

<b>TO:</b>	<b>CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON FEBRUARY 6, 2018</b>
<b>FROM:</b>	<b>KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL &amp; ENGINEERING SERVICES AND CITY ENGINEER</b>
<b>SUBJECT:</b>	<b>WHARNCLIFFE ROAD SOUTH ENVIRONMENTAL STUDY REPORT</b>

<b>RECOMMENDATION</b>
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That, on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to the Wharncliffe Road South Improvements Environmental Assessment:

- (a) Wharncliffe Road South from Becher Street to Commissioners Road Municipal Class Environmental Study Report **BE ACCEPTED**;
- (b) A Notice of Completion for the project **BE FILED** with the Municipal Clerk; and,
- (c) The Environmental Study Report **BE PLACED** on public record for a 30 day review period.

<b>PREVIOUS REPORTS PERTINENT TO THIS MATTER</b>
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- Civic Works Committee – June 19, 2012 – London 2030 Transportation Master Plan
- Strategic Priorities and Policy Committee – June 23, 2014 – Approval of 2014 Development Charges By-Law and DC Background Study
- Civic Works Committee – October 6, 2014 – Environmental Assessment Appointment of Consulting Engineer
- Civic Works Committee – November 29, 2016 – Environmental Assessment Update
- LACH - January 11, 2017 – Municipal Class Environmental Assessment Study – Wharncliffe Road South from Becher Street to Commissioners Road West
- LACH - November 16, 2017 – Wharncliffe Road South Environmental Assessment – 100 Stanley Street

<b>2015-19 STRATEGIC PLAN</b>
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The following report supports the Strategic Plan through the strategic focus area of *Building a Sustainable City* by implementing and enhancing safe and convenient mobility choices for transit, automobile users, pedestrians, and cyclists. The Environmental Assessment will identify solutions to improve the Wharncliffe Road South corridor including addressing the long-standing bottleneck at the Canadian National Railway (CNR) bridge.

## BACKGROUND

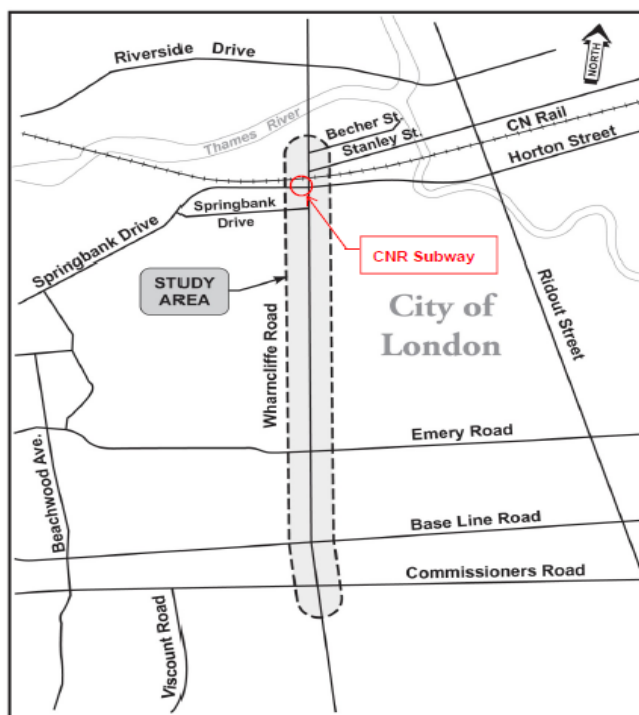
### Purpose

This report provides Committee and Council with an overview of the Municipal Class Environmental Assessment (EA) for Wharncliffe Road South Improvements from Becher Street to Commissioners Road and seeks approval to finalize the study. The completed Environmental Study Report (ESR) documents the EA process undertaken for Wharncliffe Road South Improvements.

### Context

The Wharncliffe Road South Class EA Study was carried out in accordance with Schedule 'C' of the Municipal Class Environmental Assessment (Class EA) document (October 2000, amended 2007, 2011, and 2015). 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 *Ontario Environmental Assessment Act*.

This Class EA study has satisfied the requirements of the *Ontario Environmental Assessment Act* by providing a comprehensive, environmentally sound planning process with public participation, and facilitating dialogue with parties representing a number of diverse interests. This Environmental Study Report (ESR) documents the decision making process carried out during the Wharncliffe Road South Class EA study. See below for a map illustrating the project limits.



**Wharncliffe Road South EA Limits**

The Wharncliffe Road South corridor is a major north/south corridor in the City. The study portion of Wharncliffe Road South is an arterial road that accommodates between 28,000 and 35,000 vehicles per day and provides a key transportation corridor between the Southwest Area Plan (SWAP) lands, Western University, Downtown London and other destinations. The corridor is comprised of four through lanes throughout, except in the area of the two rail bridge “bottlenecks”. This EA addresses the CNR crossing that is observed to create congestion, cut-through traffic on residential streets and an elevated collision history.

The Wharncliffe Road South Class EA supports the Strategic Plan through the strategic focus area of building a sustainable city by implementing and enhancing safe and convenient mobility choices for transit, automobile users, pedestrians and cyclists. The environmental assessment will identify solutions to improve Wharncliffe Road South including addressing the long-standing bottleneck at the CNR Bridge. Key findings of the transportation assessment are summarized by the following:

- The road 'bottleneck' created by the CNR Bridge has been recognized by the City since the 1960's with various studies that considered the replacement of this aging bridge. The bottleneck contributes to congestion, cut-through traffic in adjacent residential neighbourhoods and collisions. Steady population and job growth is projected and the City of London must ensure the road network is efficient and supports a range of transportation modes.
- Within a 5-year period (between Year 2009 to 2013), a total of 748 collisions were recorded at the study area intersections with the highest collision rate at Horton Street. It is noted that some of the turning movements at this intersection are operating at or over existing capacity. The relatively higher collision rate for this intersection may be due to the existing network constraint, proximity to the CNR Bridge, and blocked sightlines. The limiting factor of a single northbound lane under the structure requires the merging of three movements: eastbound left-turn, westbound right-turn, and northbound through. The proximity of the CNR Bridge to the intersection and the bridges associated embankments contribute to limited sightlines between vehicles and between vehicles and pedestrians. The existing vegetation on the embankment also significantly reduces the sightlines for the west and southbound right-turns and eastbound left-turn movements.
- The northbound capacity constraint at the CNR Bridge also results in high delays for the approaching northbound traffic at Horton Street. The queue length for northbound through-traffic generally extends to Byron Avenue (approximately 300 m) during morning peak hour. Consequently, eastbound traffic at Springbank Drive (un-signalized) experiences high delays during both peak hours.
- Within a 5-year period (between Year 2009 to 2013), there were a total of 295 collisions recorded at mid-blocks in the study area. The substandard lane widths and higher traffic delays / congestion and the high density of accesses / driveways allowing all turning movements to/from the properties are the potential contributing factors for the high collision rates.
- In 2014, the City of London conducted a detailed safety review study, ranking the top 20 intersections on the basis of their Potential for Safety Improvement (PSI). Wharncliffe Road South intersections at Commissioners Road and Horton Street rank 7th and 14th respectively for the PSI.

Transportation objectives for Wharncliffe Road South were identified in the City of London 2030 Transportation Master Plan (TMP). The TMP recommended two distinct project phases to improve Wharncliffe Road South that have been addressed within the Wharncliffe Road South Class EA:

- Phase 1 comprises the addition of one northbound travel lane on Wharncliffe Road South between Horton Street and Becher Street, thereby addressing the 'gap' that exists between the existing four lane Wharncliffe Road South to the north and south of this section. It also involves implementing operational improvements at the Horton Street intersection and replacing the CNR Bridge to accommodate the additional northbound lane and the intersection improvements.

CNR is an important project partner as the owner of the railway. CNR has provided input and an endorsement of a preferred grade separation design.

The City of London Transportation Master Plan recommends implementation of Phase 1 on the 5 to 10 year horizon (i.e. 2018 to 2023) and the Development Charges Background Study (2014) recommends implementation in 2019. Implementation of Phase 1 is planned immediately following approval of this EA.

- Phase 2 involves the development of a long-term vision for Wharncliffe Road South from Springbank Drive to Commissioners Road West. This section of Wharncliffe Road South is already four lanes but has operational issues that reduce its efficiency. Improvements considered for this section includes road cross-section enhancements and access management. It is intended that the road improvements will also enhance transit system efficiency and performance. Efficient transit routes will play an important part in supporting the planned rapid transit network in London. The TMP recommended implementation in the 10 to 15 year horizon (i.e. 2023 to 2028).

## **The London Plan**

The following aspects of the London Plan are pertinent to the Wharncliffe Road South Class EA: Main Street Place Type is identified between Commissioners Road and Horton Street; and Civic Boulevard Street Classification for the remaining study area. The Main Street Place Type encourages a broad range of residential, retail service and office uses. Mixed-use building are encouraged. This Place Type reflects the existing use within the Commissioners Road to Horton Street section of Wharncliffe Road South and supports redevelopment / reinvestment in this area.

The Civic Boulevard Street Classification places a priority on pedestrian, cycle and transit movements, moves medium to high volumes of vehicular traffic, and encourages a high quality pedestrian realm and urban design.

The current zoning surrounding Wharncliffe Road South is designated as Main Street Commercial Corridor (north section) and Auto-Oriented Commercial Corridor (south section). The Main Street Commercial Corridor is intended to: provide for the redevelopment of the vacant, under-utilized and poorly maintained properties; encourage development which maintains the scale, setback and character of the neighbourhood; encourage common parking areas instead of individual access points and parking areas; encourage mixed use development to achieve higher densities and reinforce the modal shift to transit and active transportation. The Auto-Oriented Commercial Corridor permits a greater range of commercial uses. One of the key goals of the designation is to improve the aesthetics, manage access, provide for coordinated design of signage, street furniture, lighting and landscaping, and safe / convenient pedestrian and transit access.

## **City of London 2030 Transportation Master Plan (2013)**

One of the five key initiatives of the TMP is a *More Strategic Program of Road Network Improvements*. There is a greater emphasis in this TMP on transit, active transportation, Travel Demand Management (TDM), parking, and many road improvements will be required. The City's approach to defining the need for road network improvements has become more strategic. This approach recognizes the targets for reduced modal share for the automobile by 2030, and is consistent with the City's expectation that transit and

active transportation modal shares will increase significantly from current levels. The City's approach also explicitly recognizes that road improvements will be required for different purposes.

In this regard, a number of widenings are required to support the Bus Rapid Transit (BRT) initiative. Among the TMP road projects identified, were two distinct projects for Wharncliffe Road South, within the study area:

- Widen to four lanes between Becher Street and Springbank Drive, recommended for implementation on the 5 to 10 year horizon (i.e. 2018 to 2023); and,
- 'Optimize' operations between Horton Street and Commissioners Road, recommended for implementation on the 10 to 15 year horizon (i.e. 2023 to 2028). The TMP specifies that *optimization* projects reflect highly constrained urban rights-of-way where the opportunity to complete physical improvements will be limited.

### **2014 Development Charge Background Study**

The DC Background Study reflected the two TMP-recommended projects for Wharncliffe Road South and identified high level funding allocations as well as recommended timing for implementation of 2019.

### **London's Bus Rapid Transit Initiative**

As envisioned by the Transportation Master Plan, the Bus Rapid Transit (BRT) network will rely on a strategic program of road network improvements to support the City's overall transportation network. BRT will place greater emphasis on transit, active transportation and parking, many road improvements will be required. Wharncliffe Road South is strategically positioned as a north-south route that offers a transportation alternative to Wellington Road for vehicular traffic and an opportunity to create a more efficient London Transit network to connect with and support BRT via the stations planned at Riverside Drive and Oxford Street.

### **London ON Bikes Cycling Master Plan (2016)**

The Wharncliffe Road South Class EA study team consulted with the City's London ON Bikes team during the development of the Cycling Master Plan. Given the currently constrained right-of-way on Wharncliffe Road South, south of Horton Street, a designated cycling facility was not proposed in the Cycling Master Plan. However, the replacement of the CNR Bridge will provide additional boulevard width to accommodate cyclists and protect for future lanes. Given that the bridge replacement represents a long-term investment, provision for a future potential cycling facility is considered prudent planning.

## **Cultural Heritage**

The cultural heritage resources within the study area were reviewed to identify Ontario Heritage Act (OHA) designated properties and listed properties. The *City of London Inventory of Heritage Resources* includes the following nine properties within or adjacent to the Wharncliffe Road South study corridor:

- 21 Wharncliffe Road South, added to heritage inventory May 2016;
- 32 Wharncliffe Road South, Priority 3;
- 98 Stanley Street, Priority 2;
- 100 Stanley Street, Municipality Designated under Part IV, OHA;
- 90 Wharncliffe Road South, Priority 2;
- 189 Wharncliffe Road South, Priority 2;
- 194 Wharncliffe Road South, Priority 2;
- 260 Wharncliffe Road South, Priority 2; and
- 381 Wharncliffe Road South, Priority 2.

The need for the identification, evaluation, management and conservation of Ontario's heritage is acknowledged as an essential component of environmental assessment and municipal planning in Ontario.

## **DISCUSSION**

### **Project Description**

The Wharncliffe Road South Class EA Study was identified as a Schedule C project under the Municipal Class EA. Schedule C includes the construction of new facilities and major expansions to existing facilities that have the potential for significant environmental effects. An Environmental Study Report is required to document all aspects of the Class EA study.

The ESR 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 environment considerations, planning and design alternatives that were considered and a description of the recommended alternative.

The ESR also identifies environmental effects and proposed mitigation measures, commitments to further work, consultation, and monitoring associated with the implementation of the project. A copy of the executive summary for the ESR is contained in Appendix A.

### **Planning and Analysis of Alternatives**

The first phase of the Municipal Class EA process involved the problem and opportunity statement identification. It was determined that improvements are needed in this corridor to address existing and future road/traffic operational deficiencies, future transit system efficiencies, road safety and long-term vision of a street design that improves active transportation.

The second phase of the Municipal Class EA involved identifying alternative solutions (planning alternatives) to the problem/opportunity. The following five alternatives were assessed against their ability to reasonably address the problems and opportunities, and in consideration of the constraints identified in the early stages of the study, to identify the preferred solutions:

- Alternative 1 - Do Nothing
- Alternative 2 - Transportation Demand Management (TDM)
- Alternative 3 - Operational Improvements
- Alternative 4 - Improvements to Other Roads
- Alternative 5 - Arterial Road Widening

### *Recommended Planning Solution*

The evaluation process concluded that the preferred planning solution to solve the current congestion, capacity and operational deficiencies should be a combination of the Alternatives 2, 3 and 5. This solution will improve existing operational deficiencies, accommodate future travel demand and transit system expansion, address future pedestrian and cyclist movements, accommodate safe movement through the corridor, address drainage deficiencies, and minimize social impacts and maximize social benefits.

The preferred planning solution addresses the problems and opportunity statement while avoiding unnecessary social and natural environment impacts.

### **Design Alternatives**

The third phase of the Municipal Class EA process involved the development and review of alternative design concepts. The main outcome in this phase of the study was developing road cross-section concepts for the recommended planning solution.

Several road cross-section concept alternatives were developed to properly assess the potential impacts and benefits associated with each alternative.

The following design issues and constraints influence the generation, assessment, and evaluation of the alternative designs:

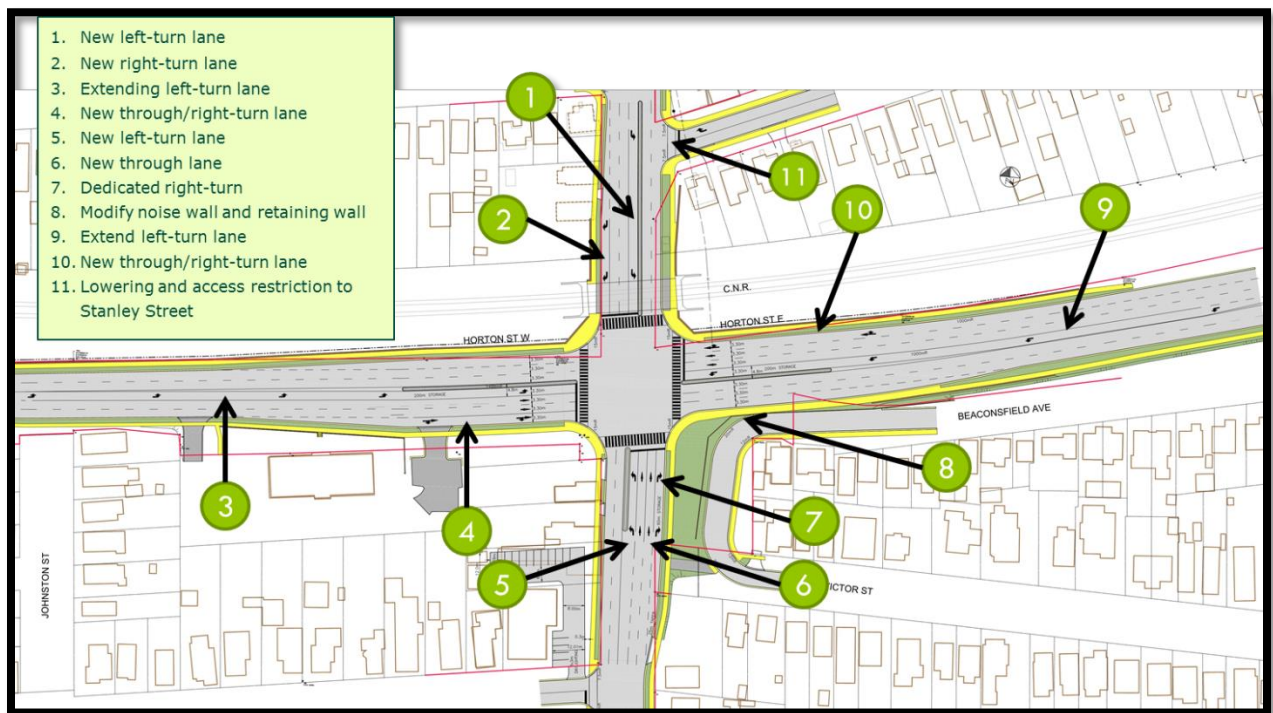
- Accommodation of potential future land use changes and densities within the study area;
- Consideration of active transportation initiatives;
- Avoidance of significant property requirements to the extent possible; and
- Minimization of environmental impacts (social, cultural, and natural environments).

The Preferred Planning Solution involves several aspects to be implemented in two phases as described below. This approach is consistent with the recommendations of the Transportation Master Plan (TMP), recognizing that the CNR Bridge replacement and additional northbound lane on Wharncliffe Road South is high priority for the City, and provides the City with flexibility to implement longer-term improvements in other parts of Wharncliffe Road South in future, as needed.

### *Phase 1 - Becher Street to Springbank Drive*

The project primarily involves the replacement of the CNR structure using an on-line replacement construction methodology which allows for CNR to maintain operations while under construction. This will enable the provision of one additional northbound

through lane on Wharncliffe Road South to connect the four-lane cross-section that exists to the north and south. Other improvements to the Horton Street intersection are shown in the figure below and include north and southbound dedicated left-turn lanes, additional southbound right-turn lane, extension of east and westbound left-turn lane storage, additional east-westbound through/right-turn lane. With the new functionality of the Horton Street intersection, southbound left turns onto Stanley Street will be blocked to improve safety. This will also reduce the traffic pressure on the residential section of Stanley Street. Complimentary southbound left-turn prohibitions from Wharncliffe Road to Becher Street and The Ridgeway will also be considered to prevent cut-through traffic in residential areas.



Wharncliffe Road South / Horton Street East Improvements

The project involves five full and eight partial (edge, land only) property requirements. The required acquisitions from some residential and commercial properties impact structures and other facilities such as parking areas. The final extent of acquisition at these locations and associated mitigation will be the subject of negotiations with the property owners. There are impacts to the following heritage properties:

- 100 Stanley Street, which is municipally designated under Part IV of the Ontario Heritage Act. This property is discussed later in this report.
- 32 Wharncliffe Road South which is listed on the City of London's Inventory of Heritage Resources as Priority 3 is impacted with a minor strip property acquisition.

#### *Phase 2 – Springbank Drive to Commissioners Road*

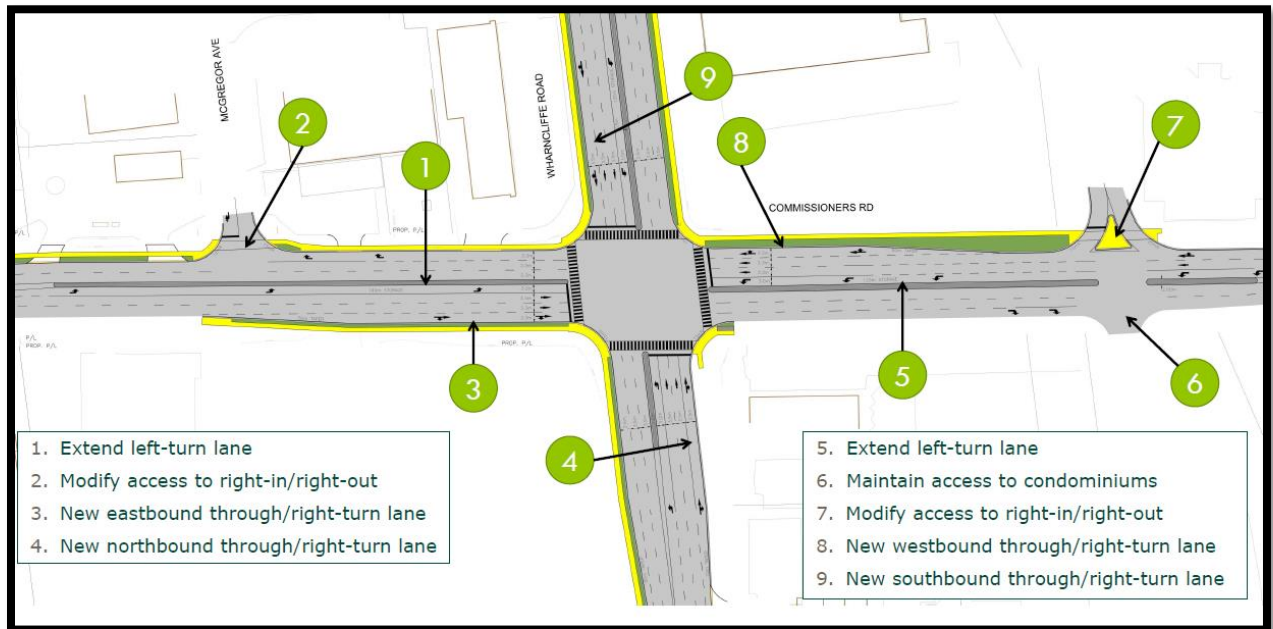
This section of Wharncliffe Road South already has four through lanes. Due to a heavily constrained corridor created by a narrow right-of-way with very limited space, this project section is focused on incremental optimization improvements to the road cross-section to improve both all road user environments.

The proposed improvements in this section include reconstructing the existing cross-section at preferable widths to create a more comfortable environment. This includes uniform lane widths, boulevards, and wider sidewalks. A new centre left-turn lane is proposed between Emery Street and Base Line Road.



The following intersection recommendations are also proposed:

- Emery Street – addition of north and southbound dedicated left-turn lanes;
- Base Line Road – extension of southbound left-turn lane; and
- Commissioners Road – addition of east/westbound and north/southbound through/right-turn lanes and extension of east and westbound left-turn lanes as illustrated below. The access to McGregor Avenue and Highland Avenue will be modified to right-in/right-out. The access to the condominium residences opposite Highland Avenue will be maintained.



### Wharnclyffe Road South / Commissioners Road Improvements

Significant efforts have been made during the Wharnclyffe Road South Class EA to minimize property impacts, including: minimizing the road cross-sections and associated rights-of-way and recommending a road design alternative that minimizes overall property impacts.

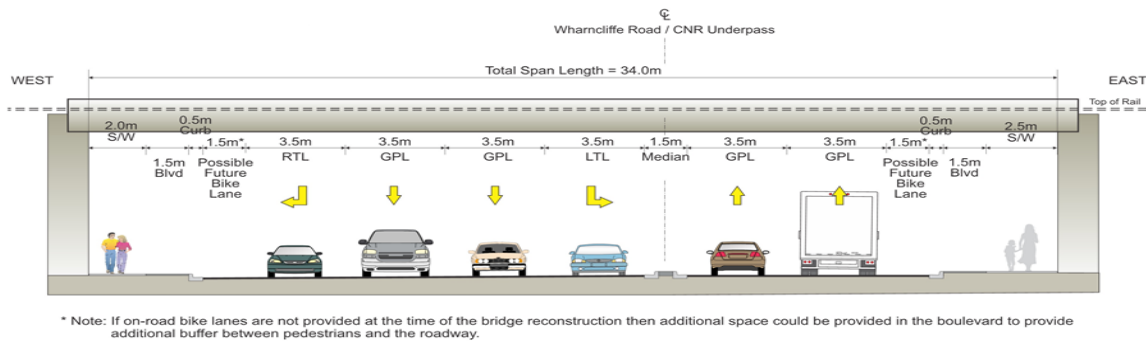
Despite these measures to avoid property impacts, some sections of the project have very limited existing right-of-way and therefore extensive property will be required to accommodate the recommended improvements. Requirements vary from building impacts to minor removal of landscaped areas. The preferred plan will impact 68 properties, and there are impacts to the following heritage properties:

- One (1) property (89 Wharnclyffe Road South) included on the City of London's Inventory of Heritage Resources as a Priority 2 resource, will be fully impacted.
- Six (6) heritage listed properties will be partially impacted with acquisition of land only through strip widening.

The property impacts in the corridor are extensive despite the modest nature of the improvements. Therefore implementation will be timed as properties redevelop and property becomes available to minimize impacts. A long-term corridor vision is illustrated in the ESR that builds upon potential property redevelopment.

## CNR Bridge Design Alternatives

Improvements to the Horton Street intersection to accommodate four through lanes plus turn lanes on Wharncliffe Road South requires the replacement of the railway bridge with a larger structure. See the illustration below for the fully developed road widening configuration beneath the proposed CNR Bridge.



### Proposed Road Cross-Section at CNR Bridge

The existing bridge is 94 years old and is approaching the end of its service life. The environmental assessment evaluation recommends on-line construction of the new CNR Bridge. The on-line method does not require a rail diversion and constructs the new abutments behind the existing abutments underneath short temporary structural trestle spans. The on-line method is recommended because it is quicker to construct, has fewer impacts to users of Wharncliffe Road and Horton Street, is more cost effective and is overall more efficient. This method was endorsed by CNR. CNR did not endorse a rail diversion construction methodology due to concerns about the excessive length and increased curvature of the required diversion at this location. A rail diversion would also require a very long road closure of Wharncliffe Road and Horton Street of up to 24 months. The construction of this project is complex and requires rail traffic to be maintained. Further input and approval from CNR will be required in detailed design. The road profile and utilities beneath the bridge will be designed considering the long-term potential for high speed rail in the CNR corridor through London as envisioned in the recent report by David Collenette, Ontario's Special Advisor on high speed rail

## Public and Agency Consultation

A Notice of Study Commencement for the project was issued in February 9, 2015. A project website page was also developed at the outset of this study. Responses from residents were received that related to property and access impacts, timing and duration of construction, pedestrian and cyclist safety, and high traffic volumes.

Public Information Centre 1 was held on June 11, 2015 to review the study scope, existing conditions, need and justification, planning alternatives, and design concept alternatives.

Public Information Centre 2 was held on November 30, 2016. A summary of the public and agency feedback was presented along with the preliminary preferred alternative, impacts, and mitigation.

Two meetings occurred with the Riverforks Community Organization.

The project team presented the Cultural Heritage Assessment Report (CHAR) and the Preliminary Preferred Plan (as presented at Public Information Centre 2) to the London Advisory Committee on Heritage (LACH) on January 11, 2017.

The project team provided a staff report and preliminary Heritage Impact Statement (HIS) for information purposes to LACH on November 16, 2017, to follow-up on work

that was undertaken by the Wharncliffe Road South Class EA project team with respect to considering options to conserve the cultural heritage value of the heritage-designated property at 100 Stanley Street.

In addition to these formal events, the project team met individually numerous times with property owners who are most significantly impacted. Several proactive meetings occurred on October 19 and 20, 2016 prior to Public Information Centre 2 to provide early notification to those impacted. Subsequent ongoing dialogue has occurred with interested parties throughout the study to the present time.

The project team met with CNR in January 2015 and January 2016. In April 2016, a structural preliminary design report was provided to CNR to facilitate their internal review process. City and CNR staff discussed the project again in August 2016. In October 2016, CNR decisively approved the in place replacement alternative. CNR conveyed concerns related to the extensive rail diversion required under the other alternative.

### **Consideration of Cultural Heritage Value at 100 Stanley Street**

In order to examine viable heritage conservation options, and in an effort to provide more certainty to the EA recommendations and preliminary design in the area of 100 Stanley Street, an additional scope of work was undertaken following Public Information Centre 2. This additional analysis exceeds what is typically undertaken for an EA and was added to:

- Identify a range of heritage conservation options that reflect heritage policies including the Provincial Policy Statement, the Ontario Heritage Act and the City of London Official Plan;
- Complete a technical review consisting of:
  - A more detailed review of the construction staging and access needs with a CNR-approved contractor;
  - A review of the feasibility of maintaining the dwelling in place or relocating the dwelling with a contractor experienced in heritage building relocation; and,
  - Options related to the potential for relocation, routing and design requirements of utilities, and municipal services to lessen property impacts.
- Identify key issues and constraints for each of the heritage options based on the technical review; and,
- Prepare a Heritage Impact Statement (HIS) to inform the consideration of heritage value in recommending an approach.

The EA preliminary recommendation with respect to conserving the cultural heritage value of 100 Stanley Street is to relocate the dwelling. The proposed receiving site will utilize city-owned parcels on the west side of Wharncliffe Road South, south of Evergreen Avenue. These parcels are within approximately 60 m of the residence at 100 Stanley Street. The project team believes that this recommendation offers the best opportunity to protect the cultural heritage value that is both sympathetic to the original context and recognizes the importance of the building to the city and neighbourhood.

The feasibility of relocating the home was confirmed by a contractor with experience moving heritage buildings. Based on the preliminary investigations, the home appears to be in good structural condition and relocation with minimal damage is possible using conventional techniques. Relocation would be subject to future planning approvals, development of a detailed relocation plan and a more detailed heritage conservation strategy.

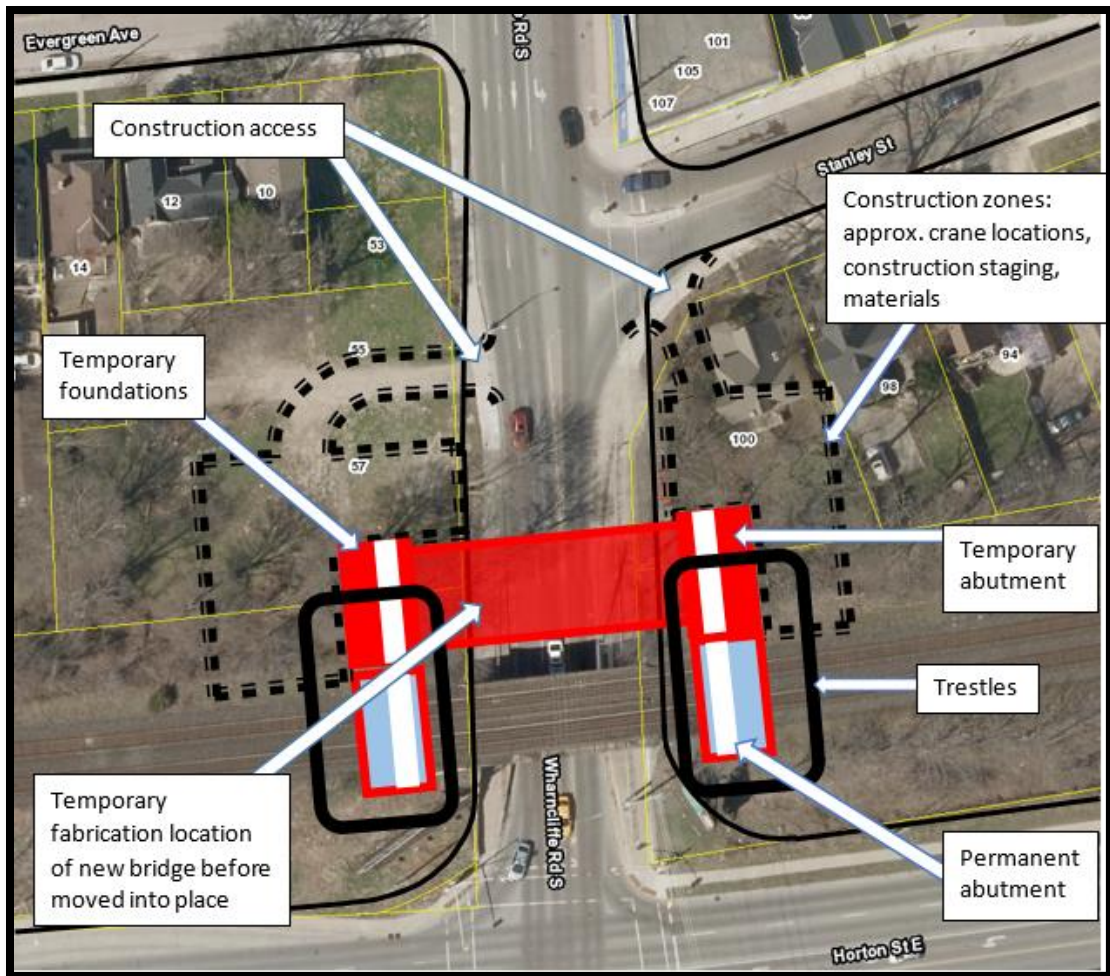
The City of London has designated the subject property under Part IV of the Ontario Heritage Act (OHA) with By-law No. L.S.P.-3413-272, dated November 1, 2010, which was registered as Instrument No. ER40074, November 26, 2010. The project team proposes to relocate the dwelling in such a way that conserves all of the exterior and interior attributes ascribed in the By-law.

The project team acknowledges that the context / setting of the dwelling will change in relation to the neighbourhood and streetscape. However, the proposed receiving property is sympathetic to the original 100 Stanley Street address in that it is located very close to the original property, on a corner of Wharncliffe Road South, in a similar streetscape realm to the existing. Although the project team's recommendation will not preserve the authenticity of the original site, it is believed to preserve the cultural heritage values of 100 Stanley Street with integrity. Following construction, there would be an opportunity to reinstate a small park setting at 100 Stanley Street that could be named St. James Park, with associated heritage interpretive materials reflecting the history of original St. James Park at this site, the route to Port Stanley and the original location of the dwelling.

The project team has made this recommendation on the basis that no other options to retain the dwelling in its current location are viable and demolition is not recommended. The other options developed by the project team were:

1. Preserving 100 Stanley Street in-situ with minimal impacts requires a replacement of the bridge west of its current location with a 40 m alignment shift of Wharncliffe Road to the west. This large shift is required for constructability to build the new bridge abutments outside of the existing abutments because construction of a new abutment under the existing bridge span is not possible. This option is not viable due to major property impacts. All homes fronting onto Wharncliffe Road South between Evergreen Avenue and Riverview Avenue would be removed, as well as four homes on Evergreen Avenue. In total approximately 13 properties would need to be fully removed. One of the properties impacted would be 12 Evergreen Avenue that is listed on the Inventory of Heritage Resources
2. Maintaining 100 Stanley Street in-situ with modifications was also developed but is not viable due to unacceptable risks to the dwelling and its cultural heritage value given the close proximity to the construction area, the nature of construction activities and cost escalation.

This option would require establishment of a temporary construction easement over the entire lot. The bridge replacement requires construction of new permanent abutments behind the existing and beneath the live rail line. Adjacent temporary abutments are required to extend north to support the fabrication of the new steel superstructure beside the existing structure. Once fabricated, the steel superstructure will be slid into place. Half of the east side temporary abutment will need to be located on 100 Stanley Street. The area surrounding in close proximity to the house is required for construction equipment at the elevation of the railway including cranes, pile drivers and drill rigs to construct the abutment as shown in the figure below.



Railway Grade Separation Construction Areas

Creating this working area while maintaining the dwelling would require installation of a temporary wall system of soldier piles, lagging and hoarding installed almost completely around the dwelling and backfilled to a height up to the second storey to support construction equipment. All vegetation would require removal. The dwelling would be inhabitable during construction for approximately 24 months. The Heritage Impact Study identifies negative implications for the character and setting and concerns with the potential for construction damage from air, noise, dust and vibration.

Upon completion, the 100 Stanley Street lot would be 40% smaller. The adjacent new road grades would be 0.5 to 0.8 m lower than existing and would require retaining walls around the remnant parcel, steps to the dwelling, protection of exposed foundations and removal of the existing driveway. This option also introduces significant risk of large utility relocation cost escalation due to higher complexity relocations around the dwelling.

3. Demolition is technically feasible and would be the least costly option. The dwelling would be removed subject to meeting regulatory requirements and permits / approvals. The process would include an updated heritage impact study, a salvage plan for specific built resources and a documentation report. This option results in the permanent loss of the cultural heritage value.

It is noteworthy that the required on-line bridge replacement methodology dictates that the new bridge abutments must be located behind the existing abutments. This leaves little opportunity to reduce construction impacts to 100 Stanley Street. Construction of the bridge replacement, as opposed to the additional width in the proposed road cross-section as a result of the additional lanes and active transportation space, creates the impacts to 100 Stanley Street.

The preliminary recommendation was presented to LACH on November 16, 2017 as an information item. LACH reiterated their previous position (January 2017) that they do not support the potential demolition of 100 Stanley Street. LACH also indicated a preference for preserving 100 Stanley Street in-situ which, as noted above, is not viable.

The economic comparisons of the viable alternatives considered construction, property and compensatory resident costs depending on the option. The house relocation option included excavation and site preparation at new and existing sites, new foundation and slab, bracing, relocation, landscaping and demolition of the remaining original foundation. The net difference between relocation and demolition is approximately \$0.5 M after considering all the costs associated with each option.

As is typical for an EA study, preliminary mitigation recommendations are subject to review and confirmation during detailed design, in consideration of the more detailed understanding of design, technical issues/constraints, costing and Council direction.

## **IMPLEMENTATION**

### **Construction Staging and Traffic**

Implementation of Phase 1 from Becher Street to Springbank Drive is planned immediately following approval of the EA Study. Improvements to corridor operation and traffic flow gained from widening the CNR subway will be monitored following construction.

Completion of the full scope of the proposed work will be a significant undertaking. The reconstruction of the CNR subway is very complex. The project involves the construction of a new railway bridge within a live rail line and subject to technical and scheduling constraints imposed by the railway.

It is estimated that an on-site construction duration in the order of 18 months is necessary for the CNR rail bridge construction. The intersection at Horton Street will be lowered by about 1.8 m in order to achieve the required clearance under the new rail bridge. Similarly, Stanley Street will be lowered by about 0.8 m in order to connect to Wharncliffe Road. It is anticipated that a Wharncliffe Road South closure of 5 to 6 months will be required. This is required for the fabrication of the new bridge above Wharncliffe Road north of the existing and with reduced road clearance and to lower the road profile. A Horton Street closure of 2 to 3 months is required to lower the grades on Horton Street to match Wharncliffe Road and complete required servicing work. These impacts will be further scrutinized in much more detail during the design phase with the goal to minimize and mitigate impacts. The impacts will be communicated to the community with appropriate advance notice and identification of detours.

To maximize work done during the road closures required for the grade separation reconstruction, infrastructure work such as watermain and sewer upgrades and rehabilitation of the Wharncliffe Road bridge over Thames River will be coordinated to occur at the same time. These other work items have been anticipated and would individually trigger substantial road restrictions if implemented separately.

Subject to approval and acceptance of this ESR, detailed design will be initiated. The design and approvals of the proposed project will include property acquisition requirements, and thorough agency (CNR and MOECC) approvals and co-ordination. Commencement of construction will likely be in 2021 with potential utility relocations in 2020 and will need to be coordinated with other major City projects.

The subsequent plan for optimization improvements (Phase 2) of Wharncliffe Road South from Springbank Drive to Commissioners Road West will continue to be under review for long-term implementation. The timing and implementation of this section will be determined based on the identified improvements, infrastructure renewal needs and availability of property. The ESR will provide guidance for future property development including road widening dedication and access management requirements.

<b>FINANCIAL CONSIDERATIONS</b>
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**Preliminary Cost Estimates**

*Phase 1, Becher Street and Springbank Drive*

A preliminary construction cost for Phase 1, Wharncliffe Road South between Becher Street and Springbank Drive is \$38.9 M. The cost estimate includes roadway construction, the railway grade separation, traffic signals, street lighting, stormwater management, utility relocation, landscaping, traffic control, sanitary sewer and watermain improvements, landscaping, staging, and property acquisitions. The preliminary estimate for the project is summarized below and this value will be used to update future capital budgets.

Item	Estimated Cost
Removals	\$763,000
Roadwork	\$5,156,000
Storm Sewers	\$644,000
CNR Structure	\$15,993,000
Sanitary Sewer	\$3,163,000
Watermain	\$627,000
Temporary Work	\$1,050,000
Utility Relocation	\$1,620,000
Property Acquisition	\$5,561,000
Engineering	\$4,320,000
<b>TOTAL</b>	<b>\$38,897,000</b>

Cost sharing is anticipated with Canadian National Railway at 15% of the railway grade separation. Utility cost sharing has been taken into account within the estimates. The watermain and sewer costs represent life cycle renewal investments that will be funded out of sewer and water rate accounts. Accounting for these sources identifies a \$31.5 M City budget need for the Phase 1 Transportation growth project. The current Development Charge Background Study identifies \$23 M for the Phase 1 and 2 of Wharncliffe Road Improvements identified for implementation in 2019. Potential allocation of both phases of the 2019 Wharncliffe Road investments to the priority Phase 1 improvements leaves an \$8.5 M shortfall that will be accounted for in the upcoming 2019 Development Charges Background Study and future capital budget updates.

### *Phase 2, Springbank Drive to Commissioners Road*

The preliminary cost for Phase 2 of the Wharncliffe Road South Improvements between Springbank Drive and Commissioners Road is \$16.8 M. This value is subject to numerous assumptions based on the long-term nature of the works and will be further refined as the timing for implementation is determined. The project team assumed the required property will be obtained predominantly through development dedication and assumes only a portion of the identified property would require purchase. With the EA identifying a long-term vision that is impaired by property constraints, and considering the financial needs of the Phase 1 project described above, the upcoming Development Charges Background Study update will defer the improvements from Springbank Drive to Commissioners Road as a long-term need. This creates the financial capacity describe above.

## **CONCLUSION**

Improvements to the Wharncliffe Road South corridor are required to fulfill its necessary function in the transportation network. The provincial Environmental Assessment Act requires the completion of an EA for projects of this scope. The improvements identified in this EA will help fulfill the Strategic Plan Area of Focus of Building a Sustainable City by providing convenient and connected mobility choices for all Londoners.

A Municipal Class Environmental Assessment (EA) was undertaken. The ESR is ready for final public review.

The EA was prepared with input from external agencies, utilities, emergency service providers, agricultural community and other stakeholders, as well as First Nations and property owners in proximity to the study.

The preferred plan for Wharncliffe Road South, from Becher Street to Springbank Drive includes the following aspects:

- Replacement of the CNR Bridge with a single span, double track through plate girder bridge utilizing an on-line trestle replacement methodology; this is planned to reduce traffic congestion, residential cut-through traffic and collision rates;
- Addition of one northbound lane on Wharncliffe Road South and the creation of standard vertical clearance, wider sidewalks and cycling space beneath the bridge;
- Improvements to the Horton Street intersection which include north and southbound dedicated left-turn lanes, additional southbound right-turn lane, extension of east and westbound left-turn lane storage, additional east-westbound through/right-turn lane. With the new functionality of the Horton Street intersection, southbound left turns onto Stanley Street will be blocked to improve safety.
- Relocation of the dwelling at 100 Stanley Street to a nearby property, in a manner that conserves the heritage values of the dwelling and is compliant with provincial and municipal heritage policies.



The preferred plan for Wharncliffe Road South, from Springbank Drive to Commissioners Road identifies longer-term improvements that includes the following aspects:

- Partial road cross-section improvements designed to:
  - Create travel lanes and turn-lanes a consistent width throughout the study area;
  - provide for a two-way left-turn lane between Emery Street and Base Line Road to allow for left-turn movements without impacting traffic operations;
  - provide for a greater separation between the roadway and sidewalk; and
  - provide for a wider sidewalk to enhance the pedestrian environment.
- Improvements to the Commissioners Road intersection, including changes in access to nearby McGregor Avenue and Highland Avenue;
- Design improvements to other intersections to be consistent with current City design standards and bring them into AODA compliance;
- Access management to reduce the number of commercial entrances, in accordance with City guidelines, and therefore reduce the number of potential conflict points for traffic and pedestrians; and,
- Transit system improvements that increase transit efficiency and better integrate with improved traffic operations.

Pending Council approval, a Notice of 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 period.
- Should the public and stakeholders feel that the EA process has not been adequately addressed, they may provide written notification within the 30-day review period to the Minister of the Environment requesting a Part II Order.
- If no requests for a Part II Order are received, the project will be in an immediate position to move forward to the detailed design and property acquisition in accordance with the recommendations of the study.
- Construction of Phase 1 is anticipated to begin as early as 2021 subject to Council approval of the revised capital budget, property acquisition and approvals.

## Acknowledgements

This report was prepared with the assistance of Ted Koza, P.Eng., Transportation Design Engineer and Josh Ackworth, C.E.T., Technologist II of the Transportation Planning & Design Division.

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Attachment: Appendix A – Environmental Study Report Executive Summary

cc. Gillian Thompson – WSP/MMM Group  
CN Rail