Report to Civic Works Committee

To:	**Chair and Members** **Civic Works Committee**
From:	**Kelly Scherr, P. Eng., MBA, FEC** **Deputy City Manager, Environment & Infrastructure**
Subject:	**Windermere Road Improvements** **Environmental Study Report**
Date:	**September 13, 2022**

Recommendation

That, on the recommendation of the Deputy City Manager, Environment & Infrastructure, the following actions **BE TAKEN** with respect to the Windermere Road Improvements Municipal Class Schedule C Environmental Assessment:

a) The Windermere Road Improvements Environmental Assessment Study **BE ACCEPTED**;

b) A Notice of Study Completion for the Project **BE FILED** with the Municipal Clerk; and,

c) The Environmental Study Report **BE PLACED** on the public record for a 30-day review period.

It being noted that the project implementation timing will be reconsidered in the future Development Charges Background Study and multi-year budgeting processes due to the increased project cost estimate and a capital budget amendment will be brought forward with the 2023 Budget Update to identify only near-term pre-engineering funds to maintain project progress.

Executive Summary

Purpose

This report provides an overview of the Municipal Class Environmental Assessment (EA) for the Windermere Road improvements and seeks approval to finalize the study and post it for the 30-day public review period. The study identifies improvements to the Windermere Road corridor from Western Road to Doon Drive's west leg, along with a new cycling connection along Richmond Street from Windermere Road to the Thames Valley Parkway.

Context

The City of London strives to provide sustainable transportation infrastructure and accommodation for all modes of transportation and users of all ages and abilities.

The Windermere Road corridor from Western Road to Richmond Street was last reconstructed in 2001. Since then, the priorities of the transportation modes have evolved and the requirements under the Accessibility for Ontarians with Disabilities Act (AODA) have been updated. In addition, the nearby network of active transportation facilities has expanded providing an opportunity for more connections.

The need for the Windermere Road Improvements project was identified in the 2019 Development Charges Background Study and affirmed in the 2021 Development Charges Background Study Update with a potential implementation timing of 2024. The 2016 Cycling Master Plan also highlights the future cycling infrastructure on

Windermere Road between Western Road and Richmond Street.

The Windermere Road Improvements Environmental Assessment study was initiated to fulfill the City's obligations as the proponent under the Ontario Environmental Assessment Act. The study reviewed the alternative transportation design solutions along the Windermere Road corridor between Western Road and the west leg of Doon Drive to identify traffic operations, active transportation, and transit improvements in accordance with the City's Complete Streets Design Manual. The study also assessed the potential to connect active transportation facilities along Richmond Street from Windermere Road to the Thames Valley Parkway (TVP) trail system.

The EA study area is in the north/central area of the City of London in close proximity to the Western University campus and University Hospital. The study area limits extend from Western Road to the west leg of Doon Drive along Windermere Road and also includes Richmond Street to south of the Thames River, as shown on Figure 1.

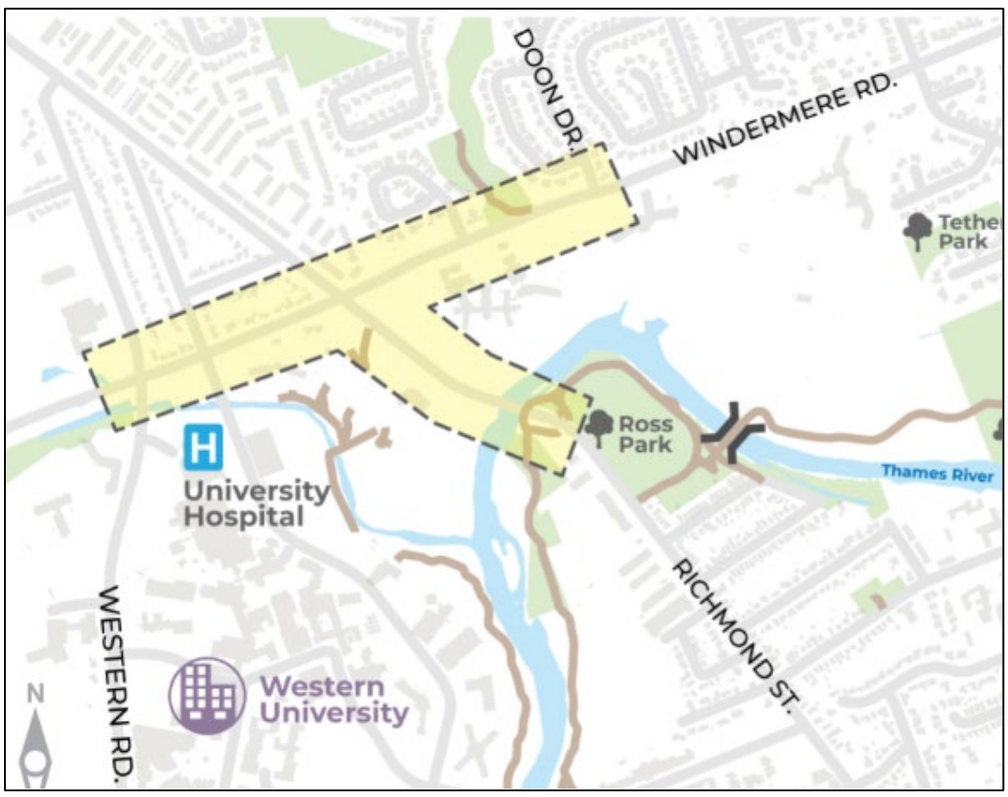


Figure 1: EA Study Area Map

Linkage to the Corporate Strategic Plan

The following report supports the Strategic Plan through the strategic focus area of Building a Sustainable City by improving safety for all modes of transportation and increasing access to transportation options. The improvements along Windermere Road will enhance safe and convenient mobility choices for motorists, pedestrians, cyclists, and transit users.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

- Civic Works Committee – June 19, 2012 – London 2030 Transportation Master Plan
- Civic Works Committee – September 7, 2016 – London ON Bikes Cycling Master Plan
- Strategic Priorities and Policy Committee – May 6, 2019 – Approval of 2019

Development Charges By-Law and DC Background Study
- Civic Works Committee – September 29, 2020 – Windermere Road Improvements Environmental Assessment Study – Appointment of Consulting Engineer
- Civic Works Committee – August 31, 2021 – Outcome of Climate Lens Screening Applied to Major Transportation Projects

2.0 Discussion and Considerations

2.1 Study Description

The Windermere Road Improvements EA was carried out in accordance with Schedule C of the Municipal Class Environmental Assessment (Class EA) document. The Class EA process is approved under the Ontario Environmental Assessment Act and outlines the process whereby municipalities can comply with the requirements of the Act.

The Class EA study has satisfied the requirements of the Ontario Environmental Assessment Act by providing a comprehensive, environmentally sound planning process with public participation. The Environmental Study Report documents the process followed to determine the recommended undertaking and the environmentally significant aspects of the planning, design, and construction of the proposed improvements. It describes the problem being addressed, the existing social, natural and cultural environmental considerations, the planning and design alternatives that were considered, and a description of the recommended alternative.

The study area is focussed on the Windermere Road corridor from Western Road to the west leg of Doon Drive. During the early stages of the EA study, Richmond Street from Windermere Road to Thames River was also added to the study area in response to Civic Works Committee comments indicating a desire to review opportunities for a new active transportation connection to the Thames Valley Parkway network.

2.2 Problem and Opportunity Statement

Phase I of the Municipal Class EA (MCEA) process involved the identification of the problem and opportunity statement. Based on the review of existing conditions, servicing studies, planning documents, preliminary traffic studies and collision data, the following summarizes the problems and opportunities within the study area:

<u>Problem</u>

- Windermere Road from Western Road to Doon Drive west leg does not adequately accommodate the full range of growing users within the community, including users of all ages and abilities, pedestrians, cyclists, transit vehicles and motorists.

- The existing Western Road/Windermere Road and Richmond Street/Windermere Road intersections are not compliant with the Accessibility for Ontarians with Disabilities Act (AODA) and do not accommodate potential future transit improvements.

- Existing sewers and sections of watermains along the corridor are in poor condition, cannot accommodate future growth, and require replacement.

<u>Opportunity</u>

- Support safe accommodation for all modes of transportation and users of all ages and abilities, pedestrians, cyclists, transit vehicles and motorists.

- Identify improvements to the intersections at Western Road/Windermere Road and Richmond Street/Windermere Road for increased capacity where possible and accommodate AODA requirements and future transit improvements.

- Address watermains and sewers required to be replaced in conjunction with intersection and corridor improvements and to support future growth.

2.3 Alternative Solutions

Phase II of the MCEA process includes an inventory of the existing socio-economic, cultural and natural environments, and technical considerations to identify alternative solutions to address the problem/opportunity statement. Alternative solutions are identified and evaluated based on their ability to reduce impacts to the socio-economic, archaeology and cultural heritage, natural environment, climate change, transportation engineering and cost. The following six alternative solutions were developed for the Windermere Road improvements:

1. Do Nothing – Maintain the existing conditions on Windermere Road.
2. Improve Other Roads in the Transportation Network – Improvements would take place on roadways adjacent/parallel to Windermere Road.
3. Improve Transit Infrastructure – Improvements to transit infrastructure in the study area to accommodate existing and future transit services.
4. Introduce Active Transportation Infrastructure – Implement new active transportation facilities in the study area to create continuous, safe facilities.
5. Intersection and/or Operational Improvements – Capacity improvements to intersections of Western Road/Windermere Road and Richmond Street/Windermere Road for all modes of transportation. Improvements would also address AODA and potential future transit requirements.
6. Provide Additional Travel Lanes – Introduction of additional travel lanes within the study area resulting in corridor widening and intersection improvements.

Through the evaluation of these alternatives, a combination of Alternatives 3, 4 and 5 were recommended to be caried forward to Phase III of the EA Study.

2.4 Design Alternatives

Phase III of the MCEA process involved the development and evaluation of alternative design concepts. The main outcome in this phase of the study was developing corridor cross-sections and layout concepts for the recommended planning solution. Identification of the land requirements for this project was a key outcome to identify appropriate mitigation measures such as minimizing socio-economic, cultural and environmental impacts. Four active transportation design options were developed for Windermere Road and two for Richmond Street.

2.5 Recommended Alternative

The development of transportation infrastructure capacity increases considered the unique nature of the corridor including closely spaced intersections, traffic generators, the nature of trips and modes of travel in the area. When selecting the recommended alternative, the Multi-Modal Level of Service (MMLOS) approach was used for determining the appropriate level of service (LOS) for all modes transportation (i.e., cyclists, pedestrians, transit, and motorists). The City's Complete Streets Design Manual requirements were also considered. The potential impacts to natural, socio-economic, cultural features, and costs were minimized. The recommended alternative was selected, developed, and refined through consultation with agencies, stakeholders, First Nations, and the public.

The Transportation Planning and Design Climate Emergency Screening Tool (CEST) was applied to the Windermere Road Improvements project at the early stage of the Environmental Assessment (EA). Assessment of climate change mitigation and adaptation issues material to the project determined that the preferred alternative from the EA prioritizes options that align with the City's Climate Emergency Declaration. Specifically, the preferred alternative from the EA identifies improvements to operations of the transit corridor, mobility, and access for major destinations while also examining the provision of connectivity to major active transportation corridors. It is expected that the proposed improvements have a potential to:

- Manage congestion by providing feasible alternatives to single-occupant vehicle trips by providing increased capacity via safe and accessible infrastructure for alternative modes of transportation;

- Provide cycling infrastructure that increases connectivity within the cycling network and is considered safe to use for cyclists of all ages and abilities by constructing two new protected intersections and new connections to Western Road and the TVP;

- Improve pedestrian safety, connectivity, and provide accessibility by introducing wider separated sidewalks;

- Help make transit more efficient by improving operations of the intersections;

- Help to improve the movement of people and goods within London by improving operations of the intersections;

- Implement strategies to minimize the need for the removal of mature and healthy trees;

- Improve quality of the stormwater by providing quality treatment measures;

- Incorporate additional risk management measures to improve resilience to water course flooding or intense rainfall by integrating low-impact development stormwater control measures into the design and minimizing the increase in impervious surfaces.

The preferred design concepts/improvements are shown on the design plans, attached as Appendix ‘B’, and summarized below:

Windermere Road Corridor Between Western Road to Doon Drive West Leg

- The Windermere Road centreline alignment is recommended to be adjusted to accommodate the protected intersection design and reduce property impacts.

- A one-way raised cycle track with a separated sidewalk is recommended on both sides of the corridor. This option provides one-way designated bicycle facilities separated from the motor vehicle travel lanes vertically and with a boulevard.

- Cross ride and crosswalks are recommended at the Tallwood Circle and Doon Drive west leg intersections. The one-way raised cycle tracks will transition to the existing on-street cycling facilities east of Doon Drive west leg at the study area limit.

- Municipal infrastructure including watermain, sanitary sewer, storm sewer, and sanitary forcemain is also recommended for replacement to accommodate the realignment of the Windermere Road, due to the age, condition, and to increase the capacity.

Richmond Street from Windermere Road to the Thames River

- A two-way raised cycle track is recommended on the east side of Richmond Street. This option provides a two-way active transportation facility separated from the motor vehicle travel lanes vertically and with a boulevard.

- At the East Brough’s Bridge over the North Thames River, the two-way raised cycle track and sidewalk cannot be maintained due to limited space available on the bridge, so they will transition to a pedestrian and cyclist shared-use facility.

Windermere Road and Richmond Street Intersection

- A protected intersection for cyclists and pedestrians.

- Addition of a new eastbound right-turn lane.

- Crosswalks on all approaches to the intersections to provide safe intersection crossings for pedestrians.

- Addition of one-way cross ride on the north and south approaches to the intersection and two-way cross ride on the east approach to the intersection to provide safe intersection crossings for cyclists.

- Adjustment of the Windermere Road centreline alignment west of Richmond Street to limit property impacts to the residences on the north side of Windermere Road.

- Addition of median raised islands in the centre of Windermere Road and Richmond Street.

- Improved design and location of left turn lanes which provide better sightlines for turning vehicles and improves safety.

- Removal of the existing right-turn channelization islands on Richmond Street, retaining the northbound right-turn lane and the southbound through-right lane.

- Potential closure of one Western University entrance on Windermere Road which is supported by Western.

- Provision for future active transportation facilities on Richmond Street north of Windermere Road.

Windermere Road and Perth Drive/Canterbury Intersection

- Separate cross rides and crosswalks to provide safe intersection crossings for cyclists and pedestrians.

- 2-stage queue boxes to accommodate cyclist left turning movements.

Windermere Road and Western Road intersection

- A protected intersection for cyclists and pedestrians

- Crosswalks and cross rides on all approaches to the intersections to provide safe intersection crossings for pedestrians and cyclists.

- Adjustment of the Windermere Road centreline alignment to limit property impacts to the residences on the north side of Windermere Road.

3.0 Financial Impact/Considerations

3.1 Preliminary Cost Estimates

A preliminary construction cost estimate for the ultimate improvements identified in the study has been prepared, including engineering, utility relocation, roadway construction, municipal infrastructure, property acquisition, and contingencies. The total preliminary construction estimate developed during the environmental assessment is $13.89M including contingencies and engineering fees. The breakdown of the cost estimate is shown in the Table 1 below. The EA cost estimate is based on the current costs of similar projects and reflects recent extraordinary inflationary increases in construction material prices, and labour market conditions. The total estimated project cost is significantly higher than the approved project budget of $3,952,788 (TS1359). The major factors that contributed to the significant difference between the original project budget and the EA estimate are as follows:

- The current economic environment is significantly impacting capital construction pricing based upon increased inflation, supply chain challenges for certain construction materials and labour shortages. The original project budget does not reflect the current economic situation.

- The scope and the study area of the project were adjusted to ensure appropriate connections and transitions for the proposed active transportation facilities. This

included Windermere Road to Doon Drive west leg in the east and Richmond Street from Windermere Road to the Thames River in the south.

- The estimated cost for the municipal underground infrastructure work, utilities, property acquisition, and environmental mitigation are over 45% of the total project cost. The full extent of the scope of these components and associated costs were unknown at the time when the initial project budget was developed and could not be determined until more extensive investigative work was completed. It is cost effective to include this underground work with the transportation project due to construction and staging efficiencies. The condition of these underground services also warrant near term replacement. A portion of the municipal servicing infrastructure costs are to be funded via separate growth and rate-based accounts as appropriate.

- The design standards for the active transportation facilities have evolved and, in order to provide high quality cycling facilities and intersection design treatments that appeal to people of all ages and abilities, additional costs for these elements have been incorporated into the cost estimate.

As part of the 2023 Budget Update, a budget amendment will be brought forward for 2023 funds to continue progress on the project design and property acquisition. The complete cost of the project will be incorporated into and subject to the priority balancing in the Multi-year Budget and 2025 Development Charges Study processes.

Table1. Environmental Assessment Cost Estimate for Windermere Road Improvements

Project Component	Estimated Cost (2022 $)
Roadworks	$5,550,000
Municipal Servicing Infrastructure (Water, Sewers, and Forcemain)*	$3,370,000
Sub Total	**$8,920,000**
Utilities (10% Roadworks)	$555,000
Contingency (20% Sub Total + Utilities)	$1,895,000
Environmental Mitigation	$300,000
Property Acquisition	$800,000
Engineering (15% Sub Total + Utilities)	**$1,421,000**
Total Preliminary Design Estimated Cost	**$13,891,000**

* A portion of the municipal servicing infrastructure costs are to be funded via separate growth and rate-based accounts as appropriate

4.0 Key Issues and Considerations

4.1 Property Impacts

Minimizing property requirements was a key criterion in the identification and evaluation of the alternative solutions by the project team.

Property acquisition is anticipated throughout the study area corridor to accommodate the proposed roadway and active transportation improvements. Required property from Western University will be dedicated according to the Master Site Plan agreement. As part of this EA study, it was identified that the City will require frontages from the properties in the following locations:

- North side of Windermere Road, east of Western Road;
- South side of Windermere Road from Western Road to east of Perth Drive;
- South side of Windermere Road, west side of Richmond Street;
- South side of Windermere Road, east side of Richmond Street; and

- East side of Richmond Street, south of Windermere Road.

The proposed new right-of-way limits were presented to the public during PIC #2 and are shown in the Appendix 'B'. The final right-of-way and the limits of property acquisition and dedication will be confirmed during the detailed design phase.

4.2 Public and Agency Consultation

Consultation was a key component of this Class EA study in order to provide an opportunity for stakeholder groups and the public to gain an understanding of the study process and provide feedback. The consultation plan was organized around key study milestones, including the two Public Information Centres (PICs), stakeholder meetings and participation of technical review/regulatory agencies. The key stakeholders included Western University, London Health Science Centre, residents, agencies, Indigenous communities, and those who may be affected by the project.

A Notice of Study Commencement was issued in December 2020. The study team received correspondence from the public and agencies indicating their interest in the study and requesting to be kept informed.

The first PIC was hosted via videoconference using the Zoom platform on June 10, 2021 and the second PIC in the same format on November 8, 2021. Both PICs served as an opportunity for the public to review the project information, ask questions, and provide input to the members of the study team.

Eight Indigenous Communities were notified of the study commencement and PICs via individualized emails and were provided with opportunities to provide input and identify any issues or concerns: Aamjiwnaang First Nation, Bkejwanong Territory (Walpole Island), Caldwell First Nation, Kettle and Stony Point First Nation, Chippewas of the Thames First Nation, Munsee-Delaware Nation, Delaware Nation at Moraviantown and Oneida Nation of the Thames. No project issues or concerns were identified by the Indigenous Communities.

The project information was also presented to the following City of London Advisory Committees for feedback: Cycling Advisory Committee, Transportation Advisory Committee, Environmental Ecological Planning Advisory Committee, and the London Advisory Committee on Heritage.

During the upcoming 30-day public review, the Environmental Study Report (ESR) will be made available on the City of London website, at the City Hall, and also at the closest public library to the study area. As per Ministry of the Environment, Conservation and Parks' (MECP) request, the Environmental Study Report (ESR) has been submitted for their technical review. The Environmental Study Report Executive Summary is attached as Appendix A.

If a member of the public or agency choses, they may make a request to the MECP for an order requiring a higher level of study (i.e. requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g., require further studies). These requests will be considered only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights.

4.3 Implementation

The project implementation timing needs to be re-established based on project property acquisition, coordination with other area projects, and financing.

Due to the new project cost estimate, the project construction timing will be reconsidered with other priorities in the upcoming 2024-2027 Multi-Year Budget and 2025 Development Charges Background Study processes. The construction timing is also subject to completion of property acquisition, utility relocations, detailed engineering as well as securing required approvals. Coordination with adjacent City projects, upcoming projects at the University of Western Ontario, property owners, and regulatory agencies is also a consideration planned early in the design process, providing opportunities for further consultation and to assist in finalizing the construction timing. It is estimated that the construction of the project could be undertaken in one

construction season.

Network traffic management and a communications plan will be developed during detailed design to inform road users, outline detours during potential closures, and instruct local traffic movement. Access to properties will be maintained during construction.

Conclusion

Improvements to Windermere Road are necessary to accommodate all modes of transportation and users of all ages and abilities (pedestrians, cyclists, transit vehicles and motorists), improve the operation and accessibility of the intersections, and provide active transportation connections to the existing trail network. A Municipal Class Environmental Assessment (EA) study was undertaken to confirm the preferred long-term solution in accordance with Schedule C of the Municipal Class Environmental Assessment process. The ESR has been completed and will be reviewed by the MECP prior to posting for the final public review.

This project has been reviewed with the Transportation Planning and Design Climate Lens Process's Climate Emergency Screening Tool and the preferred alternative is expected to provide a sustainable approach to inclusion of complete street elements that will promote active transportation and transit use while managing congestion and improving safety. The new infrastructure will also be designed to provide improved resiliency over the existing conditions.

Alternative solutions and design concepts were developed to address the problems and opportunities. The recommended alternative for Windermere Road is to create two new protected intersections at Western Road and Richmond Street that will provide additional capacity and safety improvements for all modes of transportation (i.e. pedestrians, cyclist, transit, and motorists). New raised cycle tracks on both sides of Windermere Road from Western Road to Doon Drive west leg and a new two-way cycling connection to the TVP along the east side of Richmond Street are also recommended.

The EA identifies a project cost estimate higher than current budget amounts. This is a function of extraordinary construction cost escalation, project limit adjustments to connect infrastructure, underground servicing and new design standards. As such, the project implementation timing will be reconsidered in future budgeting processes. A revised project timing is also supported by coordination with other area projects and the time required for property assembly.

Consultation was a key component of this study. The Class EA was prepared with input from Indigenous Communities, the public, advisory committees, agencies, utilities, and property owners in proximity to the study.

Pending Council approval, a Notice of Study Completion will be filed, and the ESR will be placed on public record for a 30-day review period. Stakeholders and the public are encouraged to provide input and comments regarding the study during this time. Accommodation will be made for those requiring hard copy review. Requests for a higher level of study or conditions may be submitted to the MECP based on impacts to constitutionally protected Aboriginal and treaty rights.

Prepared by:	**Garfield Dales, P. Eng, Division Manager, Transportation Planning and Design**
Submitted by:	**Doug MacRae, P. Eng., MPA, Director, Transportation and Mobility**
Recommended by:	**Kelly Scherr, P. Eng., MBA, FEC, Deputy City Manager, Environment and Infrastructure**

Attach: Appendix A – Environmental Study Report Executive Summary

Appendix B – Design Plans

Windermere Road Improvements – Schedule C Municipal Class Environmental Assessment

Executive Summary

Prepared for:
City of London

Prepared by:
Stantec Consulting Ltd.

August 4, 2022

Table of Contents

1.0 Executive Summary 1
1.1 Consultation 3
1.2 Phase 1 – Problem and Opportunities 3
1.3 Phase 2 – Alternative Solutions 1
1.4 Phase 3 – Design Alternatives 2
1.4.1 Active Transportation 2
1.4.2 Intersection Improvements 3
1.5 Preliminary Cost Estimate 4
1.6 Implementation and Timing 4
1.7 Potential Impacts and Proposed Mitigation 5
1.8 Approvals and Permits 5
1.9 Closing 5

List of Tables

Table 1: Problems and Opportunities 1
Table 2: Preliminary Cost Estimate 4

List of Figures

Figure 1: Study Area Map 2

1.0 Executive Summary

The City of London retained Stantec Consulting Ltd. to identify intersection, active transportation, and transit improvements along Windermere Road corridor between Western Road and Doon Drive (Figure 1). The study also assesses the potential to connect active transportation facilities along Richmond Street from Windermere Road to the Thames Valley Parkway trail system. In addition, the accessibility improvements along the corridor and intersections will be implemented to accommodate road users of all ages and abilities.

In accordance with the Municipal Class Environmental Assessment (MCEA) (Municipal Engineers Association, 2000, as amended in 2007, 2011, and 2015), this study is being planned as a Schedule C undertaking, which includes the completion of Phases 1 through 4 of the MCEA study process.

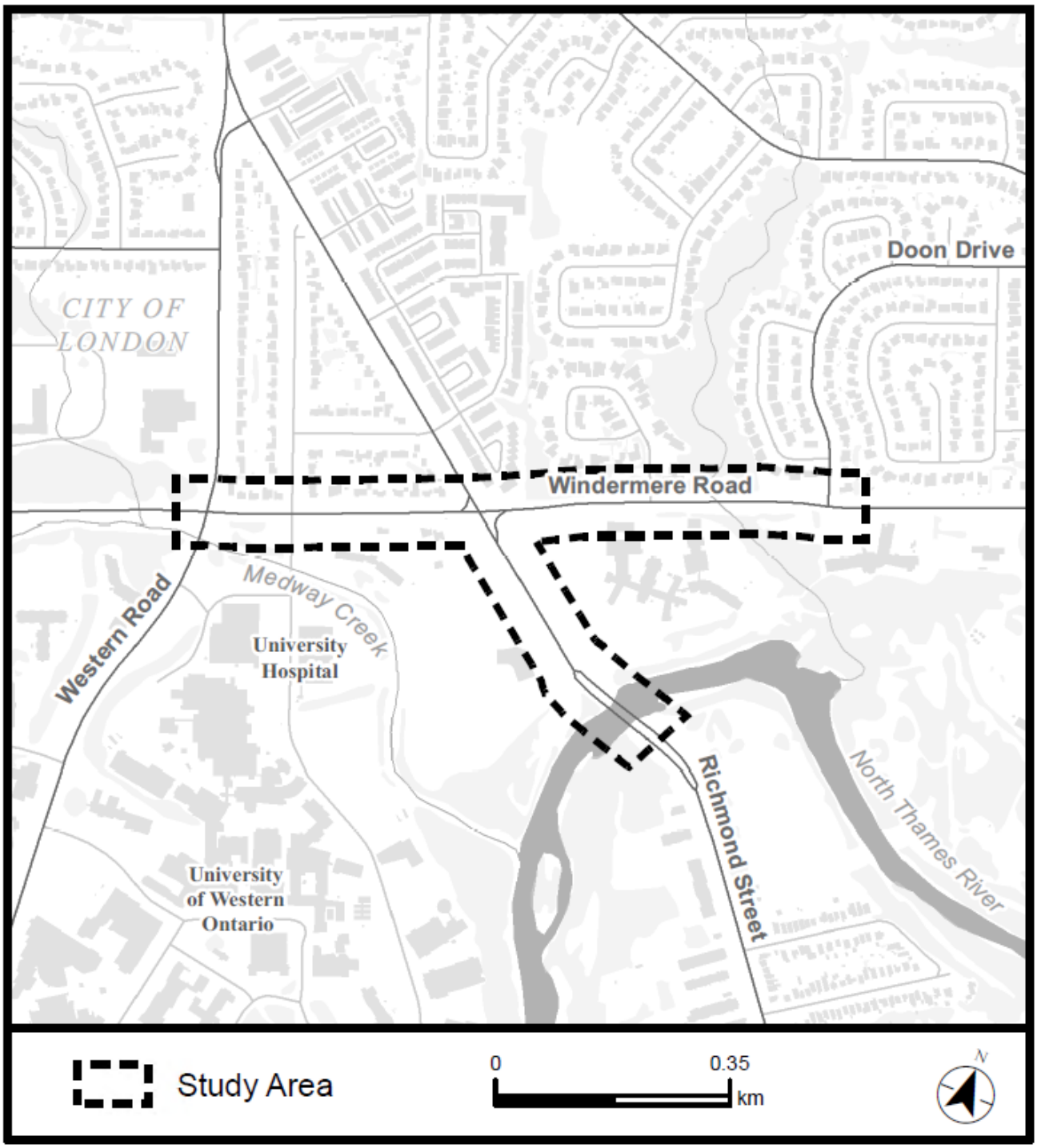


Figure 1: Study Area Map

1.1 Consultation

A contact list was developed at the outset of the study, which includes relevant government and regulatory agencies, utilities, community organizations, interested members of the public, and Indigenous communities. Project notices issued to date include the Notice of Study Commencement (December 2020), Notice of Public Information Centre (PIC) #1 (June 2021), and Notice of PIC #2 (November 2021). The Notice of Completion is anticipated to be issued in October 2022. All notices have been mailed by the City of London to residents, emailed to Indigenous communities, and published in The Londoner newspaper in two consecutive editions.

Two PICs were held throughout the study to ensure stakeholders had an understanding of the project, and to provide opportunities to provide input into the alternative solutions, evaluation criteria, and design alternatives. While the project information would typically be presented at a PIC event, adjustments were made to ensure public safety and COVID-19 restrictions on public gatherings. As a result, the City of London hosted a live webinar via videoconference using the Zoom platform to present the PIC materials. The webinars were recorded and subsequently posted on the project website.

All input from the public, review agencies, committees, and other stakeholders has been documented. All consultation with Indigenous communities has also been documented in a Consultation Log.

1.2 Phase 1 – Problem and Opportunities

Phase 1 of the MCEA process includes a review of a number of planning and policy documents, related studies and reports, and initial traffic review. A number of policy documents were reviewed to understand the existing and planned conditions and objectives within the study area and surrounding neighborhoods, and to provide the framework for identifying improvements. Relevant policy documents include the Provincial Policy Statement, City of London Transportation Master Plan, City of London Official Plan, The London Plan, London ON Bikes, City of London Strategic Plan, and London’s Rapid Transit Initiative Master Plan.

Based on the review of existing conditions, servicing studies, planning documents, development proposals, preliminary traffic studies and collision data, there are opportunities to improve the Windermere Road study area. Table 1 summarizes the problems and opportunities within the study area:

Table 1: Problems and Opportunities

Problem	Opportunity
Windermere Road from Western Road to Doon Drive (West) does not balance the full range of potential users within the community, including users of all ages and abilities, pedestrians, cyclists, transit vehicles and motorists.	Support safe accommodation for all modes of transportation and users of all ages and abilities; pedestrians, cyclists, transit vehicles and motorists.
The existing Western Road/Windermere Road and Richmond Street/Windermere Road intersections do not accommodate future transit improvements and are not compliant with the *Accessibility for Ontarians with Disabilities Act* (AODA).	Identify improvements to the intersections at Western Road/Windermere Road and Richmond Street/Windermere Road and accommodate AODA requirements. The improvements will have the potential to be consistent with future transit improvements.
Existing watermains and sewers along the corridor are nearing their end of life and may require replacement, and do not accommodate future growth/sewer upsizing needs.	Address watermains and sewers required to be replaced.

1.3 Phase 2 – Alternative Solutions

Alternative solutions are identified and evaluated based on their ability to reduce impacts to the socio-economic, natural, cultural and technical environments. Alternative solutions considered for the study area include:

- Do Nothing
- Improve Other Roads in the Transportation Network
- Improve Transit Infrastructure
- Improve Active Transportation Infrastructure
- Intersection and/or Operational Improvements
- Provide Additional Travel Lanes

To support the planned improvements for future rapid transit and accommodation of all modes of transportation, improvements to Windermere Road from Western Road to Doon Drive are required. The following combination of alternative solutions are recommended to allow flexibility to address the identified problems and opportunities:

- Improved Transit Infrastructure
- Improved Active Transportation Infrastructure
- Intersection and / or Operational Improvements

This combination of alternative solutions will prioritize the needs for cyclists, pedestrians and auto users, providing sufficient capacity for existing and future travel demand within the City of London.

1.4 Phase 3 – Design Alternatives

1.4.1 Active Transportation

Four types of active transportation facilities were developed based on the Ontario Traffic Manual (OTM) Book 18 to improve active transportation infrastructure along Windermere Road and connections to the TVP trail system: On-Street Separated Bike Lanes, One-Way Raised Cycle Track, Two-Way Raised Cycle Track, Two-Way Shared-Use Facility. To determine the active transportation design best suited for the study area, Windermere Road and Richmond Street were divided into three sections for analysis: Windermere Road east of Richmond Street, Windermere Road west of Richmond Street, Richmond Street.

1.4.1.1 Preferred Design Alternative - Active Transportation

Windermere Road west of Richmond Street

One-Way Raised Cycle Track is the preferred alternative design for Windermere Road west of Richmond Street. This option provides one-way designated bicycle facilities with a buffer in the form of boulevard proposed between the motor vehicle travel lanes, and with vertical separation from the motor vehicle travel lanes, implemented on both sides of Windermere Road.

Windermere Road east of Richmond Street

One-Way Raised Cycle Track is the preferred alternative design for Windermere Road east of Richmond Street. As mentioned, this option provides one-way designated bicycle facilities on both sides of Windermere Road.

Richmond Street

Two-way Raised Cycle Track is the preferred alternative design for Richmond Street. This option provides a two-way designated bicycle facility located on the east side of Richmond Street, with a buffer in the form of boulevard proposed between the motor vehicle travel lanes, and with vertical separation from motor vehicle travel lanes, and separated from the sidewalk.

At East Brough’s Bridge over the North Thames River, the two-way raised cycle track and sidewalk cannot be maintained due to limited space available on the bridge and will

transition to a two-way shared-use facility on the bridge. The facility will have a connection to the Thames Valley Parkway trail system on the south side of the bridge.

1.4.2 Intersection Improvements

A number of operational and intersection design improvements were identified for Windermere Road, and the intersections at Western Road and Richmond Street. Watermain, storm sewers, sanitary sewers and forcemains requiring replacement have been identified and recommended.

1.4.2.1 Preferred Design Alternative - Intersection Improvements

Windermere Road and Western Road Intersection

The proposed improvements include a protected intersection for cyclists and pedestrians, crosswalks, and cross rides on all approaches to the intersections, and the adjustment of the Windermere Road centreline alignment to limit property impacts to the residences on the north side of Windermere Road. The existing watermain, storm sewer, sanitary sewer and forcemain within this area require replacement due to condition, location, impacts by proposed roadway improvements, material, size, and age.

Windermere Road and Perth Drive / Canterbury Road Intersection

The proposed improvements include separate cross rides and crosswalks, and 2-stage queue boxes for left turn cycling movements. The replacement of the watermain, storm sewer, sanitary sewer, and sanitary forcemain will continue along this section of Windermere Road.

Windermere Road and Richmond Street Intersection

The proposed improvements include the following:

- a protected intersection
- crosswalks on all approaches to the intersections
- one-way cross ride on the north and south approaches
- two-way cross ride on the east approach
- the adjustment of the Windermere Road centreline alignment west of Richmond Street
- addition of median raised islands in the centre of Windermere Road and Richmond Street
- positive offset left-turn lanes
- removal of the existing right-turn channelization islands on Richmond Street
- retaining the northbound right-turn lane and the southbound through-right lane
- addition of eastbound right-turn lane

- potential closure of east entrance to Western University Westminister Hall on Windermere Road
- provision for future active transportation facilities on Richmond Street north of Windermere Road

The replacement of the watermain, storm sewer, sanitary sewer, and sanitary force main will continue along this section of Windermere Road to the east of Richmond Street.

1.5 Preliminary Cost Estimate

The capital costs associated with the improvements is estimated to be approximately $13,891,086.00. The estimated cost is subject to change.

Table 2: Preliminary Cost Estimate

Capital Cost	Estimated $
Roadworks	$5,549,503.56
Municipal Infrastructure - Water	$384,466.67
Municipal Infrastructure - Storm Sewers	$740,378.00
Municipal Infrastructure - Sanitary Sewers	$1,208,080.00
Municipal Infrastructure - Forcemain	$1,037,500.00
Sub Total	**$8,919,928.23**
Utilities (10% Roadworks)	$554,950.36
Contingency (20% Sub Total + Utilities)	$1,894,975.72
Property	$800,000.00
Environmental Mitigation	$300,000.00
Engineering (15% Sub Total + Utilities)	**$1,421,232.00**
Total Estimated Cost	**$13,891,086.00**

1.6 Implementation and Timing

The final construction timing will be determined based upon completion of property acquisition, utility relocations and the detailed engineering as well as securing required approvals. It is estimated that the construction of the project could be undertaken in one construction season. Coordination with adjacent City projects, upcoming projects at the University of Western Ontario, property owners, and regulatory agencies is planned early in the design process, providing opportunities for further consultation and to assist in finalizing the construction timing. At this time, considering the timelines required for property acquisition and completion of design and other advance activities, construction is planned to occur no sooner than 2026.

Network traffic management and a communications plan will be developed during detailed design to inform road users, outline detours during potential closures, and

instruct local traffic movement. Access to properties will be maintained during construction.

1.7 Potential Impacts and Proposed Mitigation

Many of the environmental concerns related to this project have been mitigated through the process by which the preferred design was selected. The anticipated impacts and proposed mitigation measures have been described in Section 9 of the Environmental Study Report. The City of London will work with Upper Thames River Conservation Authority, Environmental and Ecological Planning Advisory Committee and the Ministry of Environment, Conservation and Parks during detailed design and prior to the start of construction to ensure that the proposed works are acceptable and to obtain required permits as discussed in Section 10 of the Environmental Study Report.

1.8 Approvals and Permits

Any permits required should be identified during detailed design. Prior to commencing design implementation, the following permits/approvals may be required:

- Upper Thames River Conservation Authority - Regulated Areas Ontario Regulation 157/06 due to the potential to interfere with the unnamed tributary to Medway Creek. If required, a permit application package may be required for submission to UTRCA. Consultation with UTRCA during detailed design is recommended to confirm permit application requirements.
- Ministry of Natural Resources and Forestry - If snakes or amphibians or fish require relocation during construction, a Wildlife Scientific Collector's Authorization, or a Licence to Collect Fish for Scientific Purposes may be required under the Fish and Wildlife Conservation Act.
- Ministry of Heritage, Sport, Tourism and Culture Industries - The Stage 1 archaeological assessment was submitted to MHSTCI and has been accepted into the Ontario Public Register of Archaeological Reports. The Stage 2 archaeological assessment will be completed during detailed design and must be reviewed by MHSTCI and accepted into the Ontario Public Register of Archaeological Reports.

1.9 Closing

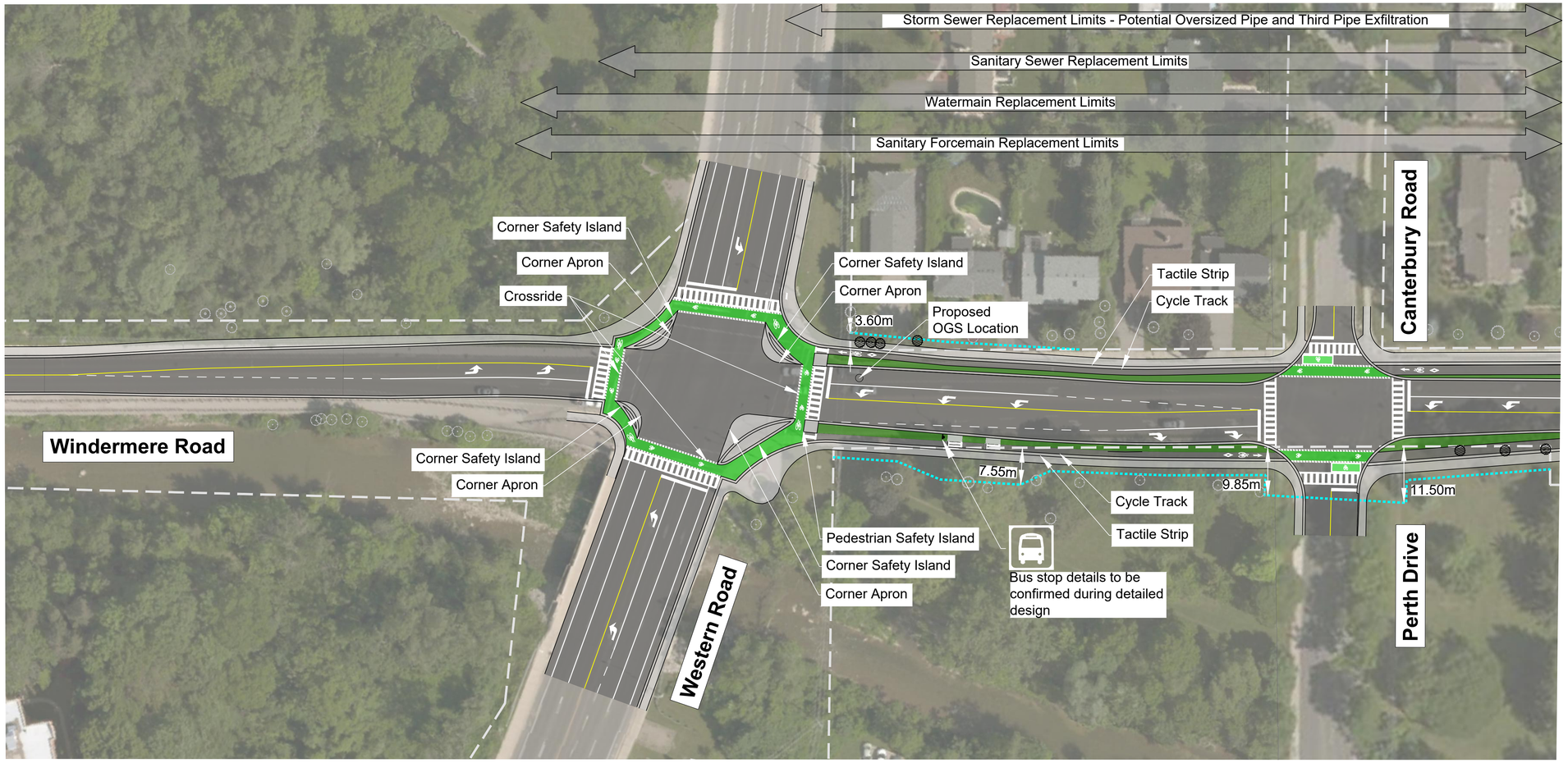
The filing of this Environmental Study Report represents the conclusion of Phase 1 through Phase 4 of the Municipal Class EA planning process as outlined in the MCEA document. Provided that no Section 16 Order requests are received and provided all appropriate environmental and engineering permitting and approvals are obtained, the City may proceed with detailed design and implementation (Phase 5) 30 days following the completion of the public review period.

APPENDIX B: DESIGN PLANS

Cross-Section Drawings

Supplemental Legend:

- Proposed Roadway Platform
- Proposed Sidewalk/Median/Curb
- Proposed Boulevard/Green Space
- Proposed Crossride
- Proposed Crosswalk
- Existing ROW
- Proposed New ROW Limit
- Proposed New Bus Stop
- Proposed Tree Removal
- Existing Tree



EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
					DESIGN				
					DRAWN BY				
					CHECKED				
					APPROVED				
					DATE				

CONSULTANT OR DIVISION

Stantec

600 - 171 Queens Avenue
London, ON. N6A 5J7
www.stantec.com

ENGINEER'S STAMP

London CANADA

CORPORATION OF THE CITY OF LONDON

SCALE

TITLE

WINDERMERE RD EA

WINDERMERE ROAD

PROJECT No.

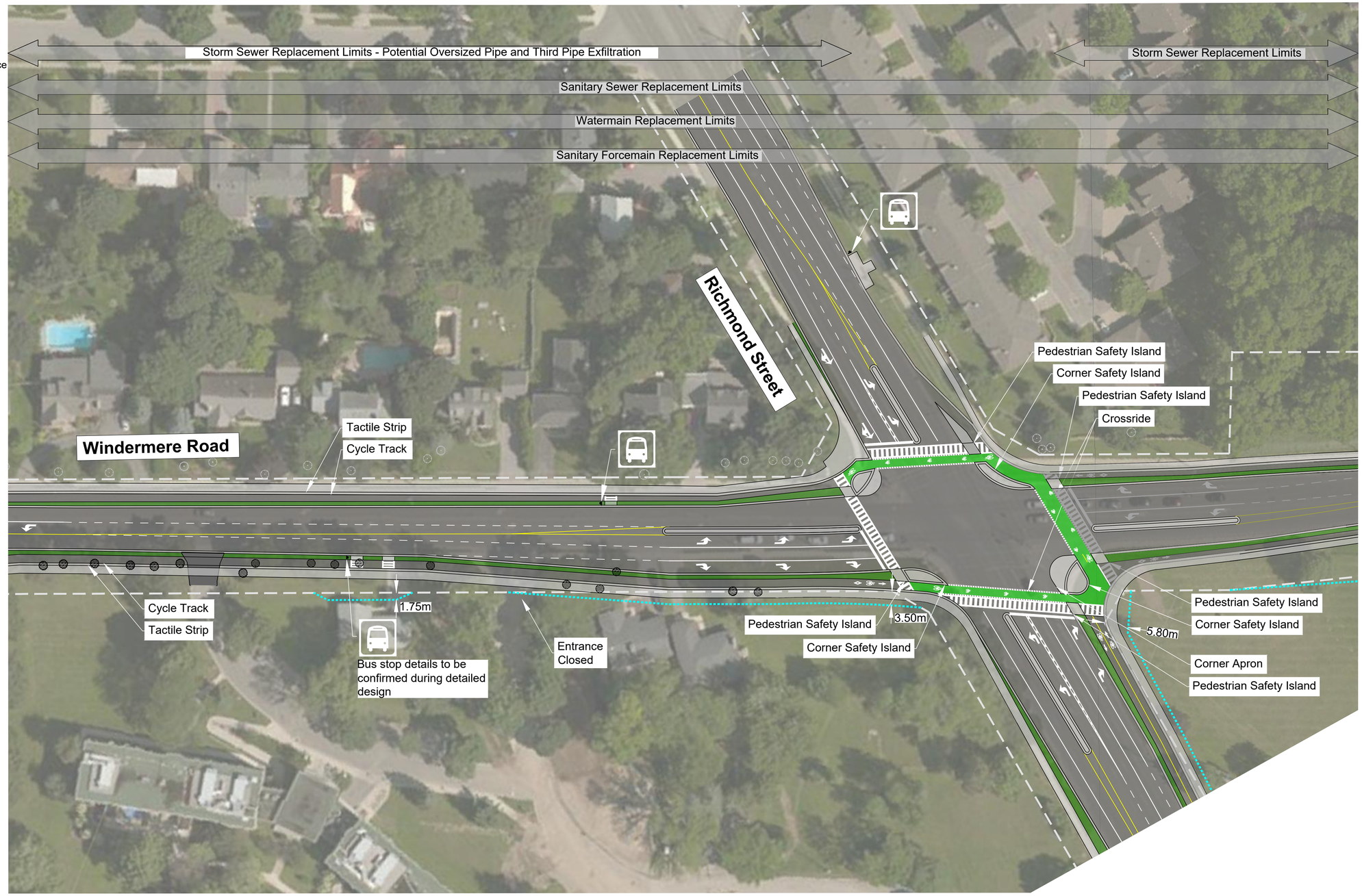
SHEET No.

01

PLAN FILE No.

Supplemental Legend:

- Proposed Roadway Platform
- Proposed Sidewalk/Median/Curb
- Proposed Boulevard/Green Space
- Proposed Crossride
- Proposed Crosswalk
- Existing ROW
- Proposed New ROW Limit
- Proposed New Bus Stop
- Proposed Tree Removal
- Existing Tree



EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
					DESIGN				
					DRAWN BY				
					CHECKED				
					APPROVED				
					DATE				

CONSULTANT OR DIVISION

Stantec

600 - 171 Queens Avenue
London, ON, N6A 5J7
www.stantec.com

ENGINEER'S STAMP

London CANADA

CORPORATION OF THE CITY OF LONDON

SCALE

TITLE

WINDERMERE RD EA

WINDERMERE ROAD

PROJECT No.

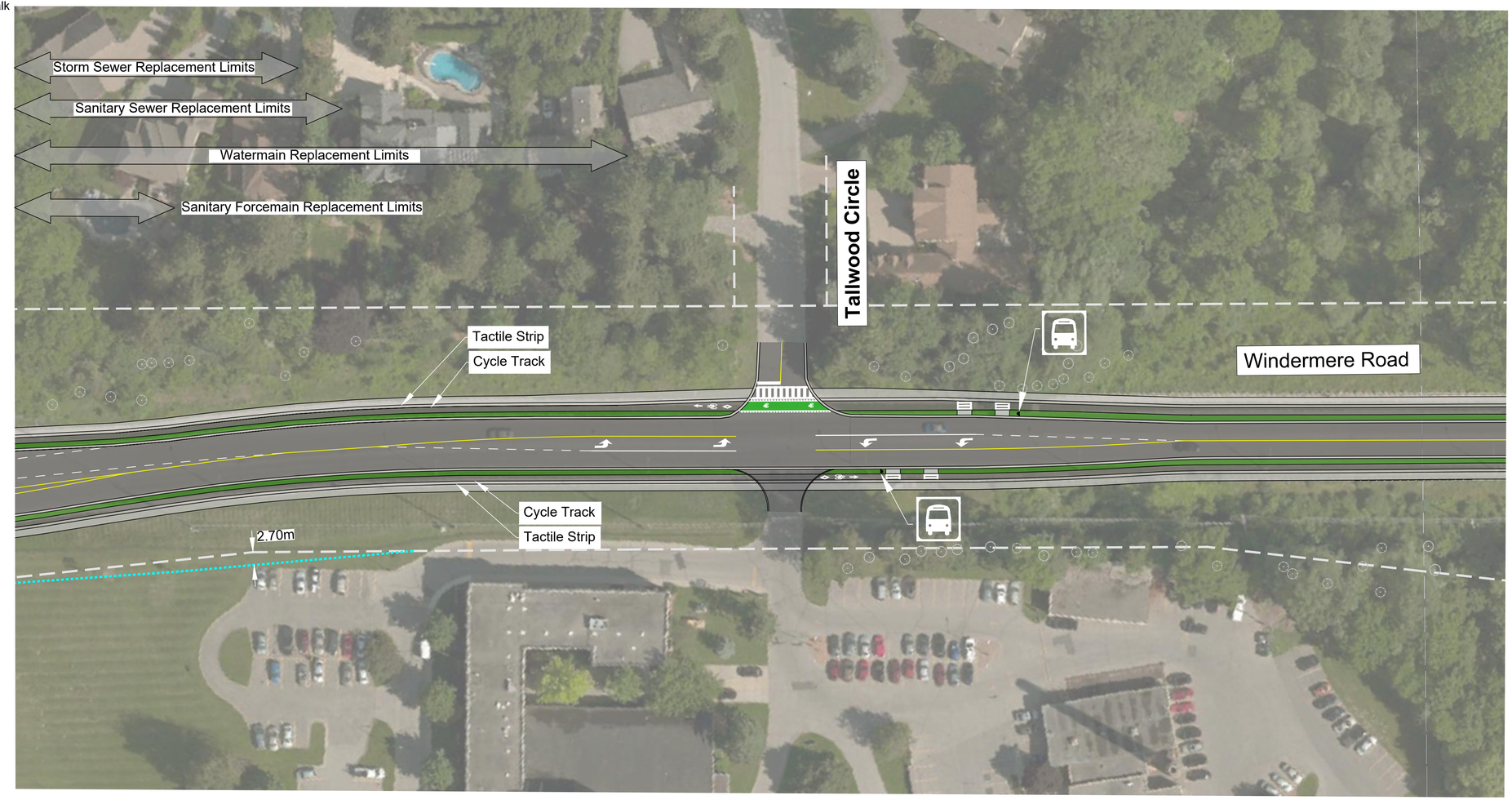
SHEET No.

02

PLAN FILE No.

Supplemental Legend:

- Proposed Roadway Platform
- Proposed Sidewalk/Median/Curb
- Proposed Boulevard/Green Space
- Proposed Crossride
- Proposed Crosswalk
- Existing ROW
- Proposed New ROW Limit
- Proposed New Bus Stop
- Proposed Tree Removal
- Existing Tree



EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
					DESIGN				
					DRAWN BY				
					CHECKED				
					APPROVED				
					DATE				

CONSULTANT OR DIVISION

Stantec

600 - 171 Queens Avenue
London, ON. N6A 5J7
www.stantec.com

ENGINEER'S STAMP

London CANADA

CORPORATION OF THE CITY OF LONDON

SCALE

TITLE

WINDERMERE RD EA

WINDERMERE ROAD

PROJECT No.

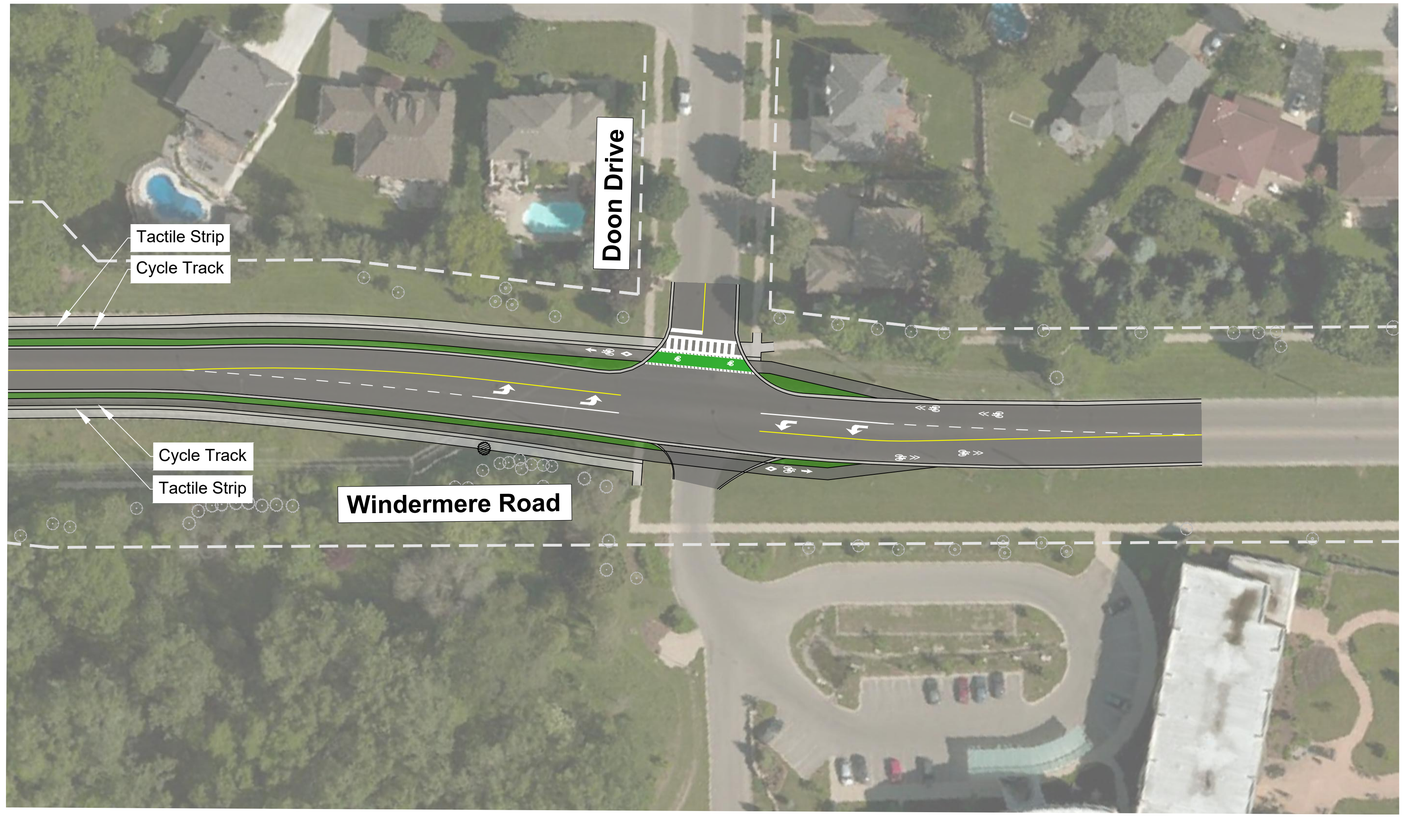
SHEET No.

03

PLAN FILE No.

Supplemental Legend:

- Proposed Roadway Platform
- Proposed Sidewalk/Median/Curb
- Proposed Boulevard/Green Space
- Proposed Crossride
- Proposed Crosswalk
- Existing ROW
- Proposed New ROW Limit
- Proposed New Bus Stop
- Proposed Tree Removal
- Existing Tree



EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
					DESIGN				
					DRAWN BY				
					CHECKED				
					APPROVED				
					DATE				

CONSULTANT OR DIVISION

Stantec

600 - 171 Queens Avenue
London, ON. N6A 5J7
www.stantec.com

ENGINEER'S STAMP

London CANADA

CORPORATION OF THE CITY OF LONDON

SCALE

TITLE

WINDERMERE RD EA

WINDERMERE ROAD

PROJECT No.

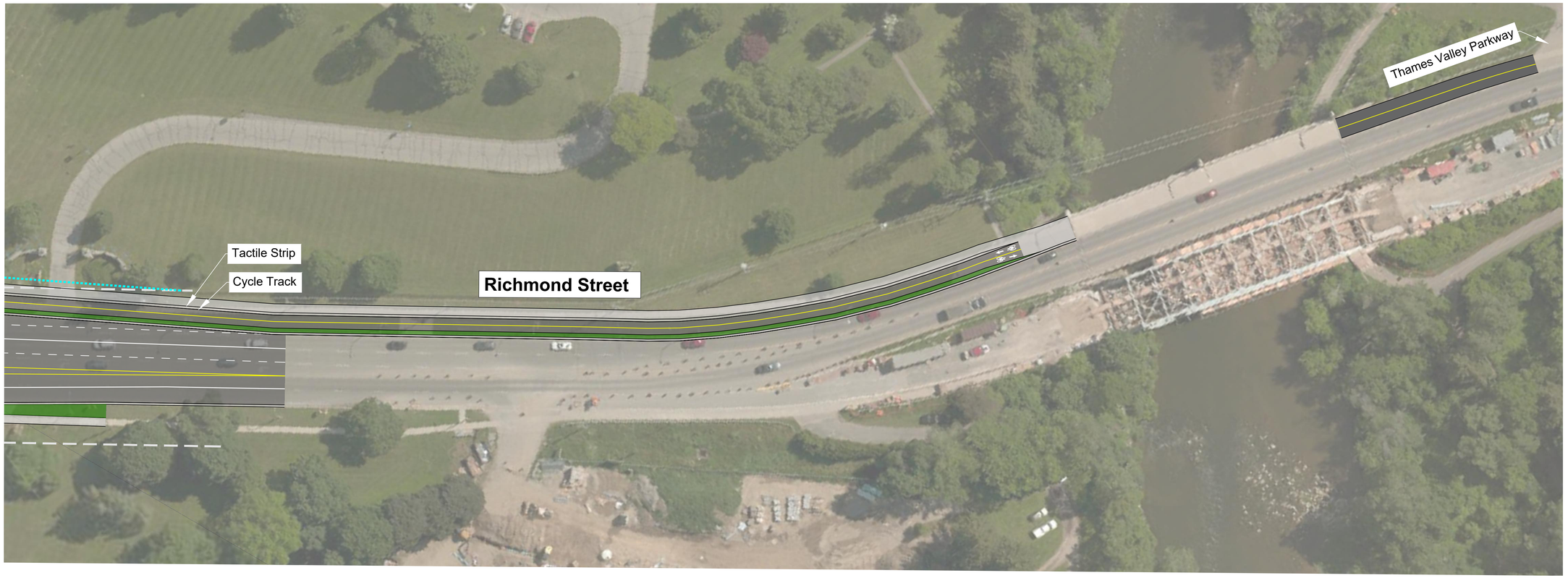
SHEET No.

04

PLAN FILE No.

Supplemental Legend:

- Proposed Roadway Platform
- Proposed Sidewalk/Median/Curb
- Proposed Boulevard/Green Space
- Proposed Crossride
- Proposed Crosswalk
- Existing ROW
- Proposed New ROW Limit
- Proposed New Bus Stop
- Proposed Tree Removal
- Existing Tree



EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
					DESIGN				
					DRAWN BY				
					CHECKED				
					APPROVED				
					DATE				

CONSULTANT OR DIVISION

Stantec

600 - 171 Queens Avenue
London, ON. N6A 5J7
www.stantec.com

ENGINEER'S STAMP

London CANADA

CORPORATION OF THE CITY OF LONDON

SCALE

TITLE

WINDERMERE RD EA

RICHMOND STREET

PROJECT No.

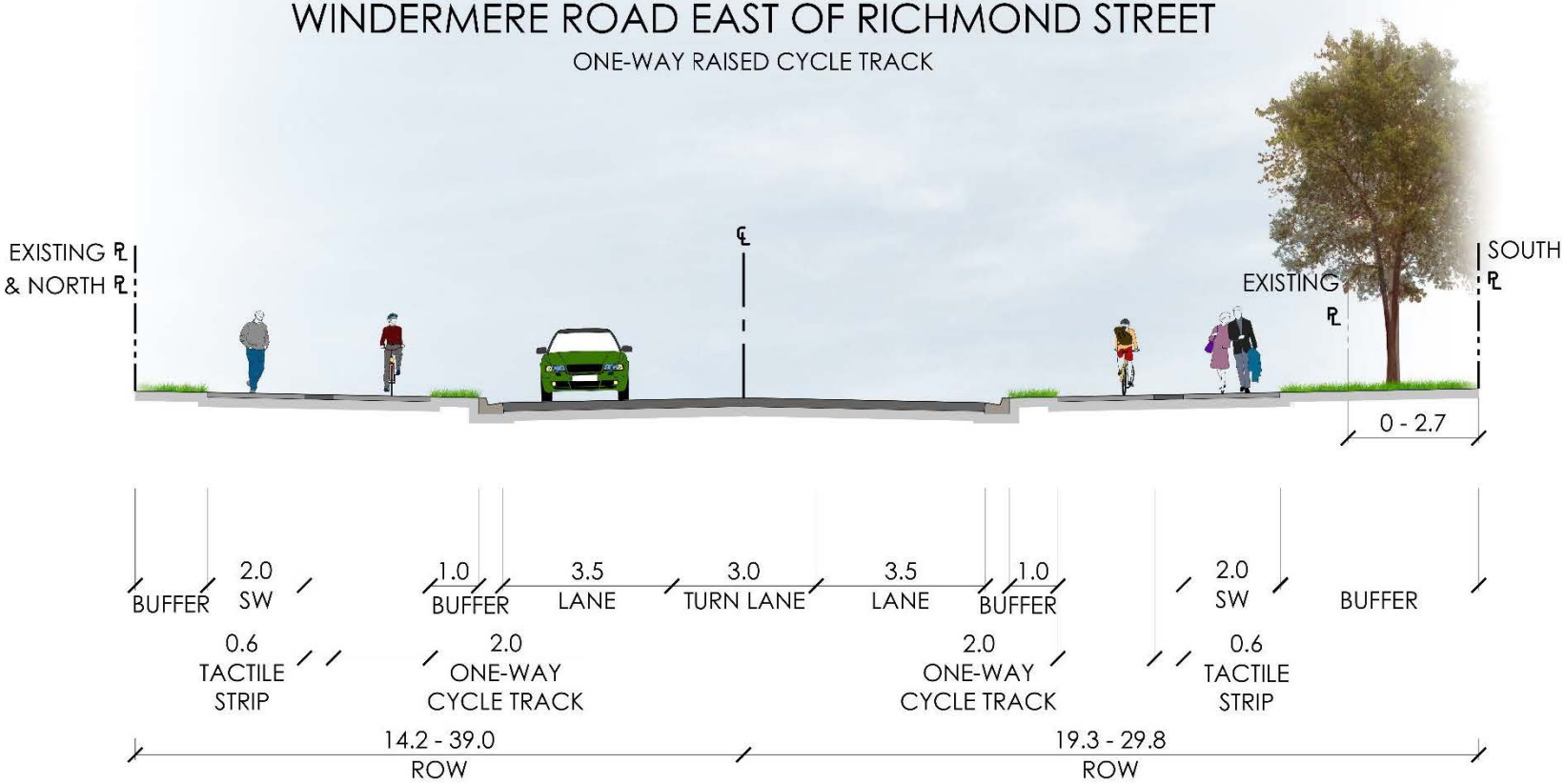
SHEET No.

05

PLAN FILE No.

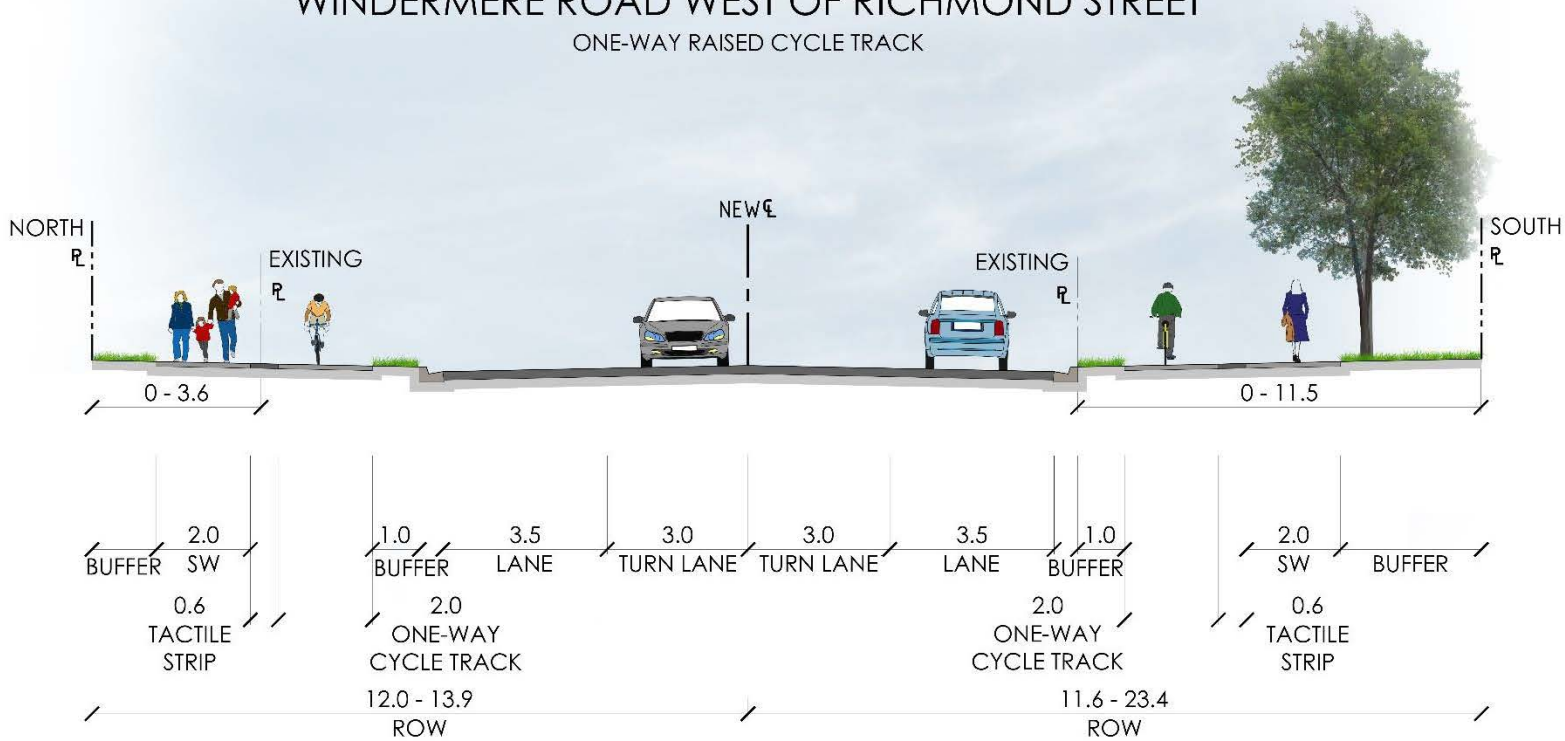
WINDERMERE ROAD EAST OF RICHMOND STREET

ONE-WAY RAISED CYCLE TRACK



WINDERMERE ROAD WEST OF RICHMOND STREET

ONE-WAY RAISED CYCLE TRACK




RICHMOND STREET
TWO-WAY RAISED CYCLE TRACK
EXISTING ℄
& WEST ℄
℄
EXISTING
℄
EAST
℄
0 - 5.8
BUFFER
2.0
SW
1.5
BLVD
3.5
LANE
3.3
LANE
3.0
TURN LANE
3.3
LANE
3.3
LANE
3.0
TURN LANE
1.0
BLVD
3.00
TWO-WAY
CYCLE TRACK
2.0
SW
BUFFER
0.60
TACTILE STRIP
18.2 - 19.3
ROW
16.7 - 27.0
ROW

RICHMOND STREET (EAST BRIDGE)

TWO-WAY SHARED-USE FACILITY