territoriality	Attawandaron
Contact Period - Indigenous	1700 CE-present	treaties, mixture of Indigenous & European items	Ojibwa, Oneida, Delaware
Contact Period - Settler	1796 CE-present	industrial goods, homesteads	pioneer life, municipal settlement



2.3.1.1 Paleo Period

The first human populations to inhabit the London region arrived between 12,000 and 10,000 years ago, coincident with the end of the last period of glaciation. Climate and environmental conditions were significantly different than they are today; local environs would not have been welcoming to anything but short-term settlement. Termed Paleoindians by archaeologists, Ontario's Indigenous peoples would have crossed the landscape in small groups (i.e., bands or family units) searching for food, particularly migratory game species. In this area, caribou may have provided the staple of the Paleo period diet, supplemented by wild plants, small game, birds and fish.

Given the low density of populations on the landscape at this time and their mobile nature, Paleo period sites are small and ephemeral. They are sometimes identified by the presence of fluted projectile points manufactured on a highly distinctive whitish-grey chert named "Fossil Hill" (after the formation) or "Collingwood." This material was acquired from sources near the edge of the escarpment on Blue Mountain. It was exploited by populations from as far south as the London area, who would have traveled to the source as part of their seasonal round. There are known Paleo period sites in this portion of the City of London and these are often found in association with the kettle ponds that dot its rolling landscape and with glacial lake shorelines.

2.3.1.2 Archaic Period

Settlement and subsistence patterns changed significantly during the Archaic period as both the landscape and ecosystem adjusted to the retreat of the glaciers. Building on earlier patterns, early Archaic period populations continued the mobile lifestyle of their predecessors. Through time and with the development of more resource rich local environments, these groups gradually reduced the size of the territories they exploited on a regular basis. A seasonal pattern of warm season riverine or lakeshore settlements and interior cold weather occupations has been documented in the archaeological record.

Since the large cold weather mammal species that formed the basis of the Paleo period subsistence pattern became extinct or moved northward with the onset of warmer climate conditions, Archaic period populations had a more varied diet, exploiting a range of plant, bird, mammal and fish species. Reliance on specific food resources like fish, deer and nuts becomes more pronounced through time and the presence of more hospitable environments and resource abundance led to the expansion of band and family sizes. In the archaeological record, this is evident in the presence of larger sites and aggregation camps, where several families or bands would come together in times of plenty. The change to more preferable environmental circumstances led to a rise in population density. As a result, Archaic sites are more plentiful than those from the earlier period. Artifacts typical of these occupations include a variety of stemmed and notched projectile points, chipped stone scrapers, ground stone tools (e.g., celts, adzes) and ornaments (e.g., bannerstones, gorgets), bifaces or tool blanks, animal bone (where and when preserved) and waste flakes, a by-product of the tool making process.



2.3.1.3 Early, Middle and Transitional Woodland Periods

Significant changes in cultural and environmental patterns are witnessed in the Woodland period (c. 950 BCE-1700 CE). By this time, the coniferous forests of earlier times were replaced by stands of mixed and deciduous species. Occupations became increasingly more substantial in this period, culminating in major semi-permanent villages by 1,000 years ago. Archaeologically, the most significant changes by Woodland times are the appearance of artifacts manufactured from modeled clay and the construction of house structures. The Woodland period is often defined by the occurrence of pottery, storage facilities and residential areas similar to those that define the incipient agricultural or Neolithic period in Europe.

Early and Middle Woodland period peoples are also known for a well-developed burial complex and ground stone tool industry. Unique Early Woodland period ground stone items include pop-eyed birdstones and gorgets. In addition, there is evidence of the development of widespread trading with groups throughout the northeast. The recovery of marine shells from the Lake Superior area indicates that exchanges of exotic materials and finished items from distant places were commonplace.

2.3.1.4 Late Woodland Period

During the Late Woodland period, much of Southwestern Ontario was occupied by two groups: Iroquoians and what are thought by archaeologists to be Algonquin speaking populations (the term “Western Basin Tradition” has been used to describe this cultural complex). In the east, the Iroquoian occupants were the Attawandaron, a tribal group described by European missionaries and whose historic homeland was significantly further east. Like other known Iroquoian groups including the Huron (Wendat) and Petun (Tionontati), the Attawandaron practiced a system of intensive horticulture based on three primary subsistence crops (corn, beans and squash). Their villages incorporated a number of longhouses, multi-family dwellings that contained several families related through the female line. The Jesuit Relations describe several Attawandaron centres in existence in the 17th century, including a number of sites where missions were later established. While precontact Attawandaron sites may be identified by a predominance of well-made pottery decorated with various simple and geometric motifs, triangular stone projectile points, clay pipes and ground stone implements, sites post-dating European contact are recognized through the appearance of various items of European manufacture. The latter include materials acquired by trade (e.g., glass beads, copper/brass kettles, iron axes, knives and other metal implements) in addition to the personal items of European visitors and Jesuit priests (e.g., finger rings, stoneware, rosaries, glassware). The Attawandaron were dispersed and their population decimated by the arrival of epidemic European diseases and inter-tribal warfare. Many were adopted into other Iroquoian communities.

Archaeologists have also documented the in-situ development of Late Woodland period archaeological traditions from Middle Woodland period precedents that are believed to have an Algonquin cultural origin, quite distinct from Iroquoian populations who lived to the east. The archaeological record of these groups has been labeled the “Western Basin Tradition.” During the Late Woodland period, complex settlements are characteristic of these people and, at their peak, are characterized by fortified villages containing large, likely extended family, structures. Some of the villages are surrounded by earthworks. There is evidence for the cultivation of corn and beans by roughly 900 CE. The pottery traditions of these people varied significantly from those of their Iroquoian neighbors. Early vessels, called Wayne ware, are small, thin-walled pots covered with vertical cord marking and tool impressions. Vessels become more elaborate through time, incorporating multiple bands of tool impressions, castellated rims and incised decoration. Late pottery is characteristically bag-shaped and often incorporates dentate stamping as well as appliqué strips and strap handles, similar to



some Mississippian tradition pottery. As was not the case with much Iroquoian pottery, clay fabrics were mixed with shell temper.

2.3.2 Treaty History

The project area is encompassed by the London Township Treaty No. 6 which was signed September 7, 1796 between the British Crown and the Chippewa Nation:

WHEREAS we the principal Chiefs, Warriors, and People of the Cheppewa Nation of Indians being desirous for a certain consideration hereinafter mentioned of selling and disposing of a certain parcel or tract of land situated and lying on the north side of the River Thames or River La Tranche and known in the Indian name by Escunnisepe unto His Britannic Majesty King George the Third our great Father.

This treaty encompassed land on the north side of the Thames River west of the Forks in London and on the north side of the south branch of the Thames east of the Forks until near what is now Woodstock. Portions of both Middlesex and Oxford Counties are included in the treaty area.

Although the treaty’s language is framed as “extinguishment” of Indigenous rights and title to the region, exactly what was understood to have been relinquished and retained by the Chippewa Nation is contested (Deshkan Ziiibing 2016; Miskokomon 2013):

... our understanding from our elders, an understanding we share with many other Anishinaabe nations, is that our treaties did not “surrender” our lands, despite what Britain and Canada have presumed (Deshkan Ziiibing 2016:5).

Deshkan Ziiibing, otherwise known as the Chippewas of the Thames First Nation (COTT FN), is the closest signatory Descendant community. COTT FN recognizes that other Anishinaabe nations were also signatories (Deshkan Ziiibing 2016: 5).



2.3.3 Nineteenth-Century and Municipal Settlement

Historically the project area falls within part of Lots 15 and 16, Concession 3 in the Geographic Township of London, Middlesex County, Ontario. A brief discussion of pioneer and later municipal settlement and land use in the township is provided below in an effort to identify features signaling archaeological potential.

Prior to the earliest European settlement in the Thames River Valley, the London environs were actively used for hunting and camping by Chippewa, Ottawa and Pottawatami. It was from them that the British Crown purchased lands in 1790 and 1796 (Armstrong 1986; LTHBC 2001). John Graves Simcoe, the first Lieut.-Governor of Upper Canada, visited the Thames River environs in 1793 on his journey to Detroit from Niagara. Simcoe was very concerned about the threat of northward expansion by the Americans at the Windsor border. He was planning the defence of the English colony when he aspired to establish the capital of Upper Canada at the Forks of the Thames. Simcoe believed the Forks, being inland, was well protected from attacks across the border. The Thames River also offered transportation which encouraged the development of the fur trade. About 3,850 acres as set aside at the Forks as a Crown Reserve for the future site of London taking up land north and south of the Forks in London and Westminster Township, respectively. Simcoe quickly set his plans in motion ordering construction begin on Dundas Street, Longwoods Road and Commissioners Road all established on old Indigenous trails (H.R. Page & Co. 1878). Simcoe's selection of London however came under severe criticism. Many thought the site was far too isolated. Roads at the time were difficult to travel. Thus, Toronto was chosen instead. Simcoe left for England in 1796.

Working alongside Colonel Thomas Talbot to create opportunities for settlement, Colonel Mahon Burwell initiated the first formal survey of London Township in 1810. This survey initially focused on the first six concessions (up to Sunningdale Road) but was suspended when war broke out in 1812. The northern section of the township was surveyed following the war, with the first true settlers arriving between 1817 and 1818. The first land patent, however, dates to 1812 and relates to lands that formed part of Burwell's initial survey. Among those who received the earliest patents were Burwell himself and the honorable John Hale. These grants were given in lieu of payment for services and loyalty, as both gentlemen did not plan to homestead on these lots but instead sell them to arriving immigrants (LTHBC 2001:11-14; H.R. Page & Co. 1878:9).

In 1818, a group of Irish settlers arrived in London Township and established homesteads on lots in the 4th, 5th, and 6th concessions. Their trek here was organized by Richard Talbot of Tipperary, Ireland, who had spent a great deal of time working on behalf of the government to find families who were interested in relocating to Upper Canada. Richard Talbot took the advice of his kinsman Colonel Thomas Talbot, and brought these families to London Township, which was said to be one of the most productive agricultural areas in the Thames River Valley (LTHBC 2001:13-14). Other early settlers were of English and Scottish descent (LTHBC 2001:15).

2.3.3.1 Western University

Western University was founded on March 7, 1878 by Bishop Isaac Hellmuth and officially opened in 1881. It consisted of four faculties (Arts, Divinity, Law and Medicine). Western University's first campus was located at the former Hellmuth College further east along St. James Street between Wellington Street and Waterloo Street (Lutman and Hives 1982:8). Huron College, formed in 1863 as an Anglican theological college by Bishop Benjamin Cronyn, amalgamated with the university in 1881. By 1885 the university was suffering financially and only the medical faculty was running. In 1908 the school became nondenominational and expanded steadily



due to increased funding. In 1916 a large tract of land was purchased from the Kingsmill family (Lot 16; Map 7) to become the new campus. In 1923 the university was officially renamed The University of Western Ontario.

Many of the signature buildings and features of the campus were built ca. 1923 as part of the new campus development, including: Hume Cronyn Memorial Observatory, McIntosh Gallery, Natural Sciences, Old Lawson Library, University College, Middlesex College, Great Hall, Medway Hall, Spencer Engineering, and the Thames Hall (RCHR 2020:99; UWO 2011). The characteristic main gates and the University Drive Bridge were also built at this time, in the Collegiate Goth Style, consistent with the style of the other original buildings (RCHR 2020:99). Construction of University Drive Bridge (Image 1) was completed in 1923 using a steam-powered excavator and linked the east side of the Thames River with the new campus (UWO 2011). A view of the bridge, looking west towards the University College, was illustrated on a London Ontario postcard between the 1920s and 1930s (Image 2).

2.3.4 Review of Historic Maps and Aerial Imagery

The project area historically falls within part of Lots 15 and 16, Concession 3, in the Geographic Township of London, Middlesex County, Ontario. No structures are depicted within or near the project area on the 1862 Tremaine map (Map 6). The Thames River flows through the project area, in a similar orientation as it does today. Lot 16 is not affiliated with anyone according to this map, although a grist mill (G.M.) is situated along the northernmost portion of the lot, adjacent to Windermere Road at Richmond Street, roughly 1 km away from the project area. Lot 15 is affiliated with a Rev. C.C. Brough (north of the Thames River), which includes the Glebe lands (east of the Thames River). Two additional grist mills are situated south and west of Richmond Street. The structures are roughly 300 m northeast of the current project area. Roughly 200 m and 300 m south of the project area, Huron Street and Regent Street are major thoroughfares that are depicted as open by this time. An unnamed dirt laneway is shown roughly 150 m west of the project area.

Similarly, no structures are shown within the vicinity of the project area on the 1879 historic atlas of Middlesex County (Map 7). The area has become increasingly urbanized, with smaller lots visible within the eastern section of Lot 16 and the southern portion of Lot 15. West of the Thames River Lot 15 is affiliated with Kingsmille, although no structures are depicted on the lot at this time.

A review of a 1926 geodetic survey of Canada (Map 8) shows the newly constructed University Drive Bridge. At this time, the University thoroughfare appears paved east of the bridge and as a dirt laneway west of the bridge. The topography around both sides of the bridge appear elevated at the bridge fortifications, with natural sloping illustrated along both banks of the Thames River.

A review of a 1942 aerial photograph (Map 9) shows that University Drive is fully paved with a southern thoroughfare visible by this time. Worn pathways leading from University Drive toward the river are present, and much of the area is now grassed with trees only appearing along the riverbank. Some residences are illustrated along what is now Sunset Street by 1942.

A review of a 1950 aerial photograph (Map 10) shows increasing residential development southeast of the project area, with the addition of The Parkway and Westview Drive. Additional pathways appear from University Drive along what is now Perth Drive, Lambton Drive, and in the area of what is now used for Elgin Hall Residence parking.



A review of a 1957 geodetic survey of Canada (Map 11) shows the continued expansion of residential development southeast of the project area. Portions of the Thames River appear narrower at this time than in previous years, with minor changes to the riverbank topography.

A review of a 1965 aerial photograph (Map 12) shows the expansion of Western University, including the new structures of Sydenham Hall (east) and Delaware Hall (northwest), a parking area along Lambton Drive (southwest), and northeast of the current project area. Paved pathways or sidewalks are also visible from University Drive Bridge north to the parking lot, south to Westview Drive, along Sunset Street, and University Drive.

By 2021, few changes have occurred within the project area, with the exception of the paved laneway leading from University Drive at Sunset Street towards the parking lot behind Elgin Hall (Map 13). Elgin Hall Residence was constructed in 1999, which included the addition of paved sidewalks, upgraded utilities, and changes made to the right-of-way along University Drive fronting the residence (UWO 2011).

2.3.5 Review of Heritage Properties and Plaques

There are no designated heritage properties or plaques within 50 m of the Project area (RCHR 2020).

Numerous buildings at Western University, including University Drive Bridge, have a “listed” cultural heritage status (RCHR 2020:99). The University Drive Bridge is listed as the Collegiate Gothic style, and construction was completed in November of 1923 by John Putherbough (UWO 2011).



3 STAGE I PROPERTY INSPECTION

As the project area was in proximity to features that signal archaeological potential, a Stage I property inspection was conducted to evaluate the current conditions within the project area and its integrity. The Stage I property inspection was undertaken in good weather and lighting conditions. No conditions were encountered that would hinder the property inspection or the identification of features of archaeological potential. The property boundaries were determined in the field based on proponent mapping, aerial images, and landscape features.

The project area is roughly 3.6 ha (8.9 ac) in size and includes University Drive extending to a portion of Lambton Drive along the west and The Parkway and Sunset Street along the east. The North Thames River runs north-south through its centre and under the University Drive Bridge. The project area comprises roughly 75 m of open channel, riverbanks, portions of residential and university developments, greenspace, and the entirety of the University Drive Bridge.

3.1 Western Portion of the Project Area and the North Thames River

The ROW east of Lambton Drive is grassed and lightly treed extending east towards the North Thames River (Image 3). North of the greenspace is an area of built up berm leading up to the University Drive Bridge (Image 4). The southwest corner of the project area includes a paved parking lot with buried utilities (hydro, sewer) adjacent to the riverbank (Image 5). Beneath the University Drive Bridge, and west of the North Thames River, is a dirt pathway that is densely treed north and south of the bridge (Image 6). The North Thames River is roughly 50 m wide at the bridge crossing.

3.2 Eastern Portion of the Project Area and the North Thames River

The riverbanks east of the North Thames River are densely treed with dirt and paved pathways along the riverbank underneath the University Drive Bridge (Images 7 and 8). The areas east of the bridge and along the north and south University Drive ROW are steeply sloped berm built up to the paved sidewalks (Image 7 and 11). Paved pathways continue south from the bridge towards The Parkway, southeast towards Sunset Street, Northeast to the Elgin Hall Residence Parking, and north as a continuation of the riverbank pathways (Images 7-10). The northeast and southeast segments of the project area also include manicured lawn as part of the University landscaping (Images 9, 11).

The results of the Stage I assessment, as well as the location and orientation of all photographs appearing in this report, are presented on Map 14. Maps 15 and 16 present the results on proponent mapping, and Maps 17 and 18 are unaltered proponent maps.

3.3 Documentary Records

All records are currently being stored at the TMHC corporate office located at 1108 Dundas Street, Unit 105, London, ON, N5W 3A7. Table 4 provides an inventory of the documentary records generated during this project.

Table 4: Documentary Records

Dates of Fieldwork	Field Notes	Field Maps	Digital Images
October 11, 2022	Digital and hard copies	Digital and hard copies	12 Images



4 ANALYSIS AND CONCLUSIONS

As noted in Section 2.1, the Province of Ontario has identified numerous factors that signal the potential of a property to contain archaeological resources. Based on the archaeological and historical context reviewed above, the Project area is in proximity (i.e., within 300 m) to features that signal archaeological potential, namely:

- registered archaeological sites (AgHh-72);
- the proximity to a primary water source (North Thames River);
- mapped 19th-century transportation routes (Richmond Street, Huron Street, Regent Street);
- mapped 19th-century structures (grist mill);
- listed cultural and heritage sites (Western University, University Drive Bridge); and
- the City of London's *Archaeological Management Plan* identifies the project area as having archaeological potential.

As the project area was in proximity to features that signal archaeological potential, a Stage I property inspection was conducted to evaluate the current conditions of the property area and its integrity. The Stage I property inspection visually confirmed that the majority of the project area contains areas of previous disturbance (paved roads and ROWs, parking lots, buildings, paved pathways, and built-up berm) (0.72 ha; 20.0%). It also determined that portions along the bridge and roadways were steeply sloped (0.22 ha; 6.1%). However, portions of the project area that are grassed and treed are not obviously disturbed and retain archaeological potential (1.08 ha; 30.0%) and would require Stage 2 assessment. A portion of the current project area has already been assessed (1.26 ha; 35.0%) and determined to have no further archaeological potential. If there are areas within the North Thames River that are to be impacted (0.32 ha; 8.9%) a Marine Archaeology Checklist must be completed.



5 RECOMMENDATIONS

Based on the Stage I background research and property inspection, the following recommendations are made:

- A portion of the project area was previously assessed (1.26 ha; 35.0%; WSP 2018; Map 5); no further assessment work is recommended for these areas (Map 14).
- The grassed and wooded areas within the project area, as shown on Map 14 (1.08 ha; 30.0%), are not obviously disturbed, retain archaeological potential and are recommended for Stage 2 assessment. As these lands are non-ploughable, the Stage 2 assessment should consist of a standard test pit survey at a 5 m transect interval, in keeping with provincial standards.
- Portions of the project area have been previously disturbed (0.72 ha; 20.0%) and are considered to no longer retain archaeological potential (Map 14). These areas have been photo documented and no further assessment work is recommended.
- The areas of slope (0.22 ha; 6.1%) within the project area are considered not to retain archaeological potential (Map 14). These areas have been photo documented and no further assessment work is recommended.
- No in-water impacts are planned for the University Drive Bridge Replacement. If in-water impacts are planned, the areas within the North Thames River (0.32 ha; 8.9%) require marine assessment and the Marine Archaeology Checklist must be completed.

Our recommendations are subject to the conditions laid out in Section 7.0 of this report and to the MTCS' review and acceptance of this report into the provincial registry.



6 SUMMARY

A Stage I archaeological assessment was conducted for an EA for the University Drive Bridge Replacement Project (No. 9M5173) at Western University in London, Ontario. The project area is roughly 3.6 ha (8.9 ac) in size and centres around the existing University Drive Bridge, which crosses a roughly 50 m segment of the North Thames River. Historically the project area is located within part of Lots 15 and 16, Concession 3, in the Geographic Township of London, Middlesex County, Ontario. The background research indicated that although a portion of the project area was previously assessed as having no further CHVI (1.26 ha; 35.0%) the remainder of the project area was in proximity to features signalling archaeological potential and a Stage I property inspection was undertaken. The Stage I property inspection determined that portions of the project area were previously disturbed (0.72 ha; 20%) or sloped (0.22 ha; 6.1%), and no longer retained archaeological potential, while the grassed and treed areas (1.08 ha; 30.0%) were not obviously disturbed, retain archaeological potential, and are recommended for Stage 2 assessment. If there are areas within the North Thames River that are to be impacted (0.32 ha; 8.9%) a Marine Archaeology Checklist must be completed.



7 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the MTCS as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c. 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the Project area of a development proposal have been addressed to the satisfaction of the MTCS, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the Ontario Heritage Act.

Should previously undocumented (i.e., unknown or deeply buried) archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify the police or coroner and Crystal Forrest, A/Registrar of Burial Sites, Ontario Ministry of Government and Consumer Services. Her telephone number is 416-212-7499 and e-mail address is Crystal.Forrest@ontario.ca.



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9 IMAGES



Image 1: University Drive Bridge Structural Plan Original Drawings (ca. 1922)

John M. Moore and Co. Architects c/o Western University Archives (1922)

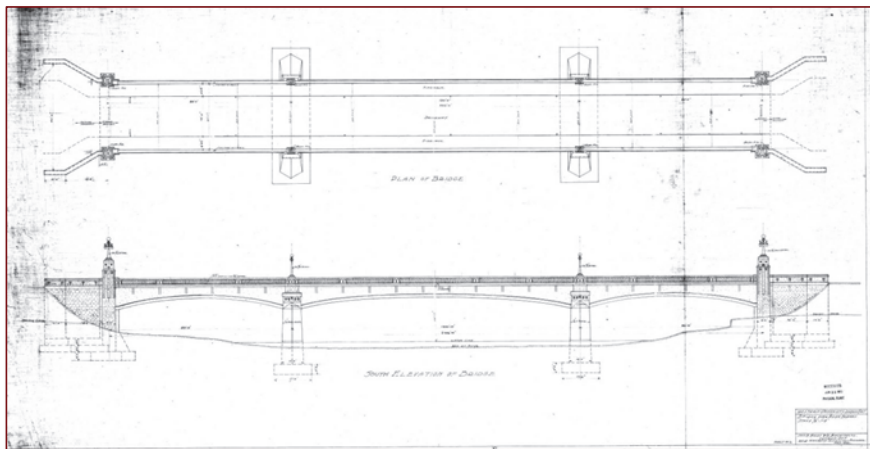


Image 2: University Drive Bridge Shown on a Postcard (ca. 1920s/1930s)

Looking Northeast; From PECO (n.d.)



Image 3: Grassed Area Requiring Test Pit Survey

Looking East



Image 4: Steeply Sloped and Built Up West Segment of University Drive Bridge

Looking East





Image 5: Paved Parking Lot and Disturbed Area with Buried Utilities

Looking South



Image 6: Built Up University Drive Bridge and Pathway Below Bridge

Looking East



Image 7: Steep Slope and Built Up Area for Bridge and Paved Bike Path

Looking East



Image 8: University Drive Bridge, Paved Bike Path, and Buried Utilities

Looking North





Image 9: Grassed and Treed Area with Few Utilities Requiring Test Pit Survey

Looking East



Image 10: Paved Sunset Street and Sidewalks with some Buried Utilities

Looking East



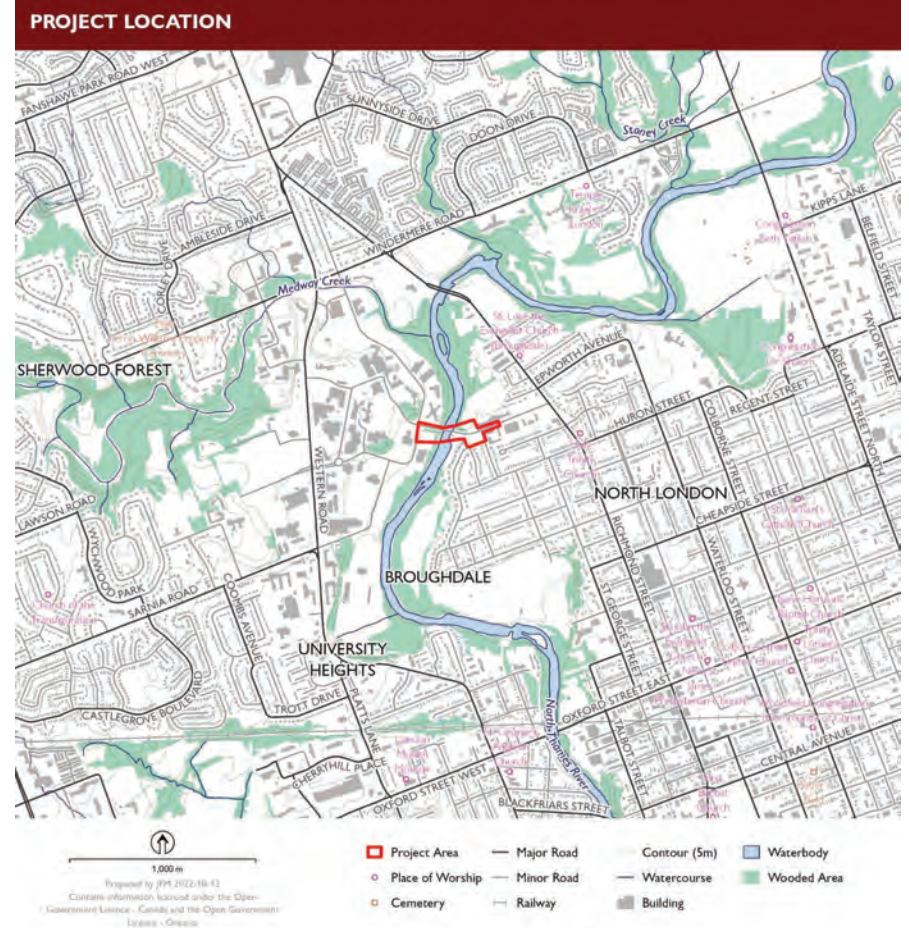
Image 11: Built Up Berm, Paved Sidewalk, and Grassed Area Requiring Test Pit Survey

Looking East





10 MAPS

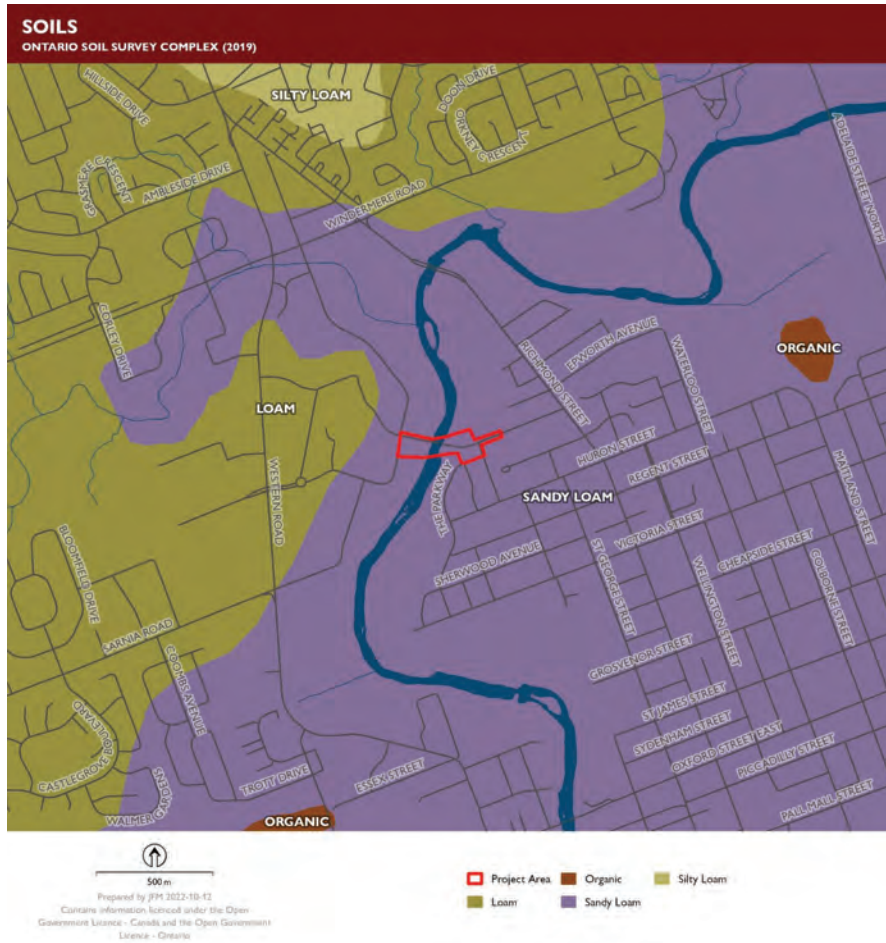


Map 1: Location of the Project Area in the City of London, ON





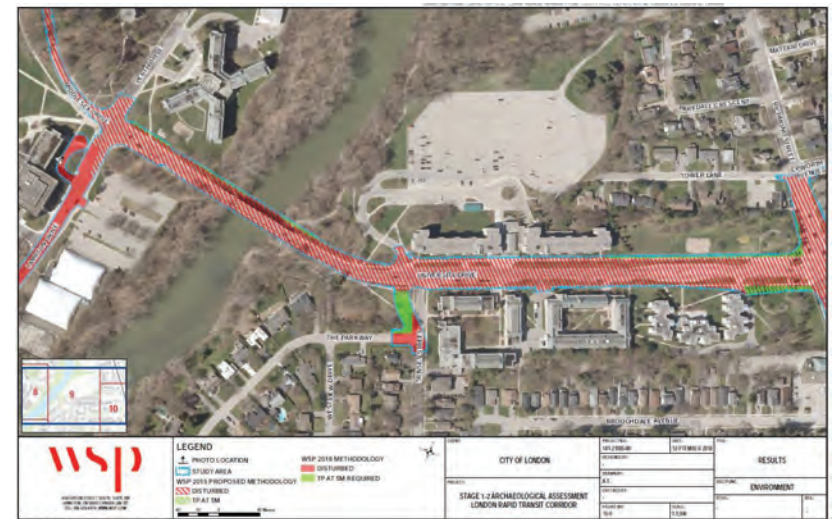
Stage I Archaeological Assessment
University Drive Bridge Replacement Project, Part of Lots 15 and 16, Con 3, London, ON



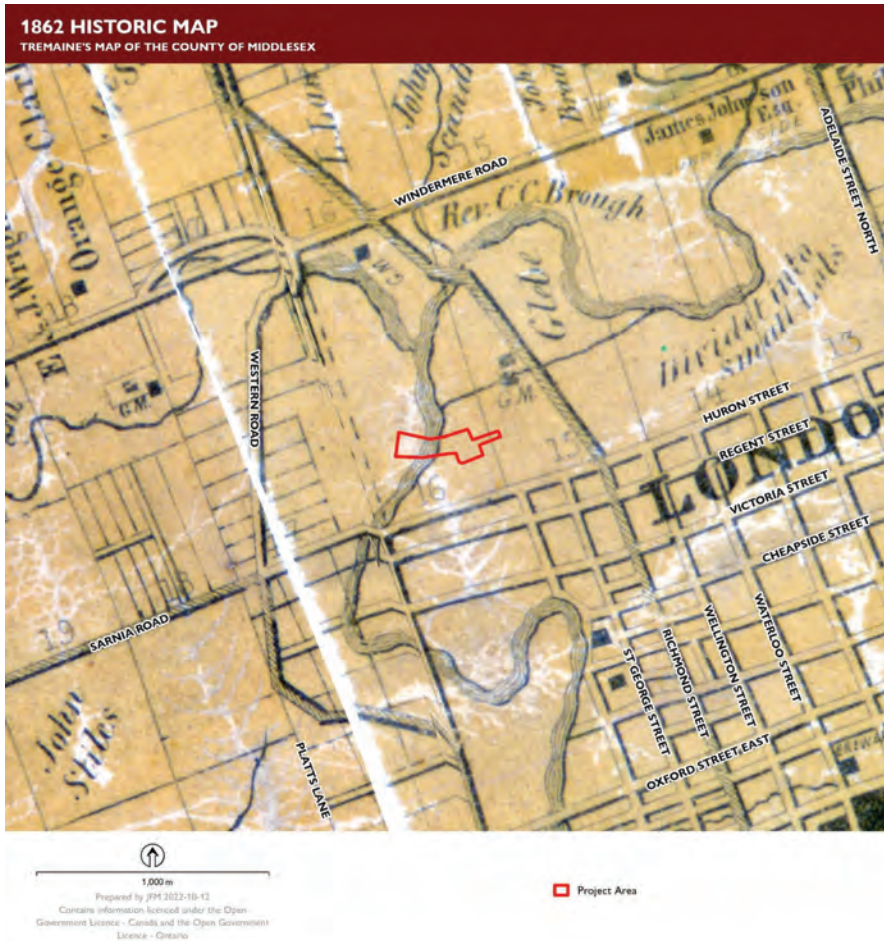
Map 4: Soils Within the Vicinity of the Project Area



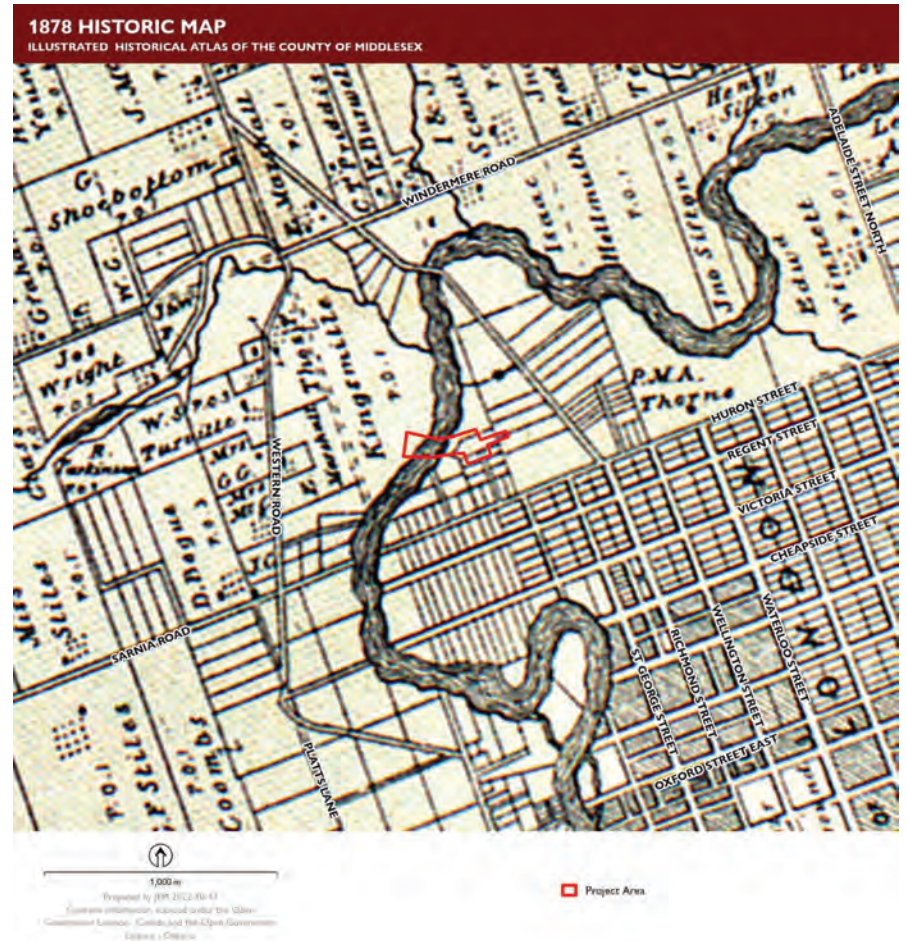
Stage I Archaeological Assessment
University Drive Bridge Replacement Project, Part of Lots 15 and 16, Con 3, London, ON



Map 5: WSP (2018) Stage I Archaeological Assessment Results



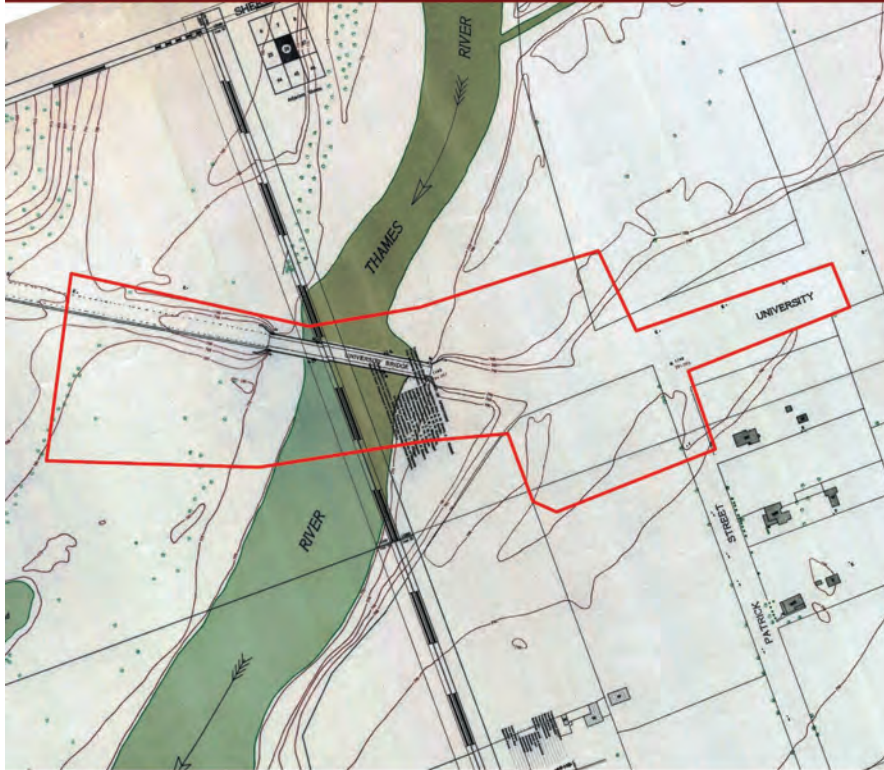
Map 6: Location of the Project area Shown on the 1862 Tremain Map of Middlesex County



Map 7: Location of the Project Area on an 1878 Historic Atlas of London Township



1926 HISTORIC MAP
GEODETIC SURVEY OF CANADA



90 m
Prepared by JPH 2012-10-12
Contains information licensed under the Open
Government Licence - Canada and the Open Government
Licence - Ontario

Project Area

Map 8: Location of the Project Area on a 1926 Geodetic Survey Map of London Township



1942 AERIAL PHOTOGRAPHY
DEPT. OF LANDS AND FORESTS



90 m
Prepared by JPH 2012-10-12
Contains information licensed under the Open
Government Licence - Canada and the Open Government
Licence - Ontario

Project Area

Map 9: Location of the Project Area on a 1942 Aerial Photo of London Township



1950 AERIAL PHOTOGRAPHY
DEPT. OF PLANNING AND DEVELOPMENT



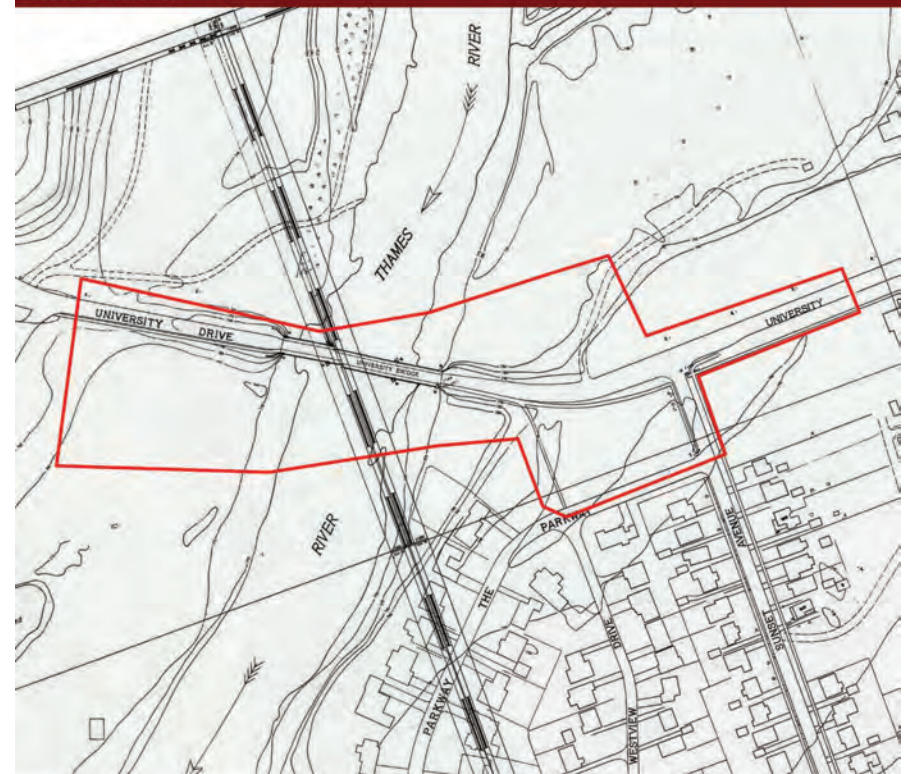
90 m
Prepared by JPM 2012-10-13
Contains information licensed under the Open
Government Licence - Canada and the Open Government
Licence - Ontario

Project Area

Map 10: Location of the Project Area on a 1950 Aerial Photo of London Township



1957 HISTORIC MAP
GEODETIC SURVEY OF CANADA



90 m
Prepared by JPM 2012-10-13
Contains information licensed under the Open
Government Licence - Canada and the Open Government
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Project Area

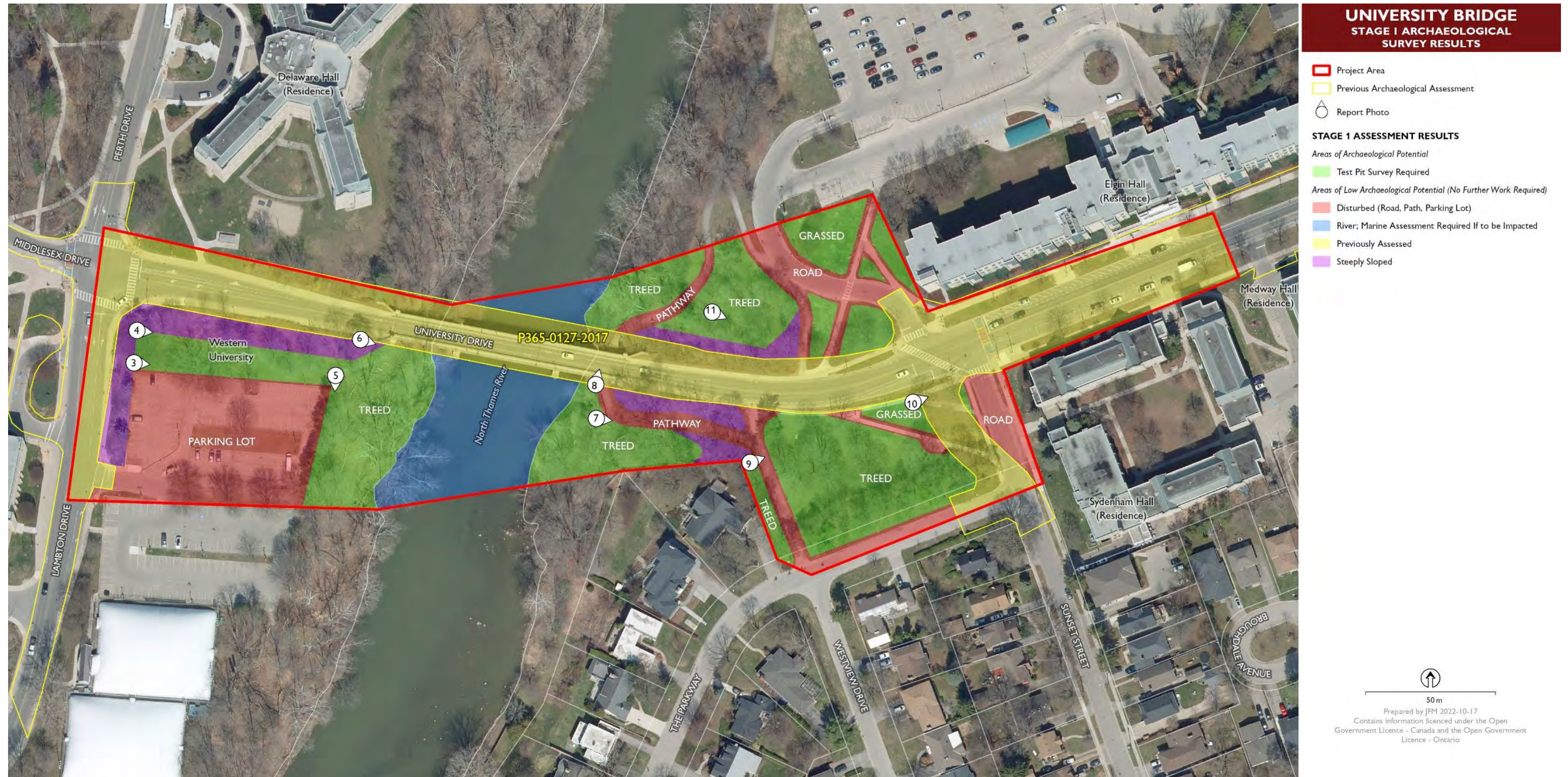
Map 11: Location of the Project Area on a 1957 Geodetic Survey Map of London Township



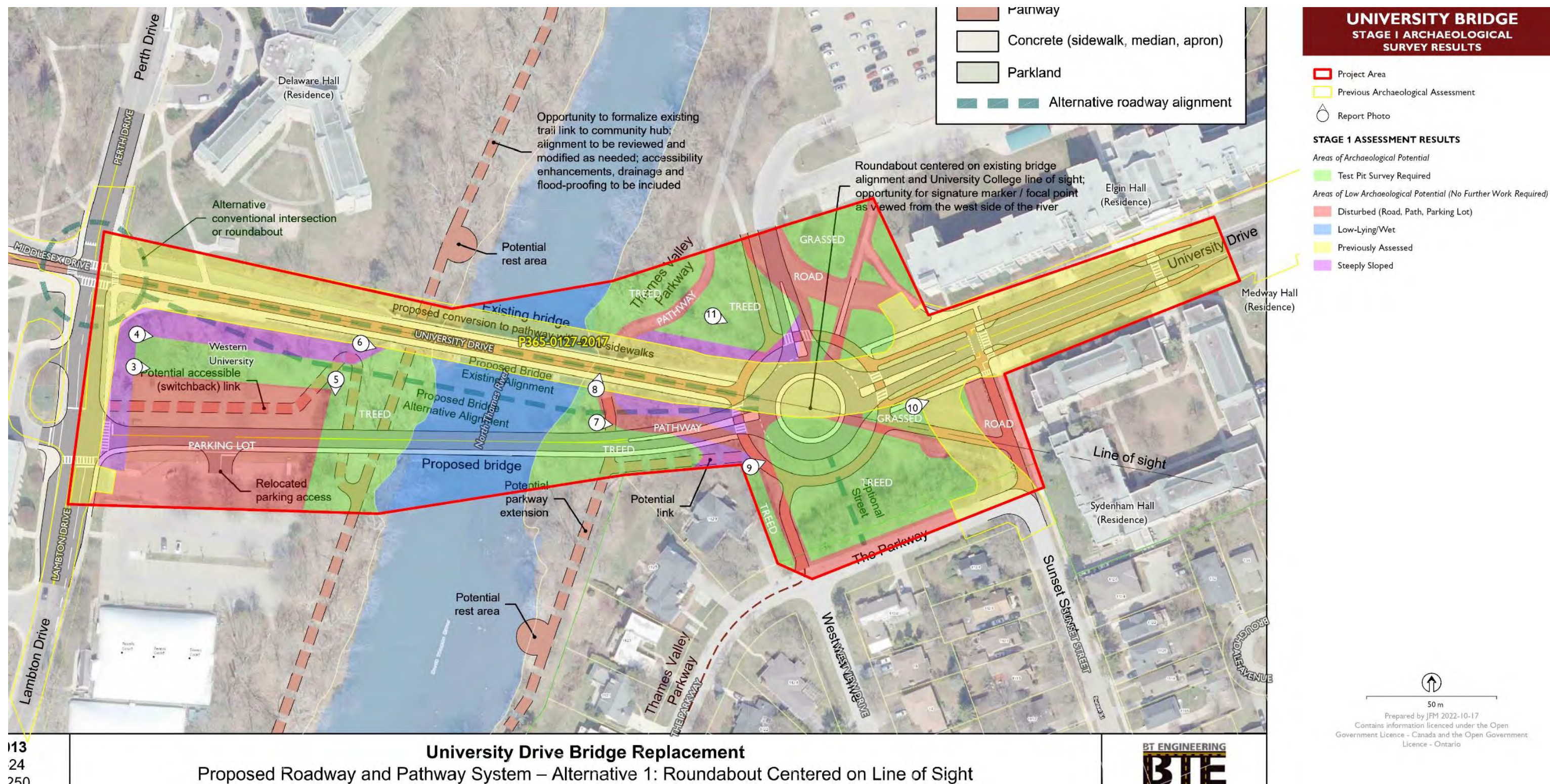
Map 12: Location of the Project Area on a 1965 Aerial Photo of London Township

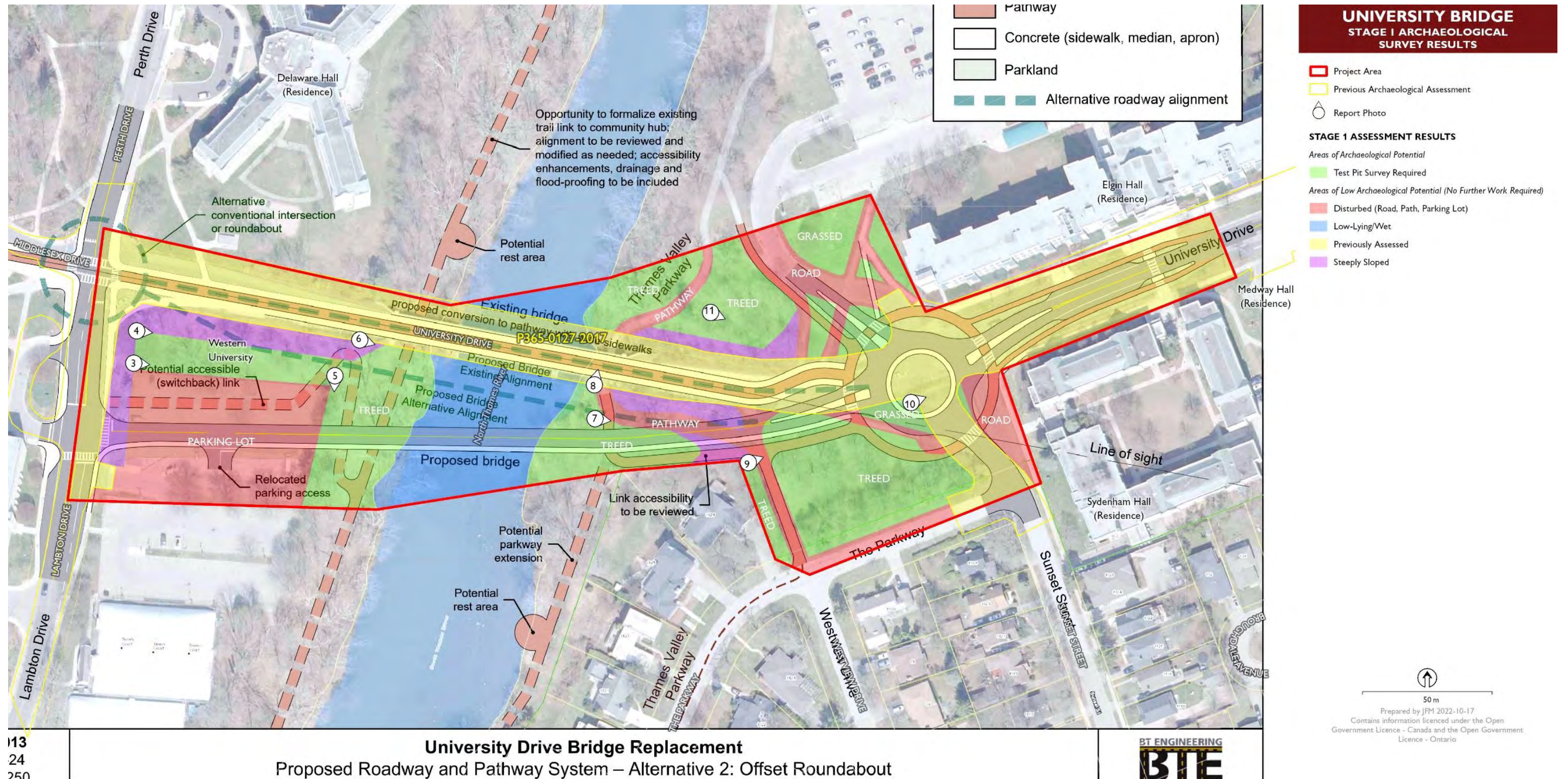


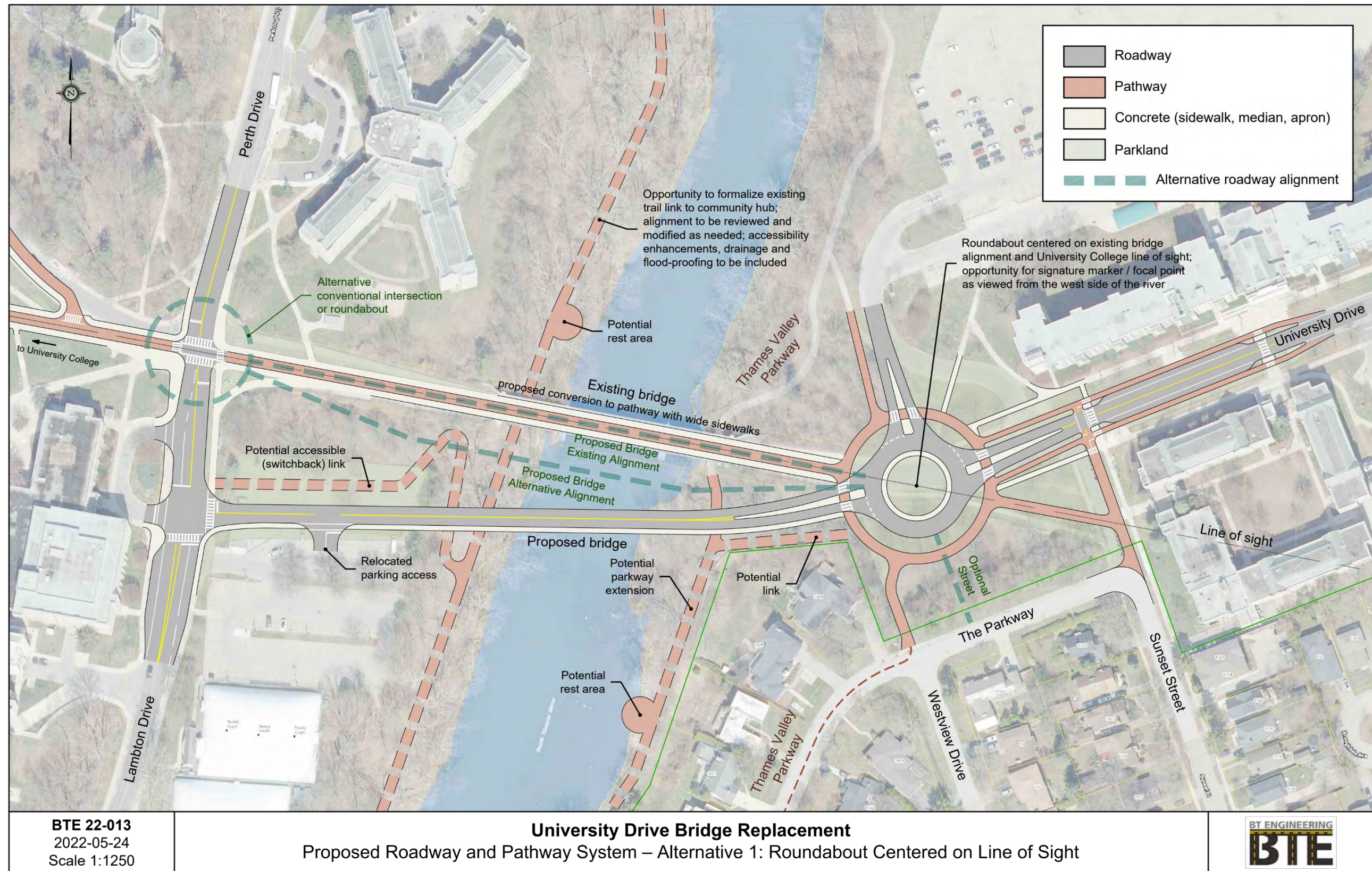
Map 13: Location of the Project Area on a 2021 Aerial Photo of London Township



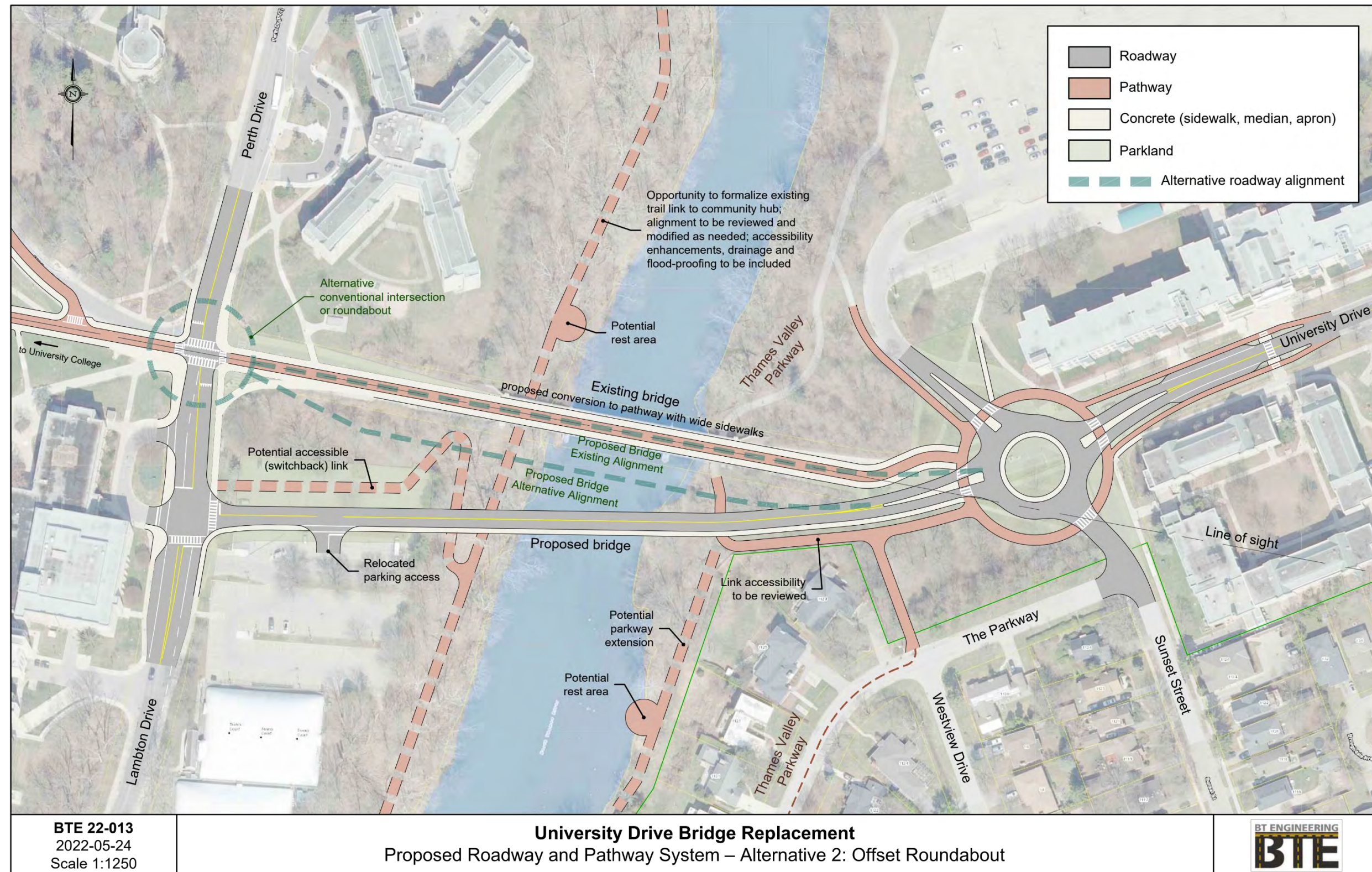
Map 14: Stage I Archaeological Survey Results Showing Areas of Potential







Map 17: Unaltered Proponent Map I



Map 18: Unaltered Proponent Map 2

Ministry of Citizenship and Multiculturalism (MCM)

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Oct 25, 2022

Matthew Beaudoin (P324)
Timmins Martelle Heritage Consultants Inc.
105 - 1108 Dundas London ON N5W 3A7

RE: Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, "Stage 1 Archaeological Assessment Environmental Assessment University Drive Bridge Replacement Project (No: 9M5173) Western University 1151 Richmond Street City of London Part of Lots 15 and 16, Concession 3 Geographic Township of London Middlesex County, Ontario", Dated Oct 24, 2022, Filed with MCM Toronto Office on N/A, MCM Project Information Form Number P324-0786-2022, MCM File Number 0017808

Dear Dr. Beaudoin:

The above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18, has been entered into the Ontario Public Register of Archaeological Reports without technical review.¹

Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require further information, please do not hesitate to send your inquiry to Archaeology@Ontario.ca

cc. Archaeology Licensing Officer
Katherine Scott,BT Engineering
Tucker Morton,Western University

¹In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.



**Stage 2 Archaeological Assessment
University Drive Bridge Replacement Project
Western University
1151 Richmond Street
City of London
Part of Lot 16, Concession 3
Geographic Township of London
Middlesex County, Ontario**

Original Report

Submitted to:
Ministry of Citizenship and Multiculturalism

Prepared for:
BT Engineering
509 Talbot Street,
London ON, N6A, 2S5

Prepared by:
TMHC Inc.
1108 Dundas Street, Unit 105
London, ON N5W 3A7
519-641-7222
tmhc.ca



Licensee: Matthew Beaudoin, PhD, P324
PIF No: P324-0974-2024
Project No: 2024-518
Dated: April 7, 2025

EXECUTIVE SUMMARY

In 2022, TMHC Inc. (TMHC) was contracted by BT Engineering (BTE) to conduct a Stage 1 archaeological assessment in support of an Environmental Assessment (EA) for the University Drive Bridge Replacement Project located at 1151 Richmond Street, within Western University's main campus, in the City of London Ontario. The assessment concluded that there was archaeological potential within the project area, and a Stage 2 assessment was recommended.

In 2024, BT Engineering (BTE) on behalf of Western University contracted TMHC to conduct the Stage 2 archaeological assessment for the Western University Bridge Replacement Project (Project No. 9M5173) which was conducted in accordance with the provisions of the *Environmental Assessment Act*. The work was also in keeping with the City of London's *Archaeological Management Plan* (ASI et al. 2017), a guide for assessing potential archaeological impacts in land use planning in the City of London. The project area is roughly 0.79 ha (2.0 ac) in size and is located within Lot 16, Concession 3, in the Geographic Township of London, Middlesex County. The project area contains the existing University Drive Bridge, North Thames River and embankments, and grassed and lightly treed areas. The purpose of the assessment was to determine whether there were archaeological resources present within the project area.

The project area is comprised of non-ploughable lands (manicured grass and lightly treed areas). As such, the project area was subject to a standard test pit assessment, employing a 5 m transect interval, in keeping with provincial standards. Natural soils were encountered during the test pit survey (30.0%; 0.24 ha), as well as areas that exhibited disturbed soil profiles (22.9%; 0.18 ha). Despite the disturbances encountered, the 5 m survey interval was maintained throughout the assessment due to the small property size.

A portion of the project area had been previously assessed, and no further work was required (47.0%; 0.37 ha). The remainder of the project area comprises an area which was previously disturbed during the installation of subsurface utilities, deemed of low archaeological potential, and photo-documented (0.2%; 0.002 ha).

All work met provincial standards, and no archaeological material was documented during the assessment. As such, no further archaeological assessment is recommended.

These recommendations are subject to the conditions laid out in Section 7.0 of this report, and to the Ministry of Citizenship and Multiculturalism's (MCM's) review and acceptance of this report into the provincial register of archaeological reports.



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PROJECT PERSONNEL

Project Manager	Matthew Beaudoin, PhD (P324)
Project Administrators	Kellie Theaker, CHRP
	Victoria Scott, MA, MLis
	Sara Harvey
Health and Safety Coordinator	Wendi Jakob, C.Tech, CAPM
Fieldwork Coordinator	Valerie Wolfkamp, MA
Field Directors	Arwen Johns, MA (R1330)
Field Technicians	Robert Brown, BA (R1403)
	Simon Smith
GIS Technicians	Andrew Turner, BA (R1042)
	David Gostick, BA
Report Writer	Marya D’Alessio, MA (R1163)
Senior Reviewer	Matthew Beaudoin, PhD (P324)

ACKNOWLEDGEMENTS

Steve Taylor	BT Engineering
--------------	----------------



TERRITORIAL ACKNOWLEDGEMENT

The project area is located on the traditional lands of the Anishinaabek (Ah-nish-in-a-bek), Haudenosaunee (Ho-den-no-show-nee), Lūnaapéewak (Len-ahpay-wuk), and Attawandaron (Add-a-won-da-run) peoples, on lands connected with the London Township Treaty of 1796 and the Dish with One Spoon Covenant Wampum and the Nanfan (Fort Albany) Deed of 1701. This land continues to be home to diverse Indigenous peoples (e.g., First Nations, Métis and Inuit) who are contemporary stewards of the land.



INDIGENOUS PARTICIPANTS

Aamjiwnaang First Nation

Coordinators	Wanda Maness	Cathleen O’Brien
Fieldwork Monitor	Laura Rogers	

Onyta’a:ka (Oneida Nation of the Thames)

Environment and Consultation Coordinator	Jenelle Cornelius
Loyane (Chief) – Sonohse:s (Turtle) Clan	Al Day
Fieldwork Monitor	Elton (Bear) John



ABOUT TMHC

Established in 2003 with a head office in London, Ontario, TMHC Inc. (TMHC) provides a broad range of archaeological assessment, heritage planning and interpretation, cemetery, and community consultation services throughout the Province of Ontario. We specialize in providing heritage solutions that suit the past and present for a range of clients and intended audiences, while meeting the demands of the regulatory environment. Over the past two decades, TMHC has grown to become one of the largest privately-owned heritage consulting firms in Ontario and is today the largest predominately woman-owned CRM business in Canada.

Since 2004, TMHC has held retainers with Infrastructure Ontario, Hydro One, the Ministry of Transportation, Metrolinx, the City of Hamilton, and Niagara Parks Commission. In 2013, TMHC earned the Ontario Archaeological Society’s award for Excellence in Cultural Resource Management. Our seasoned expertise and practical approach have allowed us to manage a wide variety of large, complex, and highly sensitive projects to successful completion. Through this work, we have gained corporate experience in helping our clients work through difficult issues to achieve resolution.

TMHC is skilled at meeting established deadlines and budgets, maintaining a healthy and safe work environment, and carrying out quality heritage activities to ensure that all projects are completed diligently and safely. Additionally, we have developed long-standing relationships of trust with Indigenous and descendent communities across Ontario and a good understanding of community interests and concerns in heritage matters, which assists in successful project completion.

TMHC is a Living Wage certified employer with the [Ontario Living Wage Network](#) and a member of the [Canadian Federation for Independent Business](#).



KEY STAFF BIOS

Matthew Beaudoin, PhD – Principal

Matthew received a PhD in Anthropology from Western University in 2013 and has a professional archaeological license with the Province of Ontario (P324). During his archaeological career, Matthew has conducted extensive field research and artifact analysis in Labrador and Ontario, and has taught the Field Methods Course and Principals of archaeology courses as a part-time faculty member at Western University. Matthew has also conducted ethnographic projects in Labrador, and has volunteered with the OAS to provide archaeological training to several Indigenous communities throughout the province.

Over the course of his career, Matthew has supervised over 900 archaeological assessments in Ontario, including Stages 1-4, under a variety of regulatory triggers including provincial and municipal Environmental Assessments, Green Energy projects, development projects under the *Planning Act*, and as due diligence process. Matthew has extensive experience managing large and complex archaeological projects in conjunction with other disciplines, specialists, and Indigenous communities including Enbridge Line 10 Westover Segment, Imperial Oil from Waterdown to Finch, and Highway 3 Widening in Kingsville. Since joining TMHC in 2008, Matthew has also been involved with several notable projects, such as the archaeological assessment of Stoney Point/Camp Ipperwash. For these and other projects, Matthew works closely with heritage staff at TMHC and with heritage staff employed by clients and stakeholder communities.

Matthew is an active member of the Canadian Archaeological Association, the Ontario Archaeological Association, the Society for American Archaeology, and the Society for Historical Archaeology.



STATEMENT OF QUALIFICATIONS AND LIMITATIONS

The attached Report (the “Report”) has been prepared by TMHC Inc. (TMHC) for the benefit of the Client (the “Client”) in accordance with the agreement between TMHC and the Client, including the scope of work detailed therein (the “Agreement”).

The information, data, recommendations and conclusions contained in the Report (collectively, the “Information”):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the “Limitations”);
- represents TMHC’s professional judgement in light of the Limitation and industry standards for the preparation of similar reports;
- may be based on information provided to TMHC which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context; and
- was prepared for the specific purposes described in the Report and the Agreement.

TMHC shall be entitled to rely upon the accuracy and completeness of information that was provided to it and has no obligation to update such information. TMHC accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

TMHC agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but TMHC makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

Except (1) as agreed to in writing by TMHC and Client; (2) as required by-law; or (3) to the extent used by governmental reviewing agencies for the purpose of obtaining permits or approvals, the Report and the Information may be used and relied upon only by Client.

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This Statement of Qualifications and Limitations is attached to and forms part of the Report and any use of the Report is subject to the terms hereof.



QUALITY INFORMATION

Report prepared by:

Marya D'Alessio MA, (PI 163)

Archaeology Specialist

Report reviewed by:

Matthew Beaudoin, PhD (P324)

Principal



I PROJECT CONTEXT

I.1 Development Context

I.1.1 Introduction

In 2022, TMHC Inc. (TMHC) was contracted by BT Engineering (BTE) to conduct a Stage 1 archaeological assessment in support of an Environmental Assessment (EA) for the University Drive Bridge Replacement Project located at 1151 Richmond Street, within Western University’s main campus, in the City of London Ontario. The assessment concluded that there was archaeological potential within the project area, and a Stage 2 assessment was recommended.

In 2024, BT Engineering (BTE) on behalf of Western University contracted TMHC to conduct the Stage 2 archaeological assessment for the Western University Bridge Replacement Project (Project No. 9M5173) which was conducted in accordance with the provisions of the *Environmental Assessment Act*. The work was also in keeping with the City of London’s *Archaeological Management Plan* (ASI et al. 2017), a guide for assessing potential archaeological impacts in land use planning in the City of London. The project area is roughly 0.79 ha (2.0 ac) in size and is located within Lot 16, Concession 3, in the Geographic Township of London, Middlesex County. The project area contains the existing University Drive Bridge, North Thames River and embankments, and grassed and lightly treed areas. The purpose of the assessment was to determine whether there were archaeological resources present within the project area.

All archaeological assessment activities were performed under the professional archaeological license of Matthew Beaudoin, PhD (P324) and in accordance with the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011, “*Standards and Guidelines*”). Permission to enter the property and carry out all required archaeological activities, including collecting artifacts when found, was given by BTE.



1.1.2 Purpose and Legislative Context

The *Ontario Heritage Act* (R.S.O. 1990) ([OHA](#)) provides legislative oversight for the conservation, protection, and preservation of heritage resources in the Province of Ontario, including archaeological resources. The *OHA* assigns responsibility for doing so to a provincial ministry, now the Ministry of Citizenship and Multiculturalism (MCM). The MCM regulates how archaeological sites are dealt with by:

- Establishing a system to license individuals permitted to identify and investigate archaeological sites;
- Creating technical standards and guidelines for archaeological fieldwork and reporting;
- Maintaining a list of registered archaeological sites; and
- Overseeing transfers of archaeological collections.

The *OHA* does not speak to the need for undertaking archaeological assessments prior to land development. Instead, it regulates how such work must be undertaken and how archaeological sites are dealt with when the need for an archaeological assessment is prompted by other pieces of legislation.

The *Environmental Assessment Act* (R.S.O. 1990) provides for the protection and conservation of the environment. In this case, the environment is widely defined to cover “cultural heritage” resources. Section 5(3)(c) of the Act stipulates that heritage resources to be affected by a proposed undertaking be identified during the environmental screening process. Within the EA process, the purpose of a Stage 1 background study is to determine if there are known cultural resources within the proposed project area, or potential for such resources to exist. Subsequently, it can act as a planning tool by identifying areas of concern that, where possible, could be avoided to minimize environmental impact. It is also used to determine the need for a Stage 2 field assessment involving the search for archaeological sites.

The City of London’s *Archaeological Management Plan* (ASI et al. 2017) is a planning tools developed to implement these requirements by identifying areas where there is potential for archaeological sites to exist. If properties are deemed to have potential for archaeological sites, a Stage 1 and 2 archaeological assessment is required.



1.2 Project Context: Archaeological Context

1.2.1 Project Area: Overview and Physical Setting

The project area is located within the eastern section of Western University’s main campus at 1151 Richmond Street in the City of London, Ontario, which is situated east of Western Road and west of Richmond Street. The project area focuses on a roughly 320 m stretch of University Drive that includes grasslands fronting a parking lot area near Lambton Drive (southwest); grasslands fronting the North branch of the Thames River on the south side of University Drive (south); manicured lawn fronting University Drive along The Parkway and Sunset Street (southeast); and manicured lawn on the north side of University Drive fronting Elgin Hall Residence (northeast) (Maps 1-2). The overall project area is roughly 0.79 ha (2.0 ac) in size and contains the existing University Drive Bridge, North Thames River and embankments, and grassed and lightly treed areas.

The project area falls within the Stratford Till Plain physiographic region, as defined by Chapman and Putnam (1984; Map 3). The Stratford Till Plain is a broad clay plain of 1,370 square miles stretching from London in the south to Blyth and Listowel in the north (Chapman and Putnam 1984:210). It is a large ground moraine interrupted by terminal moraines, composed of brown calcareous silty clay till (Chapman and Putnam 1984:210). Along the Thames River, the region is characterized by gravel terraces. These have provided a valuable source of sand and gravel, as evident in the large number of aggregate pits and quarries in the area. The project area, more specifically, falls within a spillway associated with the Thames River.

Formal soil surveys for Middlesex County do not map the soils in this area as they are defined as “urban.” According to generalized soils mapping for the City of London (1995), the predominant soil type within the project area is sandy loam (Map 4).

The project area lies within the Thames River drainage. The North Branch of the Thames River flows through the project area (Map 1).



1.2.2 Summary of Registered or Known Archaeological Sites

According to PastPortal (accessed November 22, 2024) there are 14 registered archaeological sites within 1 km of the project area (Table 1). AgHh-270 is the closest registered site to the project area, roughly 270 m north. AgHh-270 is an unknown Indigenous scatter of 23 artifacts identified during Stage 2 test pitting in 2022. The site has further cultural heritage value or interest (CHVI) and is recommended for Stage 3 assessment.

AgHh-72 is also within close proximity of the project area, located roughly 300 m east. AgHh-72 consists of a scatter of materials potentially affiliated with a 19th-century tavern or hotel fronting Richmond Street. Many of the sites located within 1 km of the project area were discovered during preliminary survey of the area in the 1980s and 1990s prior to construction activities related to expansion of the University and transit systems (MCM 2024).

Table 1: Registered Archaeological Sites within 1 km of the Project Area

Borden Number	Site Name	Time Period	Affinity	Site Type	Status
AgHh-10	Ronto	Post-Contact, Woodland	Euro-Canadian, Neutral	hamlet, house	
AgHh-22					
AgHh-49					
AgHh-72		Post-Contact			
AgHh-74	AgHh-74	Woodland, Early	Aboriginal	findspot	
AgHh-94	Thornwood	Woodland, Late	Aboriginal, Iroquoian	Othercamp/campsite	
AgHh-260		Post-Contact		cabin	Further CHVI
AgHh-261		Archaic, Early	Aboriginal	findspot	No Further CHVI
AgHh-265		Pre-Contact	Aboriginal	camp/campsite	Further CHVI
AgHh-269		Pre-Contact	Aboriginal	scatter	Further CHVI
AgHh-270		Pre-Contact	Aboriginal	scatter	Further CHVI
AfHh-321	North Branch Mills	Post-Contact	Euro-Canadian	Otherbuilding	
AfHh-933		Post-Contact		Unknown	Further CHVI
AfHh-934		Post-Contact		Unknown	Further CHVI



1.2.3 Summary of Past Archaeological Investigations within 50 m

During the course of this study, records were found for two archaeological investigations within 50 m of the project area. However, it should be noted that the MCM currently does not provide an inventory of archaeological assessments to assist in this determination.

1.2.3.1 Stage 1 and 2 Archaeological Assessments – London Bus Rapid Transit System (Map 5)

In 2018, WSP Canada conducted a Stage 1 and 2 archaeological assessment for the London Bus Rapid Transit System, which included four segments of two operational routes, in the City of London, Ontario. While there were previous reports associated with this project (WSP 2016), the 2018 report is the cumulative results of this work. Previously assessed portions include: the entirety of Lambton Drive, part of the entrance to the western parking lot, the intersection of Lambton Drive/Middlesex Drive/Perth Drive/University Drive, University Drive and the associated University Drive Bridge and right-of-way (ROW), a section of the northeast (Elgin Hall Residence) parking lot entrance, and a segment southeast of University Drive, west of Sunset Street and including part of The Parkway. These areas were all considered to be disturbed and no further assessment was recommended for these areas. Portions of the grassed and forested area adjacent to these segments were considered to have archaeological potential and required Stage 2 test pit survey. No archaeological materials were recovered as a result of the Stage 2 assessment of these areas. The results of this assessment are presented in a report entitled *Stage 1-2 Archaeological Assessment London Bus Rapid Transit System* (WSP 2018; Licensee Douglas Yahn; PIF P365-0127-2017).

1.2.3.2 Stage 1 Archaeological Assessment – Western University Bridge Replacement Project (Map 6)

In 2022, TMHC was contracted by BTE to conduct the Stage 1 archaeological assessment in support of the University Drive Bridge Replacement Project, located at 1151 Richmond Street, within Western University’s main campus, in the City of London Ontario. The Stage 1 property inspection visually confirmed that the majority of the project area contained areas of previous disturbance (paved roads and ROWs, parking lots, buildings, paved pathways, and built-up berm). It also determined that portions of the project area along the bridge and roadways were steeply sloped. Areas within the project area that were grassed and treed were determined to retain archaeological potential and the assessment concluded that a Stage 2 assessment was recommended for these areas. The results of this assessment are presented in a reported entitled *Stage 1 Archaeological Assessment, Environmental Assessment, University Drive Bridge Replacement Project, Western University* (TMHC 2022; Licensee Matthew Beaudoin, PIF P324-0786-2022).

1.2.4 Dates of Archaeological Fieldwork

The Stage 2 fieldwork was conducted on April 23, 2025, in sunny and warm weather conditions under the direction of Arwen Johns, MA (R1330).



1.3 Project Context: Historical Context

1.3.1 Indigenous Settlement in the City of London

The previous Stage 1 report (TMHC 2022) provided a detailed summary of Indigenous settlement in the London area. As such, the same information is only provided in tabular format here (Table 2).

Table 2: Chronology of Indigenous Settlement in the London Area

Period	Time Range	Diagnostic Features	Archaeological Complexes
Early Paleo	9000-8400 BCE	fluted projectile points	Gainey, Barnes, Crowfield
Late Paleo	8400-8000 BCE	non-fluted and lanceolate points	Holcombe, Hi-Lo, Lanceolate
Early Archaic	8000-6000 BCE	serrated, notched, bifurcate base points	Nettling, Bifurcate Base Horizon
Middle Archaic	6000-2500 BCE	stemmed, side & corner notched points	Brewerton, Otter Creek, Stanly/Neville
Late Archaic	2000-1800 BCE	narrow points	Lamoka
Late Archaic	1800-1500 BCE	broad points	Genesee, Adder Orchard, Perkiomen
Late Archaic	1500-1100 BCE	small points	Crawford Knoll
Terminal Archaic	1100-950 BCE	first true cemeteries	Hind
Early Woodland	950-400 BCE	expanding stemmed points, Vinette pottery	Meadowood
Middle Woodland	400 BCE-500 CE	dentate, pseudo-scallop pottery	Saugeen/Couture
Transitional Woodland	500-900 CE	first corn, cord-wrapped stick pottery	Princess Point/Riviere au Vase
Late Woodland	900-1300 CE	first villages, corn horticulture, longhouses	Glen Meyer/Young
Late Woodland	1300-1400 CE	large villages and houses	Uren, Middleport/Springwell
Late Woodland	1400-1650 CE	tribal emergence, territoriality	
Contact Period - Indigenous	1650 CE-present	treaties, mixture of Indigenous & European items	
Contact Period - Settler	1796 CE-present	industrial goods, homesteads	



1.3.2 Treaty History

The project area is encompassed by the London Township Treaty No. 6, which was signed September 7, 1796, between the British Crown and the Chippewa Nation:

WHEREAS we the principal Chiefs, Warriors, and People of the Cheppewa Nation of Indians being desirous for a certain consideration hereinafter mentioned of selling and disposing of a certain parcel or tract of land situated and lying on the north side of the River Thames or River La Tranche and known in the Indian name by Escunnisepe unto His Britannic Majesty King George the Third our great Father.

This treaty encompassed land on the north side of the Thames River west of the Forks in London and on the north side of the south branch of the Thames east of the Forks until near what is now Woodstock. Portions of both Middlesex and Oxford Countis are included in the treaty area.

Although the treaty’s language is framed as “extinguishment” of Indigenous rights and title to the region, exactly what was understood to have been relinquished and retained by the Chippewa Nation is contested (Deshkan Ziibing 2016; Miskokomon 2013):

... our understanding from our elders, an understanding we share with many other Anishinaabe nations, is that our treaties did not “surrender” our lands, despite what Britain and Canada have presumed (Deshkan Ziibing 2016:5).

Deshkan Ziibing, otherwise known as the Chippewas of the Thames First Nation (COTTFN), is the closest signatory Descendant community. COTTFN recognizes that other Anishinaabe nations were also signatories (Deshkan Ziibing 2016:5).

In 1701, the Fort Albany/Nanfan Treaty was signed between the Haudenosaunee Confederacy and the acting governor of New York, on behalf of the British Crown. That agreement covered a vast territory encompassing most of the lower Great Lakes, claimed as the Haudenosaunee’s Beaver Hunting Grounds. Much of the same territory also falls within the Dish with One Spoon Wampum. The wampum represents an agreement between the Haudenosaunee and the Anishinaabeg to share the hunting territories around the Great Lakes (Glover 2020). In 1840, after losing their land base in New York State, over 200 Oneida members formed Oneida Nation of Thames near Delaware, Ontario. The community purchased their new settlement lands with their own funds and did not receive a Crown allotted reserve (Oneida Nation of the Thames 2023). Their presence reintroduced Haudenosaunee stewardship practices to the region which continue today.



1.3.3 Nineteenth-Century and Municipal Settlement

Historically the project area falls within part of Lot 16, Concession 3, in the Geographic Township of London, Middlesex County, Ontario.

The previous Stage 1 report (TMHC 2022) provided a summary of 19th century settlement and municipal settlement. As such, it will not be repeated here.

1.3.4 Review of Historic Maps and Aerial Imagery

The project area historically falls within part of Lot 16, Concession 3, in the Geographic Township of London, Middlesex County, Ontario. No structures are depicted within or near the project area on the 1862 *Tremaine's Map of the County of Middlesex* (Map 7). The Thames River flows through the project area, in a similar orientation as it does today. No names are associated with Lot 16 at this time, although a grist mill (G.M.) is situated along the northernmost portion of the lot, adjacent to Windermere Road at Richmond Street, roughly 1 km north of the project area. Two additional grist mills are situated northeast of the project area, on the west side of Richmond Street. Huron Street and Richmond are depicted as open by this time. An unnamed dirt laneway is shown roughly 150 m west of the project area.

Similarly, no structures are shown within the vicinity of the project area on the 1878 Map of the Township of London contained within H.R. Page and Co.'s *Illustrated Historical Atlas of the County of Middlesex* (Map 8). Lot 16 is affiliated with Kingsmille at this time. The area has become increasingly urbanized, with smaller lots visible within the eastern section of Lot 16 and immediately south and southeast of the project area.

A review of a 1926 geodetic survey map (Map 9, upper left) shows the newly constructed University Drive Bridge. At this time, the University thoroughfare appears paved east of the bridge and as a dirt laneway west of the bridge. The topography around both sides of the bridge appears elevated at the bridge fortifications, with natural sloping illustrated along both banks of the Thames River.

By 1950 (Map 9, upper right), an aerial image shows increasing residential development southeast of the project area, with the addition of The Parkway and Westview Drive. Additional pathways appear from University Drive along what is now Perth Drive, Lambton Drive, and in the area of what is now parking for the Elgin Hall Residence. Much of the area is now grassed with trees only appearing along the riverbank.

By 1957 the geodetic survey map (Map 9, lower left) shows the continued expansion of residential development southeast of the project area. Portions of the Thames River appear narrower at this time than in previous years, with minor changes to the riverbank topography.

A review of a 1965 aerial photograph (Map 9, lower right) shows the expansion of Western University, including Perth Drive, the new structures of Sydenham Hall (east) and Delaware Hall (northwest), a parking area along Lambton Drive (southwest), and northeast of the current project area. Paved pathways or sidewalks are also visible from University Drive Bridge north to the parking lot, south to Westview Drive, along Sunset Street, and University Drive.

By 2024, few changes have occurred within the project area, with the exception of the paved laneway leading from University Drive at Sunset Street towards the parking lot behind Elgin Hall (Map 2). Elgin Hall Residence was constructed in 1999, which included the addition of paved sidewalks, upgraded utilities, and changes made to the ROW along University Drive fronting the residence (UWO 2011).



1.3.5 Review of Heritage Properties

There are no designated heritage properties or plaques within 50 m of the project area (RCHR 2020).

Numerous buildings at Western University, including University Drive Bridge, have a "listed" cultural heritage status (RCHR 2020:99). The University Drive Bridge is listed as the Collegiate Gothic style, and construction was completed in November of 1923 by John Putherbough (UWO 2011).



2 FIELD METHODS

All fieldwork was undertaken in good weather and lighting conditions. No conditions were encountered that would hinder the identification or recovery of artifacts. The property boundaries were determined in the field based on proponent mapping, landscape features, property fencing, and GPS co-ordinates.

The project area is comprised of non-ploughable lands (manicured grass and lightly treed areas). As such, the project area was subject to a standard test pit assessment, employing a 5 m transect interval (Images 1 and 2). Test pits measuring at least 30 cm (shovel-width) were excavated through the first 5 cm of subsoil with all fill screened through 6 mm hardware cloth. Once screening was finished, the stratigraphy in the test pits was examined and then the pits were backfilled as best as possible, tamped down by foot and shovel and re-capped with sod. Test pitting extended up to 1 m from all standing features, including trees and buildings, when present. It was anticipated that when cultural material was found, the test pit survey would be intensified (reduced to 2.5 m) to determine the size of the site. If not enough archaeological materials were recovered from the intensification test pits, a 1 m² test unit would be excavated atop of one of the positive test pits to gather additional information.

Typical test pits contained roughly 40 cm of brown sandy loam soil over tan-orange sandy silt subsoil (30.0%; 0.236 ha; Images 3 and 4).

On the eastern and western ends of the project area, a fill layer was encountered containing roughly 70 cm of mixed brown and grey sandy loam with heavy gravel fill (22.9%; 0.18 ha; Images 5 and 6). These areas of disturbance were noted along University Drive, adjacent to parking lots, and adjacent to sidewalks and paved pathways, and were therefore likely the result of grading activities, the construction of roadbeds, sidewalks, pathways, the parking lot and installation of underground utilities, as well as significant landscaping activities. In these areas the soils consisted entirely of brown and grey sandy loam and gravel fill, with no intact soil layers encountered. Despite the disturbance encountered, the 5 m survey interval was maintained throughout the assessment due to the small project area size.

As per Section 2.1, Standard 2 of the *Standards and Guidelines* (MTC 2011:28-29), certain physical features and deep land alterations are considered as having low archaeological potential and are thus exempt from the standard test pit survey. Approximately 0.2% (0.002 ha) of the project area was disturbed, consisting of a grassed area with numerous subsurface utilities, southwest of the Sunset Street/University Drive intersection (Image 7). This area was photo-documented. The remainder of the project area had been previously assessed, and no further assessment was required (47.0%; 0.37 ha).

Map 10 illustrates the Stage 2 field conditions and assessment methods; the location and orientation of all photographs appearing in this report are also shown on this map. Map 11 presents the Stage 2 results on the proponent mapping. An unaltered proponent map is provided as Map 12.



3 RECORD OF FINDS

No archaeological materials or sites were identified during the Stage 2 archaeological assessment of the project area. Table 3 provides an inventory of the documentary records generated during this project.

All files are currently being stored at the TMHC corporate office located at 1108 Dundas Street, Unit 105, London, ON, N5W 3A7.

Table 3: Documentary Records

Date	Field Notes	Field Maps	Digital Images
April 23, 2025	Digital and hard copies	Digital and hard copies	41 Images



4 ANALYSIS AND CONCLUSIONS

A Stage 2 field assessment was conducted in keeping with the MCM's *Standards and Guidelines* (MTC 2011). The test pit survey did not result in the documentation of archaeological resources.



5 RECOMMENDATIONS

All work met provincial standards, and no archaeological material was documented during the assessment. As such, no further archaeological assessment is recommended.

These recommendations are subject to the conditions laid out in Section 7.0 of this report and to the MCM's review and acceptance of this report into the provincial register.



6 SUMMARY

A Stage 2 archaeological assessment was conducted for the Western University Bridge Replacement Project (Project No. 9M5173), located in the City of London, Ontario. The project area is roughly 0.69 ha (1.7 ac) in size and is located within Lot 16, Concession 3, in the Geographic Township of London, Middlesex County. The previous Stage 1 assessment revealed that the project area had potential for the discovery of archaeological resources and a Stage 2 survey was recommended. The Stage 2 assessment (test pit survey at a 5 m interval) did not result in the documentation of archaeological resources. As such, no further archaeological assessment is recommended.



7 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the MCM as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c. 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the MCM, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Public and Business Service Delivery and Procurement.



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WSP Canada (WSP)

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9 IMAGES



Image 1: Test Pit Survey at 5 m Interval

Looking West



Image 2: Test Pit Survey at 5 m Interval

Looking East



Image 3: Typical Test Pit



Image 4: Typical Test Pit





Image 5: Disturbed Test Pit



Image 6: Disturbed Test Pit



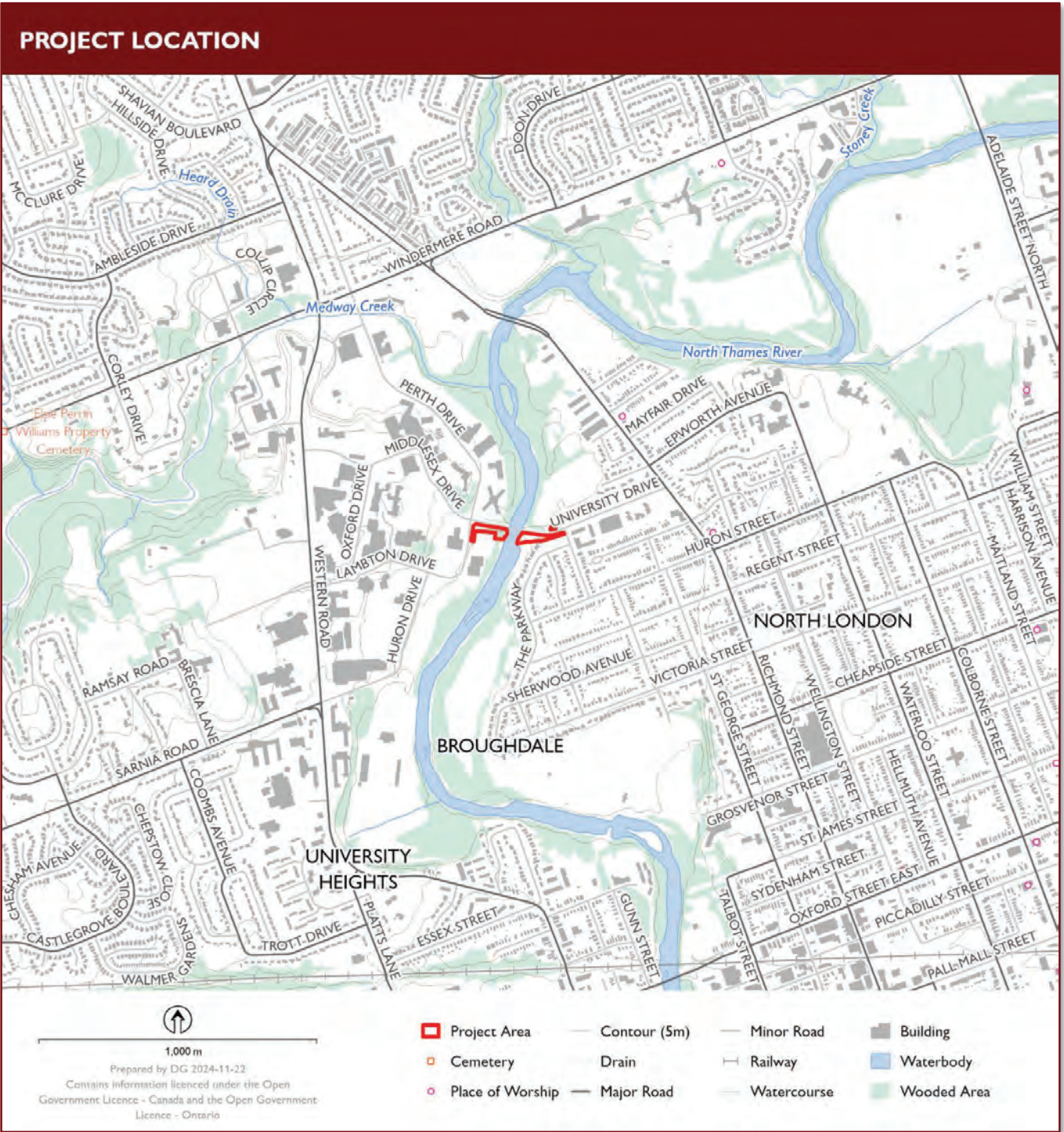
Image 7: Grassed Area with Subsurface Utilities Marked

Looking East



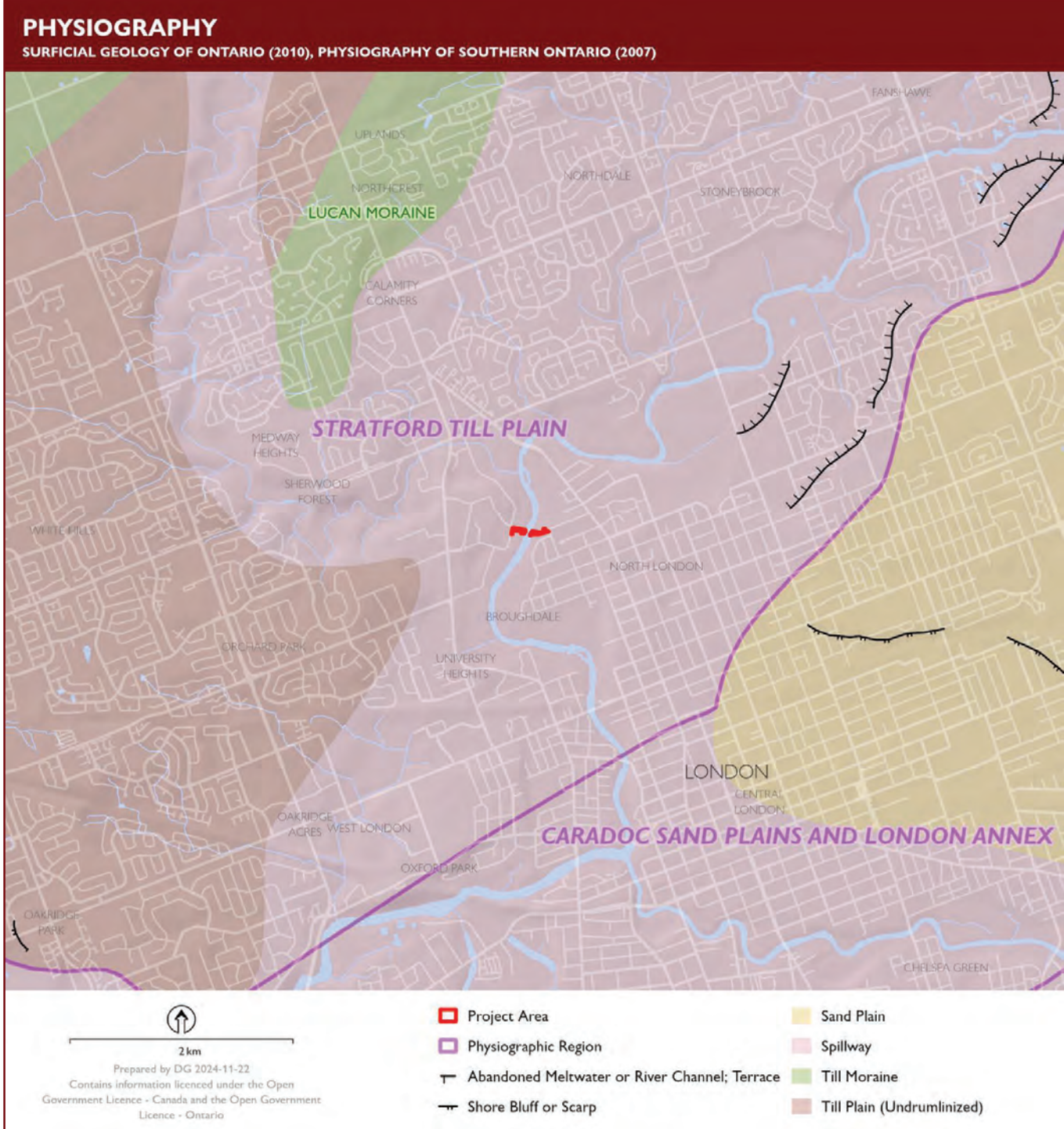


10 MAPS

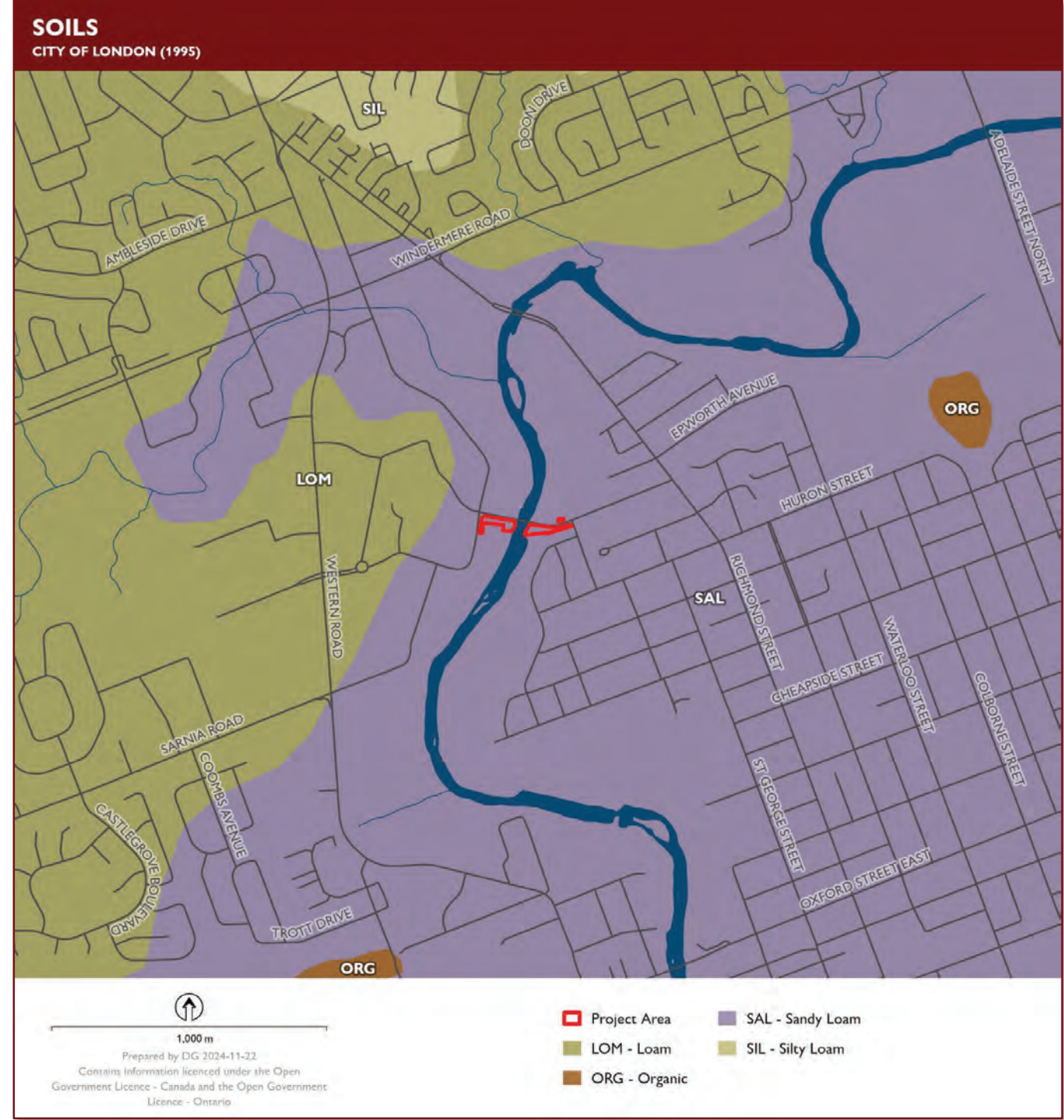




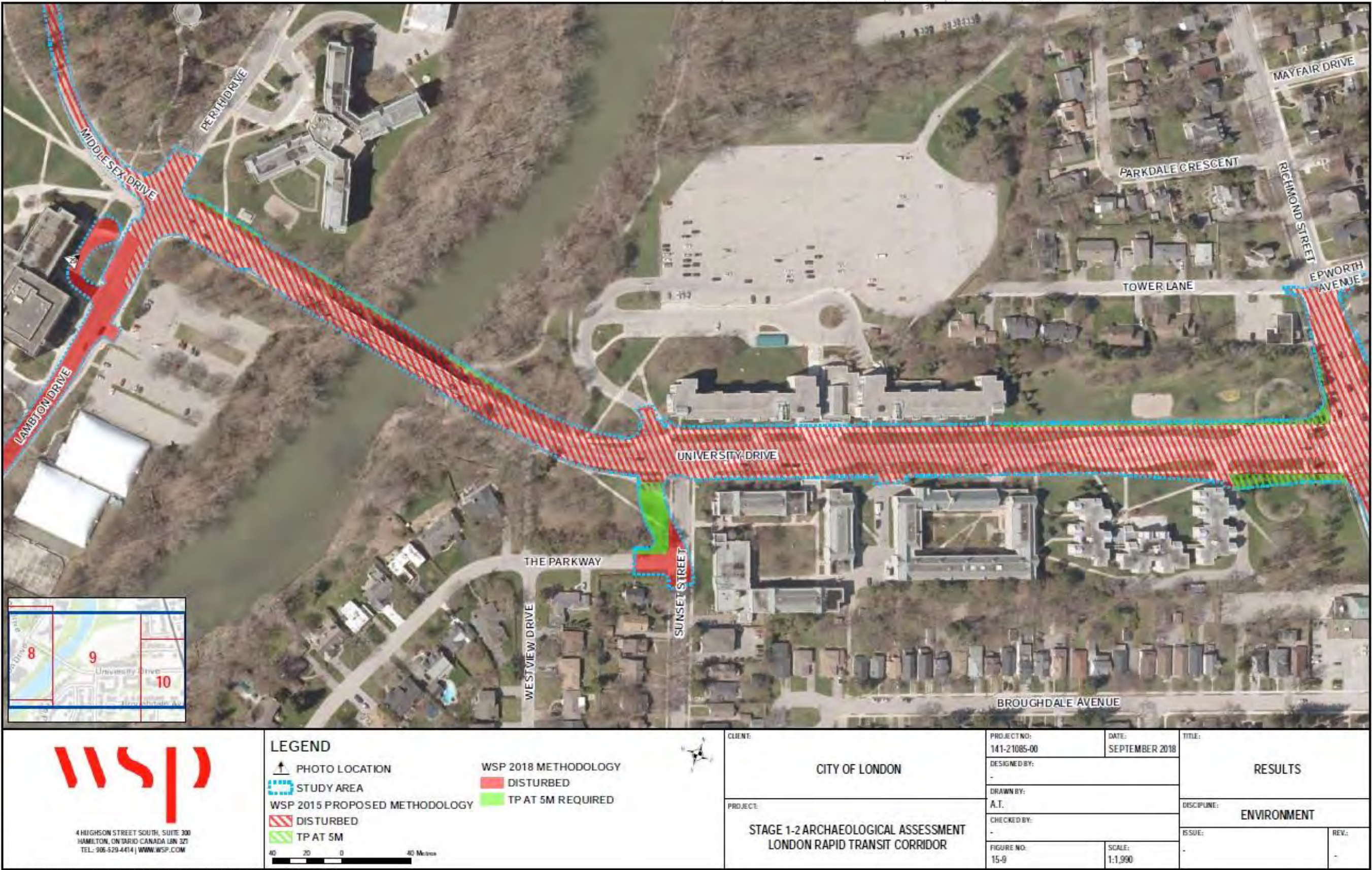
Map 2: Aerial Photograph Showing the Location of the Project Area



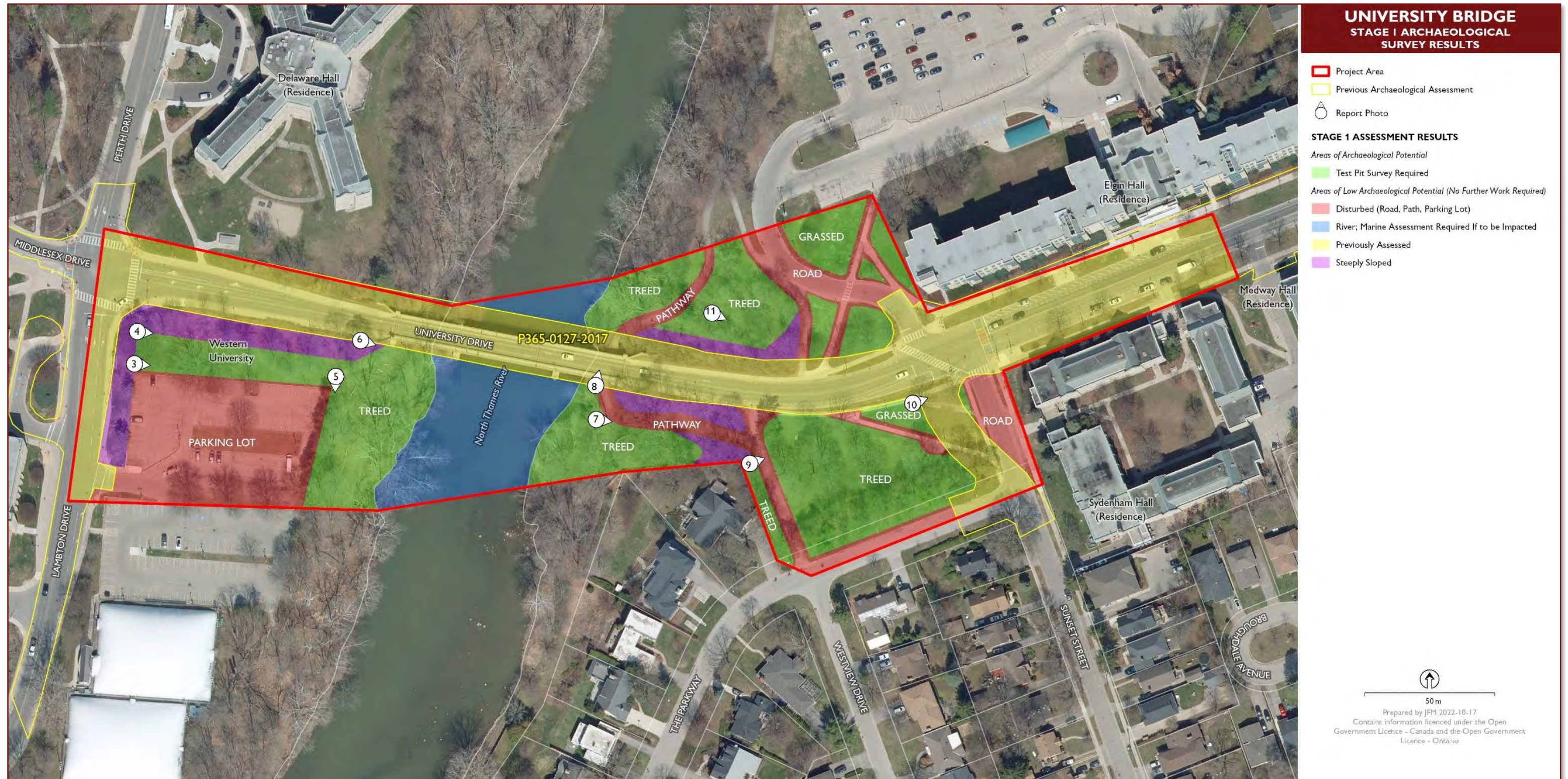
Map 3: Physiography Within the Vicinity of the Project Area



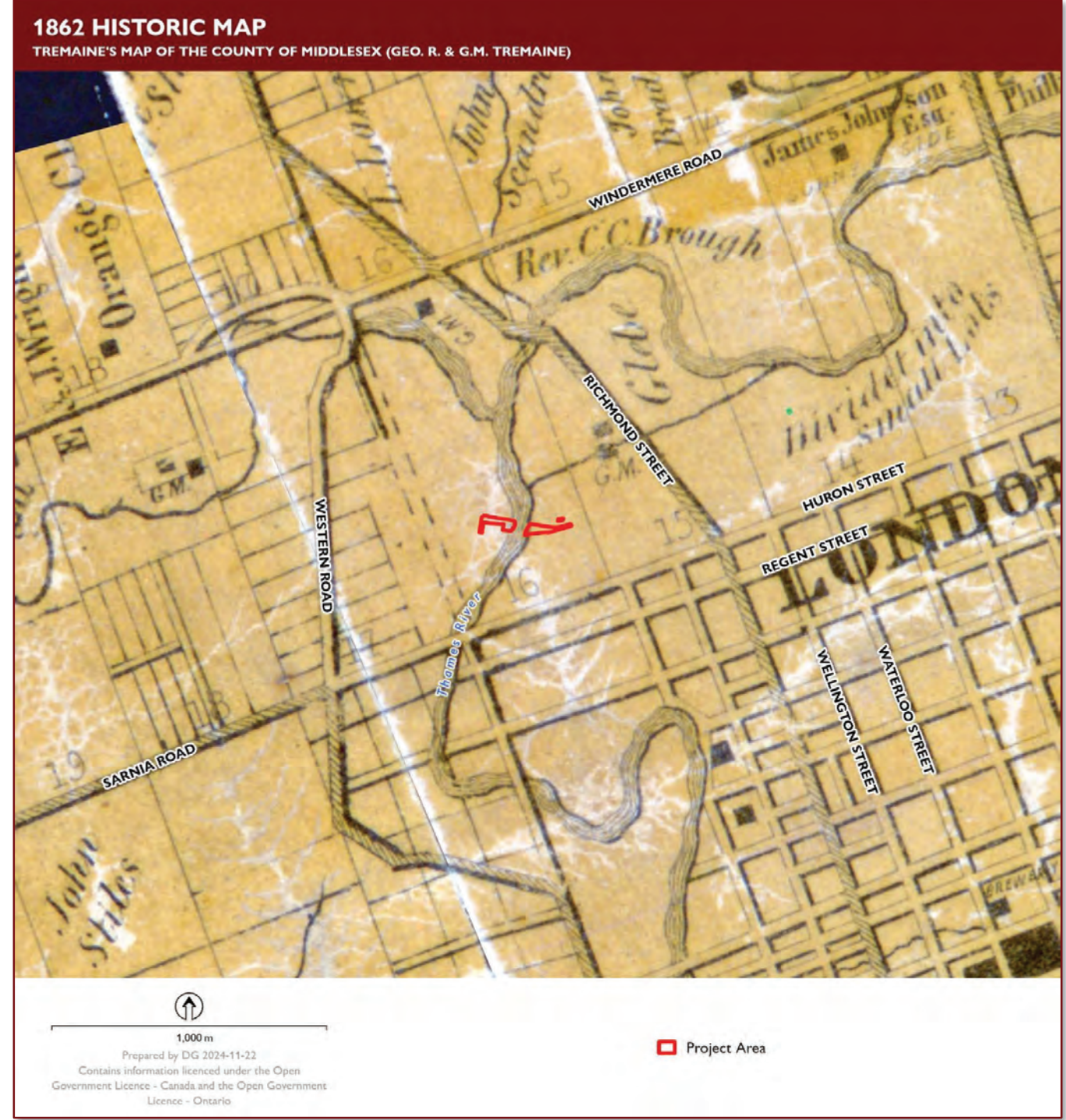
Map 4: Soils Within the Vicinity of the Project Area



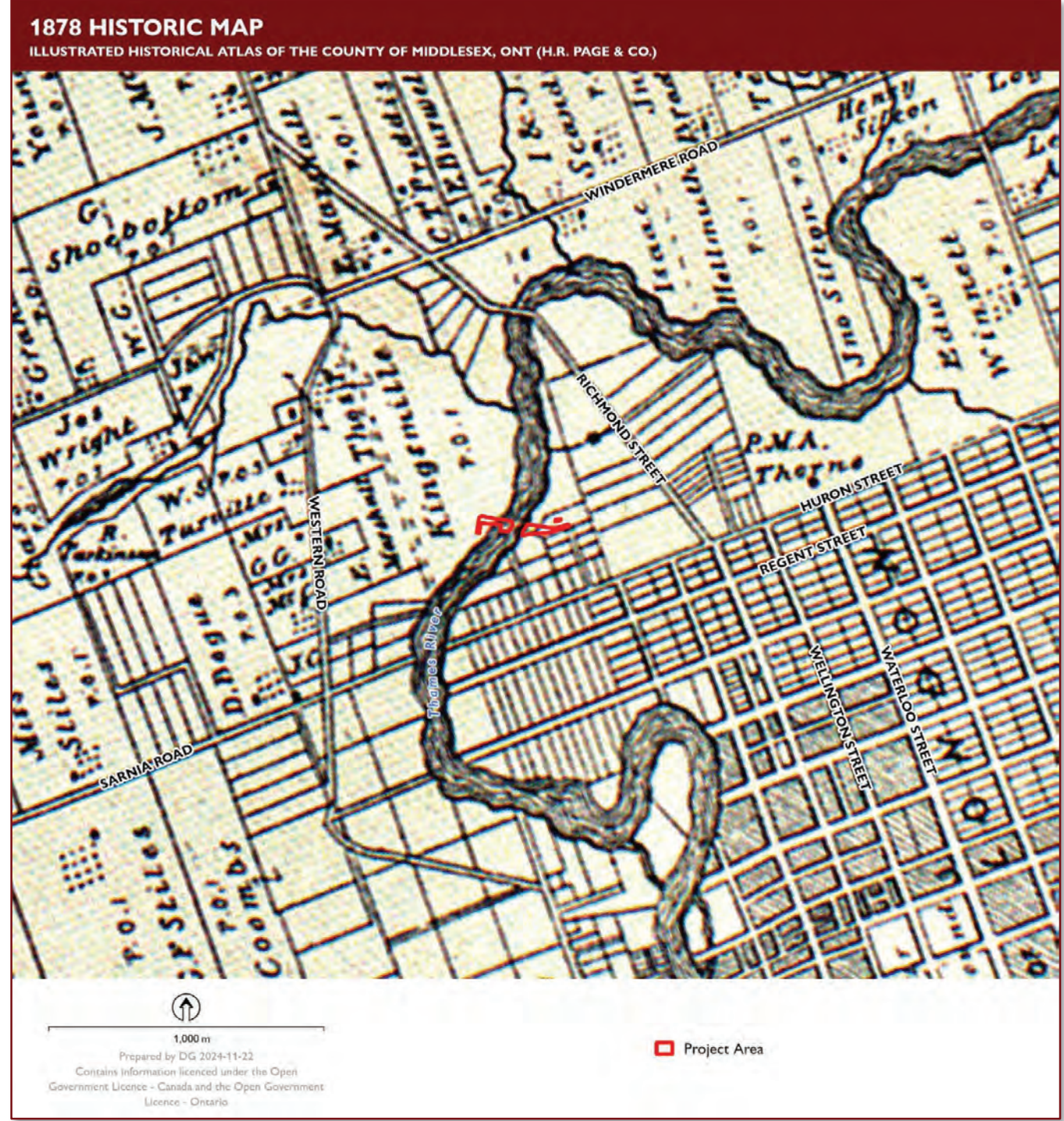
Map 5: WSP (2018) Stage 1 Archaeological Assessment



Map 6: TMHC (2022) Stage I Archaeological Assessment



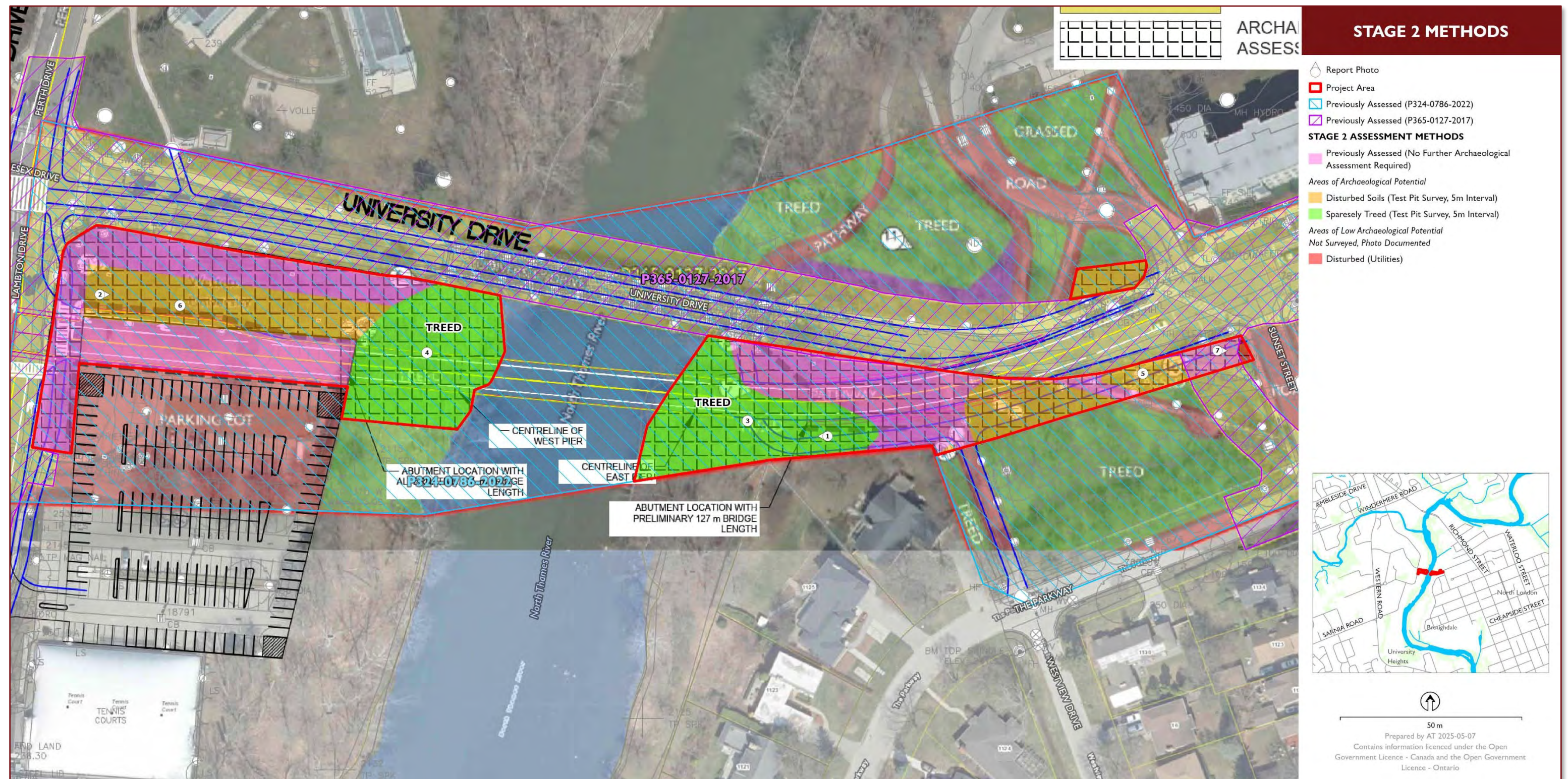
Map 7: Location of the Project Area Shown on the 1862 Map of Middlesex County



Map 8: Location of the Project Area Shown on the 1878 Map of London Township







Map I I: Stage 2 Field Conditions and Assessment Methods on Proponent Mapping





Ministry of Citizenship and Multiculturalism (MCM)

Archaeology Program Unit
Heritage Operations Branch
Citizenship, Inclusion and Heritage Division
5th Floor, 400 University Ave.
Toronto ON M7A 2R9
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Ministère des Affaires civiques et du Multiculturalisme (MCM)

Unité des programme d'archéologie
Direction des opérations du patrimoine
Division de la citoyenneté, de l'inclusion et du patrimoine
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Nov 13, 2025

Matthew Beaudoin (P324)
TMHC Inc.
105 - 1108 Dundas London ON N5W 3A7

RE: Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, "Stage 2 Archaeological Assessment University Drive Bridge Replacement Project Western University 1151 Richmond Street City of London Part of Lot 16, Concession 3 Geographic Township of London Middlesex County, Ontario", Dated Oct 23, 2025, Filed with MCM on N/A, MCM Project Information Form Number P324-0974-2024, MCM File Number 0017808

Dear Matthew Beaudoin (P324):

The above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18, has been entered into the Ontario Public Register of Archaeological Reports without technical review.¹

Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require further information, please do not hesitate to send your inquiry to Archaeology@Ontario.ca

cc. Archaeology Licensing Officer
Steve Taylor,BT Engineering
TBD TBD,TBD

¹In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Appendix I

Noise Report



Noise Assessment Report
Western University -
University Drive Bridge Replacement Class
Environmental Assessment and Design

August 2025

Prepared by: BT Engineering and
Entuitive Joint Venture
509 Talbot Street
London, ON N6A 2S5
519-672-2222



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Appendix A TNM 3.2 Output

EXECUTIVE SUMMARY

Western University is undertaking a Municipal Class Environmental Assessment (EA) Study and design to develop a replacement strategy for the crossing of the north branch of the Thames River at University Drive in London, Ontario. The existing bridge is nearing the end of its service life as a vehicular bridge. This noise analysis assessed the forecasted noise impacts associated with the replacement of the bridge.

This noise assessment completed in accordance with the Ministry of the Environment, Conservation and Park’s (MECP) Environmental Noise Guideline - Stationary and Transportation Sources - Approval and Planning (NPC-300) (August 2013).

The sound levels were calculated at Noise Sensitive Areas (NSAs) using TNM 3.2 modelling software for an existing condition in year 2025, at the earliest planned construction year (2030) and 10 years after construction completion in year 2040 (with or without the project). To determine the noise impacts, sound levels were calculated in the outdoor living area (OLA) (16-hour Equivalent Sound Level, L_{eq} (16)) and the plane of a bedroom or living/dining room window (8-hour Equivalent Sound Level, L_{eq} (8)).

The noise assessment involved the following:

- Prediction of sound levels at five (5) representative receiver sites adjacent to the Study Area to assess the impact on the OLAs (daytime) and plane of windows (nighttime);
- Assessment of sound levels for existing conditions (2025), earliest planned construction (2030) and 10 years after construction, with and without the project (2040); and
- Review the TNM outputs to determine if noise mitigation is warranted at those receiver sites and in the Study Area.

The NSAs adjacent to the Study Area are currently experiencing sound levels lower than the daytime exclusion limit of 55 dBA and the nighttime exclusion limit of 50 dBA, as per MECP requirements. In the year 2040, 10 years after construction, the sound level at Receiver 1 during the daytime are 53.8 dBA (without the project) and 55.5 dBA (with the project). Based on these levels, it is not technically or economically feasible to install barriers for the one property with sound levels around the exclusion limit.

1.0 INTRODUCTION

Western University retained BT Engineering Inc. (BTE) in joint venture with Entuitive to undertake an Environmental Assessment (EA) Study and design for the improvements to the University Drive Bridge located across the north branch of the Thames River in London, Ontario. This noise assessment has reviewed the change in sound levels to determine if mitigation is required in Noise Sensitive Areas (NSA) in the year 2040, 10 years following earliest construction. The Study Area is as shown in **Figure 1**.

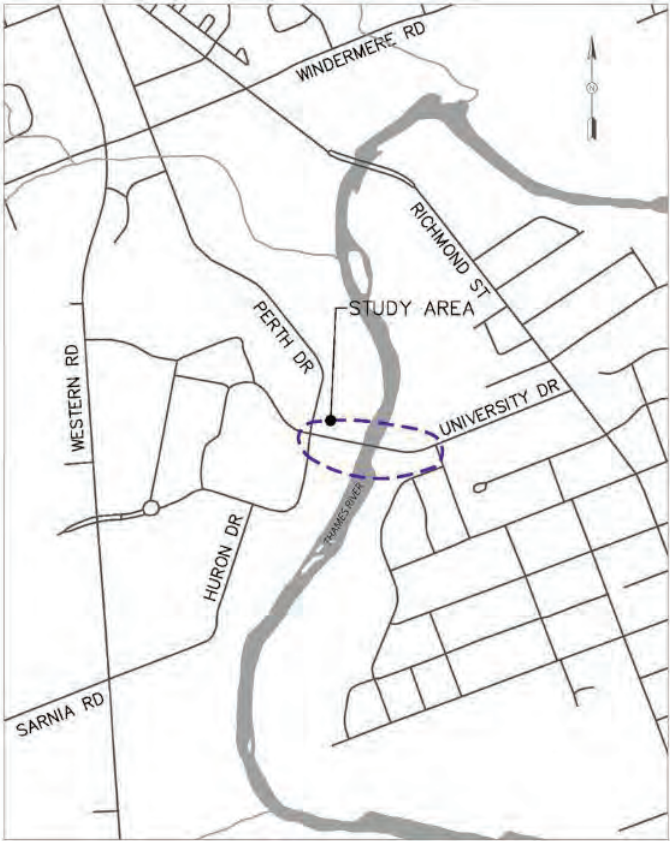


Figure 1: Study Area

The purpose of this noise assessment is to consider existing conditions for NSAs and assess the changes in sound levels for the build-out year (2030) and the 10-year horizon (2040). The Recommended Plan for the University Drive Bridge is to construct a new vehicular bridge adjacent to the existing bridge, and the existing bridge will be used for active transportation. The bridge replacement project is not increasing the number of travel lanes, or the traffic in the area. Therefore, the focus of this assessment is the residential community southeast of the existing University Drive, where noise from vehicular traffic will be closer to the NSAs, as shown in **Figure 2**.

A mitigation assessment is carried out for any receiver sites where the proposed roadworks will result in daytime sound levels higher than 55 dBA in the OLA or sound levels higher than 50 dBA in the plane of bedroom window during nighttime.

2.0 BACKGROUND AND CONTEXT OF REPORT

The existing University Bridge was initially constructed in 1922. The bridge has been repaired over the years from 1965 to 2014 with a major modification to widen the useable sidewalk width and replace part of the deck in 2002. No major repairs were made to the bearings, girders or substructure over this period, but the structure is nearing the end of its service life for vehicular traffic.

A detailed inspection of the structure, including a load evaluation, was completed in 2016 by Webster Engineering Services Ltd. in association with Parsons Inc. dated January 16, 2016. This report indicated that the structure included severe deficiencies in the bearings and drop-in-span support locations. The remaining fatigue life of the bridge structure was identified as “undefined” due to unobservable details, although no fatigue cracking was noted as being observed. The bridge remains open to restricted traffic and is subject to frequent inspections.

The current EA plan is for the existing vehicular bridge on University Drive to be converted to an active transportation bridge only and construct a new vehicular bridge south of the existing bridge. The new vehicular bridge will maintain 2 lanes of traffic, which will not increase the traffic in the Study Area; however, the new bridge shifts the noise source (automobiles) southerly closer to the NSAs. This noise assessment is to review the potential impact of shifting the noise source closer to the NSAs. In addition, noise impacts from short-term construction related effects will be required to conform to City of London Municipal Noise bylaws and will be addressed in the subsequent detail design phase and Design and Construction Report.

The purpose of this noise assessment is to consider existing conditions for NSAs and determine if there will be a noise level increase after construction is completed. If the sound levels are above the exclusion limit in the Environmental Noise Guide mitigation may be considered.

3.0 METHODOLOGY

This evaluation was conducted within the Study Area to determine the impact to adjacent NSAs as well as what mitigation measures should be incorporated in the final design as one component of the EA process, if required.

The noise assessment utilized TNM 3.2 noise software program to determine the L_{eq} (16) and L_{eq} (8) for the roadway traffic. The assessment was performed in accordance with MOECC (MECP) Environmental Noise Guideline - Stationary and Transportation Sources - Approval and Planning (NPC-300) (August 2013). The noise assessment involved the following:

- Prediction of sound levels at five (5) representative receiver sites adjacent to the Study Area to assess the impact on the OLAs (daytime) and plane of windows (nighttime);
- Assessment of sound levels for existing conditions (2025), earliest planned construction (2030) and 10 years after construction, with and without the project (2040); and
- Review the TNM outputs to determine if noise mitigation is warranted, or technically and economically feasible.

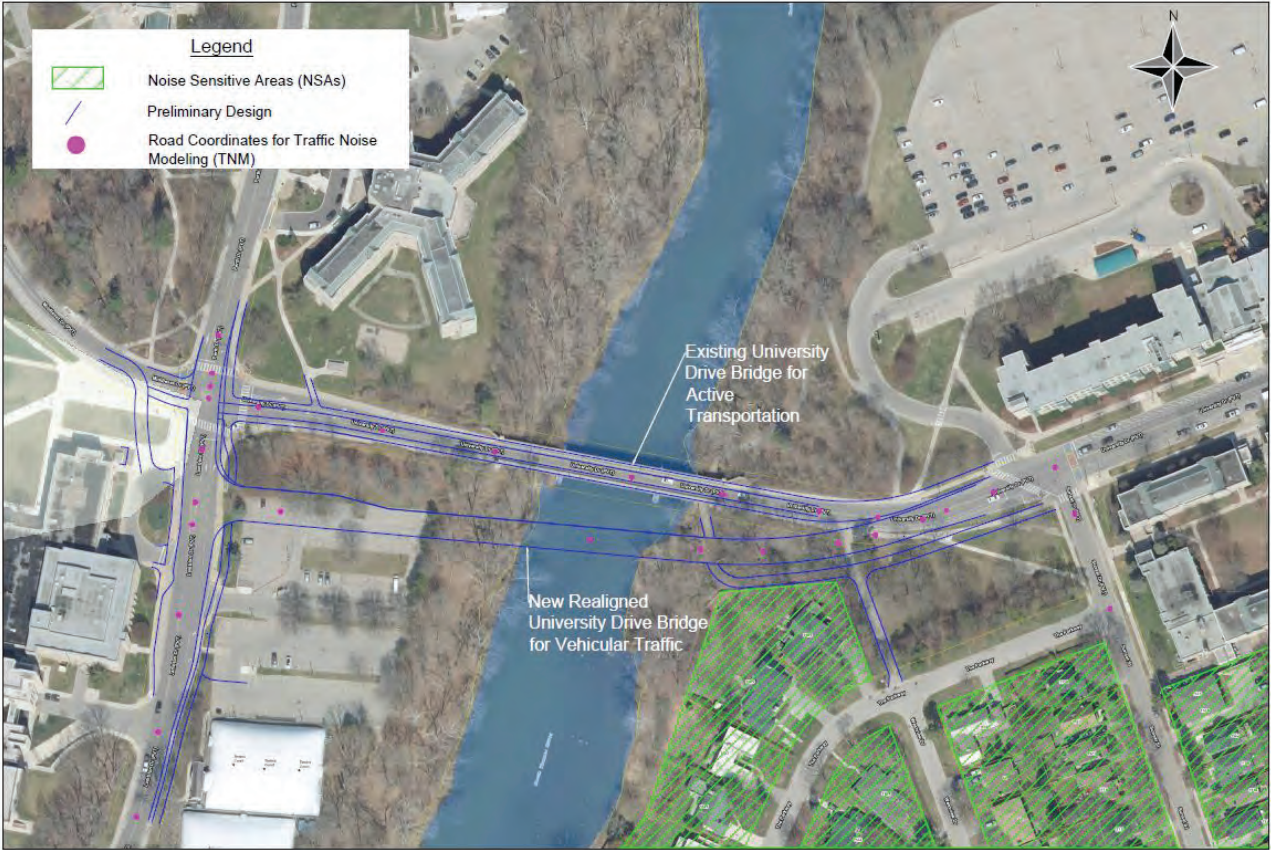


Figure 2: Noise Assessment Study Area

The representative receiver sites, as shown in **Figure 3**, included:

- Receiver Site 1: 1129 The Parkway
- Receiver Site 2: 1125 The Parkway
- Receiver Site 3: 1123 The Parkway
- Receiver Site 4: 1121 The Parkway
- Receiver Site 5: 1119 The Parkway



Figure 3: Representative Receiver Site Locations

The general overall procedure outlined in this report and the noise assessment included:

- Identification of the noise sources and NSAs within 500 m of the noise study area.
- Establishment of representative receiver sites in the NSAs.
- Prediction of future roadway traffic volumes (2030 build-out, 2040 10-year horizon).
- Prediction of the equivalent sound levels for the 2030 build-out and 2040 horizon years.
- A review of sound levels and consideration of the need for noise mitigation measures.

Acoustical modelling was completed to assess daytime sound levels at OLA sites located 3.0 m from the building façade and 1.5 m above the existing ground. For nighttime assessments, acoustical modelling was completed to assess plane of bedroom window sound levels at either 1.5 m (single storey building) or 4.5 metres above the existing ground (2-storey building).

Year 2022 traffic counts at the intersection of University Drive/Lambton Drive/Perth Drive within the Noise Assessment Study Area were obtained from the City of London. For prediction of future sound levels, a 1% growth rate was assumed to determine the existing (2025), build-out (2030) and horizon (2040) year traffic volumes.

The following input variables were used or considered in the TNM 3.2 noise software program for generating sound levels:

- Topography (hills, flatlands) – the site includes a ravine and elevated berm
- Existing attenuation due to shielding from barriers (natural or man-made, including dense rows of houses)
- The intermediate ground surface (hard surface reflects sound, soft surface absorbs sound)
- Distance, in metres, from source to receiver, using the centreline of the road as the source
- Receiver height, in metres – 1.5 m above ground level at 3.0 m offset from a residence (townhouse or single family)
- Posted speed limit (all roads under review have a posted speed of 40 km/h)
- Depth and type of woods (0-30 metres, 30-60 metres, 60 metres or more)
- Roadway grade (slope)

4.0 EXISTING DATA

4.1 Noise Sensitive Area

The existing land use within the Study Area is institutional with Western University to the west of the University Drive bridge. To the east of the bridge, Northeast of University Drive, there is a Western residences hall fronting the road, and the Medway lot behind. Southeast of University Drive there is a residence hall and a residential neighbourhood. Within the residential zones to the southeast are detached housing and an apartment building, as well as some green space. The receiver sites used for the analysis are in the residential neighbourhood to the southeast of the University Drive.

There are no existing noise barriers present within the Study Area.

4.2 Traffic Data

The noise source considered was vehicular traffic on University Drive, Lambton Drive, Perth Drive and Sunset Street. No other noise sources, such as rail or aircraft, are within the limits of the noise assessment and were therefore not considered.

See **Table 1** for a summary of the traffic characteristics including Average Annual Daily Traffic (AADT) volumes, posted speeds and assumed truck percentages of University Drive, Lambton Drive, Perth Drive and Sunset Street.

Table 1: Traffic Characteristics						
Street Name	Posted Speed Limit (km/h)	Year 2025 AADT	Year 2030 AADT	Year 2040 AADT	Truck Traffic %	
					Medium	Heavy
University Drive	40	9685	10179	11244	5	0
Lambton Drive	40	10303	10829	11961	5	0
Perth Drive	40	5378	5653	6244	5	0
Sunset Street	40	3101	3259	3600	1	0

4.3 University Drive Realignment

The analysis includes the effect of the realignment of the University Drive bridge for vehicular traffic. The realignment of the bridge and University Drive is illustrated in **Figure 4**. The realignment project is planned to be constructed in 2030 (earliest).

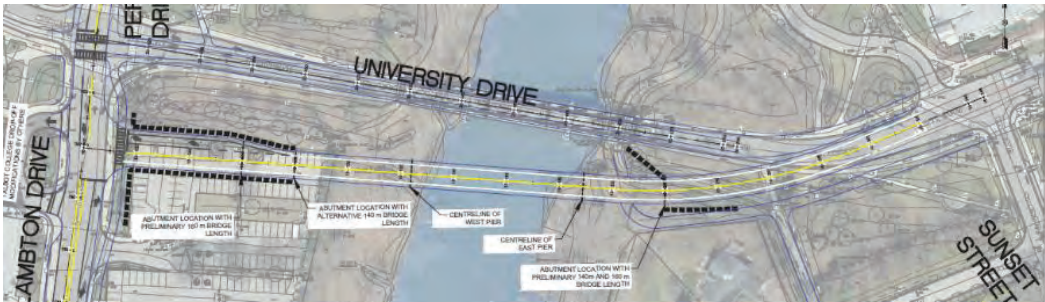


Figure 4: University Drive Realignment

5.0 IMPACT CRITERIA

The assessment of the impact of the predicted sound levels utilized the MECP Environmental Noise Guideline. The significance of a noise impact has been assessed considering the objective of 55 dBA (daytime, Leq (16)) at the OLA, and 50 dBA (nighttime, Leq (8)) at the plane of window.

The sound level increases from the existing condition (2025) to the build out year (2030) and 10-year horizon (2040) are as shown in **Table 2** and **Table 3**. See **Appendix A** for the TNM output tables.

Table 2: Daytime Existing and Future Sound levels				
Receiver Sites	2025 Leq (dBA)	2030 Leq (dBA)	2040 Leq (with the project) (dBA)	2040 Leq (without the project) (dBA)
1	53.1	55	55.5	53.8
2	51.4	53	53.4	52.1
3	50	51.3	51.8	50.6
4	48.8	50	50.5	49.5
5	47.9	49	49.4	48.6

Table 3: Nighttime Existing and Future Sound levels				
Receiver Sites	2025 Leq (dBA)	2030 Leq (dBA)	2040 Leq (with the project) (dBA)	2040 Leq (without the project) (dBA)
1	47.9	49.9	50.5	48.6
2	45.8	47.4	49	46.5
3	43.9	45.2	45.7	44.5
4	42.6	43.8	44.3	43.3
5	41.1	42.1	42.6	41.8

Noise control measures may be applied if the Leq (16) in the OLA is greater than 55 dBA and less than or equal to 60 dBA to reduce the sound level to 55 dBA. If the sound level is greater than 60 dBA, noise control measures should be implemented to reduce the level to 55 dBA. If the Leq (8) in the plane of a bedroom or living/dining room window is greater than 50 dBA and less than or equal to 60 dBA, mitigation efforts should be considered at the occupant’s discretion. If the sound levels are above 60 dBA, mitigation should be implemented.

The future sound levels with the project for Receiver Site 1 (closest to the future realigned bridge) are above the exclusion limits for daytime and nighttime by 0.5 dBA. The difference between the future sound levels with or without the project are less than 3 dBA, and therefore not distinguishable to the human ear. It would not be technically or economically feasible to implement a noise barrier to reduce the sound effects at Receiver Site 1.

6.0 CONCLUSION

Based on the predicted sound levels at the OLA and plane of window for each of the representative receiver sites, no mitigation is required. It would not be economically or technically feasible to construct a noise barrier for 1129 The Parkway, given that the sound level in the future with the project is approximately 55 dBA during the day and 50 dBA at night.

GLOSSARY OF TERMS

AADT	Annual Average Daily Traffic – the average 24-hour, two-way traffic for the period from January 1st to December 31st.
Abatement	To reduce the emission of noise or vibrations from a source.
Acoustical analysis	An acoustical analysis involving the input of variables (traffic volumes, roadway gradient, presence of barriers, posted speed) to generate output (sound levels) from a noise software program.
Adjacent	Adjacent indicates lying near road rights-of-way, although not necessarily contiguous to them.
Aesthetics	Aesthetics refers to methods of providing visual relief and appealing characteristics to planned noise barriers though the application of landscaping designs.
Ambient/ Existing/ Background Noise Level	Ambient is the all-encompassing noise associated with a given environment, usually consisting of a composite of sounds from many sources. It is the noise level prior to construction of an undertaking.
Attenuation	See Noise Attenuation
Automobile	See Vehicle Classification
Berm	Earth land from used to shield residential areas (NSA’s) from noise.
(dBA)	‘A’ Weighted sound level; the human ear cannot hear the very high and the very low sound frequencies as well as the mid – frequencies of sound, and hence the predicted sound levels, measured in dBA, are a reasonable accurate approximation of sound levels heard by the human ear. The resulting value is in decibels and is commonly labeled dBA.
Decibel (dB)	Decibel is a logarithmic unit of measure used for expressing level of sound.
EA	Environmental Assessment
Equivalent Sound Level (Leq)	The level of a continuous sound having the same energy as a fluctuating sound in a given time period. In this report Leq refers to 16-hour average or 8-hour average.
First Row Receiver	First row receivers are those immediately adjacent to the highway, having no shielding effect from other houses.
Future Ambient	Ambient noise level projected 10 years after construction without the purpose undertaking.
GVW	Gross Vehicle Weight is the total weight (in kilograms) transmitted to the highway by a vehicle or combination of vehicles, and load.
Heavy Truck	See Vehicle Classification
Leq	Equivalent sound level expressed on the A – weighted decibel scale.
Medium Truck	See Vehicle Classification
Mitigation Measures	Actions taken to reduce the effects of noise increases. These measures include walls, berms adjustments to horizontal and vertical alignments and pavement types that are designated to result in reduced noise levels in NSA’s.

MOECC (MECP)	Ministry of the Environment and Climate Change (Ministry of the Environment, Conservation and Parks)
MTO	Ontario Ministry of Transportation
Noise	Undesirable and / or unwanted sound.
Noise Attenuation	A mitigation measure used to lessen the intensity of the noise level (dBA) where the noise level is increased in a noise sensitive area by more than 5 dBA, 10 years after project completion.
Noise Barrier	A noise barrier is a physical structure, which is located between a noise source and a noise sensitive receiver. These include walls, berms and combinations of the two, which are effective in reducing sound level transmission from the source to the receiver.
Noise Impact Assessment	The difference (delta) between ambient (before construction) and noise level with construction of the undertaking, both projected 10 years after construction.
NSA	Noise Sensitive Area is a noise sensitive land use, which has an outdoor living area (OLA) associated with the residential unit. Private homes, townhouse, apartments, and hospitals are classifies as NSA’s.
OLA	Outdoor Living Area is adjacent to a noise sensitive area (NSA) and is the part of an outdoor amenity area provided for the quiet enjoyment of the outdoor environment.
Receiver	A sound sensitive dwelling unit, the location to which the noise / sound is received. This is modelled to reflect the ear level of a person sitting in their outdoor recreational area (patio), 3 meters from the face of the building.
Sound	A dynamic (fluctuating) pressure that transmits by means of rapid air fluctuation from a source to a receiver.
Source	The location from which the noise / sound emits.
TNM	Traffic Noise Model (noise software program)
Vehicle Classification	For noise calculations, vehicular traffic is segregated into three types: automobiles, medium trucks and heavy trucks. Automobiles – two axles and four wheels designated primarily for the transportations of nine or fewer passengers, or transportation of cargo (light trucks), including motorcycles. The gross vehicle weight (GVW) is less than 4500 kilograms. Medium trucks – two axles and four wheels designated for the transportation of cargo. The gross vehicles weight is 4 500 kg> GVW<12 000 kg Heavy trucks – three or more axles and designated for the transportation of cargo. GVQ > 12 000kg

Appendix A

TNM 3.2 Output

REPORT:	Results: Sound Levels - No Barrier Objects		
TNM VERSION	3.2.8741.34338	REPORT DATE:	26 June 2025
CALCULATED WITH:	TNM v3.2.8741.34338	CALCULATION DATE:	6/26/2025 9:49:01 AM
CASE:	22-013 Western University Drive Noise TNM	ORGANIZATION:	BTE
UNITS:	Metric	ANALYSIS BY:	Helene Bygott
DEFAULT GROUND TYPE:	Pavement	PROJECT/CONTRACT	22-013 Western University Drive Bridge Replacement
ATMOSPHERICS:	20°C, 50%	Average pavement type shall be used unless a state highway agency substantiates the use of a different type with approval FHWA.	
PAVEMENT TYPE(S) USED:	Average		

Receiver				Modeled Traffic Noise Levels				
Name	No.	Nb. R.R.	Existing LAeq					Type of Impact
				LAeq		Increase over Existing		
				Calc.	Absolute Criterion	Calc.	Relative Criterion	
			dBA	dBA	dBA	dBA		
1129 Day	1	1	---	53.8	55.0	---	---	None
1125 Day	3	1	---	52.1	55.0	---	---	None
1123 Day	5	1	---	50.6	55.0	---	---	None
1121 Day	7	1	---	49.5	55.0	---	---	None
1119 Day	9	1	---	48.6	55.0	---	---	None

REPORT:

TNM VERSION

CALCULATED WITH:

CASE:

UNITS:

DEFAULT GROUND TYPE:

ATMOSPHERICS:

PAVEMENT TYPE(S) USED:

Results: Sound Levels - No Barrier Objects

3.2.8741.34338

TNM v3.2.8741.34338

22-013 Western University Drive Noise TNM

Metric

Pavement

20°C, 50%

Average

REPORT DATE:

26 June 2025

CALCULATION DATE:

6/26/2025 9:55:58 AM

ORGANIZATION:

BTE

ANALYSIS BY:

Helene Bygott

PROJECT/CONTRACT

22-013 Western University Drive Bridge Replacement

Average pavement type shall be used unless a state highway agency substantiates the use of a different type with approval FHWA.

Receiver					Modeled Traffic Noise Levels				
Name	No.	Nb. R.R.	Existing LAeq dBA						Type of Impact
				LAeq		Increase over Existing			
				Calc.	Absolute Criterion	Calc.	Relative Criterion		
				dBA	dBA	dBA	dBA		
1129 Night	2	1	---	48.6	50.0	---	---	None	
1125 Night	4	1	---	46.5	50.0	---	---	None	
1123 Night	6	1	---	44.5	50.0	---	---	None	
1121 Night	8	1	---	43.3	50.0	---	---	None	
1119 Night	10	1	---	41.8	50.0	---	---	None	

REPORT:

TNM VERSION

CALCULATED WITH:

CASE:

UNITS:

DEFAULT GROUND TYPE:

ATMOSPHERICS:

PAVEMENT TYPE(S) USED:

Results: Sound Levels - No Barrier Objects

3.2.8741.34338

TNM v3.2.8741.34338

22-013 Western University Drive Noise TNM

Metric

Pavement

20°C, 50%

Average

REPORT DATE:

23 June 2025

CALCULATION DATE:

6/23/2025 4:31:03 PM

ORGANIZATION:

BTE

ANALYSIS BY:

Helene Bygott

PROJECT/CONTRACT

22-013 Western University Drive Bridge Replacement

Average pavement type shall be used unless a state highway agency substantiates the use of a different type with approval FHWA.

Receiver				Modeled Traffic Noise Levels					
Name	No.	Nb. R.R.	Existing LAeq dBA						
				LAeq		Increase over Existing		Type of Impact	
				Calc.	Absolute Criterion	Calc.	Relative Criterion		
				dBA	dBA	dBA	dBA		
1129 Day	1	1	---	53.1	55.0	---	---	Sound Level	
1125 Day	3	1	---	51.4	55.0	---	---	Sound Level	
1123 Day	5	1	---	50.0	55.0	---	---	Sound Level	
1121 Day	7	1	---	48.8	55.0	---	---	Sound Level	
1119 Day	9	1	---	47.9	55.0	---	---	Sound Level	

REPORT:

TNM VERSION

CALCULATED WITH:

CASE:

UNITS:

DEFAULT GROUND TYPE:

ATMOSPHERICS:

PAVEMENT TYPE(S) USED:

Results: Sound Levels - No Barrier Objects

3.2.8741.34338

TNM v3.2.8741.34338

22-013 Western University Drive Noise TNM

Metric

Pavement

20°C, 50%

Average

REPORT DATE: 23 June 2025

CALCULATION DATE: 6/23/2025 4:38:12 PM

ORGANIZATION: BTE

ANALYSIS BY: Helene Bygott

PROJECT/CONTRACT 22-013 Western University Drive Bridge Replacement

Average pavement type shall be used unless a state highway agency substantiates the use of a different type with approval FHWA.

Receiver				Modeled Traffic Noise Levels					
Name	No.	Nb. R.R.	Existing LAeq dBA						
				LAeq		Increase over Existing		Type of Impact	
				Calc.	Absolute Criterion	Calc.	Relative Criterion		
				dBA	dBA	dBA	dBA		
1129 Night	2	1	---	47.9	50.0	---	---	None	
1125 Night	4	1	---	45.8	50.0	---	---	None	
1123 Night	6	1	---	43.9	50.0	---	---	None	
1121 Night	8	1	---	42.6	50.0	---	---	None	
1119 Night	10	1	---	41.1	50.0	---	---	None	

REPORT:

TNM VERSION

CALCULATED WITH:

CASE:

UNITS:

DEFAULT GROUND TYPE:

ATMOSPHERICS:

PAVEMENT TYPE(S) USED:

Results: Sound Levels - No Barrier Objects

3.2.8741.34338

TNM v3.2.8741.34338

22-013 Western University Drive Noise TNM

Metric

Pavement

20°C, 50%

Average

REPORT DATE: 23 June 2025

CALCULATION DATE: 6/23/2025 4:52:51 PM

ORGANIZATION: BTE

ANALYSIS BY: Helene Bygott

PROJECT/CONTRACT 22-013 Western University Drive Bridge Replacement

Average pavement type shall be used unless a state highway agency substantiates the use of a different type with approval FHWA.

Receiver				Modeled Traffic Noise Levels					
Name	No.	Nb. R.R.	Existing LAeq dBA						
				LAeq		Increase over Existing		Type of Impact	
				Calc.	Absolute Criterion	Calc.	Relative Criterion		
				dBA	dBA	dBA	dBA		
1129 Day	1	1	---	55.0	0.0	---	---	Sound Level	
1125 Day	3	1	---	53.0	0.0	---	---	Sound Level	
1123 Day	5	1	---	51.3	0.0	---	---	Sound Level	
1121 Day	7	1	---	50.0	0.0	---	---	Sound Level	
1119 Day	9	1	---	49.0	0.0	---	---	Sound Level	

REPORT:

TNM VERSION

CALCULATED WITH:

CASE:

UNITS:

DEFAULT GROUND TYPE:

ATMOSPHERICS:

PAVEMENT TYPE(S) USED:

Results: Sound Levels - No Barrier Objects

3.2.8741.34338

22-013 Western University Drive Noise TNM

20°C, 50%

Average

REPORT DATE: 23 June 2025

CALCULATION DATE: 6/23/2025 4:55:23 PM

ORGANIZATION: BTE

ANALYSIS BY: Helene Bygott

PROJECT/CONTRACT 22-013 Western University Drive Bridge Replacement

Average pavement type shall be used unless a state highway agency substantiates the use of a different type with approval FHWA.

Receiver				Modeled Traffic Noise Levels					
Name	No.	Nb. R.R.	Existing LAeq dBA						
				LAeq		Increase over Existing		Type of Impact	
				Calc.	Absolute Criterion	Calc.	Relative Criterion		
				dBA	dBA	dBA	dBA		
1129 Night	2	1	---	49.9	0.0	---	---	Sound Level	
1125 Night	4	1	---	47.4	0.0	---	---	Sound Level	
1123 Night	6	1	---	45.2	0.0	---	---	Sound Level	
1121 Night	8	1	---	43.8	0.0	---	---	Sound Level	
1119 Night	10	1	---	42.1	0.0	---	---	Sound Level	

REPORT:

TNM VERSION

CALCULATED WITH:

CASE:

UNITS:

DEFAULT GROUND TYPE:

ATMOSPHERICS:

PAVEMENT TYPE(S) USED:

Results: Sound Levels - No Barrier Objects

3.2.8741.34338

22-013 Western University Drive Noise TNM

20°C, 50%

Average

REPORT DATE: 23 June 2025

CALCULATION DATE: 6/23/2025 4:58:00 PM

ORGANIZATION: BTE

ANALYSIS BY: Helene Bygott

PROJECT/CONTRACT 22-013 Western University Drive Bridge Replacement

Average pavement type shall be used unless a state highway agency substantiates the use of a different type with approval FHWA.

Receiver				Modeled Traffic Noise Levels					
Name	No.	Nb. R.R.	Existing LAeq dBA						
				LAeq		Increase over Existing		Type of Impact	
				Calc.	Absolute Criterion	Calc.	Relative Criterion		
				dBA	dBA	dBA	dBA		
1129 Day	1	1	---	55.5	0.0	---	---	Sound Level	
1125 Day	3	1	---	53.4	0.0	---	---	Sound Level	
1123 Day	5	1	---	51.8	0.0	---	---	Sound Level	
1121 Day	7	1	---	50.5	0.0	---	---	Sound Level	
1119 Day	9	1	---	49.4	0.0	---	---	Sound Level	

REPORT:

TNM VERSION

CALCULATED WITH:

CASE:

UNITS:

DEFAULT GROUND TYPE:

ATMOSPHERICS:

PAVEMENT TYPE(S) USED:

Results: Sound Levels - No Barrier Objects

3.2.8741.34338

TNM v3.2.8741.34338

22-013 Western University Drive Noise TNM

Metric

Pavement

20°C, 50%

Average

REPORT DATE:

CALCULATION DATE:

ORGANIZATION:

ANALYSIS BY:

PROJECT/CONTRACT

Average pavement type shall be used unless a state highway agency substantiates the use of a different type with approval FHWA.

23 June 2025

6/23/2025 4:59:35 PM

BTE

Helene Bygott

22-013 Western University Drive Bridge Replacement

Receiver				Modeled Traffic Noise Levels				
Name	No.	Nb. R.R.	Existing LAeq	LAeq		Increase over Existing		Type of Impact
				Calc.	Absolute Criterion	Calc.	Relative Criterion	
			dBA	dBA	dBA	dBA	dBA	
1129 Night	2	1	---	50.5	0.0	---	---	Sound Level
1125 Night	4	1	---	48.0	0.0	---	---	Sound Level
1123 Night	6	1	---	45.7	0.0	---	---	Sound Level
1121 Night	8	1	---	44.3	0.0	---	---	Sound Level
1119 Night	10	1	---	42.6	0.0	---	---	Sound Level

Appendix J

Alternative Planning Solutions Report



Preliminary Alternative Planning Solutions Report

Western University -
University Drive Bridge Class
Environmental Assessment, Project No.:
9M5173

Revision 1
October 31, 2022

Prepared by: BT Engineering
and Entuitive Joint Venture
509 Talbot Street
London, ON N6A 2S5



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1. INTRODUCTION

Western University (Western) has initiated a Class Environmental Assessment (EA) Study for improvements to the University Drive Bridge located across the north branch of the Thames River in London, Ontario. The existing bridge is near the end of its service life for use by vehicular traffic and Western will define a plan for the Thames River crossing.

The existing bridge provides access across the North Thames River for vehicular traffic, transit, pedestrians and cyclists.

This Report documents the generation, analysis and evaluation of Alternative Planning Solutions. Alternative Planning Solutions consider the overall needs of the study area and identify alternative approaches of addressing the need for improvements (i.e. bridge management plan alternatives).

The EA is considering a range of alternatives to address Western’s needs, including:

- Rehabilitation of the existing bridge;
- A new bridge on the existing alignment; or
- Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

2.1 Study Area

The Study Area is located on Western University’s campus in London, Ontario and is illustrated on Figure 1.

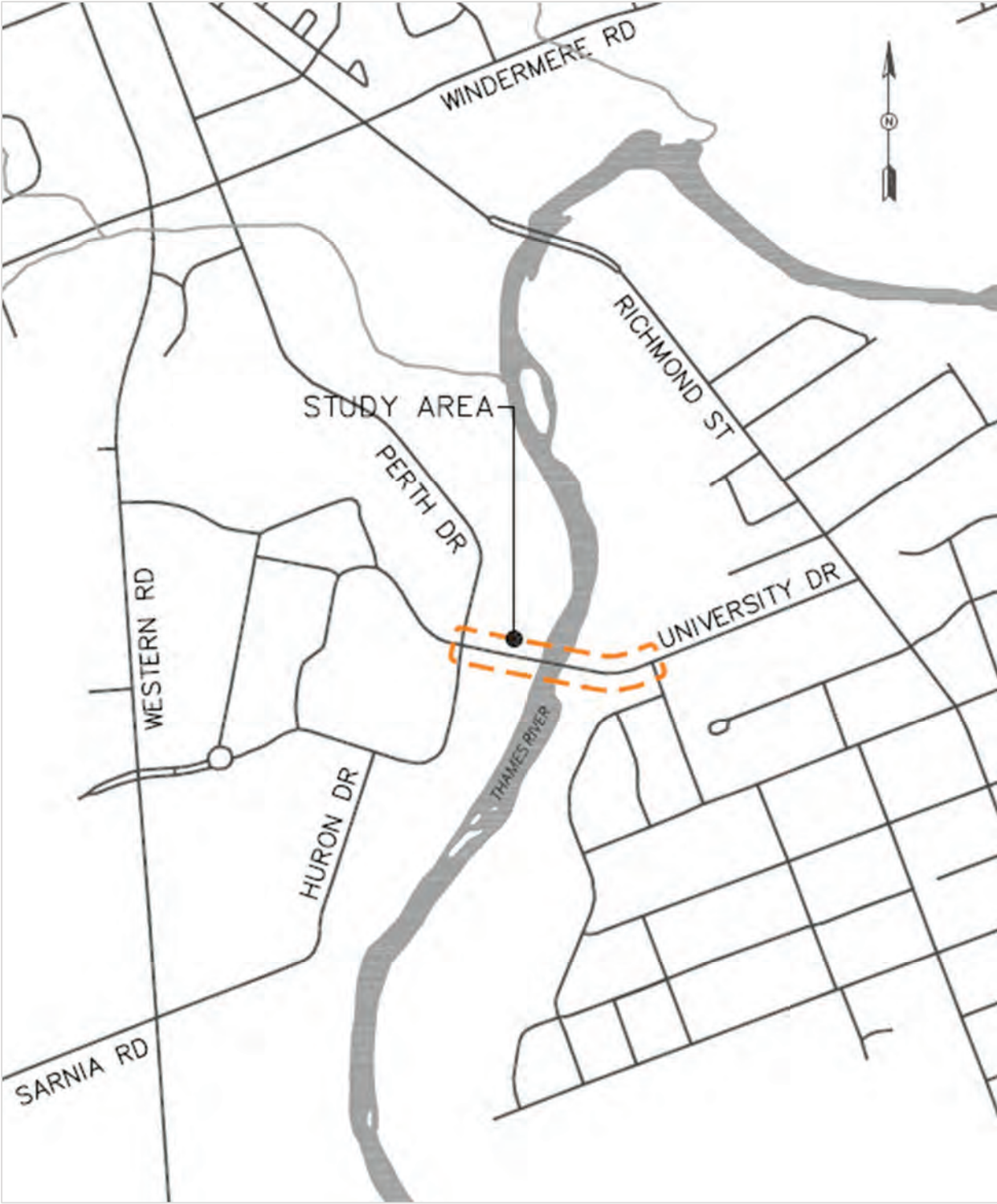


Figure 1: Study Area

1.1 Existing Bridge

The existing University Bridge was initially constructed in 1922. The structure is a steel girder bridge with the girders shaped to provide an arch profile. The exterior faces of the girders are concealed with a concrete facing that was part of the original construction. The girders are continuous over the piers with bearings at the abutments and at each side of the central drop-in span.

The bridge was modified and repaired over the years from 1965 to 2014 with a major modification to widen the useable sidewalk width and replace part of the deck in 2002. No major repairs were made to the bearings, girders or substructure over this period.

A detailed inspection of the structure, including a load evaluation, was completed in 2016 titled University Drive Bridge Structural Assessment, prepared for Western University by Webster Engineering Services Ltd. in association with Parsons Inc. dated January 16, 2016. This report indicated that the structure included severe deficiencies in the bearings and drop-in-span support locations. The remaining fatigue life of the bridge structure was identified as “undefined” due to unobservable details, although no fatigue cracking was noted as being observed.

The capacity of the bridge was confirmed by a load test conducted on March 28, 2016 under the observation of Webster Engineering Services Ltd. using a 60-tonne GVWR test vehicle. The test indicated that the load could be supported, and the results were used to inform the posting limit of the bridge at that time.

Bracing repairs were undertaken in 2016 to correct identified critical member loss conditions. Additional rehabilitation was undertaken in 2019. The abutment and drop-in span bearings were replaced and the hinge at the drop-in-span support was extensively reinforced. Minor concrete repairs were also undertaken.

Inspection reports completed in 2019, 2020, 2021 and 2022 indicate that there is no observed significant deterioration of the structure.

The bridge remains open to restricted traffic and is subject to frequent inspections.

1.2 Problem and Opportunity Statement

The existing bridge is nearing the end of its service life as a vehicular bridge and has insufficient width to suitably accommodate the number of vehicles, pedestrians and cyclists. The EA will consider a range of improvement alternatives to address the University’s transportation requirements while considering the character of the bridge that is synonymous with Western University’s campus collegiate gothic style of architecture.

This Study will develop an active transportation focused Recommended Plan that can be integrated with the University’s Campus Master Plan, Open Space Strategy and ongoing campus development.

1.3 Background Studies and Existing Conditions

Western University aims to anticipate and accommodate future growth on campus through master planning studies that guide its development, including:

- Western University Campus Master Plan 2015 (June 2015)
- Western’s Open Space Strategy (April 2018)
- Towards Western at 150, Western University Strategic Plan (April 2021)

These studies identify Western’s goals and visions for the University’s physical and academic growth based on projected enrollment. The following sections summarize elements of these reports that are applicable to the University Drive Bridge with respect to the vision and planning objectives of Western.

Western University Campus Master Plan (2015)

The Western University Campus Master Plan (June 2015) focuses on the challenges facing the Western Campus for the coming decades. Foremost among those challenges is the ability to accommodate continued growth while respecting the essential qualities of the campus and ensuring efficient, modern space and safe access around the campus. The Campus Master Plan identified key initiatives, including:

- Improve Campus Connectivity - emphasis on improving pedestrian/bicycle connectivity and the potential for rapid transit.
- Creation of High-Quality Public Spaces – creating public spaces that contribute to a sense of place consistent with Western’s history and future.
- Identification of Campus Gateways - the sense of place and arrival at Western augmented by new developments, sites, open space and pedestrian improvements to emphasize the principal gateways.

The Plan recognizes University Drive as a major “Arrival Drive” as part of the Proposed Movement and Open Space concept. Further, in Chapter 6.1 Future Transportation Strategies, two key components were Active Transportation in the form of walking and cycling infrastructure.

Western’s Open Space Strategy (April 2018)

The purpose of Western’s Open Space Strategy (April 2018) was to identify opportunities to accommodate future growth on campus, increase pedestrian safety, and integrate higher order bus transit through the campus. This Strategy started with an inventory of existing conditions that identified key opportunities to improve the campus, including the need to improve pedestrian safety, accommodate improved transit service and improve the quality of open spaces.

Network Recommendations from the Strategy include:

- Limit access to the University Drive bridge to bicycles, pedestrians, Bus Rapid Transit vehicles, and designated university vehicles.
- Create a dedicated pedestrian drop-off area at Sunset Drive which provides access to the Medway parking lot but restricts public vehicle access across the bridge.

The Open Space Strategy identified the implementation of the University Drive Bridge as a medium-term priority project occurring between 2023 and 2027.

Towards Western at 150 - Western University Strategy Plan (April 2021)

Western University’s Strategic Plan was undertaken to address the University’s post pandemic recovery plan. The Strategic Plan commits to:

- Enhance Western’s campus by investing in the quality, accessibility, and beauty of the physical environment

2. CLASS ENVIRONMENTAL ASSESSMENT (EA) PROCESS

This Study will be conducted as a Municipal Schedule C Class Environmental Assessment Study meeting the requirements of the Municipal Class Environmental Assessment. The study will culminate in the filing of an Environmental Study Report (ESR) with the Ministry of the Environment, Conservation and Parks (MECP).

This Study will complete all requirements under the Municipal Class EA by establishing the need and justification for the project, considering all reasonable alternatives with acceptable effects on the natural, social and cultural environments, and proactively involving the public and all interested stakeholders in defining a Recommended Plan.

2.1 Environmental Assessment Act Requirements

The Environmental Assessment will follow the Class EA process, meeting the requirements of the Municipal Class Environmental Assessment (2015). The Study is being initiated as a Municipal Schedule C project based on the range on anticipated effects and capital cost of the project.

The Schedule C project will include two public meetings and conclude with the preparation of an Environmental Study Report (ESR). Following this approach, the public will be provided with a 30-day review period at the Study conclusion.

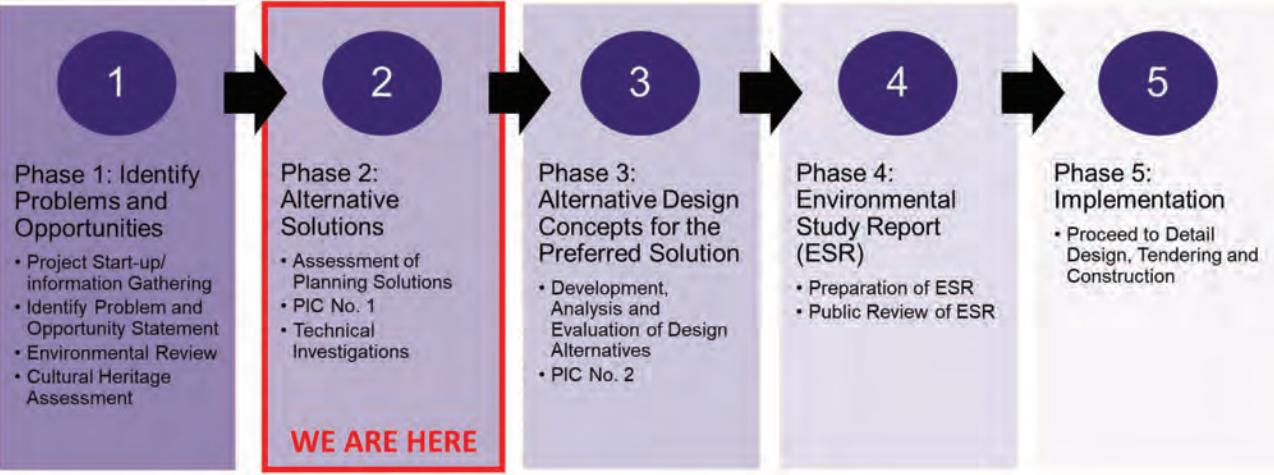


Figure 2: Municipal Class EA Process

This report follows the work program outlined in the draft Study Design Report submitted to the Ministry of Environment, Conservation and Parks (MECP).

3. ALTERNATIVE PLANNING SOLUTIONS (BRIDGE MANAGEMENT PLAN ALTERNATIVES)

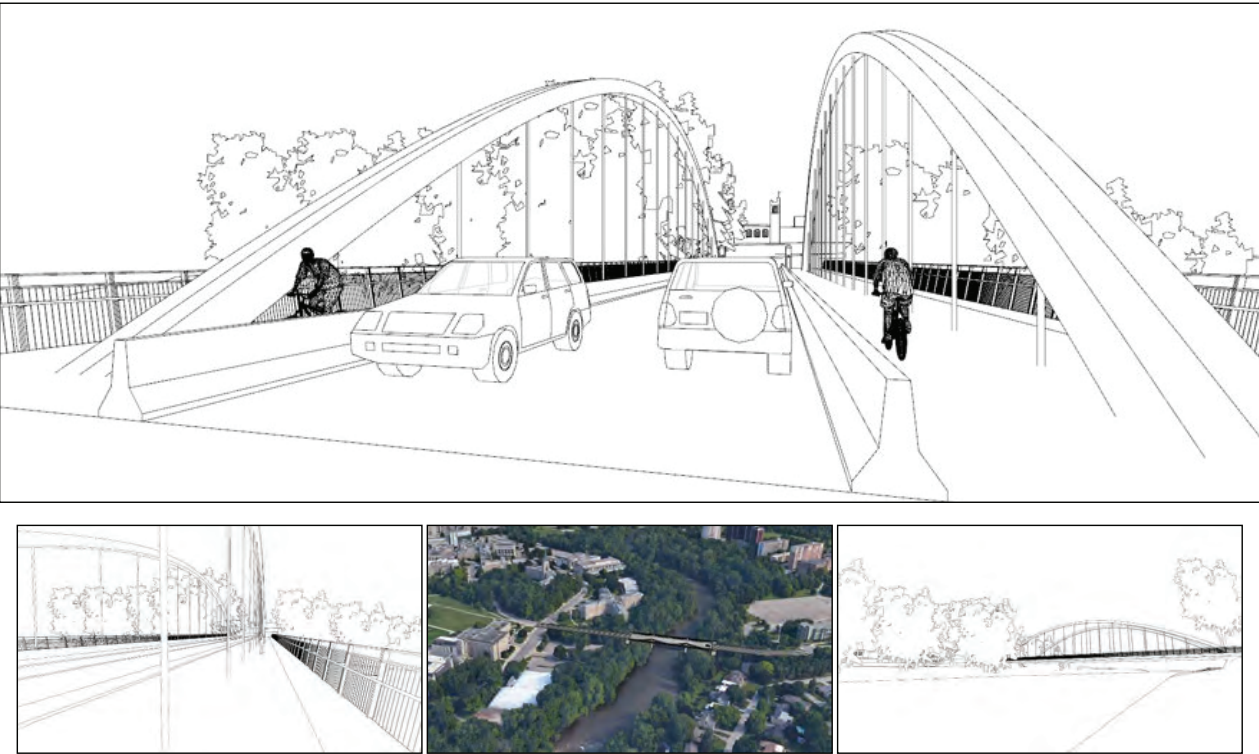
The Municipal Class Environmental Assessment requires that all reasonable and feasible Planning Solutions be identified and evaluated at the start of the Study. The Municipal Class EA process involves the sequential two-stage evaluation of alternatives. Phase 2 of the EA process initially evaluates Alternative Planning Solutions, and Phase 3 evaluates preliminary design alternatives for the preferred Alternative Planning Solution. The Alternative Planning Solutions for this study include:

1. Do Nothing – The “Do Nothing” strategy must be considered as mandated by the Class EA. It represents a baseline to which other approaches can be compared. This alternative would maintain the existing 2-lane bridge in its current location without any rehabilitation or repairs.
2. Rehabilitate Existing Bridge – The “Rehabilitate Existing Bridge” strategy would conserve the existing structure by making required repairs/restorations.
3. New Bridge on the Existing Alignment – The “New Bridge on the Existing Alignment” strategy would construct a new bridge on the existing alignment and remove the existing structure. Sub-alternatives for this Planning Solution include:
 - 3A. Signature Structure on the Existing Alignment (see **Note:** These graphics illustrate a representative approach for this alternative. The structure type will be determined during the next phase of the Study based on the preferred Planning Solution carried forward.
 - 3B. Figure 3) - Elegant, landmark structure that frames the view while approaching campus, with an architectural connection to campus as well as a distinct symbolism of its own.
 - 3C. Historic Reimagination Structure on the Existing Alignment (see **Note:** These graphics illustrate a representative approach for this alternative. The structure type will be determined during the next phase of the Study based on the preferred Planning Solution carried forward.
 - 3D. Figure 4) - Reimagination of the existing structure using the same spans and abutment location but with the necessary added width to provide the vehicle and active transportation space.
4. New Bridge on a New Alignment – The “New Bridge on New Alignment” strategy would construct a new bridge on a different alignment. Sub-alternatives for this Planning Solution include:
 - 4A. New Bridge and Abandonment/Demolition of the Existing Structure – This alternative would construct a new signature or historically reimagined structure on an adjacent alignment and would abandon and remove the existing bridge following construction of the new bridge.
 - 4B. New Signature Bridge and Conserve Existing Structure (see **Note:** These graphics illustrate a representative approach for this alternative. The structure type will be determined during the next phase of the Study based on the preferred Planning Solution carried forward.
 - 4C. Figure 5) - This alternative would construct a new signature structure on an adjacent alignment and would conserve the existing structure through preservation, restoration or rehabilitation.

The evaluation of Alternative Planning Solutions selects the most reasonable alternative that addresses the University’s objective of providing a safe and reliable crossing of the Thames River for traffic

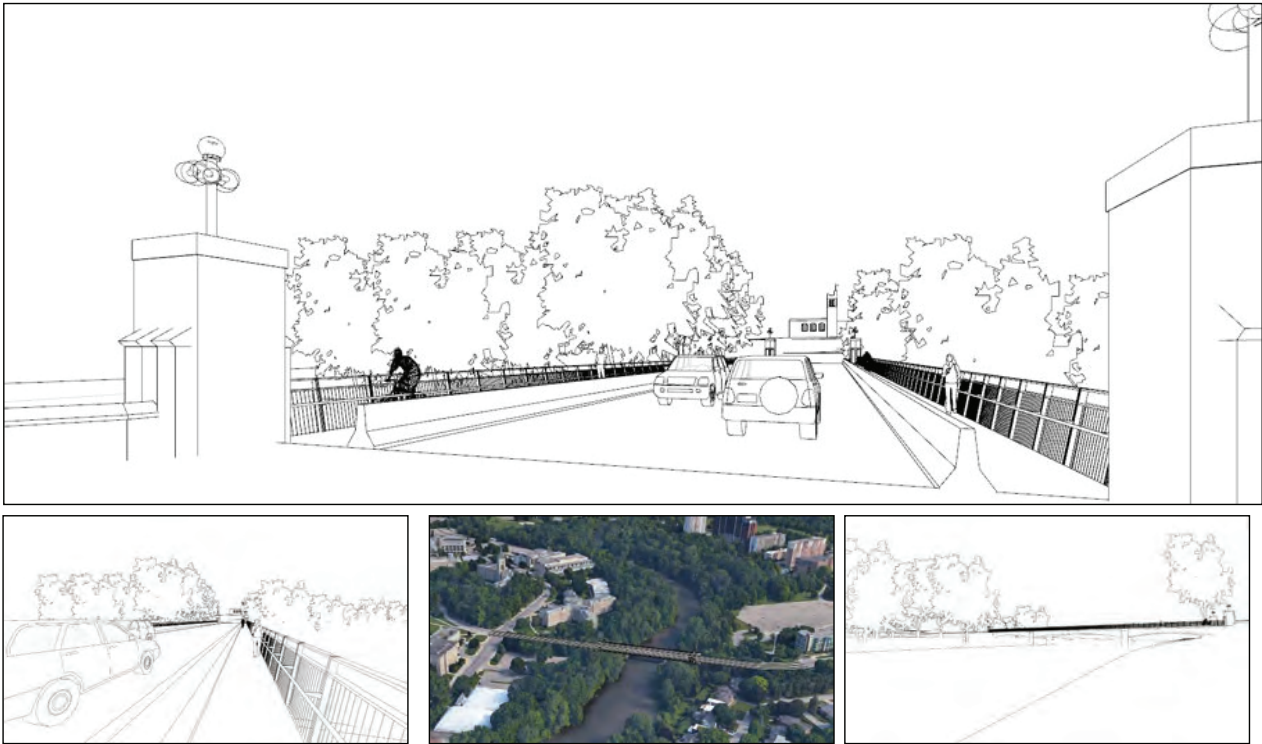
generated by the University, focusing on active transportation and transit service. A preliminary assessment of each Alternative Planning Solution is presented in **Table 1**.

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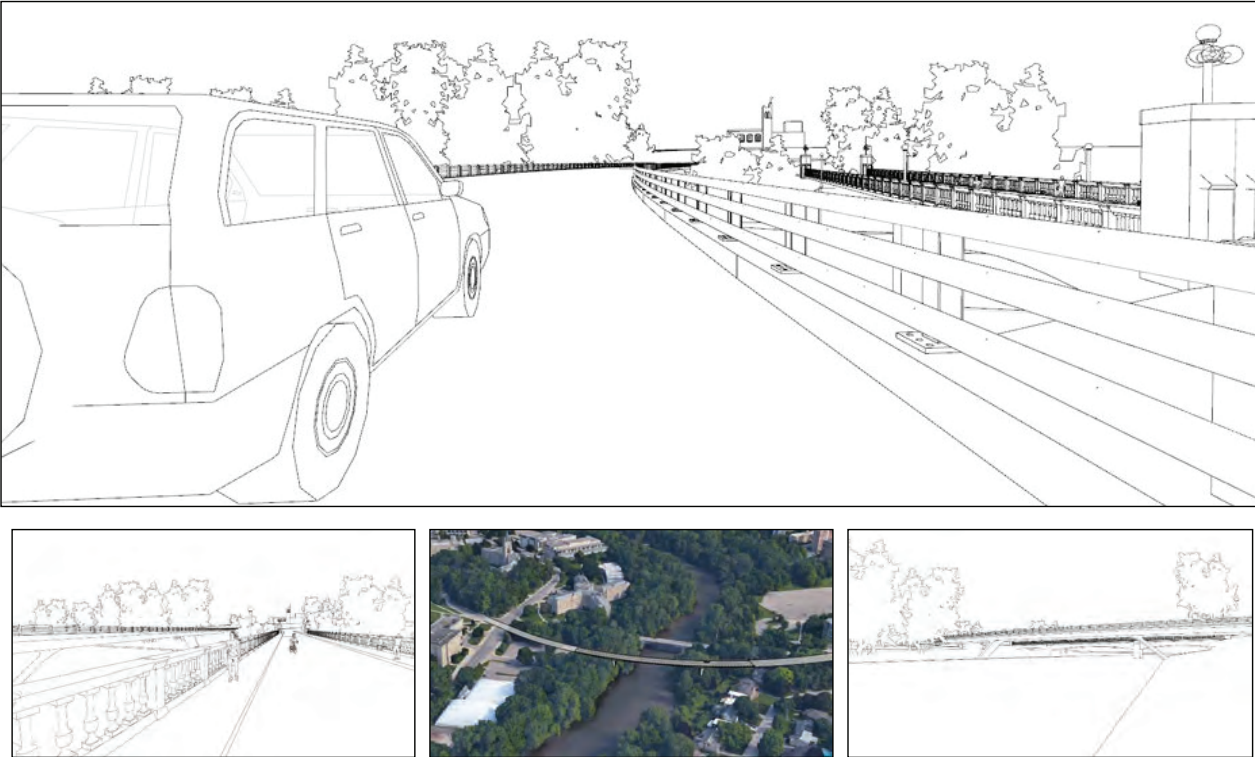
Note: These graphics illustrate a representative approach for this alternative. The structure type will be determined during the next phase of the Study based on the preferred Planning Solution carried forward.

Figure 3: Signature Structure on the Existing Alignment



Note: These graphics illustrate a representative approach for this alternative. The structure type will be determined during the next phase of the Study based on the preferred Planning Solution carried forward.

Figure 4: Historic Reimagination Structure on the Existing Alignment



Note: These graphics illustrate a representative approach for this alternative. The structure type will be determined during the next phase of the Study based on the preferred Planning Solution carried forward.

Figure 5: New Bridge and Conserve Existing Structure

Table 1: Preliminary Assessment of Alternative Planning Solutions						
Screening Criteria	Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Bridge	Alternative 3: New Bridge, Existing Alignment		Alternative 4: New Bridge, New Alignment	
			3A: New Modern Signature Structure	3B: New Historic Reimagination Structure	4A: New Bridge and Abandonment / Demolition of Existing Structure	4B: Conserve Existing and Twin with a New Bridge
Transportation						
Does this strategy accommodate vehicular traffic?	✖ The existing structure is nearing the end of its service life and requires significant repair if it is required to accommodate vehicular traffic loading. The cross section on the existing bridge is insufficient to accommodate active modes of transportation per modern standards. Based on this criterion, this alternative is not carried forward.	The existing structure is nearing the end of its service life and requires significant modifications if it is required to accommodate vehicular traffic loading. The cross section on the existing bridge is insufficient to accommodate active modes of transportation and vehicular traffic per modern standards. Rehabilitate Existing Bridge is not carried forward as a feasible alternative.	A new structure will accommodate vehicular traffic (removing load limits).	A new structure will accommodate vehicular traffic (removing load limits).	A new structure will accommodate vehicular traffic (removing load limits).	A new structure will accommodate vehicular traffic (removing load limits).
University Master Planning Objectives						
Does this strategy align with the University's planning objectives (i.e. Strategic Plan, Master Plan and Open Space Strategy)?	✖ Not carried forward. See screening criteria for Transportation.	✖ The University's planning documents recommend improving campus connectivity with a focus on active transportation elements. Rehabilitation of the existing bridge will not	A new structure will align with the University's planning objectives to: - Improve pedestrian/bicycle connectivity and the potential for rapid transit - Create a Campus Gateway and an important entrance into the campus	A new structure will align with the University's planning objectives to: - Improve pedestrian/bicycle connectivity and the potential for rapid transit - Create a Campus Gateway and an important entrance into the campus	A new structure will align with the University's planning objectives to: - Improve pedestrian/bicycle connectivity and the potential for rapid transit - Create a Campus Gateway and an important entrance into the campus	A new structure (for vehicular traffic while conserving the existing structure for pedestrians and cyclists) will align with the University's planning objectives to: Improve pedestrian/bicycle connectivity and the potential for rapid transit

Screening Criteria	Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Bridge	Alternative 3: New Bridge, Existing Alignment		Alternative 4: New Bridge, New Alignment	
			3A: New Modern Signature Structure	3B: New Historic Reimagination Structure	4A: New Bridge and Abandonment / Demolition of Existing Structure	4B: Conserve Existing and Twin with a New Bridge
		allow for improved functionality of the bridge for active transportation modes. In addition, this alternative provides reduced reliability because it defers the eventual replacement required to accommodate vehicular loading. Based on this criterion, this alternative is not carried forward.	• Increase the space for students to gather • Contribute to a sense of place consistent with Western's history and future This alternative does not align with the Master Planning principle to maintain and enhance the traditional historic architectural character of the campus (see Master Planning Principle #5 from the Campus Master Plan). This alternative is not preferred in comparison to Alternative 4B (conserve existing and new bridge with signature structure).	• Increase the space for students to gather • Contribute to a sense of place consistent with Western's history and future In comparison to Alternative 4B, this alternative does not align as well with the Master Planning principle to maintain and enhance the traditional historic architectural character of the campus (see Master Planning Principle #5 from the Campus Master Plan). This alternative is not preferred in comparison to Alternative 4B (conserve existing and new bridge with signature structure).	• Increase the space for students to gather • Contribute to a sense of place consistent with Western's history and future This alternative does not align with the Master Planning principle to maintain and enhance the traditional historic architectural character of the campus (see Master Planning Principle #5 from the Campus Master Plan). This alternative is not preferred in comparison to Alternative 4B (conserve existing and new bridge with signature structure).	• Create a Campus Gateway and an important entrance into the campus • Increase the space for students to gather • Contribute to a sense of place consistent with Western's history and future Conserving the existing bridge aligns with the Master Planning principle to maintain and enhance the traditional historic architectural character of the campus (see Master Planning Principle #5 from the Campus Master Plan).
Cultural Environment						
Will the strategy maintain the sightlines to/from University College Hill? Does this strategy allow for the conservation of the existing structure? Ministry of Tourism, Culture and Sport's (MTCS) best practices requires consideration of the following conservation options/strategies in the following order: 1. Restoration of missing or deteriorated elements	✖ Not carried forward. See screening criteria for Transportation.	✖ From a heritage perspective, the degree of rehabilitation required to accommodate vehicular traffic and active transportation would require extensive modifications that would not retain heritage value. Based on this criterion, this alternative is not carried forward.	A new signature structure does not provide heritage conservation matching the collegiate gothic style of structures on campus. In comparison to the Conserve Existing and Twin Alternative, this alternative does not provide the heritage character performance. Construction of a new bridge on the existing alignment does not allow for the restoration or retention of the structure at the existing location. Consideration will be given to retention/salvage of bridge elements for a heritage monument, and full	A historically reimaged structure has potential to interpret the collegiate gothic style of structures on campus but can also be seen as mimicking the heritage style in a new bridge. Replication does not follow heritage conservation best practices. In comparison to the Conserve Existing and Twin Alternative, this alternative does not provide the heritage character performance. Construction of a new bridge on the existing alignment does not allow for the restoration or retention of the structure at the	✖ There are two components to the heritage significance, one is location and the other is materials/form. This alternative does not maintain the existing location for arrival on campus or the sightlines to the tower. It represents the loss of heritage material and form. Abandonment will ultimately result in the demolition of the bridge since it will continue to deteriorate, become unsafe, and require removal.	This alternative allows for the retention of the existing bridge with a new structure in proximity that meets the recommended standard for new design (distinguishable from, subordinate to and visually compatible with its setting). In addition, there is opportunity for elements of the existing structure to be restored to the original design (based on the original bridge drawings and historical photographs). Conserving the existing bridge will also maintain the heritage sightlines of University College Hill.

Screening Criteria	Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Bridge	Alternative 3: New Bridge, Existing Alignment		Alternative 4: New Bridge, New Alignment	
			3A: New Modern Signature Structure	3B: New Historic Reimagination Structure	4A: New Bridge and Abandonment / Demolition of Existing Structure	4B: Conserve Existing and Twin with a New Bridge
where physical or documentary evidence (e.g. photographs or drawings) can be used for their design. 2. Retention of existing bridge with no major modification undertaken. 3. Retention of existing bridge with sympathetic modification. 4. Retention of existing bridge with sympathetically designed new structure in proximity. 5. Retention of existing bridge no longer in use for vehicular purposes but adapted for pedestrian walkways, cycle paths, scenic viewing, etc. 6. Relocation of bridge to appropriate new site for continued use (see 4) or adaptive re-use (see 5). 7. Retention of bridge as heritage monument for viewing purposes only. 8. Salvage elements/ members of bridge for incorporation into new structure or for future conservation work or displays.			recording/documentation of the structure prior to demolition. There are two components to the heritage significance, one is location and the other is materials/form. This alternative only maintains the existing location for arrival on campus and the sightlines to the tower. It represents the loss of heritage material and form. This alternative is not preferred when compared to Conserve Existing and Twin under this criterion.	existing location. Consideration will be given to retention/salvage of bridge elements for a heritage monument, and full recording/documentation of the structure prior to demolition. There are two components to the heritage significance, one is location and the other is materials/form. This alternative only maintains the existing location for arrival on campus and the sightlines to the tower. It represents the loss of heritage material and form. This alternative is not preferred when compared to Conserve Existing and Twin under this criterion.	Based on this criterion, this alternative is not carried forward.	This alternative provides an opportunity to protect and conserve the heritage value found in the bridge design, materials, form and location. This alternative is the preferred planning solution / approach under this criterion.

Screening Criteria	Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Bridge	Alternative 3: New Bridge, Existing Alignment		Alternative 4: New Bridge, New Alignment	
			3A: New Modern Signature Structure	3B: New Historic Reimagination Structure	4A: New Bridge and Abandonment / Demolition of Existing Structure	4B: Conserve Existing and Twin with a New Bridge
9. Full recording and documentation of structure if it is to be demolished.						
Natural Environment						
Does this strategy have permanent impacts to the natural and social environments?	✖ Not carried forward. See screening criteria for Transportation.	✖ Not carried forward. See screening criteria for Transportation.	- Temporary works will result in increased impacts to the natural environment and in-water works. This alternative will also have minor impacts related to construction of a new bridge.	✖ Temporary works will result in increased impacts to the natural environment and in-water works. This alternative will also have minor impacts related to construction of a new bridge including impacts to the row of chestnut trees located on the southwest side of the bridge.	✖ Not carried forward. See screening criteria for Cultural Environment.	- Minor impacts related to construction of a new bridge. Permanent impacts can be minimized by placement of the new bridge piers out of the river.
Affordability						
Does this approach provide good value for money?	✖ Not carried forward. See screening criteria for Transportation.	✖ Not carried forward. See screening criteria for Transportation.	This approach provides less value for money as it requires a substantial investment in temporary works for the relocation/replacement of existing infrastructure (i.e. utilities, watermain) and temporary active transportation infrastructure. This strategy also does not make use of residual life in the existing structure for pedestrians and cyclists.	This approach provides less value for money as it requires a substantial investment in temporary works for the relocation/replacement of existing infrastructure (i.e. utilities, watermain) and temporary active transportation infrastructure. This strategy also does not make use of residual life in the existing structure for pedestrians and cyclists.	✖ Not carried forward. See screening criteria for Cultural Environment.	This approach provides good value for money by making use of the existing structure to accommodate active transportation and support existing infrastructure (i.e. utilities). This approach minimizes the need for temporary works. The advantage of this alternative is that it reduces the need for temporary and permanent relocation of utilities (estimated cost savings: \$2-3 M). This alternative also eliminates the need for a wider new structure (bike lanes, sidewalks or multi-use paths) because they are maintained on the existing

Screening Criteria	Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Bridge	Alternative 3: New Bridge, Existing Alignment		Alternative 4: New Bridge, New Alignment	
			3A: New Modern Signature Structure	3B: New Historic Reimagination Structure	4A: New Bridge and Abandonment / Demolition of Existing Structure	4B: Conserve Existing and Twin with a New Bridge
						structure). The cost saving of this component is approximately \$2 M. The cost advantage of this alternative is in the order of \$4-5 M.
Constructability						
Does this approach have risks related to implementation?	✖ Not carried forward. See screening criteria for Transportation.	✖ Not carried forward. See screening criteria for Transportation.	Temporary works will be required to accommodate active transportation and to support existing infrastructure. These works have the potential to result in: - DFO review and approvals for in-water works associated with temporary watermain relocation - Impacts to Species at Risk (SAR). May need to convey net benefit in form of compensation habitat. - Tree Removal and Injury (compensation planting required)	Temporary works will be required to accommodate active transportation and to support existing infrastructure. These works have the potential to result in: - DFO review and approvals for in-water works associated with temporary watermain relocation - Impacts to Species at Risk (SAR). May need to convey net benefit in form of compensation habitat. - Tree Removal and Injury (compensation planting required)	✖ Not carried forward. See screening criteria for Cultural Environment.	Temporary works are not required which significantly reduces risks related to implementation.
Preliminary Recommendations						
	✖ Not carried forward. See screening criteria for Transportation.	✖ Not carried forward. See screening criteria for Transportation.	✖ Not carried forward. This alternative does not allow for conservation of the existing heritage structure and is not compatible with the University's planning approach to enhance the traditional historic architectural	✖ Not carried forward. This alternative does not allow for conservation of the existing heritage structure and is not compatible with the University's planning approach to enhance the traditional historic architectural	✖ Not carried forward. See screening criteria for Cultural Environment. This alternative has not been carried forward because it performed relatively poorly for several criteria in comparison to the Conserve Existing and Twin	✓ Recommended as the preferred Alternative Planning Solution. Conservation of the existing structure and construction of a new bridge on an adjacent alignment will:

4. CONCLUSIONS AND RECOMMENDATIONS

The evaluation of Alternative Planning Solutions recommends the most reasonable alternative that addresses the Problem and Opportunity Statement. Based on the preliminary review of Alternative Planning Solutions, New Bridge (New Alignment) and Conserve Existing Structure is recommended to be carried forward in the EA process. This Planning Solution addresses the problem statement by conserving the existing structure and providing an adjacent structure to accommodate vehicular traffic. Conserving the existing structure follows best management practices for heritage structures and minimizes the need for temporary works to accommodate active transportation and infrastructure. This technical recommendation will be presented at the first Public Information Centre (PIC) for public and stakeholder feedback.

Screening Criteria	Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Bridge	Alternative 3: New Bridge, Existing Alignment		Alternative 4: New Bridge, New Alignment	
			3A: New Modern Signature Structure	3B: New Historic Reimagination Structure	4A: New Bridge and Abandonment / Demolition of Existing Structure	4B: Conserve Existing and Twin with a New Bridge
			character of the campus. Additionally, significant temporary works would be required during construction of the new bridge on the existing alignment resulting in increased costs and constructability issues/risks. This alternative has not been carried forward because it performed relatively poorly for several criteria in comparison to the Conserve Existing and Twin planning alternative. The most important criteria where it performed poor in comparison were the Cultural Environment and the loss of the original heritage bridge.	character of the campus. Additionally, significant temporary works would be required during construction of the new bridge on the existing alignment resulting in increased costs and constructability issues/risks. This alternative has not been carried forward because it performed relatively poorly for several criteria in comparison to the Conserve Existing and Twin planning alternative. The most important criteria where it performed poor in comparison were the Cultural Environment and the loss of the original heritage bridge.	planning alternative. The most important criteria where it performed poor in comparison was the Cultural Environment and the loss of the original heritage bridge.	• Safely accommodate all modes of transportation. • Comply with University planning objectives. • Follow conservation best practices for the heritage structure. • Reduce costs and risks associated with construction. • Provide opportunities to enhance trail connectivity This approach utilizes the value of the existing structure for: • Cultural heritage. • Reuse for utilities. • Significantly reduces the overall cost of the new structure. The new structure can salvage the space available on the existing bridge for active transportation focused uses, allowing the new bridge cross section to be narrower.

5. PRELIMINARY DESIGN ALTERNATIVES

This Section describes Preliminary Design Alternatives for the recommended Planning Solution for Conserve the Existing Bridge and Twin (New Bridge on New Alignment). These preliminary design alternatives will be evaluated in Phase 3 of the Class EA. The Environmental Assessment will identify the preferred alternatives for various elements including:

- 1) Bridge Alternatives:
 - a) Span alternative
 - b) Structure type
- 2) Alignment Alternatives (new bridge):
 - a) Twin north of existing structure
 - b) Twin south of existing structure
- 3) Public Vehicular Access Alternatives:
 - a) No vehicular access
 - b) Restricted access
 - c) Full vehicular access
- 4) Designated University Vehicles, Emergency Services and Transit Access Alternatives:
 - a) 2-lane
 - b) Single lane signalized (contra-flow)
- 5) Cross Section Alternatives:
 - a) Active transportation spine
- 6) Heritage Alternatives:
 - a) Barrier alternatives
 - b) Plinth alternatives
 - c) Material alternatives
- 7) Network Connectivity Alternatives:
 - a) Sunset Street intersection improvements
- 8) Hydraulic Alternatives:
 - a) Waterway opening

6. NEXT STEPS

The preliminary recommendation for Alternative Planning Solutions is summarized in this report and will be presented at the first Public Information Centre (PIC) for public and stakeholder feedback.

The preliminary technical recommendations and preliminary design alternatives to be evaluated in the future will be reviewed following comments received at PIC No. 1.

Appendix K

Evaluation of the Bridge Alignments



Analysis and Evaluation of Preliminary Bridge Alignment Report

Western University -
University Drive Bridge Class
Environmental Assessment, Project No.:
9M5173

December 19, 2022
REV. 2

Prepared by: BT Engineering
and Entuitive Joint Venture
509 Talbot Street
London, ON N6A 2S5



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1.0 INTRODUCTION

Western University (Western) has initiated a Class Environmental Assessment (EA) Study for improvements to the University Drive Bridge located across the north branch of the Thames River in London, Ontario. The existing bridge is near the end of its service life for use by vehicular traffic and Western will develop a plan for the Thames River crossing.

The existing bridge provides access across the Thames River North Branch for vehicular traffic, transit, pedestrians and cyclists.

The preliminary conclusions and recommendations of the Alternative Planning Solutions Report were presented at the Public Open House No. 1. The Alternative Planning Solutions considered the overall needs of the study area and identified alternative approaches of addressing the need for improvements (i.e., bridge management plan alternatives) including:

- Rehabilitation of the existing bridge;
- A new bridge on the existing alignment; and
- Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

The recommended Alternative Planning Solution was rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic. The evaluation of Alternative Planning Solutions recommended the most reasonable alternative that addressed the Problem and Opportunity Statement. Based on the preliminary review of Alternative Planning Solutions, New Bridge (New Alignment) and Conserve Existing Structure is recommended to be carried forward in the EA process.

This Planning Solution addresses the problem statement by conserving the existing structure and providing an adjacent structure to accommodate vehicular traffic. It prioritizes active transportation on campus, maintains the gothic style of campus architecture and prioritizes the view of the University Tower. The vehicular bridge will be subordinate to the historic active transportation bridge. Conserving the existing structure follows best management practices for heritage structures, minimizes the need for temporary works to accommodate active transportation during construction and avoids the need for relocation of utility and university service infrastructure. This technical recommendation was presented at the first Public Information Centre (PIC) for public and stakeholder feedback. There was general support for the Recommended Planning Solution, and it has been carried forward for further evaluation. In addition, there were comments received from the public comparing alternatives north and south of the existing bridge for the new structure. This report documents the analysis and evaluation of the preliminary alignment of the new vehicular structure.

1.1. CONTEXT OF ALIGNMENT EVALUATION OF THE NEW VEHICULAR BRIDGE

The evaluation compares alternatives for the new vehicular bridge location in the vicinity of the existing North Branch of the Thames River crossing on University Drive. Based on the study recommendations presented at PIC No. 1 for alternative planning solutions, the study is continuing with the approach to have a reimagined and historically restored heritage structure maintaining the gothic style of structure of the existing bridge for active transportation. All vehicular traffic will use a new structure parallel to the active transportation spine. This active

transportation spine will connect the new Welcome Plaza to the west, with a reconfigured Sunset Street/ University Drive parking lot intersection/drop-off to the east of the bridge.

The existing bridge will remain and provide only Active Transportation (pedestrian and cycling modes of travel) and a place-making location on campus using the existing bridge alignment.

Figure 1 illustrates the concept of the active transportation spine connecting to the Welcome Plaza (general conceptual depiction of the Welcome Plaza), illustrating the removal of the University Drive street as a vehicular connection to Western Road to the west. **Figure 2** illustrates an example of a raised pedestrian crossover (PXO) for pedestrians and cyclists to cross Perth Drive/ Lambton Drive connecting to the Welcome Plaza. Using this approach, pedestrians will have the right-of-way and an OTM Book 15 Pedestrian Crossover (Level 2 Type B – Mid-block including Rapid Rectangular Rapid Flashing beacons). Vehicles would be required to stop for pedestrians and cyclists, refer to **Figure 3**.



Figure 1: Perspective looking east toward the future Plaza

The following photos provide examples of raised PXOs.



Figure 2: Sample Raised PXO presented as a recommended Best Practice for Active Transportation Spine Crossing of Perth Drive/Lambton Drive

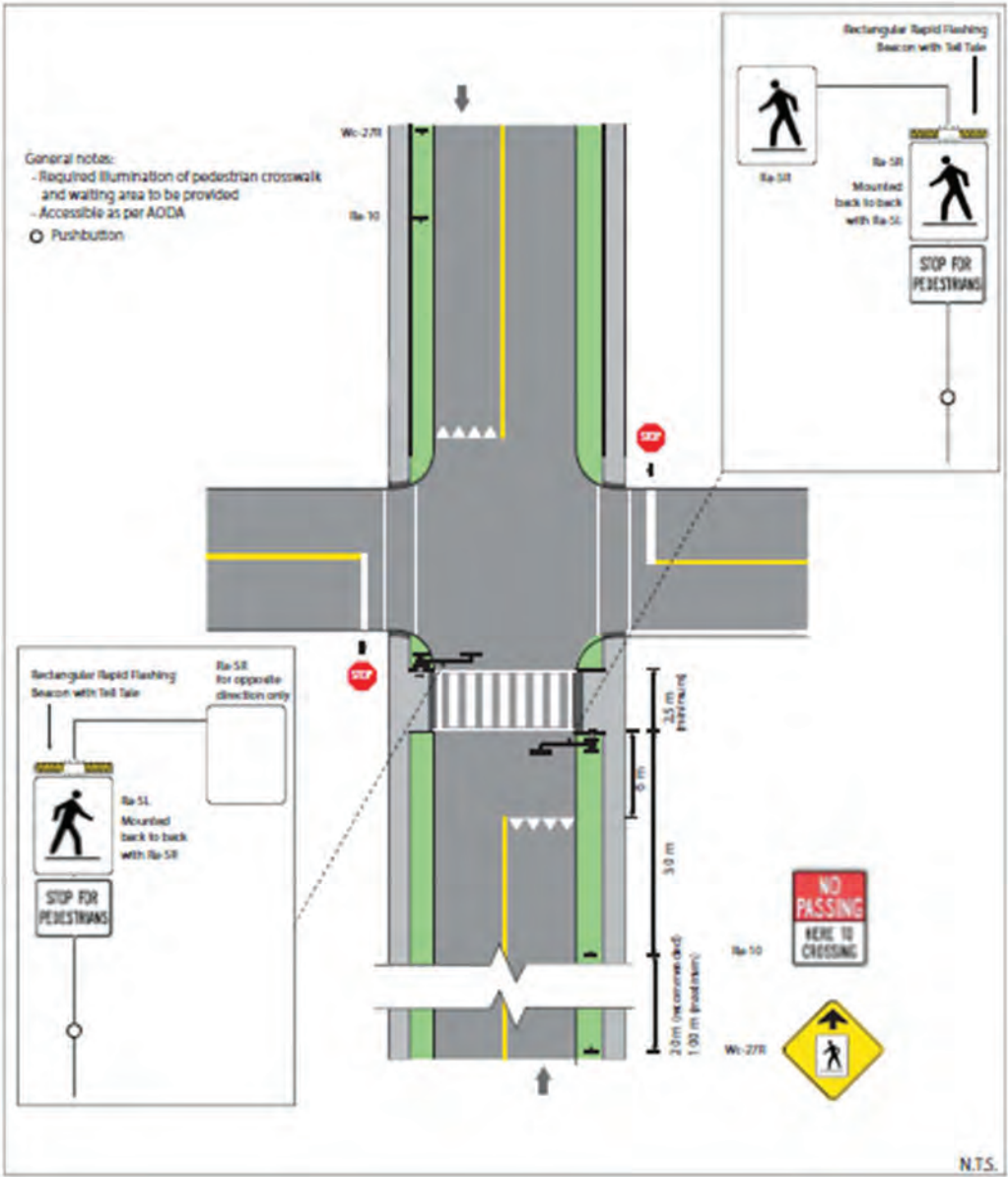


Figure 3: Pedestrian Crossover Level 2 Type B – Intersection (2-way)

The connection to the east of the Thames River is being considered to include a roundabout drop-off area that would facilitate dropping off pedestrians should restrictions on the bridge be implemented. This approach will allow the realignment of the offset roadway north or south of University Drive and would provide a drop-off area as identified in the University Open Space Plan. The concept of the east side roundabout is illustrated in **Figure 4**.

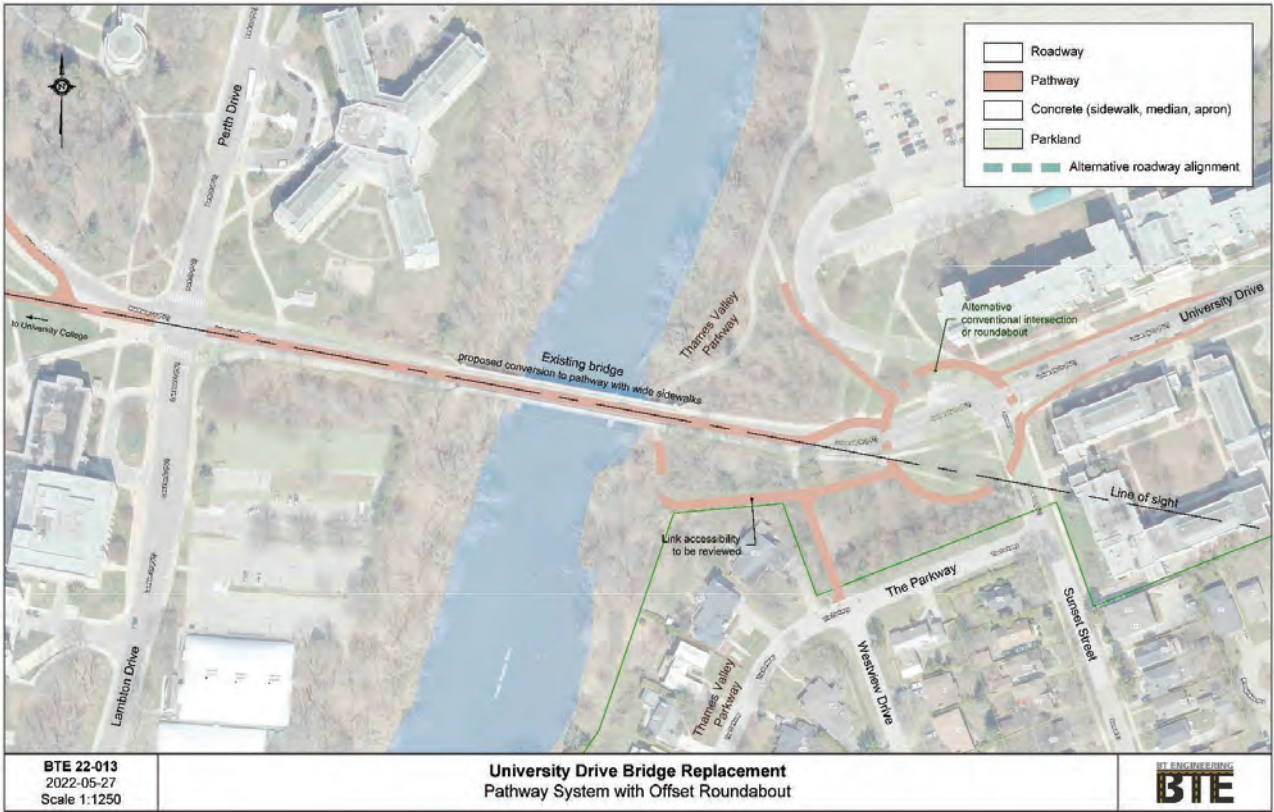


Figure 4: Roundabout Location

1.2. ALIGNMENT ALTERNATIVES UNDER STUDY

The evaluation of the new vehicular bridge alignment alternatives is comparing either a new vehicular bridge alignment to the north of the future active transportation spine (Alternative 1) or a new alignment to the south (Alternative 2). The locations of the preliminary design alternatives are illustrated in **Figure 5**.

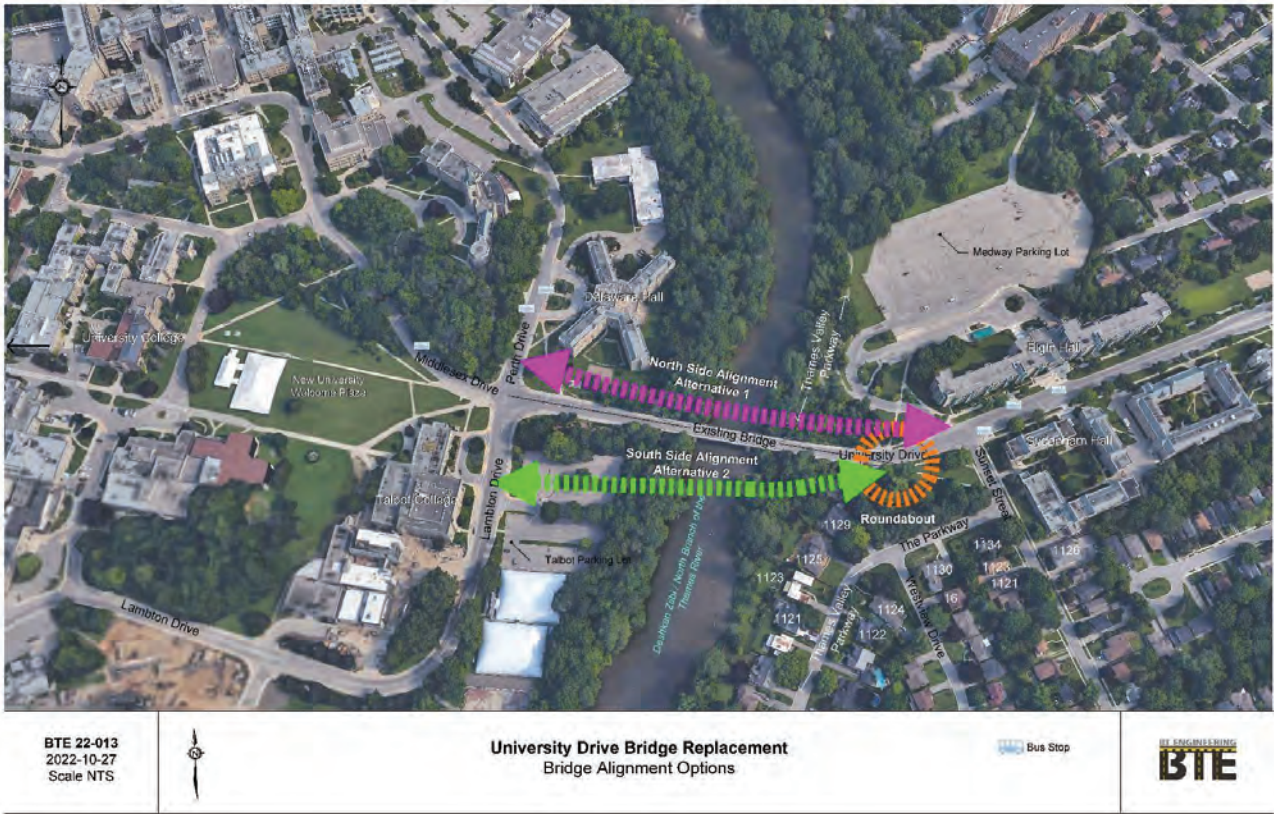


Figure 5: Bridge Alignment Alternatives

2.0 ANALYSIS AND EVALUATION OF ALIGNMENT ALTERNATIVES

2.1. ASSESSMENT OF ALTERNATIVES

2.1.1 Transportation

Existing travel demand is shown in **Figure 6**. Traffic volumes were recorded over an 8-hour period on Tuesday November 29, 2022. The volume of motorists turning to and from the south (Lambton Drive) was approximately 3 times greater than the volume of motorists turning to and from the north (Perth Drive). Realigning a new structure to the south would reduce the conflicts with pedestrians crossing the road at the Welcome Plaza.

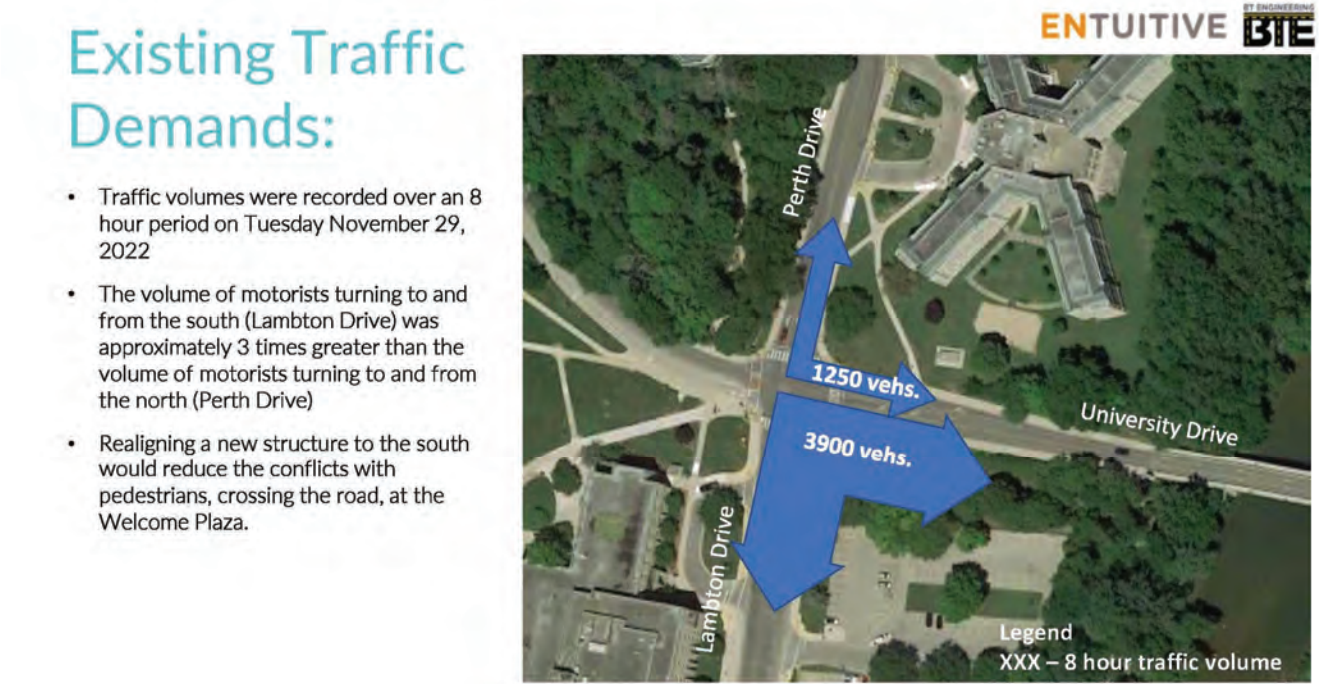


Figure 6: Existing Traffic Demand

2.1.2 Natural Environment

Below is a high-level assessment of each of the alignment alternatives and their impacts on North Thames River riverbanks and potential SAR habitat. With the bridge piers located out of the river, there are no aquatic habitat impacts anticipated.

a) Terrestrial Habitat

Alternative 1

The alignment alternative to the north is anticipated to have an impact on the riverbanks and potential SAR habitat, refer to **Photo 1**. A Kentucky Coffee Tree was found adjacent to the northeast abutment of the bridge, refer to **Photo 2**. Additional trees were identified at the northeast corner of Perth Drive and University Drive; however, these appear to have been planted. Refer to **Photo 3**.

Alternative 2

Alternative 2 avoids the areas with SAR species.



Photo 1: View of the University Drive Bridge Crossing over the North Thames River looking Southwest



Photo 2: Naturalized Kentucky Coffee Tree Near Northeast Abutment



Photo 3: Mature Kentucky Coffee Tree

2.1.3 Cultural Environment

A Stage 1 archaeological assessment was conducted as part of the Environmental Assessment (EA) for the University Drive Bridge Replacement Project to determine whether there was potential for the discovery of archaeological resources within the project area.

Portions of the project area that are grassed and treed are not obviously disturbed and retain archaeological potential (1.08 ha; 30.0%) and would require Stage 2 assessment. A portion of the current project area has already been assessed (1.26 ha; 35.0%) and was determined to have no further archaeological potential. Areas within the North Thames River (0.32 ha; 8.9%) require a marine assessment if they are to be impacted.

There appears to be an equal amount of potential archaeological areas disturbed by both Alternatives.

Neither Alternative 1 nor Alternative 2 will impact the existing heritage bridge. Views from the heritage bridge will vary depending on the distance away the new bridge will be located. Alternative 1 is closer and will have a greater impact to views on the north side. Alternative 2 is further away and will have a less impact to views on the south side. It is noted that the views to the south of the North Thames River are considered to be more noteworthy than the views of the river to the north, due to the bend in the river.

2.1.4 Social Environment

The social environment aspects of the Study Area include the impacts to students living in residences adjacent to alignment alternatives, particularly Delaware Hall located on Perth Drive. Also, the residences along the Parkway will be impacted by Alternative 2 where the roundabout moves the roadway closer to the buildings. Moving the roadway southerly will impact three (3) houses.

2.1.5 Land Use and Property

The bridge is located within the Western University Campus, crossing the Thames River North Branch with naturalized river slopes, with informal and formal pathways (Thames Valley Parkway) along the river. There are university campus buildings in the vicinity of the bridge. On the east side, the buildings include Sydenham Hall and Elgin Hall. On the west side is Delaware Hall located on the river and to the south of University Drive are a large parking lot and tennis courts. The Memorial Tower and College Building is framed when looking west from the bridge. Refer to Figure 7.

2.1.6 Cost

Alignment 1 on the north side crosses a utility structure and will have a greater cost for relocating the utility.

3.0 EVALUATION CRITERIA

The initial task in the evaluation is to develop criteria on which the alternatives will be evaluated. This process includes the identification of “global” groups of factors followed by the selection of a number of “local” sub-factors under the global groups.

3.1. QUALITATIVE EVALUATION METHODOLOGY

The evaluation of alternatives carried forward was completed using a qualitative assessment to compare the effects and performance of the alternatives. This method considers the advantages and disadvantages of each of the alternatives using the evaluation criteria as descriptors to measure the relative differences of the alternatives being considered. These effects have considered preliminary natural, cultural, social and physical elements in the Study Area.

3.1.1 Global Evaluation Factors

As an initial step, the evaluation criteria were grouped into broad categories, or global factors, established to describe the study specific engineering and environmental concerns. Six possible global factors were selected which were used for the evaluation.

The global factors for the alignment alternatives are:

- Transportation;
- Natural Environment;
- Cultural Environment;
- Social Environment;
- Land Use and Property; and
- Cost.

3.1.2 Evaluation of Sub-Factors

Under each of the six global factors listed above, there were a number of sub-factors selected for which measurements could be made. These sub-factors were the individual descriptors for the evaluation. The selection of the sub-factors is very important to the decision-making process because they must adequately describe the issue or aspect of the study area to be evaluated and the unique features of each alternative. Any aspect regarding an alternative, where there are differences among alternatives, is incorporated into the decision-making process by including it as a sub-factor. Generally, the process begins by establishing a long list of potential sub-factors through discussions with the Project Team. Then, for each group of alternatives being evaluated, the sub-factors are reviewed and screened by eliminating those that were considered equal or not applicable among the alternatives.

Table 1 provides the Long List of Factors and Sub-Factors, including those carried forward for the analysis and evaluation of each set of alternatives.



Figure 7: Study Area Features

Table 1: Long List of Factors and Sub-factors

Factors and Sub-Factors	Carried Forward	Remarks
1.0 Transportation		
Out of way travel	X	No meaningful difference.
Traffic– Level of Service	X	All alternatives will provide acceptable levels of service within the study area.
Geometrics – Horizontal Alignment and Overall Visibility	X	This sub-factor considers the overall visibility for drivers considering lateral offset of horizontal curvature and the effect of road gradient. Longer sight distances are preferred.
Geometrics – Vertical Alignments	X	This geometric element is considered under the geometric sub-factor for overall visibility.
Traffic Operations / Construction Staging	X	This criterion considers construction complexity and traffic staging.
Construction Duration	X	This criterion considers the total duration of construction.
Delays (during construction)	X	All equal.
Emergency Vehicle Access	X	All equal.
Fuel Consumption	X	All equal.
Road User Costs	X	All equal.
Accommodates Truck Traffic	X	All equal
Accommodates Cycling Network	X	Existing bridge will accommodate cyclists.
Design Speed	X	All equal.
Horizontal Alignment Length (m)	X	The greater realignment length is preferred.
Number of additional Horizontal Curves	X	The lower number of curves is preferred.
Radius Horizontal Curve (m)	X	All equal.
Length of Horizontal Curves (m)	X	All equal.
Superelevation	X	The lower the superelevation on the curve is preferred.
Sight distance to start of horizontal curve	X	This safety aspect is considered as part of the design speed sub-factor.
Construction Staging	X	Minimal staging impacts are preferred.
Compatibility with Future Needs.	X	All equal.
Vehicle Conflicts	X	All equal.
Pedestrian Conflicts	✓	
Delays for Pedestrians	✓	

Factors and Sub-Factors	Carried Forward	Remarks
Roundabout on sightline axis	✓	
Loss of existing Talbot parking	✓	
Accommodating a Sunset Dropoff Area – South side	✓	
Roadway Geometric Continuity	✓	
Flexibility to accommodate expanded transit service	✓	
2.0 Natural Environment		
Exposure Risks to Climatic Conditions – winds, snow for icy road, snow drifting	X	All equal.
Air Quality (Sensitive)	X	All equal – No adjacent sensitive sites.
Climate Change – Change in greenhouse gas (GHG) emissions and surface heating	X	Construction and operational GHG and surface heating. All alternatives are equal.
Climate Change – Resilience to increasing major storm events, i.e. rain events, snowfall	X	Provisions for snow storage and control of runoff that prevents destructive erosion damage to riverbanks and watercourses.
Sustainability - Use of natural resources to build project	X	All equal.
Aquatic Species at Risk Potential Habitat Impacted	X	Realignment alternatives that result in potential disturbances to aquatic habitats outside of the existing corridor rate lower, depending on the length of the new roadway corridor. Those alternatives following or close to the existing roadway alignment are preferred.
Flora, Fauna and Terrestrial Species at Risk Potential Habitat Impacted	✓	This sub-factor measures relative changes / impacts to natural habitat. Impacts are reduced by minimizing the footprint of new construction.
Species at Risk Potential	✓	As per historical data, information request and field investigations One terrestrial SAR species may be impacted. This is considered an important measure of impacts between the alternatives.
Total Species at Risk Habitat Impacted (Aquatic/Terrestrial)	X	See Flora, Fauna and Terrestrial Species sub-factor.
Significant Woodlands Removed	X	See Flora, Fauna and Terrestrial Species sub-factor.

Factors and Sub-Factors	Carried Forward	Remarks
Other Woodlands and Woodlots Removed (minus significant woodlots)	X	See Flora, Fauna and Terrestrial Species sub-factor.
Warm Water Fish Habitat Impacted	X	See Aquatic Species at Risk Potential Habitat Impacted sub-factor.
Cool/Cold Water Fish Habitat Impacted	X	This sub-factor measures relative changes / impacts to the Thames River aquatic habitat. Impacts are reduced by staying outside the waterway. All equal.
Loss of Fish Habitat	X	See Aquatic Species at Risk Potential Habitat Impacted sub-factor.
Water Quality (Stormwater Surface Runoff)	X	All equal. The area of impervious surface and total stormwater runoff are generally equal for the bridge alignments. The stormwater design for quantity control to be defined for the technically preferred alternative.
Stormwater Management Measures (Quantity and Quality Control)	X	All equal. Will meet standards.
Wildlife Movement/Corridor Crossings	X	See Flora, Fauna and Terrestrial Species sub-factor.
Migratory Bird Nesting Impact	X	See Flora, Fauna and Terrestrial Species sub-factor.
Bat Roosting Impact	X	See Flora, Fauna and Terrestrial Species sub-factor.
Area of Natural and Scientific Interest Removed	X	ANSIs are avoided.
Provincially Significant Wetland (PSW) Impacted	X	None present.
Evaluated Wetlands Impacted	X	None present.
Unevaluated Wetlands Impacted	X	None present.
Increase in Aquatic Habitat Fragmentation	X	See Flora, Fauna and Terrestrial Species sub-factor. Number of new barriers between continuous habitat (number of structures, increase in road grade). Can be offset by culverts that allow fish passage, etc.
Increase in Terrestrial Habitat Fragmentation	X	See Flora, Fauna and Terrestrial Species and Aquatic sub-factors. Number of new barriers between continuous habitat (number of structures, increase in road

Factors and Sub-Factors	Carried Forward	Remarks
		grade). Can be offset by wildlife crossings etc.
Aggregate Resource Area Removed	X	Aggregate Resource Areas have been avoided.
Groundwater – Significant Groundwater Recharge Areas	X	None anticipated.
River Hydraulics Impacted	✓	This is considered an important measure of impacts between the alternatives.
Loss of Floodplain Storage - Regulated Areas	X	Both equal.
3.0 Cultural Environment		
Impact to Built Heritage Features and/or Cultural Landscape Features	X	Both equal.
Roundabout on sightline axis to Tower.	✓	
View from heritage structure	✓	Ability to have new structure distinguishable from the heritage structure. Increased separation is one measure to achieve this, and a southern alignment is preferred under this criterion of bridge spacing.
Gateway to inner campus core	X	All equal.
View of the river	X	All equal.
Area of Archaeological Potential	X	This sub-factor measures the potential to impact areas with archaeological potential. Areas outside existing disturbed areas are considered to have archaeological potential.
4.0 Social Environment		
Noise - Sound Level Increases (0-5 dBA)	X	All considered equal.
Noise - Sound Level Increases (5-10 dBA)	X	All considered equal.
Visual Intrusion	✓	Delaware Hall residents impacted.
Community Effects	X	All considered equal.
Community Disruption	X	No additional traffic entering community.
Commercial/Industrial Uses Impacted	X	All considered equal. No commercial /industrial uses in the Study Area.
Mining Operations Impacted	X	No mining operations in the Study Area. All considered equal.
Waste and Contamination	X	No evidence of roadway construction or commercial waste or contaminant-generating operations in the Study Area. No known accident-prone locations or associated spill sites. All considered equal.

Factors and Sub-Factors	Carried Forward	Remarks
Impact to Emergency Response	X	All considered equal.
High Impact to Farming Activities	X	None present.
Moderate Impact to Farming Activities.	X	None present.
Low Impact to Farming Activities	X	None present.
5.0 Land Use and Property		
Impacts to Rural properties	X	None present.
Impacts to Rural Settlement Area	X	None present.
Residential Buyouts	X	No impacts anticipated.
Impacts to Residential Properties	X	No impacts anticipated.
Impacts to Utilities	✓	
Impacts to Future Planned Utilities	X	All equal.
Impact to Delaware Hall Open Space	✓	
Corridor Width	✓	Width of corridor available. Constrained to the north: 37 m (centreline to building) and south: 125 m (centreline to building).
Space available for drop off:	✓	North side: 28 m South side: 50 m There is insufficient room to provide a comparable roundabout drop-off area on the north side.
6.0 Cost		
Capital Cost	✓	Construction cost of improvements.

4.0 EVALUATION OF NEW VEHICULAR BRIDGE ALIGNMENT ALTERNATIVES

Following identification and screening of the long list of evaluation factors and sub-factors shown in **Table 1**, the factors and sub-factors carried forward were used to evaluate the alternatives.

Table 2 describes the factor and sub-factor criteria use to evaluate the new vehicular bridge alignment alternatives based on comparative measurements. Either alignment may include full vehicle access (existing conditions, restricted access (restricting public vehicles by time of day, day of week or months (school year), or no public vehicular access (limiting vehicle use to transit or campus vehicles only). The vehicle access evaluation will be documented separately.

The rating of alternatives follows the scale provided below:

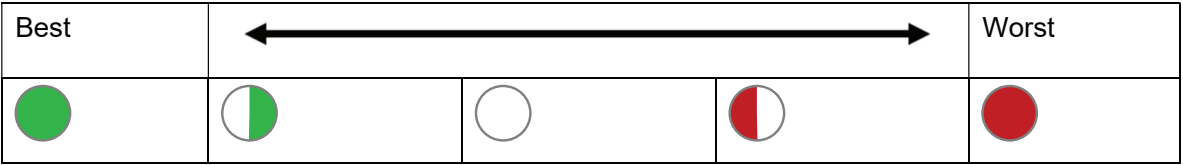


Table 2: Evaluation of New Bridge Alignment

Factors and Sub-Factors Description	North Side Alternative 1		South Side Alternative 2	
1.0 Transportation				
Vehicle Conflicts		All equal		All equal
Pedestrian Conflicts		Greater number of conflicts		Fewer number of conflicts
Delays for Pedestrians		Higher Average Delay		Lower Average Delay
Roundabout on sight line axis		Skewed crossing		Aligned
Loss of existing Talbot parking		No loss of parking		Parking impacted
Accommodating a Sunset Dropoff Area - South		No opportunity		Good Opportunity
Roadway Geometric Continuity		Poor		Good
Flexibility to accommodate expanded transit service		North alignment is poor		The south alignment is good
2.0 Natural Environment				
Flora, Fauna and Terrestrial Species at Risk Potential Habitat Impacted		Greater impact to existing natural riverbank area.		Less impact to existing natural riverbank area.
Species at Risk Potential One SAR species recorded in northeast quadrant of the Study Area		Impact to northeast quadrant area with SAR habitat.		No impact to northeast quadrant area with SAR habitat.
River Hydraulics		No impact to upstream flood levels.		A new bridge on the south side may have an impact on upstream flood levels. However, a longer bridge and lowering Lambton Drive can eliminate any potential impact.
3.0 Cultural Environment				
Roundabout on sight line axis to Tower.		Roundabout not on axis.		Roundabout is partially located on the axis.
View from heritage structure		Greater impact from view of heritage structure. (Closer to heritage bridge).		Less impact from view of heritage structure. (Further away for the bridge)

Factors and Sub-Factors Description	North Side Alternative 1		South Side Alternative 2	
4.0 Social Environment				
Visual Intrusion		Major impact		Minor effects
5.0 Land Use and Property				
Utility Facilities Impacted		Yes		No
Impact to Delaware Hall Open Space		Yes		No
Corridor Width		Poor: 37 m (centreline to building)		Best: 125 m (centreline to building)
Space available for drop off:		Poor: 28 m There is insufficient room to provide comparable roundabout drop-off area on the north side.		Best: 50 m
6.0 Cost				
Construction cost (2022 construction dollars)		Greater cost		Less cost

5.0 PRELIMINARY TECHNICAL RECOMMENDATIONS

Based on the evaluation of preliminary alternative bridge alignments, Alternative 2 South Alignment is recommended to be carried forward in the EA process. This alternative has the best transportation characteristics and minimizes the impacts to the natural, cultural and social environments, land use and property and is anticipated to have a lower cost. This alternative will also avoid impacts to a SAR species; the Kentucky Coffee tree found in the vicinity of the existing bridge’s northwest abutment.

Appendix L

Coarse Screening of Bridge Alternatives



509 Talbot Street
London, ON N6A 2S5
519-672-2222

TECHNICAL MEMORANDUM

TO:	File	DATE:	July 7, 2023
FROM:	Stephen Brook, P.Eng.	PROJECT #:	BTE 22-013
PROJECT:	Western University, University Drive Bridge Replacement		
SUBJECT:	Coarse Screening of Bridge Alternatives		

A design workshop was held with Western University representatives to generate replacement alternatives for the replacement of the existing University Drive structure. Following the completion of the workshop, three alternative structure types, provided in **Attachment 1**, were developed for consideration:

1. Concrete Arch - The main span over the river is supported on a single shallow concrete arch rib. The deck is a post-tensioned concrete slab, supported on concrete wall-columns. The arch bears against concrete foundations, supported on a combination of battered piles and inclined micropiles. An open concrete barrier wall exposes the slenderness of the deck. The bridge has an elegant, understated, and classic form.
2. Steel V-Pier - In this bridge, the deck is formed by a stiffened steel plate, coated with a high-traction wearing surface. The spans consist of three parallel steel box girders, connected by floor beams. These girders are supported by two V-shaped piers, each leg of which is a welded hollow steel tube. These V-piers are founded on concrete pedestals supported by piles. An open steel barrier exposes the slenderness of the deck. The bridge has a very slender, minimal, and modern appearance.
3. Steel Box-Girder - This is a conventional structural system commonly used for highway bridges. The spans consist of steel “tubs” onto which a concrete deck is cast. For the main span, the girders vary in depth, becoming deeper at the piers. Piers are cast-in-place concrete, on piled foundations.

A Steel Beam Box Girder bridge (Alternative 3) would be a much thicker structure. To keep that thicker structure above the regulatory 250-year flood, the profile of University Drive would need to be raised approximately 2 m. This would also impact Lambton Drive and would require the profile of Lambton Drive to be raised approximately 2 m adjacent to Talbot College.

The following assessment of the 3 structure alternatives has been completed.

Transportation

Alternatives 1 and 2 will include roadway improvements at Lambton Drive which will improve safety and traffic operations, with moderate impacts on the existing Talbot parking lot adjacent to the University Tennis Centre.

Subject: Coarse Screening of Bridge Alternatives

Project: BTE 22-013, Western University, University Drive Bridge Replacement

Date: July 7, 2023



The raised profile required on Lambton Drive to accommodate the deeper structure for Alternative 3 is attached. This would result in reduced standards for the geometry of the Lambton / Perth Drive and University Drive intersection. The sight distances which would be provided on Lambton Drive and through the intersection would be limited. This could adversely affect the safety for pedestrians and cyclists crossing Perth Drive. The reduced sightlines would also impact the safety of motorists turning at the intersection. A steeper grade for southbound motorists would end in much closer proximity to the horizontal curve on Lambton Drive, shown in **Figure 1**, which would adversely affect safety.



Figure 1: Southbound Lambton Drive

The raised roadway profiles for alternative 3 would also:

- Have a major impact on the grading of the Talbot College drop-off lane.
- Significantly impact the Talbot parking lot.
- Increase the need for retaining walls to help reduce the additional fill that would be placed in the floodplain.

Structural Considerations

Alternatives 1 and 2 would provide aesthetically pleasing structures which would be visible from a variety of locations including the existing structure, the Thames Valley Parkway and the river. The slender decks that would be provided with Alternatives 1 and 2 will also allow the profile of the realigned University Drive to closely match the elevation of the existing bridge.

The thicker depth of a box beam girder structure (alternative 3) will restrict view lines of the Thames River to the south from the existing structure. University Drive is a gateway to the University and the elevated structure would be less aesthetically pleasing than the other two alternatives. Most viewpoints would be of the underside of the structure and any utilities that may be attached to it.

In addition to restricting view lines of the Thames River the box beam girder structure will restrict the vertical clearance above the existing Thames Valley Parkway (Multi Use Trail). See **Photo 1** and **Photo 2**, below. Preferred clearance is 3.0 m is not met, refer to **Figure 2**.



Photo 1: Measuring the Existing Clearance



Photo 2: Existing Clearance – 9’ (2.7 m)

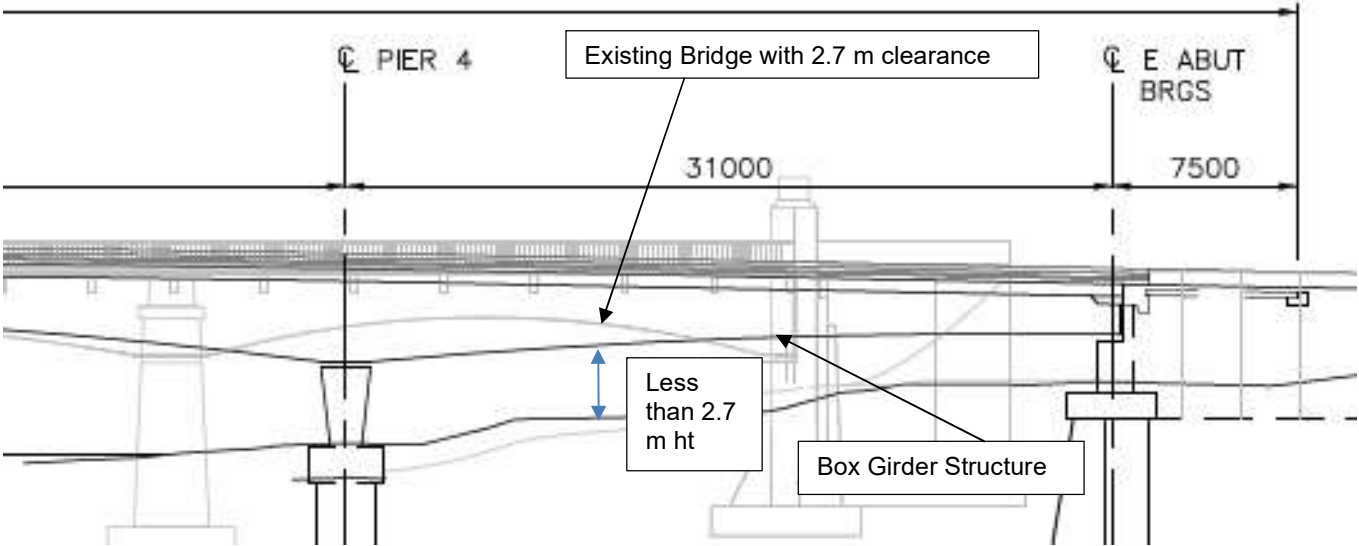


Figure 2: Elevation of Box Girder Bridge and the Existing Bridge

Future heating and cooling pipes could be accommodated on the existing structure for Alternatives 1 and 2. The additional depth of the Alternative 3 structure would enable future heating and cooling pipes to be accommodated on the new structure.

Alternatives 1 and 3 could be accessed easily for bridge inspections. The low internal clearance height with the Steel V Pier structure (Alternative 2) would make access for bridge inspections more difficult.

The durability of the structural alternatives would all be designed for a 100-year life cycle and the maintenance requirements during that time are considered to be comparable.

Hydraulics

Alternatives 1 and 2 have similar effects on the floodwater levels and floodplain storage. In both cases, the potential effects are considered insignificant. Alternative 3 will have much larger effects on both floodwater levels and floodplain storage. The raised profile of Lambton Drive will result in a substantial volume of fill placed on the floodplain, and the existing flood path that exists on Lambton Drive under the regulatory flood will be blocked by the reconstructed road, resulting in higher flood water levels.

Drainage

Alternatives 1 and 2 are not anticipated to result in drainage concerns. The raised Lambton Drive profile which will be required to accommodate the larger structure depth for Alternative 3 will result in surface drainage being directed to Talbot College, creating more potential for water damage to the building.

Cultural Environment

Alternative 3 will raise the profile of Lambton Drive to the top of Talbot College’s lower-level windows, as shown in **Figure 2**. The aesthetics of the heritage building would be impacted by the raised Lambton Drive profile blocking the view of the building’s ground floor.



Figure 3: Alternative 3 - Proposed Roadway Profile Relative to Talbot College

Social Environment

Alternatives 1 and 2 are considered to have very limited impacts on the social environment in the area of the proposed new structure. The raised Lambton Drive and University Drive roadway profiles required to provide clearance above the 250-year regional flood level for the deeper, Alternative 3 structure will block views from the lower-level Talbot College windows. The grade raise will also increase the visual intrusion of Lambton Drive vehicle traffic on the campus. Raising the profile of University Drive approximately 2 m crossing the Thames River will also increase the potential impact of headlight glare from eastbound motorists on the adjacent houses located on The Parkway. This will be more of an issue during the winter months when leaves are off all the deciduous trees.

Cost

The ease of construction and the costs to construct each of the alternative structures are anticipated to be similar. The raised roadway profiles that would be required to accommodate Alternative 3 would result in significantly higher costs for the civil works. The increased costs would reflect the additional fill, retaining walls and the effect that the raised profiles will have on the surface drainage.

Recommendation

A summary of the coarse screening of the 3 structure alternatives is provided in **Attachment 2**. It is recommended that:

1. Alternative 3 (Box Beam Girder) not be carried forward.
2. Alternative 1 (Concrete Arch) and Alternative 2 (Steel V Pier) both be carried forward for further evaluation.

Renderings of Alternative 1 and Alternative 2 are provided in **Attachment 3**.

Prepared by:



Stephen Brook, P.Eng.

- Attachments:
1. Alternative Structure Types
 2. Summary of Coarse Screening Evaluation
 3. Structure Alternative Renderings

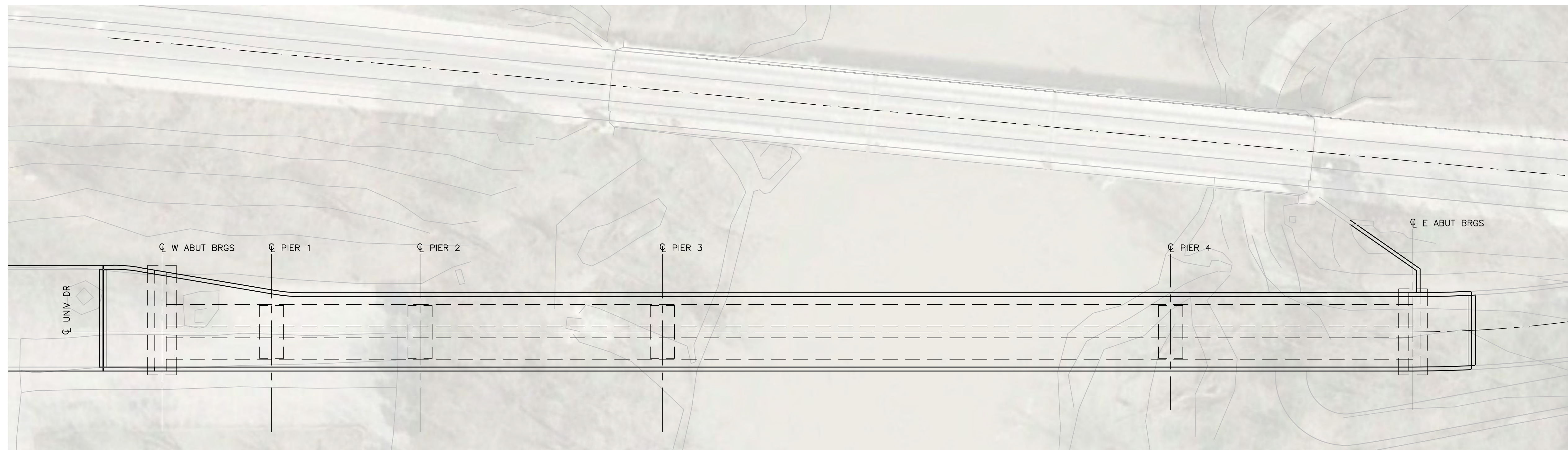
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Alternative Structure Types

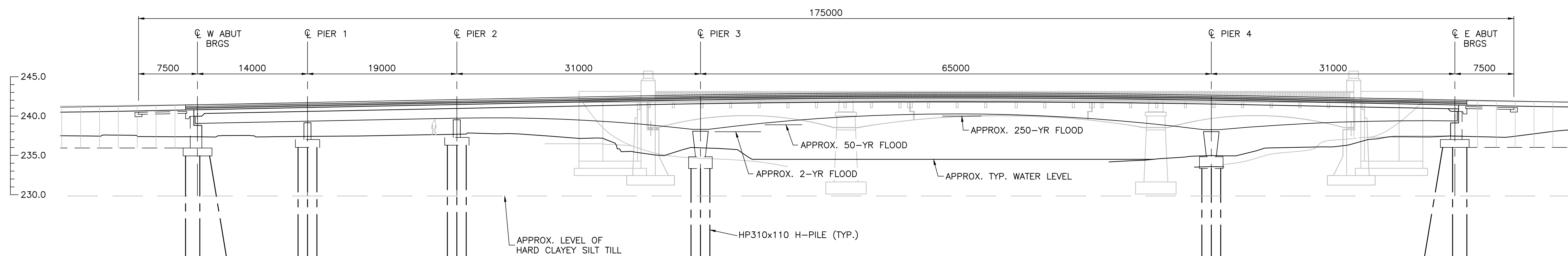


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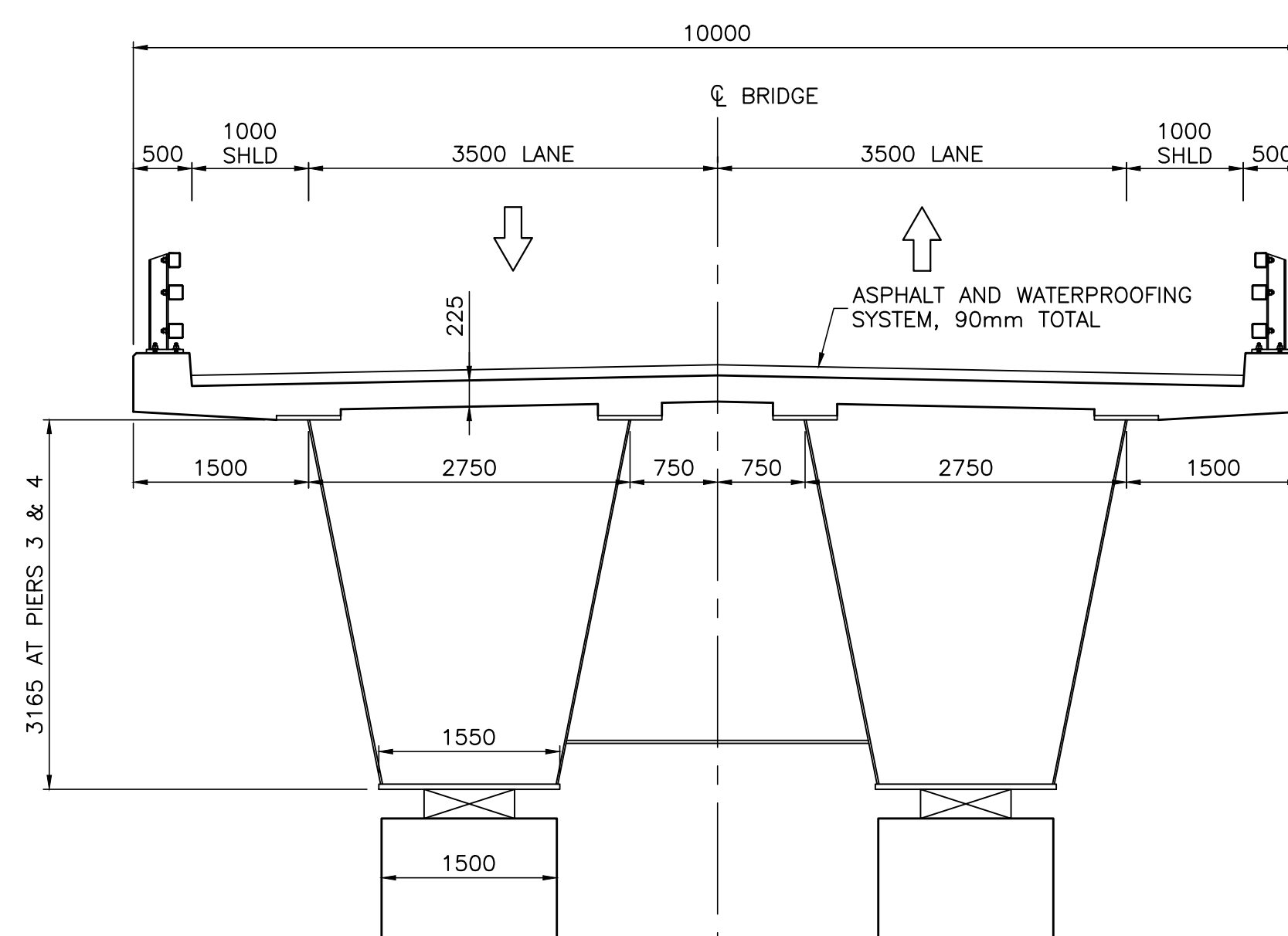
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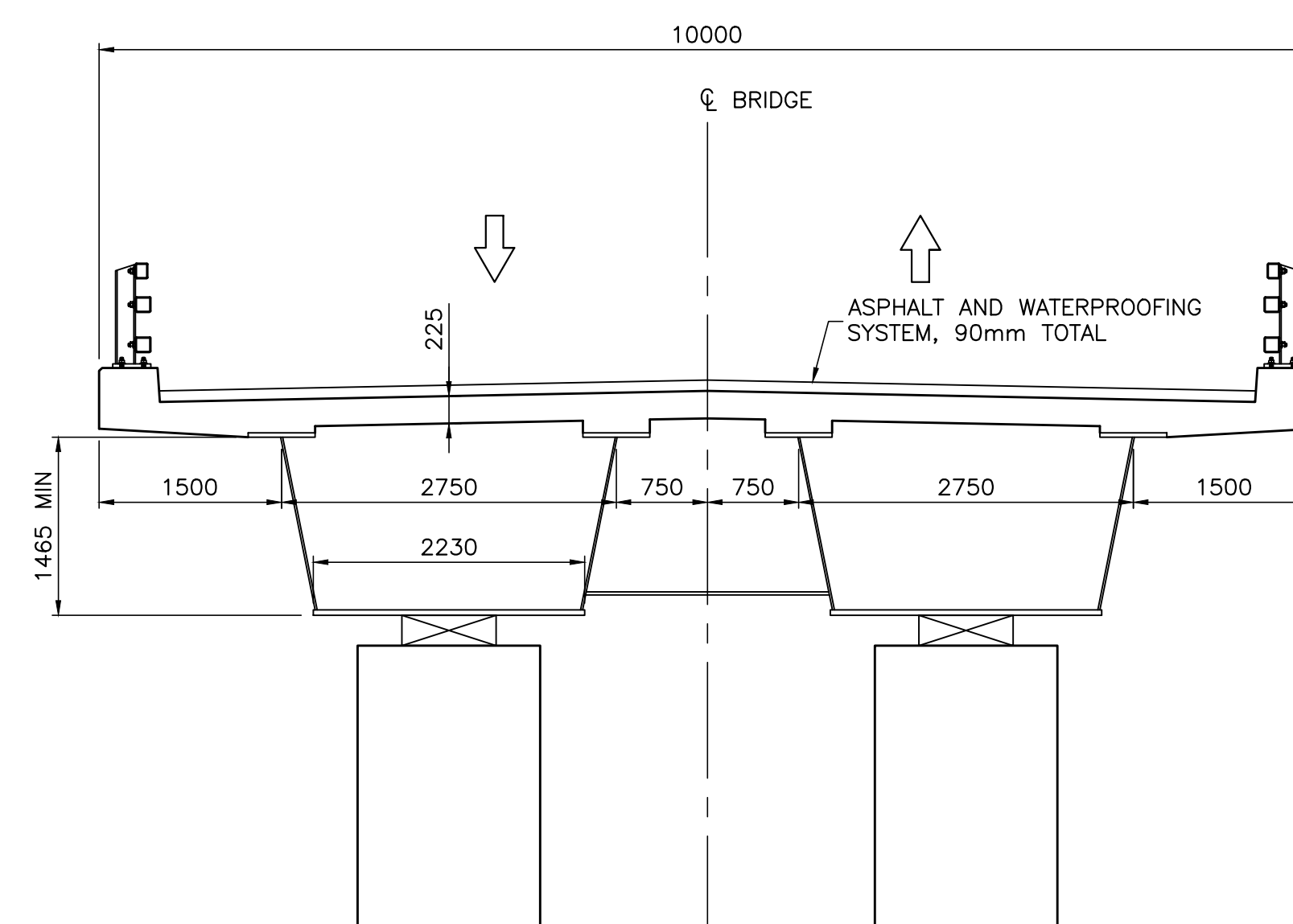
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ELEVATION
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CROSS SECTION AT PIERS 3 AND 4
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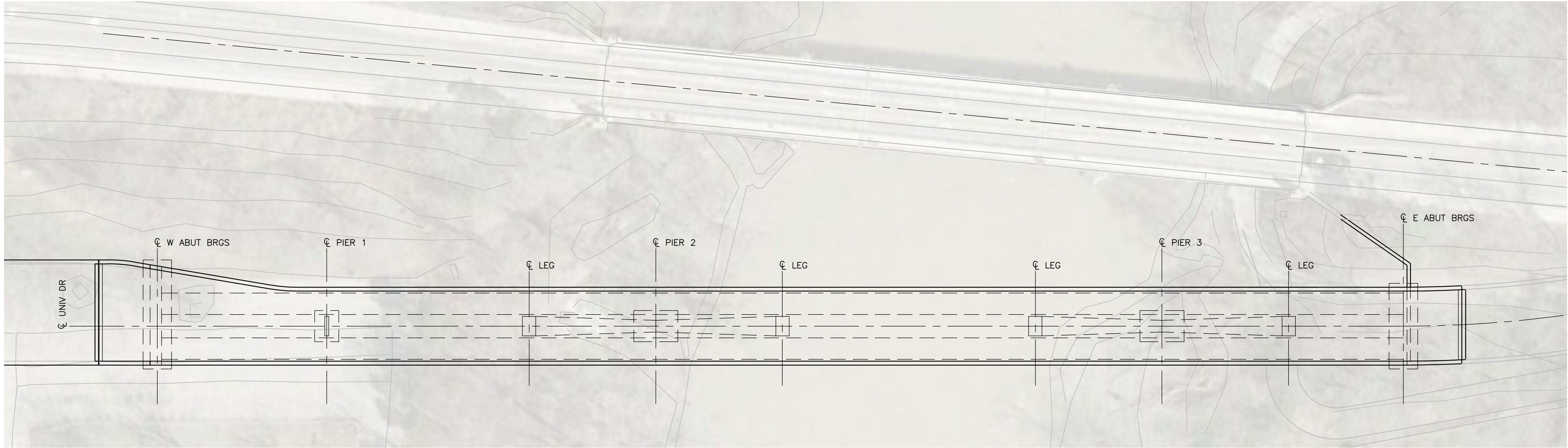


CROSS SECTION AT PIERS 1 AND 2
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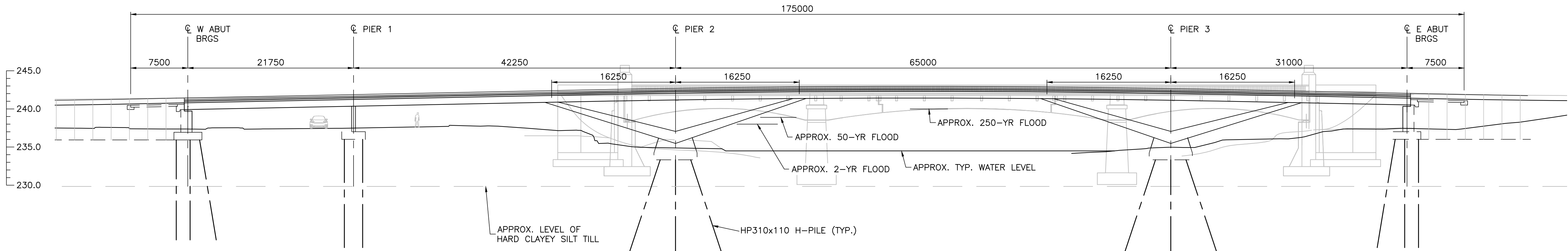
NOT FOR CONSTRUCTION

0	25 MAY 23	FOR REVIEW	
MARK	DATE	REVISIONS	
ENTUITIVE			
200 University Avenue, 7th Floor Toronto, ON M5H 3C6 Canada +1 416 477 5832			
Western			
UNIVERSITY · CANADA			
PROJECT			
University Drive Bridge			
TITLE			
STEEL BOX General Arrangement			
STATUS			
DESIGN		Conceptual Design	
DH	SCALE	DRAWING No.	
	AS NOTED		
DRAWN	DATE		
DH	23 MAY 2023		
CHECKED	PROJECT No.		
SR	FN021-03217	S-01	

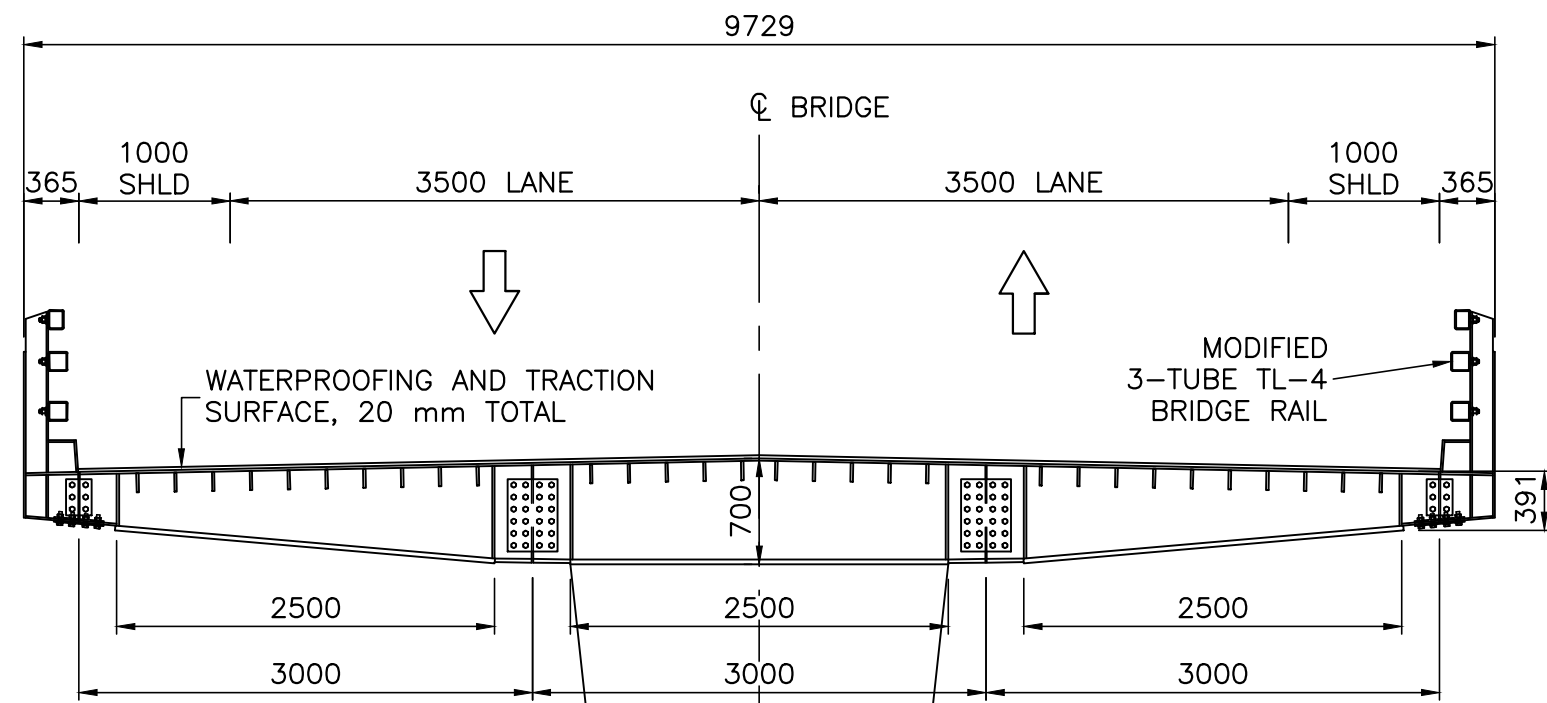
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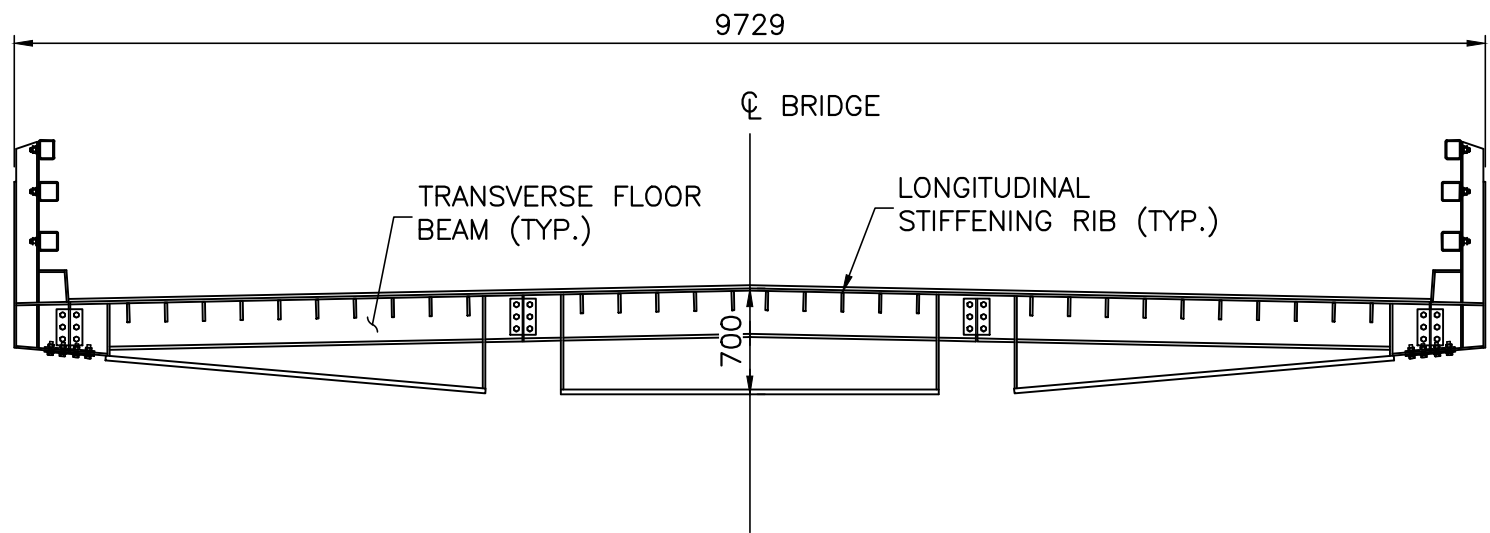
PLAN
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ELEVATION
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CROSS SECTION AT INCLINED LEGS
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TYPICAL CROSS SECTION
1:50

0	25 MAY 23	FOR REVIEW	DH
MARK	DATE	REVISIONS	BY
ENTUITIVE			
200 University Avenue, 7th Floor Toronto, ON M5H 3C6 Canada +1 416 477 5832			
Western UNIVERSITY • CANADA			
PROJECT University Drive Bridge			
TITLE STEEL V-PIER General Arrangement			
STATUS Conceptual Design			
DESIGN	DH	SCALE	AS NOTED
DRAWN	DH	DATE	23 MAY 2023
CHECKED	SB	PROJECT No.	EN021-03217
			S-01

Attachment 2

Summary of Coarse Screening Evaluation

Subject: Summary of Coarse Screening of Bridge Alternatives
Project: Western University, University Drive Bridge Replacement
Date: May 8, 2026



Summary of Coarse Screening of Bridge Alternatives

Factor	Alternative 1 Concrete Arch	Alternative 2 Steel V Pier	Alternative 3 Steel Box Girder
Transportation			
Safety for pedestrians and cyclists – sightlines at crosswalk would be restricted for Alternative 3.	Good ✓	Good ✓	Poor ✗
Vehicle Safety – The soffit elevation for Alternative 3 results in an undesirably steep downgrade for southbound Lambton Drive approaching the horizontal curve.	Good ✓	Good ✓	Poor ✗
Vehicle Safety – The roadway profile on Lambton Drive, resulting from the soffit elevation for Alternative 3, restricts sightlines through the intersection.	Good ✓	Good ✓	Poor ✗
Talbot College drop-off area grade raise.	Good ✓	Good ✓	Poor ✗
Loss of parking spaces (Talbot Parking Lot) or retaining walls restricting pedestrian access.	Good ✓	Good ✓	Poor ✗
The clearance that would remain available for the Thames Valley Parkway, under the structure.	Good ✓	Good ✓	Poor ✗
Drainage			
Drainage from Lambton Drive will be directed to Talbot College.	Good ✓	Good ✓	Poor ✗
Structure Considerations			
Bridge Aesthetics.	Good ✓	Good ✓	Poor ✗ • Deep structure depth

Subject: Summary of Coarse Screening of Bridge Alternatives
Project: Western University, University Drive Bridge Replacement
Date: May 8, 2026



			• Elevated structure above cycling/pedestrian deck reduces views to south
Ease of bridge inspections.	Good ✓	Poor ✗ Low internal clearance height	Good ✓
Ease of Utility Accommodation.	Fair Heating and Cooling to use existing bridge	Fair Heating and Cooling to use existing bridge	Good ✓
Durability All alternatives would be built to meet a 100-year life cycle.	All equal	All equal	All equal
Maintenance All alternatives require comparable maintenance requirements.	Fair	Fair	Fair
Hydraulics			
Loss of Floodplain Storage (Lambton Drive Hydraulics) Alternatives 1 and 2 have similar effects on the flood water levels and floodplain storage. In both cases, the potential effects are considered insignificant. Alternative 3 will result in a substantial volume of fill placed in the floodplain and will have much larger effect on floodplain storage.	Good ✓	Good ✓	Poor ✗
Accommodates the 250-year flood. The raised profile of Lambton Drive required for Alternative 3 will block the existing flood path on Lambton Drive under the regulatory	Good ✓	Good ✓	Poor ✗

Subject: Summary of Coarse Screening of Bridge Alternatives
Project: Western University, University Drive Bridge Replacement
Date: May 8, 2026



flood, which will have a much larger effect on flood water levels.			
Cultural Environment			
Aesthetics of Talbot College, hidden by elevated Lambton Drive, steep grades on u-drive entrance.	Good ✓	Good ✓	Poor ✗ Potential grading at Talbot College (above basement windows) The height of the bridge at Lambton Drive requires approximately a 1–2 m grade raise at Talbot College.
Social Environment			
Campus visual intrusion due to grade raise on Lambton Drive.	Good ✓	Good ✓	Poor ✗
Visual intrusion to residential properties from headlight glare.	Good ✓	Good ✓	Poor ✗
Cost			
Cost to Construct	Fair —	Fair —	Fair —
Civil Cost	Good ✓	Good ✓	Poor ✗
Ease of Construction	All equal	All equal	All equal

Subject: Summary of Coarse Screening of Bridge Alternatives
Project: Western University, University Drive Bridge Replacement
Date: May 8, 2026



Recommendation	Carried Forward	Carried Forward	Not Carried Forward
----------------	-----------------	-----------------	---------------------

Legend: Good ✓ Fair — Poor ✗

Attachment 3

Structure Alternative Renderings







Appendix M

Evaluation of Bridge Structure Alternatives



Bridge Selection Analysis and
Evaluation Report

Western University - University Drive
Bridge Class Environmental Assessment
Project No. 9M5173

November 2024

Submitted by:
BT Engineering Inc. and
Entuitive - Joint Venture
509 Talbot Street
London, ON N6A 2S5
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Appendix C Preliminary Report on Results of Hydraulic Analysis

1.0 INTRODUCTION

Western University (Western) has initiated a Class Environmental Assessment (EA) Study for improvements to the University Drive Bridge located across the north branch of the Thames River in London, Ontario. The existing bridge is near the end of its service life for use by vehicular traffic and Western through this study is developing a plan for the Thames River crossing.

The existing bridge provides access across the Thames River North Branch for vehicular traffic, transit, pedestrians and cyclists. It also supports utilities including a watermain and communications infrastructure crossing the river.

The preliminary conclusions and recommendations of the Alternative Planning Solutions Report were presented at the Public Open House No. 1. The Alternative Planning Solutions considered the overall needs of the study area and identified alternative approaches of addressing the need for improvements (i.e., bridge management plan alternatives) including:

- Rehabilitation of the existing bridge.
- A new bridge on the existing alignment.
- Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

The recommended Alternative Planning Solution was rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic. The evaluation of Alternative Planning Solutions recommended the most reasonable alternative that addressed the Problem and Opportunity Statement. Based on the preliminary review of Alternative Planning Solutions, New Bridge (New Alignment) and Conserve Existing Structure is recommended to be carried forward in the EA process.

This Planning Solution addresses the problem statement by conserving the existing structure and providing an adjacent structure to accommodate vehicular traffic. It prioritizes active transportation on campus, maintains the gothic style of campus architecture and protects the view of the University Tower. The vehicular bridge will be subordinate to the historic active transportation bridge. Conserving the existing structure follows best management practices for heritage structures, minimizes the need for temporary works to accommodate active transportation during construction and avoids the need for relocation of utility and university service infrastructure. This technical recommendation was presented at the first Public Information Centre (PIC) for public and stakeholder feedback. There was general support for the Recommended Planning Solution, and it has been carried forward for further evaluation. In addition, the public commented on alternative locations for the new structure north and south of the existing bridge. This report documents the analysis and evaluation of the preliminary alignment of the new vehicular structure.

The preliminary conclusions and recommendations of the Analysis and Evaluation of Bridge Alignment Alternatives, December 19, 2022, refer to **Appendix A**. Alternative 2 South Alignment is recommended to be carried forward in the EA process, shown in **Figure 1**. This alternative has the best transportation characteristics and minimizes the impacts to the natural, cultural and social environments, land use and property and is anticipated to have a lower cost.

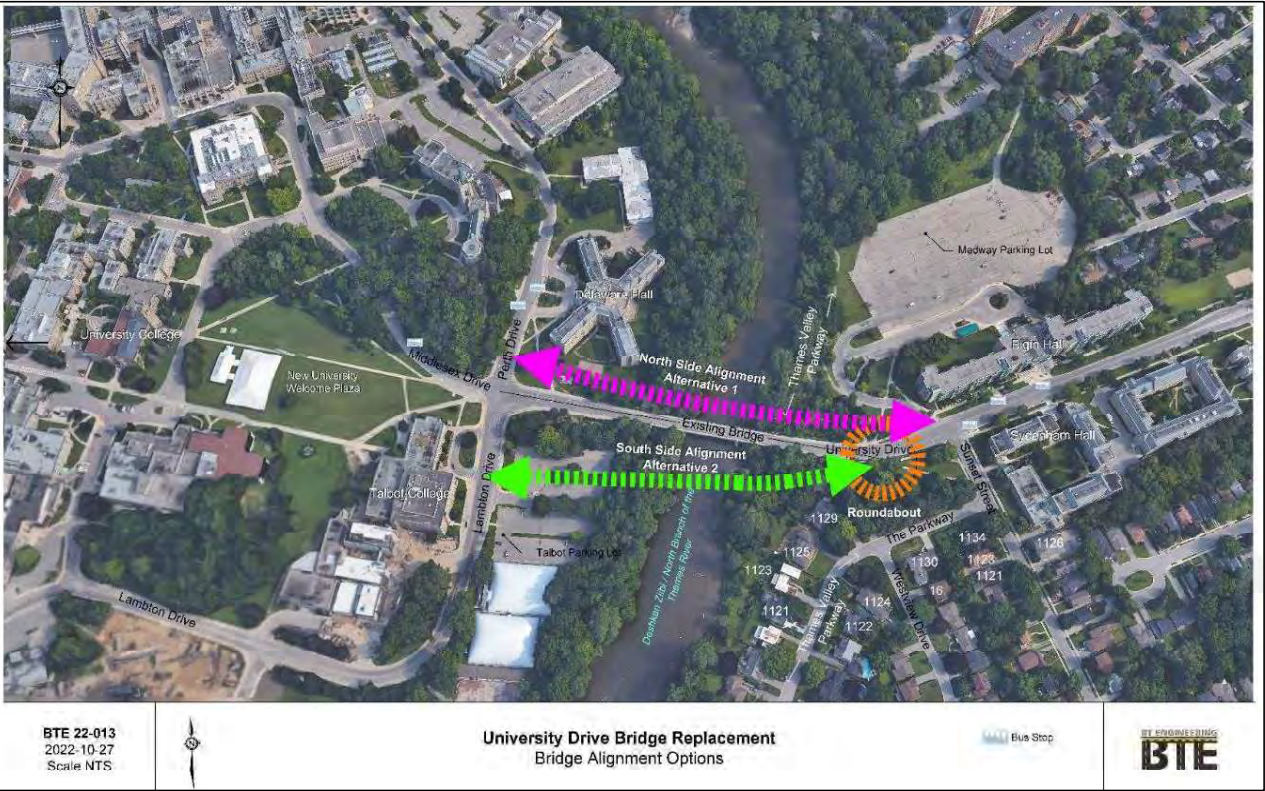


Figure 1: Bridge Alignment Alternatives

This alternative will also avoid impacts to a Species At Risk (SAR) tree; the Kentucky Coffee tree found in the vicinity of the existing bridge's northwest abutment.

2.0 ANALYSIS AND EVALUATION OF BRIDGE ALTERNATIVES

2.1 Coarse Screening of Bridge Alternatives

The preliminary conclusions and recommendations of the coarse screening of the Bridge Alternatives, refer in **Appendix B**, recommended that Alternative 1 (Concrete Arch) and Alternative 2 (Steel V Pier) both be carried forward for further evaluation.

3.0 EVALUATION CRITERIA

The initial task in the evaluation is to develop criteria on which the alternatives will be evaluated. This process includes the identification of "global" groups of factors followed by the selection of a number of "local" sub-factors under the global groups.

3.1 Qualitative Evaluation Methodology

The evaluation of alternatives carried forward was completed using a qualitative assessment to compare the effects and performance of the alternatives. This method considers the advantages and disadvantages of each of the alternatives using the evaluation criteria as descriptors to measure the relative differences of the alternatives being considered. These effects have considered preliminary natural, cultural, social and physical elements in the Study Area.

3.2 Global Evaluation Factors

As an initial step, the evaluation criteria were grouped into broad categories, or global factors, established to describe the study specific engineering and environmental concerns. Seven possible global factors were selected which were used for the evaluation.

The global factors for the alignment alternatives are:

- Structural.
- Transportation.
- Natural Environment.
- Cultural Environment.
- Social Environment.
- Land Use and Property.
- Cost.

3.3 Evaluation of Sub-Factors

Under each of the six global factors listed above, there were a number of sub-factors selected for which measurements could be made. These sub-factors were the individual descriptors for the evaluation. The selection of the sub-factors is very important to the decision-making process because they must adequately describe the issue or aspect of the study area to be evaluated and the unique features of each alternative. Any aspect regarding an alternative, where there are differences among alternatives, is incorporated into the decision-making process by including it as a sub-factor. Generally, the process begins by establishing a long list of potential sub-factors through discussions with the Project Team. Then, for each group of

alternatives being evaluated, the sub-factors are reviewed and screened by eliminating those that were considered equal or not applicable among the alternatives.

3.4 Bridge Alternatives Under Study

The bridge alternatives are described below:

1. **Alternative 1 - Concrete Arch:** The main span over the river is supported on a single shallow concrete arch rib. The deck is a post-tensioned concrete slab, supported on concrete wall-columns. The arch bears against concrete foundations, supported on a combination of battered piles and inclined micropiles. An open concrete barrier wall highlights the slenderness of the deck. The bridge has an elegant, understated, and classic form. Shown in **Figure 2** and **Figure 3**.
2. **Alternative 2 - Steel V-Pier:** In this bridge, the deck is formed by a stiffened steel plate, coated with a high-traction wearing surface. The spans consist of three parallel steel box girders, connected by floor beams. These girders are supported by two V-shaped piers, each leg of which is a welded hollow steel tube. These V-piers are founded on concrete pedestals supported by piles. An open steel barrier highlights the slenderness of the deck. The bridge has a very slender, minimal, and modern appearance. Shown in **Figure 4** and **Figure 5**.

3.5 Assessment of Alternatives

Transportation

- Alternatives 1 and 2 will include roadway improvements at Lambton Drive which will improve safety and promote active transportation consistent with objectives of the University's Master Plan. They support planned development within the campus, with moderate impacts on the existing Talbot parking lot adjacent to the University Tennis Centre. There is no meaningful transportation difference between the alternatives.

Structural

- The potential for ice damage to Alternative 2 is an additional low probability concern. The steel structure (Alternative 2) has increased potential for ice damage to steel compression members since the steel will be lower in relation to the normal flood levels. The concrete piers for Alternative 1 would be shaped to deflect ice and reduce the potential for ice flows getting caught at piers.
- Both structure types would routinely be designed with a 100-year service life. There will be no meaningful difference between the alternatives based on service life durability.
- Both alternatives would have comparable maintenance requirements.
- The hydraulic assessment of the concrete arch and steel deck with V-piers alternatives indicated both alternatives are viable with minor backwater increases upstream of the existing structure. These could be refined to achieve the desired 0.00 m water level change but it may require removal of the tennis bubbles and the hockey rink. It may not be necessary however to remove all these structures. Refer to **Appendix C**. A summary of the hydraulic findings are provided in **Table 1**.

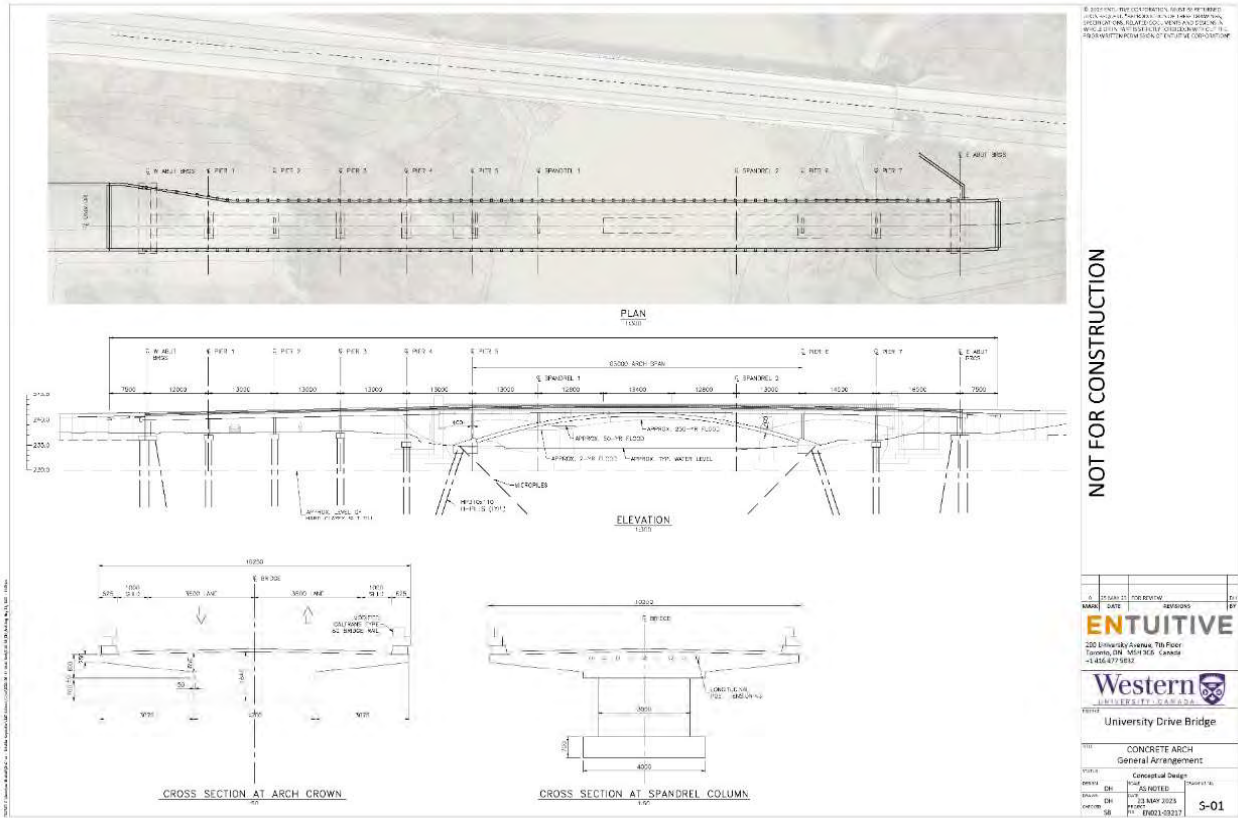


Figure 2: Alternative 1 Concrete Arch



Figure 3: Alternative 1 Concrete Arch Rendering

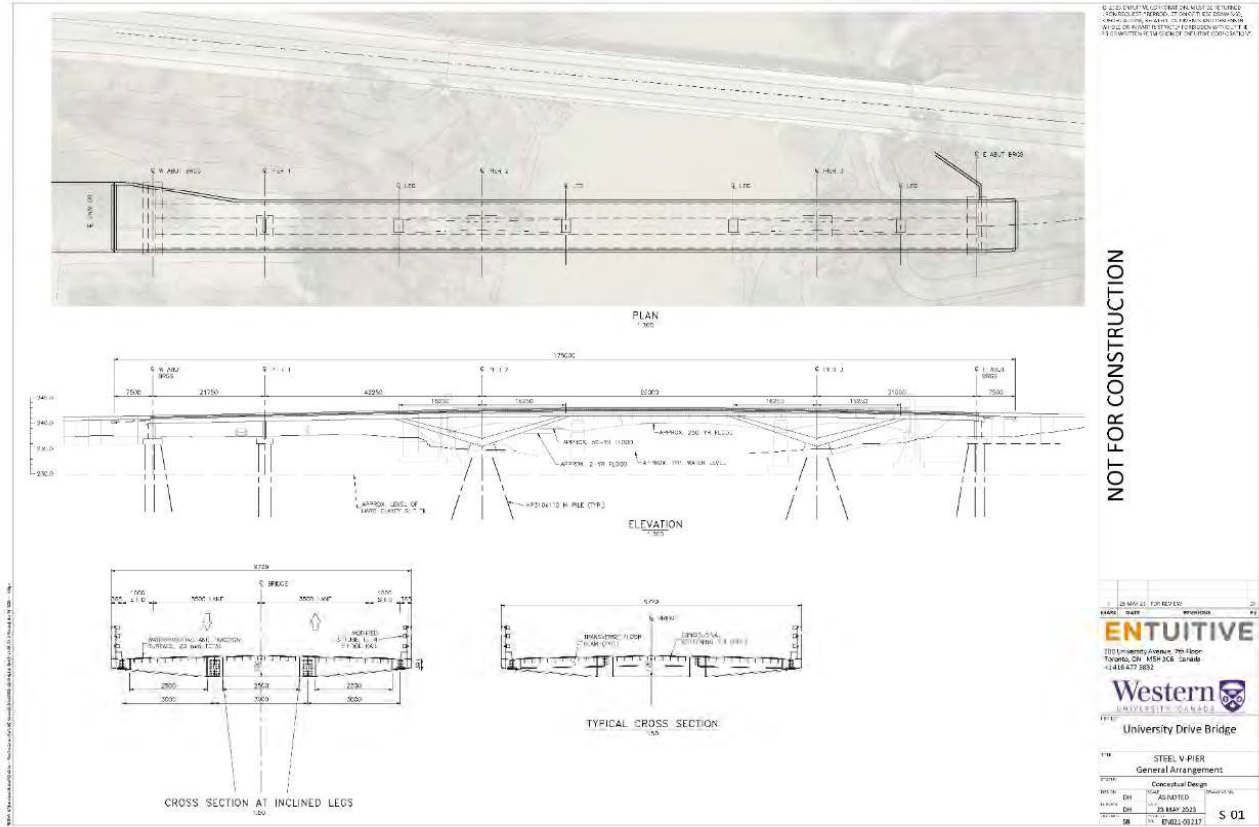


Figure 4: Alternative 2 Steel V-Pier



Figure 5: Alternative 2 Steel V-Pier Rendering

Table 1: Summary of Hydraulic Assessment

Factor	Alternative 1 Concrete Arch	Alternative 2 Steel V-pier
Hydraulics	Local increase in water levels, within the University property. Minor increases upstream of existing bridge. No increases in water levels if tennis bubbles are removed.	Local increase in water levels, within the University property. Minor increases upstream of existing bridge. No increases in water levels if tennis bubbles are removed.

Natural Features

- There will be no meaningful difference between the alternatives.

Cultural Environment

- The aesthetics of Alternative 1 generally match the architectural features of Western’s buildings in the vicinity and is preferred.
- Neither Alternative 1 nor Alternative 2 will impact the existing heritage bridge. Views from the heritage bridge to the new bridge will be equal for both alternatives.
- The Thames Valley Parkway on the east side of the river is recognized to be a major active transportation link for the City. The concrete bridge will have greater vertical clearance at the existing trail along the Thames River.

Social Environment

- No anticipated noise differences between Alternative 1 and 2.

Land Use and Property

- No anticipated differences between Alternative 1 and 2.

Cost

- No anticipated differences between Alternative 1 and 2.
- The steel v-pier structure is preferred for constructability.

A summary of the bridge selection evaluation is provided in **Table 2**.

4.0 PRELIMINARY TECHNICAL RECOMMENDATIONS

Based on the evaluation of bridge alternatives, Alternative 1 Concrete Arch is recommended as the Technically Preferred Alternative in the EA process. This alternative minimizes the risk of ice impacts, has visual characteristics consistent with existing architectural features and less trail impacts.

4.1 Refinements

Refinements to the Preferred Alternative will consider decreasing the bridge spans to improve the hydraulic capacity of the new bridge and obtain the desirable zero water level change up

and downstream of the new bridge. Refer to **Appendix C**, Preliminary Report on Results of Hydraulic Analysis, November 4, 2024, by Sanchez Engineering Inc.

Table 2: Evaluation of Bridge Alternatives		
Factor	Alternative 1 Concrete Arch	Alternative 2 Steel V Pier
Transportation		
Roadway improvements at Lambton Drive will improve safety and promote active transportation, with moderate impacts on the existing Talbot parking lot adjacent to the University Tennis Centre.	Equal ✓	Equal ✓
Structure Considerations		
Durability. Both alternatives would be built to meet a 100-year life cycle.	Equal ✓	Equal ✓
Ice Impacts. The steel v-pier structure will have less desirable ice impacts.	Good ✓	Fair —
Maintenance All alternatives require comparable maintenance requirements.	Equal ✓	Equal ✓
Hydraulics Loss of Floodplain Storage (Lambton Drive Hydraulics). Alternatives 1 and 2 have similar effects on the flood water levels and floodplain storage. In both cases, the potential effects are considered insignificant.	Good ✓	Poor ✗
Cultural Environment		
Aesthetics of concrete generally match the existing architecture. A concrete bridge is more elegant, cleaner and has a more direct expression of the structure than the heritage bridge and is preferred. The steel v-pier is slenderer distinctly modern or youthful compared to the heritage bridge.	Good ✓	Fair —

Factor	Alternative 1 Concrete Arch	Alternative 2 Steel V Pier
Socio-economic Environment		
Noise (Deck Surface) Both alternatives have a concrete deck. Both alternatives will be equal for noise.	Good ✓	Good ✓
Trail interference The Thames Valley Parkway on the east side of the river is recognized to be a major active transportation link for the City. The concrete bridge will have greater vertical clearance at the existing trail along the Thames River.	Good ✓	Poor ✗
Cost		
Cost to Construct	Comparable —	Comparable —
Constructability The ease of construction for the steel bridge is slightly better than the concrete version.	Fair —	Good ✓
Recommendation	Technically Preferred Alternative	Do not carry forward.

Legend: Good ✓ Fair — Poor ✗

Appendix A

Analysis and Evaluation of Bridge Alignment Alternatives
Refer to Appendix K of this ESR



Appendix B

Coarse Screening of Bridge Alternatives
Refer to Appendix L of this ESR



Appendix C

Preliminary Report on Results of Hydraulic Analysis

Refer to Appendix N of this ESR

Appendix N

Bridge Hydraulics Report

Western University

University Drive Bridge Replacement
Bridge Hydraulics Report

December 2025



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1 Introduction

Western University (Western) initiated a Class Environmental Assessment (EA) Study for improvements to the University Drive Bridge located across the north branch of the Thames River in London, Ontario. The EA Study is being undertaken by the BTE – Entuitive Joint Venture (JV). Sanchez Engineering Inc. (SEI) is the bridge hydraulics consultant (for this report, the JV and SEI are the Project Team).

The Alternative Planning Solutions considered the overall needs of the study area and identified alternative approaches of addressing the need for improvements including:

- Rehabilitation of the existing bridge.
- A new bridge on the existing alignment.
- Rehabilitation of the existing bridge for active transportation plus construction of a new bridge for vehicular traffic.

Based on the preliminary review of Alternative Planning Solutions, New Bridge (New Alignment) and Conserve Existing Structure was recommended to be carried forward in the EA process. In the Analysis and Evaluation of Bridge Alignment Alternatives, a North Alignment and a South Alignment were investigated. The South Alignment was recommended to be carried forward in the EA process. Refer to the Bridge Selection Analysis and Evaluation Report, November 2024.

Based on the South Alignment, the recommended new crossing is illustrated in Figure 1.

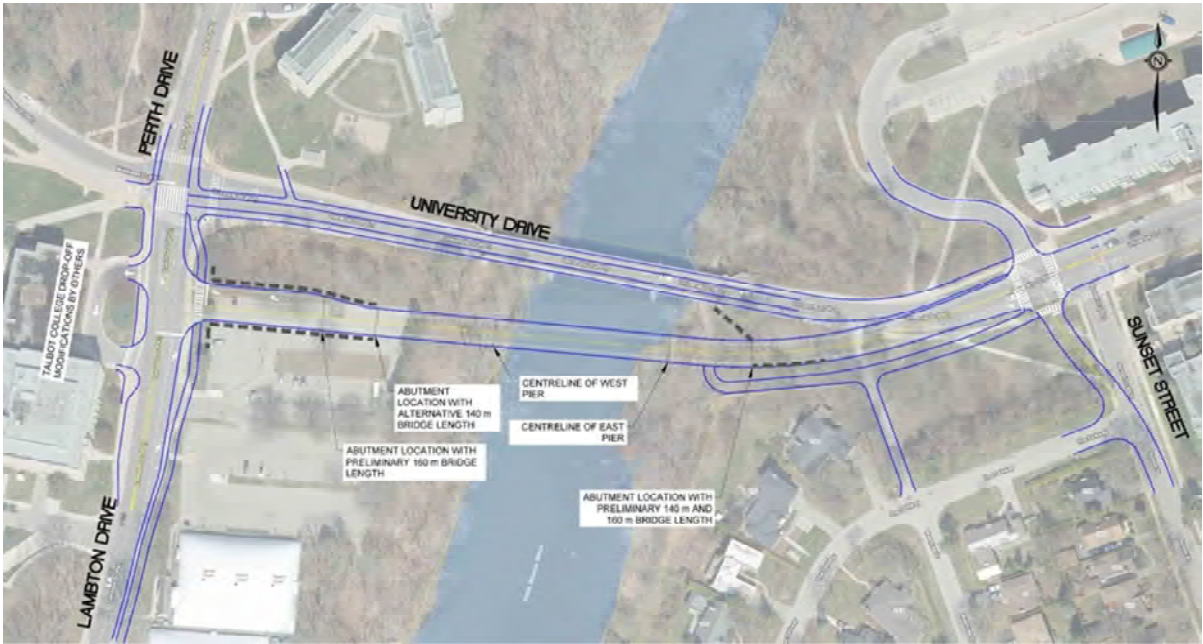


Figure 1 - Alignment of Proposed Crossing

The purpose of the Bridge Hydraulics Report is to summarize the results of the hydraulic investigations for the design of the proposed bridge. For completeness and to facilitate the review, this report includes a discussion of the background information used in the project, the hydraulic design criteria, the alternatives considered by the project, and the bridge alternatives considered.

The current version of the report is based on the report submitted on 27 October 2025, revised to include the results of comments received from the Upper Thames River Conservation Authority.

2 Background Information

Background information was provided by Western University and the Upper Thames River Conservation Authority (UTRCA). In addition, streamflow records for the Thames River were obtained from the Water Survey of Canada.

2.1 Provided by Western University

- Existing bridge original drawings
- Bridge rehabilitation drawings
- Watermain replacement drawings
- Bridge inspection reports
- Modeling Results presentation for Preliminary Staging Building, Parking Garage, University Drive Bridge (AECOM).
- Topographic Survey Data
- HEC-RAS 1D and 2D models completed by AECOM for the UWO Gathering Hub and Parking Structure Assessment.
- Draft Memorandum Report by AECOM, dated February 21, 2024, on the flood modeling for the proposed Community (Gathering) Hub and Parking Structure Projects, and University Drive update assessment.

2.2 Provided by the Conservation Authority

- HEC-RAS model for the reach of the Thames River between the extension of Victoria Street and King's University College (see Figure 1).
- LiDAR DEM for the same area.
- Peak flows for the 250-year flood, the Regulatory Flood for the Upper Thames River (extracted from the HEC-RAS model data).

2.3 Water Survey of Canada

Records of daily discharge were available for WSC Station No. 02GE002 – Thames River at Byron Spring. The daily records were used to develop the input hydrograph for the 2D model of the river, as discussed in Section 8.2. The hydrograph for the flood of April 9, 1947 was used as a basis for the model.

2.4 EA Study Reports

Relevant reports prepared by the BTE Entuitive JV during the EA Study are listed below:

- Alternative Planning Solutions Report
- Analysis and Evaluation of Bridge Alignment Alternatives, December 2022
- Bridge Selection Analysis and Evaluation Report, November 2024

3 Existing Bridge

The existing University Drive bridge was constructed in 1922. The bridge is a structural steel girder with concrete deck bridge, supported on two abutments and two 2.4 m wide piers. The spans are 25.3 m – 39.6 m – 25.3 m. The clear spans are 22.5 m – 37.1 m – 22.5 m. The soffits at midspan are 6.8 m above the streambed and 5.5 m above at the abutments and piers. The approximate waterway area of each span, measured to the lowest soffit elevations (i.e. the top of the piers and the abutments) are 89.9 m² - 192.5 m² - 80.0 m², for a total waterway area of 362.4 m².

The main characteristics of the existing University Drive bridge are summarized in Table 1.

Table 1 Existing University Drive Bridge Characteristics	
Elevation of top of deck	242.0 m±
Soffit elevation at mid-span	240.1 m±
Soffit elevation at supports	238.9 m±
Deck width	10.2 m±
Total span	90.2 m±
Total clear span	82.1 m±
No. of piers	2
Pier width	2.4 m±
Spans (West-Centre-East)	25.3 m± – 39.6 m± – 25.3 m±
Clear spans (West-Centre-East)	22.5 m± – 37.1 m± – 22.5 m±
Height of soffit above streambed at mid-span	6.8 m±
Height of soffit above streambed at supports	5.5 m±
Total waterway area	438.1 m²
Waterway area (West-Centre-East)	111.0 m²± - 230.4 m²± - 96.7 m²±
Total Waterway area to top of supports	362.4 m²±
Waterway area (West-Centre-East) to top of supports	89.9 m²± - 192.5 m²± - 80.0 m²±

4 Design Flows

The Thames River watershed at the University Drive bridge crossing drains approximately 1700 km² as shown on Figure 2.

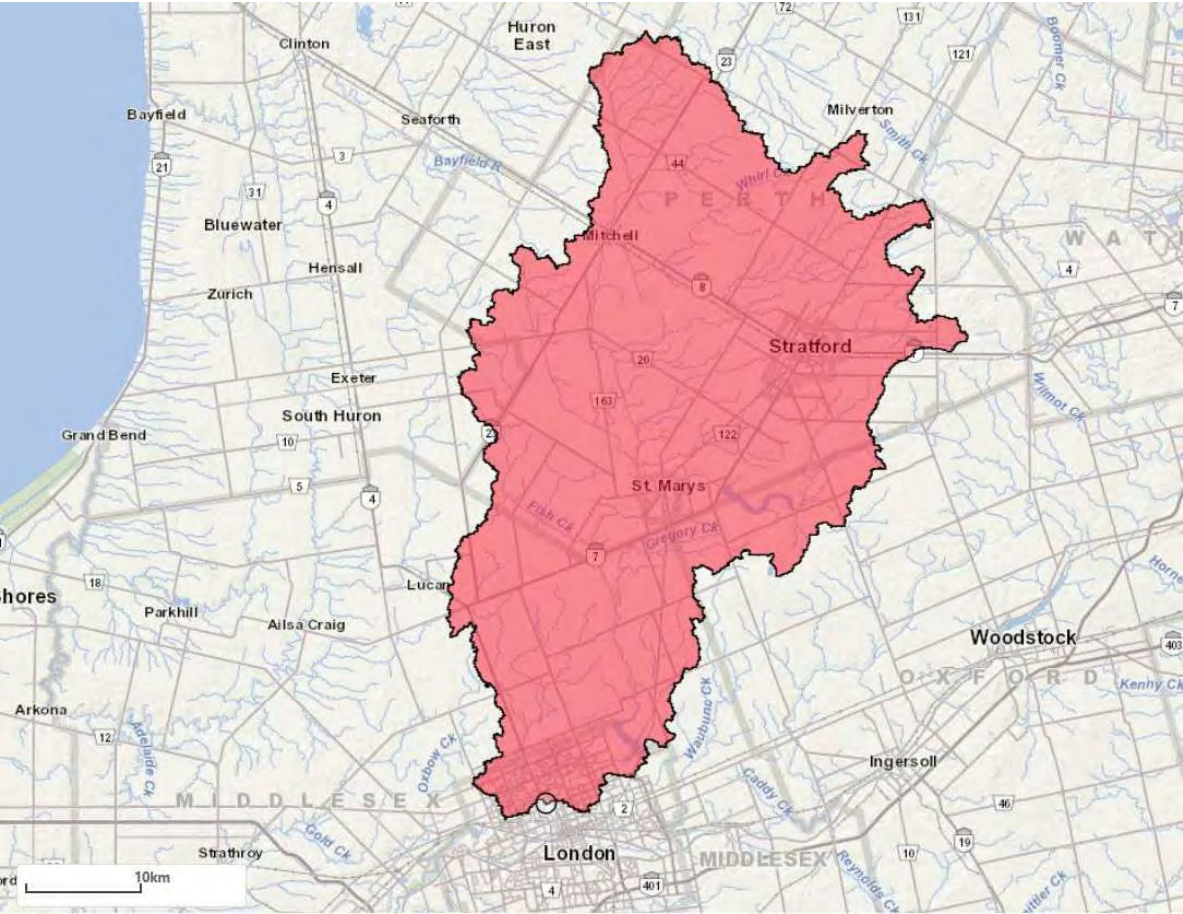


Figure 2 - Thames River watershed at University Drive

The Conservation Authority provided the peak flows with return period of 250 years with the hydraulic model of the river. The 250-year flood is the Regulatory Flood in the Thames River within the UTRCA jurisdiction.

For the design of the bridge waterway, it is necessary to determine the floods corresponding to return periods of 50 and 100 years. The flood estimates for this study were calculated based on a flood frequency analysis of the streamflow records collected by the Water Survey of Canada for Station No. 02GE002 – Thames River at Byron. The gross drainage area at the gauge is 3080 km² so it was necessary to pro-rate the flowrates at the gauge to the bridge site.

The flood flows for various return periods are summarized in Table 2. The 250-year flood was provided by UTRCA in the hydraulic model.

Table 2 Flood Flows at University Drive		
Return Period (years)	Annual Exceedance Probability (AEP) (%)	Peak Flowrate (m ³ /s)
2	50	540
5	20	670
10	10	730
20	4.0	770
50	2.0	820
100	1.0	840
250	0.4	1276

5 Hydraulic Design Criteria

The design criteria for the hydraulic design of the new bridge are based on the MTO Highway Drainage Design Standards, which address the Annual Exceedance Probability of the design flood, vertical clearance to the lowest soffit elevation and the freeboard to the travel lanes above the design flood high water level.

Standard WC-1 Design Flows (Bridges and Culverts) identifies the minimum Design Flows for the sizing of bridges and culverts, the requirement for accommodating the Regulatory Flood, and for determining the maximum allowable increase in flood elevations upstream of a bridge or culvert. The standard is written for Provincial Highways and is used by municipalities in Ontario.

Table 3 Design Flow Return Period for Bridges and Culverts - Standard Road Classifications			
Functional Road Classification	AEP (%) of Design Flow (Years) ^{1,2,3}		Check Flow for Scour
	Total Span less than or equal to 6.0 m	Total Span greater than 6.0 m	
Freeway, Urban Arterial	2	1	130% of 1% AEP
Rural Arterial, Collector Road	4	2	115% of 1% AEP
Local Road	10	4	100% of 1% AEP

Standard WC-1 notes that where there is an increase in flood elevation on private land that will adversely impact the landowners, through consultation with the Conservation Authority an agreement will be made with the affected landowners. If there is a negative impact, based on the

effect on private property, it may be necessary to change the proposed opening size to mitigate potential impacts.

Standard WC-2 Freeboard and Clearance at Bridge Crossings identifies the soffit clearance and freeboard for bridges across waterbodies on Standard Road Classification roads and Low Volume Roads.

Clearance is the vertical distance from the High Water Level of the Design Flow to the lowest point on the soffit (lowest soffit elevation).

Desirable Freeboard is measured vertically from the Energy Grade Line elevation for the Design Flow to the edge of the travelled lane. Minimum Freeboard is measured vertically from the High Water Level for the Design Flow to the edge of the travelled lane.

Standard WC-2 requires that the Freeboard and Clearance at bridge crossings shall be greater than or equal to 1.0 m for freeway, arterial roads, and collector roads.

Where the structure waterway conveys the entire Regulatory Flow without relief flow over the approaches, the Freeboard and Clearance for the Regulatory Flow can be less than the minimum required for the Design Flow.

Table 4 summarizes the Hydraulic Design Criteria, based on the MTO Highway Drainage Design Standards and the requirements of the Conservation Authority.

Table 4 Bridge Hydraulic Design Criteria	
Road Classification	Collector Road
Bridge Span	≥90 m
Annual Exceedance Probability (AEP) of Design Flood (Recurrence Interval)	2%
	50 years
Check Flood	115% of 1% AEP flood
Vertical Clearance	
Design Flood	≥1.0 m
Check Flood	> 0 m
Freeboard	
Design Flood	≥1.0 m
Check Flood	> 0 m

6 Alternative Bridge Configurations

Several bridge types were considered in the EA process, as follows:

- a. Steel box
- b. Concrete arch
- c. Steel deck with V-piers
- d. Timber girder

Option b – Concrete arch and Option c – Steel deck with V-piers were carried forward for additional evaluation.

Preliminary General Arrangement drawings were prepared by Entuitive for the Carried Forward bridge alternatives:

- Alternative 1 – Concrete Arch bridge
- Alternative 2 – Steel bridge with V-Piers

7 AECOM Hydraulic Analysis

7.1 AECOM Report Conclusions

Following an initial investigation of alternative crossing alignments and bridge types and spans by BTE, Entuitive, and Sanchez Engineering (the Project Team), Western University asked AECOM to integrate the analysis of the proposed bridge with the work that they were doing for the Community (Gathering) Hub and a new Parking Structure.

As part of their work, AECOM carried out a flood impact assessment update for the proposed University Drive Bridge. As reported in their February 2024 draft Memorandum Report, AECOM examined three bridge alternatives:

Alternative 1 – Concrete Arch, 160 m total span

Alternative 2 – Concrete Arch, 140 m total span

Alternative 3 – Steel bridge with V-Piers, 140 m total span

In their assessment, AECOM considered the ineffective flow areas downstream of the existing bridge, caused by the bridge itself and the tennis bubbles located on the west bank downstream of University Drive. The AECOM HEC-RAS model includes an ineffective flow area that removes from active flow the area shown in grey in Figure 3, taken from the AECOM draft report.

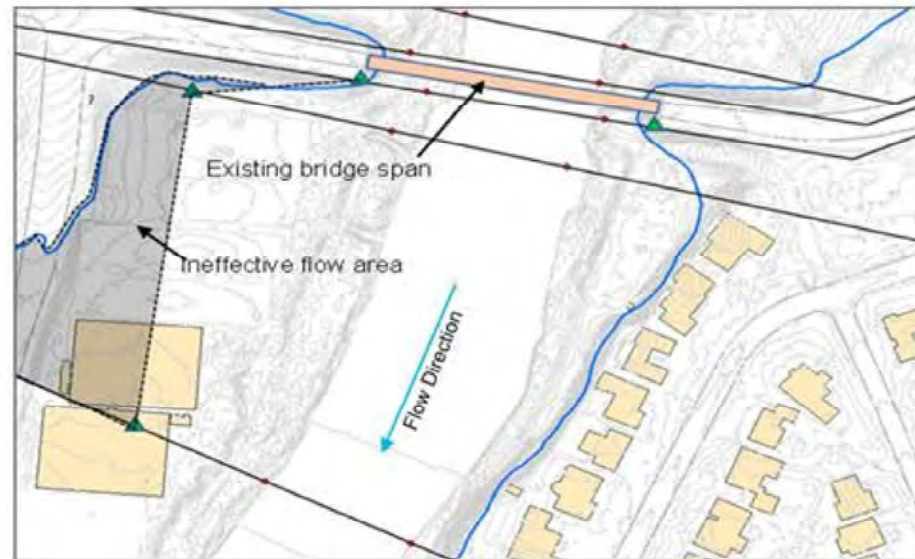


Figure 3 - Ineffective Flow Area and Cross-sections in the Initial Model

The AECOM draft Memorandum Report concluded as follows:

- Lengthening the bridge span to 160 m would not help reduce the effect of the proposed bridge because the additional span length would be in an area of ineffective flow and therefore the additional span length would not provide additional flow conveyance.
- The proposed 140 m span concrete arch bridge would result in a 0.10 m increase in the regulatory flood water level, with respect to the existing conditions.
- The proposed 140 m span steel v-pier bridge would increase the regulatory flood water level by 0.08 m upstream of the University Drive bridge.

The investigations in this report update the results of the AECOM calculations, using the HEC-RAS model provided by the Conservation Authority.

7.2 AECOM 1D/2D HEC-RAS Model

AECOM provided their HEC-RAS model to the Project Team. Of note, the model is based on the terrain surface that AECOM used in previous studies for the City of London and the University.

The geometry of the existing University Drive and bridge was updated by AECOM in their 2018 study. Their model was used for the analysis of the bridge hydraulics carried out by the Project Team.

However, in February 2025 the Conservation Authority provided their latest HEC-RAS model to the Project Team, and asked that their model be used for the subsequent analysis.

8 Hydraulic Evaluation of Bridge Alternatives

8.1 Approach

Following the work completed by AECOM, the University requested the Project Team to proceed to prepare the submission for approval of the new bridge by the Conservation Authority.

The focus of the next steps was to determine the potential effect of the proposed bridge and, if the effect was found to be adverse (i.e. significant increases in the upstream water levels), to determine options to reduce the effect. Because it is the most important flood event, the efforts were concentrated on the Regulatory Flood.

As discussed in the previous section, the 1D model by AECOM (based on the model provided by the Conservation Authority) assumed that the flood would not use the flow path on the west side of the tennis bubbles for active flow. This assumption was based on the application of standard modelling assumptions commonly used in 1D modelling. However, modelling of the river using a 2-dimensional (2D) model of the river is more representative of the flow behaviour.

Accordingly, the approach to the problem can be summarized as follows:

- Confirm the actual expected flow paths for the Regulatory Flood using a 2D model of the river, both in its existing conditions and with the new bridge in place.

As described in the following sub-section, the 2D model of the river shows that the width of the flow path is approximately equal to the width of the existing bridge, but in a relatively short length the river flow returns to use the entire flood plain, including the flow area available on the west side of the tennis bubbles and the hockey rink. Therefore, the ineffective flow areas were modified to reflect this finding.

- Once the flow configuration is determined in the 2D model, revise the ineffective flow areas in the 1D model in the existing condition.
- Using the 2D model results, add cross-sections to the 1D model to reflect the obstruction of the tennis bubbles and the hockey rink.
- Use the 1D model to calculate the water surface profiles for the existing conditions and the proposed bridge alternatives, to determine the effect on upstream water levels.

Based on the revised ineffective flow areas, the proposed bridge spans were revised to 127 m total span.

- The revised 1D model of the proposed bridge showed generally no discernible effect on water levels, except immediately downstream and upstream of the proposed bridge.

8.2 2D Model

The Digital Elevation Model (DEM) model of the existing conditions was based on the DEM model provided by the Conservation Authority. The river bathymetry was modeled using the cross-section information in the AECOM 1D model of the river. The resulting DEM was used for the calculations.

The entire reach between North Branch Park/Huron Woods and Gibbons Park bridge was modelled as one 2D Area. Manning's n sub-areas were defined for the tree-covered areas, the suburban

development areas, and the built-up areas. Breaklines were defined to model the river banks. The northbound and southbound Richmond Street bridges and the existing University Drive bridge were modelled using the 2D bridge methods in HEC-RAS.

The tennis bubbles, the hockey rink, and the Delaware Hall building were modelled explicitly as flow obstructions, because of their vicinity to University Drive and to enable visualization of their effect on the flow patterns, as discussed above.

The inflow to the 2D model was based on the hydrograph of the April 1947 flood recorded at WSC Station No. 02GE002, pro-rated based on the ratio of the regulatory flood peak flow and the maximum recorded flow for the 1947 flood.

Figure 4 shows the flooded area and the streamlines generated by the HEC-RAS model for the peak flow conditions at the bridge. The figure shows that the flood will expand to the west side of the tennis bubbles and the hockey rink.

Figure 5 shows the equivalent flow conditions for a 127 m span concrete arch bridge. It can be seen that the flow will use the entire bridge span.



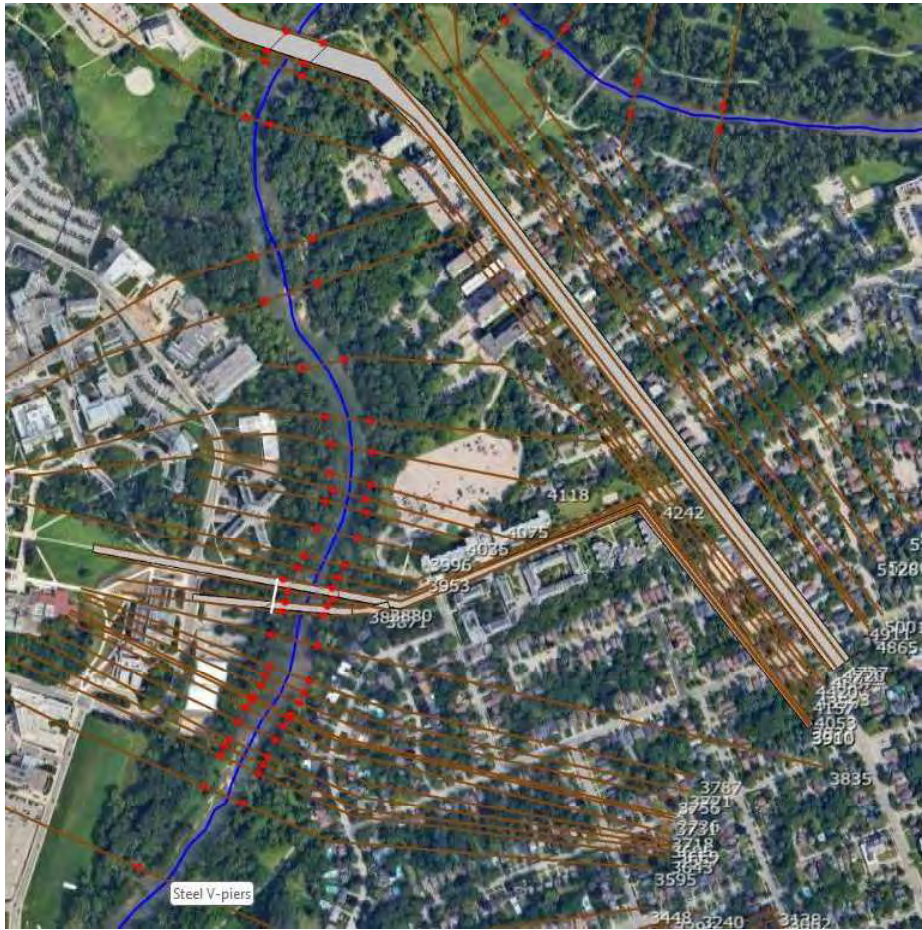


Figure 6 - 1D model with Additional Sections

8.3.2 Effect of Proposed Bridge on Water Levels

The following bridge alternatives were evaluated initially:

- Alternative 1 – Concrete Arch
- Alternative 2 – Steel Girder bridge with V-Piers

In both cases, the calculations assumed that the total bridge span would be 127 m, with a main span of 65 m, which is required to be able to span the entire watercourse without the need for a pier in the channel.

Following further evaluation, Alternative 1 – Concrete Arch was selected as the Technically Preferred Alternative, and Alternative 2 was not carried forward. The evaluation is included in the Environmental Study Report (ESR).

Table 5 presents the calculated water levels for the 250-year flood in the reach of the river between the Western football stadium and Monsignor Wemple Hall, for the existing conditions and the

conditions with the concrete arch bridge. In the reach, the peak flowrates for the 250-year flood were provided by the Conservation Authority in the ThamesRiver2025 model of the river reach. The location of the HEC-RAS model cross-sections are shown on MAP01, included in Appendix A.

Table 5 – Calculated Water Levels for the 250-Year Flood for the Existing Conditions and with the Proposed Concrete Arch Bridge						
River Station (Cross-section number)	Flood	Flowrate (m³/s)	Water Surface Elevation (m)		Computed Change (+ is increase)	
			Existing Conditions	With Concrete Arch	Water Level (m)	Energy Head (m)
5788	250 yr	1139	241.98	241.98	0.00	0.00
5539	250 yr	1139	241.96	241.96	0.00	-0.01
5462	250 yr	1139	241.75	241.75	0.00	0.00
5336	250 yr	1139	241.67	241.66	-0.01	0.00
5287	250 yr	1139	241.66	241.65	-0.01	-0.01
5281	Thames Valley Parkway Bridge					
5275	250 yr	1139	241.65	241.65	0.00	-0.01
5200	250 yr	1139	241.46	241.46	0.00	0.00
5128	250 yr	1139	241.47	241.47	0.00	-0.01
5001	250 yr	1139	241.39	241.39	0.00	0.00
4911	250 yr	1139	241.11	241.1	-0.01	-0.01
4865	250 yr	1139	240.95	240.95	0.00	0.00
4737	250 yr	1139	241.06	241.06	-0.01	-0.01
4720	Richmond Street North Bridges					
4702	250 yr	1139	240.56	240.55	-0.01	-0.01
4687	250 yr	1139	240.55	240.54	-0.01	-0.01
4503	250 yr	1139	240.73	240.72	-0.01	0.00
4420	250 yr	1276	240.66	240.65	-0.01	-0.01
4356	250 yr	1276	240.53	240.53	0.00	-0.01
4242	250 yr	1276	240.39	240.38	-0.01	-0.01
4157	250 yr	1276	240.37	240.36	-0.01	-0.01
4118	250 yr	1276	240.31	240.30	-0.01	-0.01
4075	250 yr	1276	240.32	240.31	-0.01	-0.01
4053	250 yr	1276	240.07	240.06	-0.01	-0.01
4035	250 yr	1276	240.14	240.13	-0.01	-0.01
3996	250 yr	1276	240.04	240.03	-0.01	-0.01
3953	250 yr	1276	240.12	240.11	-0.01	0.00
3934	250 yr	1276	239.89	239.88	-0.01	-0.01
3916	250 yr	1276	239.91	239.90	-0.01	-0.01
3910	University Drive Bridge					

Table 5 – Calculated Water Levels for the 250-Year Flood for the Existing Conditions and with the Proposed Concrete Arch Bridge						
River Station (Cross-section number)	Flood	Flowrate (m³/s)	Water Surface Elevation (m)		Computed Change (+ is increase)	
			Existing Conditions	With Concrete Arch	Water Level (m)	Energy Head (m)
3901	250 yr	1276	239.76	239.75	-0.01	-0.01
3886	250 yr	1276	239.55	239.75	0.20	0.03
3880	Proposed Concrete Arch Bridge					
3871	250 yr	1276	239.57	239.7	0.13	0.00
3835	250 yr	1276	239.56	239.56	0.00	0.00
3787	250 yr	1276	239.47	239.47	0.00	0.00
3771	250 yr	1276	239.42	239.42	0.00	0.00
3756	250 yr	1276	239.20	239.20	0.00	0.00
3736	250 yr	1276	239.12	239.12	0.00	0.00
3718	250 yr	1276	239.10	239.10	0.00	0.00
3696	250 yr	1276	239.08	239.08	0.00	0.00
3669	250 yr	1276	239.06	239.06	0.00	0.00
3657	250 yr	1276	239.05	239.05	0.00	0.00
3643	250 yr	1276	239.15	239.15	0.00	0.00
3595	250 yr	1276	239.23	239.23	0.00	0.00
3448	250 yr	1276	239.17	239.17	0.00	0.00
3295	250 yr	1276	239.09	239.09	0.00	0.00
3240	250 yr	1276	239.01	239.01	0.00	0.00
3129	250 yr	1276	238.76	238.76	0.00	0.00
3062	250 yr	1276	238.76	238.76	0.00	0.00
2993	250 yr	1276	238.77	238.77	0.00	0.00
2867	250 yr	1276	238.80	238.80	0.00	0.00
2785	250 yr	1276	238.74	238.74	0.00	0.00
2683	250 yr	1276	238.59	238.59	0.00	0.00

With reference to Table 5, at river stations 3871 and 3886, the hydraulic modelling indicates localized increases in water surface elevation of 0.13 m and 0.20 m, respectively, under the 250-year flood condition. These cross-sections are located immediately downstream and upstream of the proposed bridge, and represent the maximum modelled changes in water level associated with the structure.

As illustrated in Figure 7, the revised floodline in the vicinity of the bridge closely follows the existing floodline and primarily affects University-owned lands, including 1129 The Parkway. While a localized transition in water surface elevation occurs downstream of the bridge, no measurable increase in flood elevation is anticipated on adjacent privately owned lands, and no impacts to private property are expected.



Figure 7 - Floodline changes at the southeast quadrant of the new bridge (Sections 3871 and 3886)

It is noted that the model for the concrete arch bridge includes regrading of the section upstream of the new bridge (3886) based on the proposed grades between the new bridge and the existing University Drive.

Upstream of the existing University Drive crossing, the calculations show changes in water surface elevations of -0.01 m, which are the result of the calculation itself and do not reflect a change that would physically occur.

Figure 8 shows the floodlines for the 250-year flood for the existing conditions and with the proposed 127 m span concrete arch bridge. It can be observed that the floodlines overlap each other.

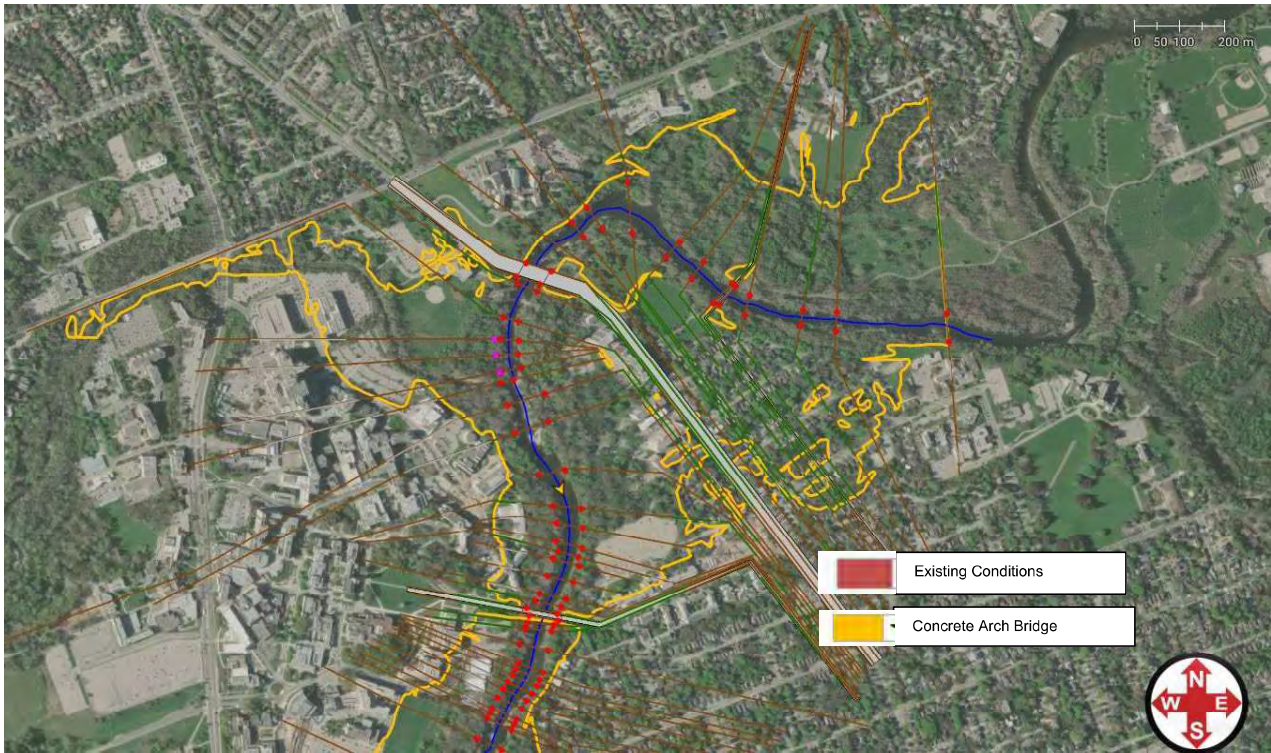


Figure 8 - Flood Plain Limits for 250-year Flood, Existing Conditions and with New Concrete Arch Bridge

9 Effect of Tennis Bubbles

The Conservation Authority requested that this report includes a discussion of the potential effect on water levels of removing the tennis bubbles, for information only. Table 6 presents the calculated water levels for the 250-year flood in the reach of the river between the Western football stadium and Monsignor Wemple Hall, for the existing conditions and the conditions with the concrete arch bridge and the tennis bubbles removed.

Table 6 – Calculated Water Levels for the 250-year Flood for the Existing Conditions Compared to the Proposed Concrete Arch Bridge, with the Tennis Bubble Removed						
River Station (Cross-section number)	Flood	Flowrate (m³/s)	Water Surface Elevation (m)		Computed Change (+ is increase)	
			Existing Conditions	With Concrete Arch	Water Level (m)	Energy Head (m)
5788	250 yr	1139	241.98	241.97	-0.01	-0.01
5539	250 yr	1139	241.96	241.95	-0.01	-0.01
5462	250 yr	1139	241.75	241.74	-0.01	-0.01
5336	250 yr	1139	241.67	241.65	-0.02	-0.01
5287	250 yr	1139	241.66	241.64	-0.02	-0.02
5281	Thames Valley Parkway Bridge					
5275	250 yr	1139	241.65	241.64	-0.01	-0.01
5200	250 yr	1139	241.46	241.45	-0.01	-0.01
5128	250 yr	1139	241.47	241.45	-0.02	-0.02
5001	250 yr	1139	241.39	241.38	-0.01	-0.01
4911	250 yr	1139	241.11	241.09	-0.02	-0.02
4865	250 yr	1139	240.95	240.93	-0.02	-0.01
4737	250 yr	1139	241.06	241.04	-0.02	-0.02
4720	Richmond Street North Bridges					
4702	250 yr	1139	240.56	240.53	-0.03	-0.02
4687	250 yr	1139	240.55	240.51	-0.04	-0.02
4503	250 yr	1139	240.73	240.70	-0.03	-0.02
4420	250 yr	1276	240.66	240.63	-0.03	-0.03
4356	250 yr	1276	240.53	240.50	-0.03	-0.03
4242	250 yr	1276	240.39	240.36	-0.03	-0.04
4157	250 yr	1276	240.37	240.33	-0.04	-0.03
4118	250 yr	1276	240.31	240.27	-0.04	-0.03
4075	250 yr	1276	240.32	240.28	-0.04	-0.04
4053	250 yr	1276	240.07	240.02	-0.05	-0.03
4035	250 yr	1276	240.14	240.10	-0.04	-0.04
3996	250 yr	1276	240.04	239.99	-0.05	-0.04
3953	250 yr	1276	240.12	240.07	-0.05	-0.04
3934	250 yr	1276	239.89	239.84	-0.05	-0.04
3916	250 yr	1276	239.91	239.86	-0.05	-0.04
3910	University Drive Bridge					
3901	250 yr	1276	239.76	239.71	-0.05	-0.04
3886	250 yr	1276	239.55	239.71	0.16	-0.01

Table 6 – Calculated Water Levels for the 250-year Flood for the Existing Conditions Compared to the Proposed Concrete Arch Bridge, with the Tennis Bubble Removed						
River Station (Cross-section number)	Flood	Flowrate (m ³ /s)	Water Surface Elevation (m)		Computed Change (+ is increase)	
			Existing Conditions	With Concrete Arch	Water Level (m)	Energy Head (m)
3880	Proposed Concrete Arch Bridge					
3871	250 yr	1276	239.57	239.66	0.09	-0.04
3835	250 yr	1276	239.56	239.51	-0.05	-0.04
3787	250 yr	1276	239.47	239.41	-0.06	-0.03
3771	250 yr	1276	239.42	239.37	-0.05	-0.03
3756	250 yr	1276	<u>239.20</u>	<u>239.28</u>	0.08	-0.03
3736	250 yr	1276	<u>239.12</u>	<u>239.19</u>	0.07	-0.02
3718	250 yr	1276	<u>239.10</u>	<u>239.11</u>	0.01	-0.02
3696	250 yr	1276	<u>239.08</u>	<u>239.11</u>	0.03	-0.03
3669	250 yr	1276	239.06	239.11	0.05	-0.03
3657	250 yr	1276	239.05	239.13	0.08	-0.04
3643	250 yr	1276	239.15	239.15	0.00	0.00
3595	250 yr	1276	239.23	239.23	0.00	0.00
3448	250 yr	1276	239.17	239.17	0.00	0.00
3295	250 yr	1276	239.09	239.09	0.00	0.00
3240	250 yr	1276	239.01	239.01	0.00	0.00
3129	250 yr	1276	238.76	238.76	0.00	0.00
3062	250 yr	1276	238.76	238.76	0.00	0.00
2993	250 yr	1276	238.77	238.77	0.00	0.00
2867	250 yr	1276	238.80	238.80	0.00	0.00
2785	250 yr	1276	238.74	238.74	0.00	0.00
2683	250 yr	1276	238.59	238.59	0.00	0.00

With reference to Table 6, the location of the tennis bubbles is modelled with river stations 3696 to 3756; the calculated water level is shown underlined. Based on the results shown in Table 6, it can be concluded that removal of the tennis bubbles would result in local increases in flood levels and that there would be a minor effect on water levels upstream of the proposed concrete arch bridge.

10 Conclusions and Recommendations

10.1 Conclusions

The following are the conclusions emanating from the study:

1. The 2D model shows that the flow downstream of the University Drive bridge is constrained by the bridge waterway for approximately 25 m downstream, but it expands quickly to use the entire river channel and floodplain below that point.
2. The span of the proposed bridge does not need to be longer than 127 m because a longer span would not provide additional water level change benefits.
3. A longer span reduces the footprint of the structure in the flood plain and the volume of flood storage taken up by a 127 m span structure; however, the cost of the additional bridge length cannot be justified since the storage volume can be compensated by other less costly methods.
4. The proposed concrete arch bridge results in no change to water levels, except for localized effects immediately upstream and downstream of the structure (refer to Table 5). These localized effects are generally confined to University-owned lands, and no impacts to adjacent private property are anticipated.
5. The removal of the tennis bubbles results in localized increases in water levels in the vicinity of the proposed concrete arch bridge and for a short distance downstream, along with a minor reduction upstream.

10.2 Recommendations

The following are the recommendations implied or specifically given in the report:

1. The concrete arch bridge with a total span of 127 m [31 m – 65 m – 31 m] is the preferred solution.
2. The results of the hydraulic analysis were submitted for review and comments to the Conservation Authority. This report includes the modifications made in response to their comments. This report can be submitted to the UTRCA for approval of the proposed bridge.
3. As part of the Environmental Assessment consultation program, potentially affected private property owners upstream and downstream of the proposed bridge will be contacted and advised of forecast changes in regulatory flood elevations, where applicable. Property owners will be provided an opportunity to offer feedback during the consultation process, with comments documented as part of the EA, and will also have the opportunity to comment during the Ministry of the Environment, Conservation and Parks (MECP) 30-day review period.

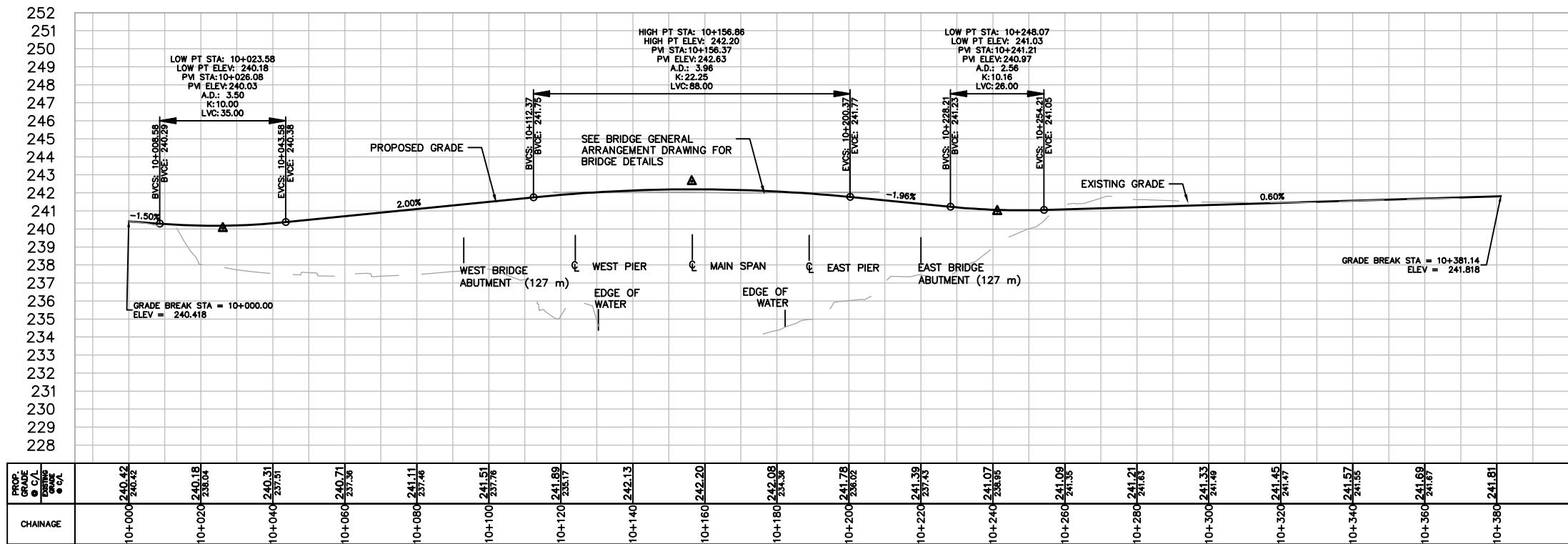
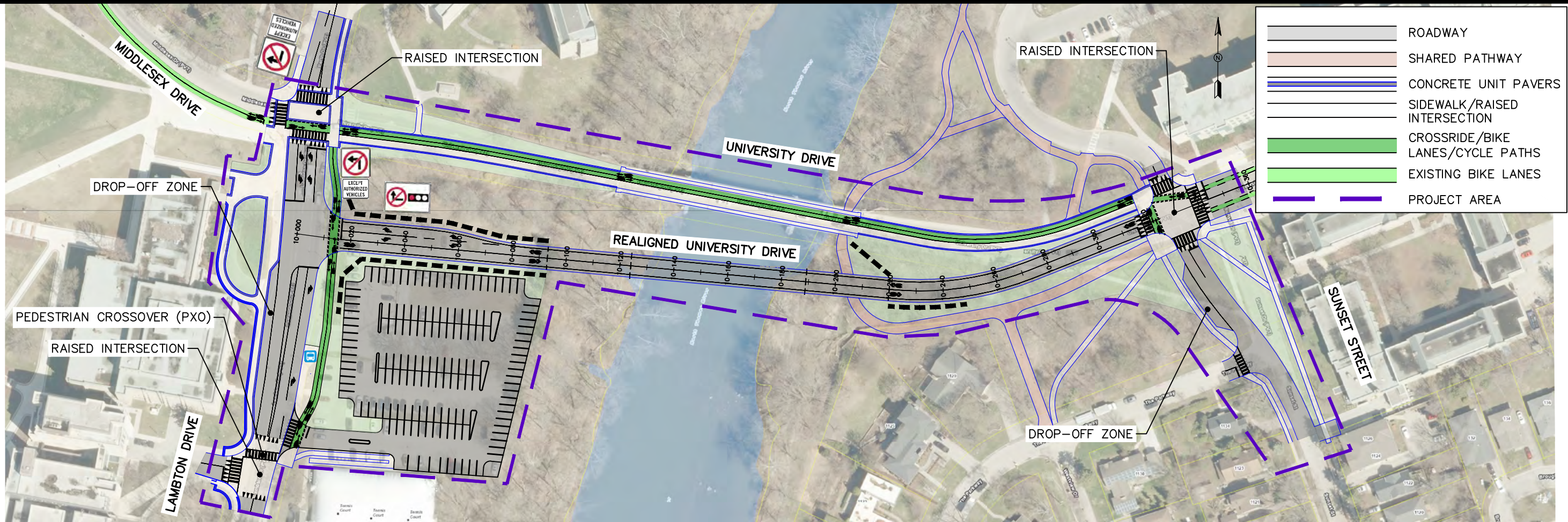
Sanchez Engineering Inc.

An aerial photograph of the University of Illinois at Chicago campus. The map is overlaid with green contour lines indicating elevation. A yellow arrow in the top left corner points left. A yellow label 'PROPOSED BRIDGE' is visible near the center-right of the map. The campus features various buildings, parking lots, and a river or canal running through it.

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Appendix O

Plates



SCALE 10 0 20
1:1500
DATE June 3, 2026
DRAWN BY W.A.
FILE No. 22-013

WESTERN UNIVERSITY
UNIVERSITY DRIVE BRIDGE
Preliminary Design

PLATE
1