

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: Western Road and Sarnia Road/Philip Aziz Avenue Corridor
and Intersection Improvements
Environmental Study Report, Notice of Completion

Date: April 12, 2023

Recommendation

That, on the recommendation of the Deputy City Manager, Environment & Infrastructure, the following actions **BE TAKEN** with respect to the Environmental Study Report for the Western Road and Sarnia Road/Philip Aziz Avenue Corridor and Intersection Improvements:

- a) The Environmental Study Report for the Western Road and Sarnia Road/Philip Aziz Avenue Corridor and Intersection Improvements **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.

Executive Summary

Purpose

This report provides an overview of the Municipal Class Environmental Assessment (MCEA) process that was completed and seeks approval to finalize the Environmental Study Report (ESR) and provide it for the necessary 30-day public review period. The study identifies improvements to Western Road from Platt's Lane to the Huron College entrance at Burnlea Walk and to Sarnia Road/Philip Aziz Avenue from Sleightholme Avenue to the Thames River.

Context

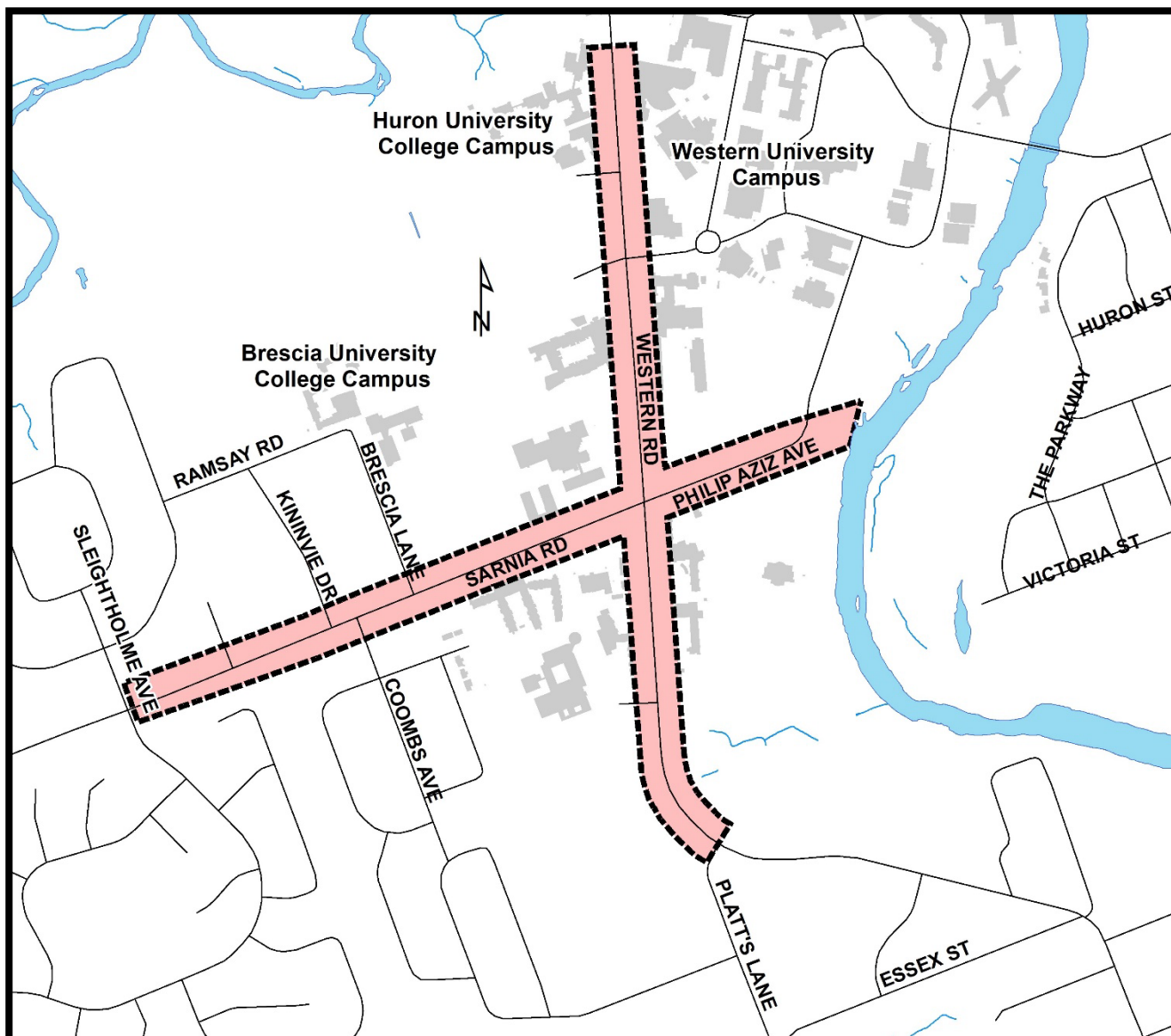
Western Road, Sarnia Road and Philip Aziz Avenue within the study area are defined as Civic Boulevards and major corridors serving Western University, as well as the broader city transportation network. The intersection accommodates 41,000 vehicles in a typical day including transit buses carrying thousands of passengers. This intersection also accommodates significant numbers of pedestrians. A 2022 count identified 6,740 and 5,070 pedestrian crossings in the north/south and east/west directions respectively, noting that a single pedestrian trip may involve both crossings. The number of cyclists counted was 203. It appears that these 2022 pedestrian and cyclist levels are influenced by the pandemic because active transportation levels in a 2018 count were approximately two thirds higher. This Environmental Assessment (EA) study was completed to evaluate the current and future needs within this area, and to develop the best solutions to address the needs of all users now and into the future.

The implementation of a complete streets approach is important to provide mobility options within the area. The improvements identified in this study will create an opportunity to enhance the features of the corridor and to accommodate existing and future traffic demands including active transportation. The improvements will enhance

the overall transportation network and provide better connectivity to adjacent communities by following the City's complete streets design approach.

The EA study area is shown on Figure 1.

Figure 1: EA Study Area Map



Linkage to the Corporate Strategic Plan

The following report supports the 2019–2023 Strategic Plan through the strategic focus areas of Building a Sustainable City, Growing Our Economy and Leading in Customer Service by contributing to improved mobility options with a complete streets lens and a focus on climate change mitigation and adaptation.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter:

- Civic Works Committee report - May 11, 2021 – Sarnia Road/Philip Aziz Avenue and Western Road Environmental Assessment – Consultant Re-Start
- Civic Works Committee report January 6, 2015 – Western Road and Sarnia Road / Philip Aziz Avenue Environmental Assessment – Consultant Award

2.0 Discussion and Considerations

2.1 Study Description

The Western Road and Sarnia Road/Philip Aziz Avenue Environmental Assessment (EA) study was carried out in accordance with Schedule 'C' of the Municipal Class Environmental Assessment (Class EA) requirements. 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 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. The Environmental Study Report (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, existing social, natural and cultural environmental considerations, climate change and identifies the planning and design alternatives that were considered, and a description of the recommended alternative.

The study area includes:

- Western Road from Platt's Lane northerly to the Huron College Driveway entrance (Burnlea Walk), and
- Sarnia Road / Philip Aziz Avenue from Sleightholme Avenue easterly to the Thames River.

The ESR also identifies environmental effects and proposed mitigation measures, commitments to further work, and consultation associated with the implementation of the project. To view a copy of the full draft ESR, follow the link [Western Road and Sarnia Road / Philip Aziz Avenue Environmental Assessment | Get Involved London](#).

2.2 Problem and Opportunity Statement

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

Problems:

- The City of London Smart Moves 2030 Transportation Master Plan identified the need to improve the Western Road and Sarnia Road/Philip Aziz Avenue intersection in the near term;
- This intersection accommodates large numbers of pedestrians, cyclists, transit routes carrying thousands of passengers and over 41,000 vehicles per day;
- The intersection experiences traffic congestion, safety concerns, increased delays, lack of connectivity for cyclists and decreasing levels of service for all users and this will continue if left untreated; and
- The existing storm drainage in the area does not meet current design standards and requires upgrades.

Opportunities:

- Develop a range of planning and design alternatives that can improve pedestrian and cyclist facilities and safety, improve intersection operations, and provide additional capacity;
- Improve continuity with Western Road north and south of the study area, addressing stormwater drainage and enhance streetscape conditions;

- Consult with the public and agencies, and solicit feedback throughout the process;
- Consider the City of London's Complete Streets Design Manual, Urban Design Guidelines, and Western University's Master Plan Vision to potentially create a gateway to the campus;
- Create complete streets and an intersection that is as functional and comfortable as possible for all users; and
- Consider the City's Climate Emergency Action Plan in the review and development of alternative solutions.

2.3 Alternative Solutions

Phase II of the MCEA process includes an inventory of the existing socio-economic, cultural and natural environments to identify alternative solutions to address the problem and opportunity statements. Alternative solutions are identified and evaluated based on their ability to reduce impacts associated with socio-economic, archaeology and cultural heritage, natural environment, climate change, transportation engineering and cost.

Alternative solutions considered for the study area included:

1. **Do Nothing** – this alternative provides a basis to which other alternative solutions are compared to.
2. **Expand Pedestrian, Bicycle and Transit Use** – this alternative would involve improvements to encourage active transportation and transit use within the corridors.
3. **Operational Improvements** – this alternative would review improving turning lanes, traffic signal optimization, etc., to realize operational improvements.
4. **Improvements to Parallel Roads** – this alternative would include improvements to other network corridors.
5. **Improvements to Access Management** – this alternative would review using local roads to improve destination access.
6. **Improvements along Philip Aziz Avenue** – this alternative would look at various ways to improve Philip Aziz Avenue to address safety concerns, including the lack of sidewalks, bike lanes, sight distances, and traffic operations.

2.4 Recommended Alternatives

The evaluation of the above alternatives has been screened against the problem/opportunity statements, and Alternatives 2, 3, 5 and 6 were carried forward.

The recommended alternatives consider transportation facilities for all road users (pedestrians, cyclists and drivers) as per the City's complete streets requirements and the latest multi-modal level of service analysis while also considering impacts to traffic operations, safety, natural, socio-economic and cultural features, and costs. The recommended alternatives were selected, developed, and refined through consultation with Indigenous communities, agencies, advisory committees, stakeholders, and the public.

Consideration for climate change, using the Climate Emergency Screening Tool, has been undertaken for the recommended alternatives including improving active transportation facilities and resiliency of the stormwater management system.

The recommended alternatives include:

Western Road (Platt's Lane to Burnlea Walk)

- Provide new separated cycling lanes and wider pedestrian sidewalks;
- Curbs will be introduced where they don't currently exist to improve drainage and safety;
- Implement transit bus bays to facilitate transit operations and accommodate the

large number of transit users boarding and alighting at these locations. These bus bays will also improve traffic operations during peak times.

- Extend the southbound right turn lane from Western Road to westbound Sarnia Road; and,
- Implement access management changes for select properties to improve traffic operations during peak traffic times.

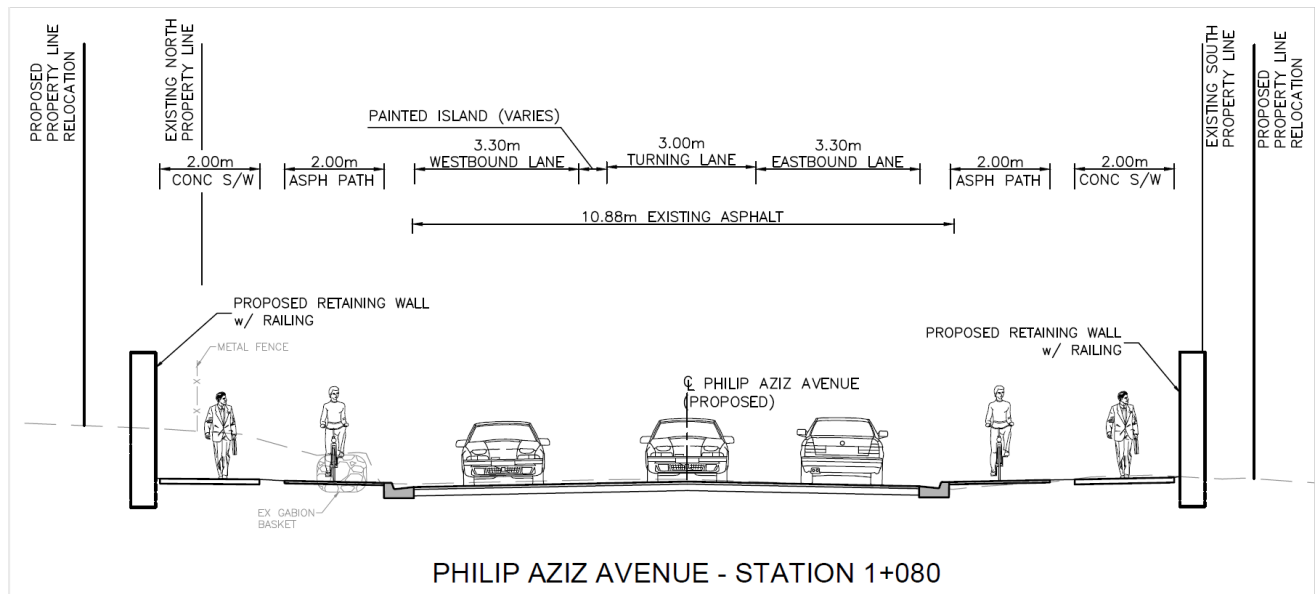
Sarnia Road (Sleightholme Avenue to Western Road)

- Provide new separated cycling lanes and wider pedestrian sidewalks.

Philip Aziz Avenue (Western Road to Thames River) (see Figure 2)

- Provide a complete urban cross section, including cycle lanes, sidewalks, curb & gutter, and a relocated entrance to the Philip Aziz property.

Figure 2 – Proposed Philip Aziz Avenue Cross Section



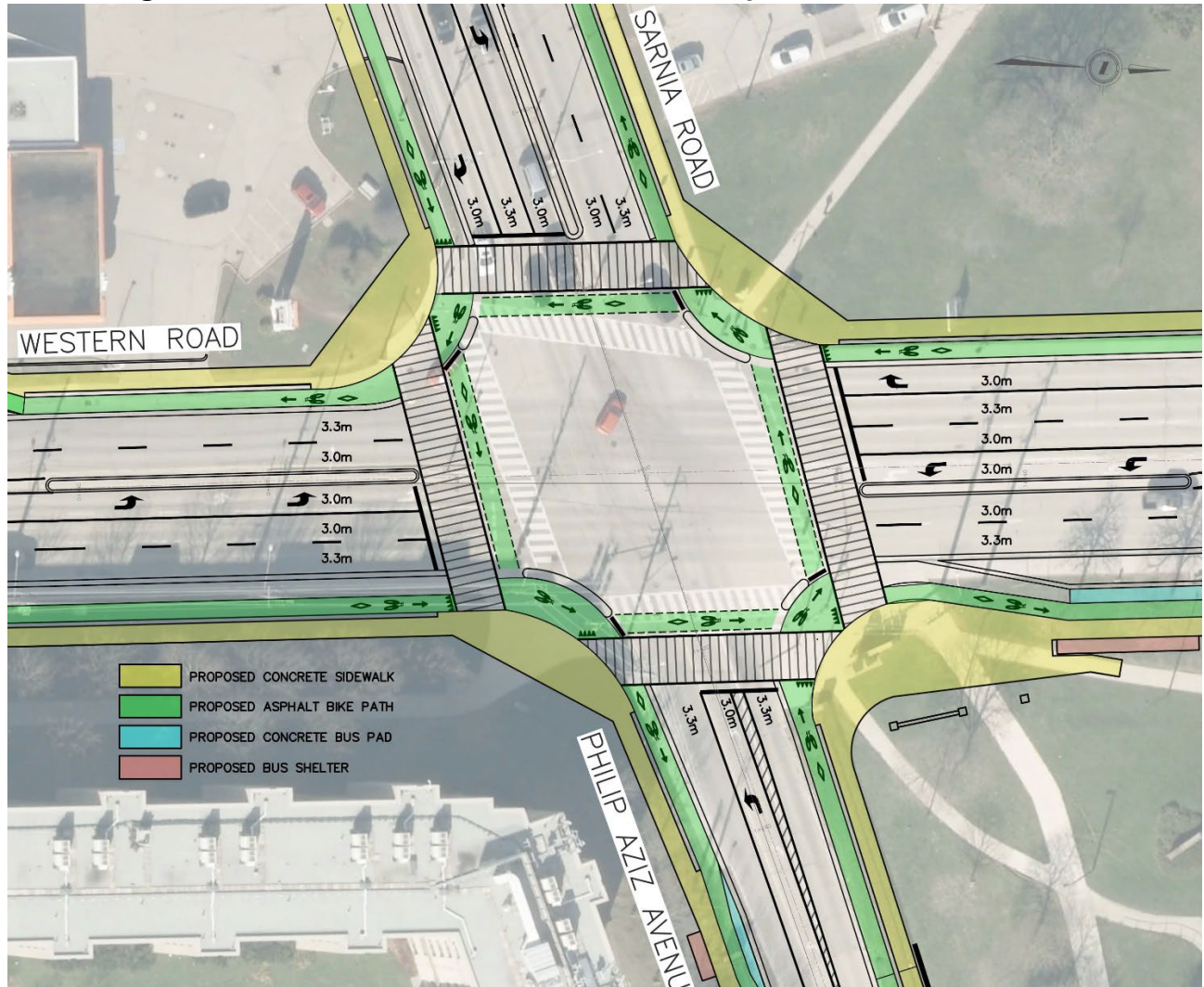
Western Road/Sarnia Road/Philip Aziz Avenue Intersection (see Figure 3)

- Provide protected intersection design elements to improve safety as well as, wider pedestrian crossings, enhanced pavement markings, improved illumination and larger pedestrian waiting areas;
- Provide improved connectivity for cycling lanes through the intersection,
- Reconstruct the intersection to suit adjacent road alignments, maintaining a single northbound left turn lane to Sarnia Road;
- Provide intersection improvements meeting current accessibility requirements; and,
- Further enhancements such as the use of a leading pedestrian signal phase, being piloted in other city locations, will be reviewed during detailed design.

Stormwater Drainage

- Provide new storm sewers on Western Road, Sarnia Road, Philip Aziz Avenue with a new stormwater outfall to the Thames River.

Figure 3 – Western Road – Sarnia Road/ Philip Aziz Avenue Intersection



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 upgrades to storm sewers, sanitary sewers and watermains, roadworks, utility relocations and property acquisition. The total preliminary construction estimate totaling \$27.09M including contingency and engineering is provided below in Table 1.

The project will be primarily funded through three transportation capital budgets - TS1136 Western Road Improvements, TS1627 Philip Aziz Improvements and TS1670 Sarnia/Philip Aziz Intersection Improvements. Some cost allocation to the Water and Wastewater and Treatment budget is anticipated for watermain and sewers components. Western University will also participate in the funding of the sanitary sewer forcemain on Philip Aziz Avenue.

The EA cost estimate is based on the current costs of similar projects reflecting recent inflationary increases in construction material prices, and labour market conditions. The updated project cost estimate developed during the EA will inform the upcoming multi-year budget process.

Table 1: Environmental Assessment Cost Estimate for the Western Road and Sarnia Road/Philip Aziz Avenue Improvements (2023 Dollars)

Item	Total
Removals	\$1,414,000
Sanitary sewer servicing	\$146,000
Storm sewer servicing	\$3,446,000
Water servicing	800,000
Roadworks	\$10,463,000
Electrical/Traffic Signals and Illumination	\$860,000
Utility Relocations	\$1,009,000
Landscaping	\$150,000
Miscellaneous minor items	\$813,000
Subtotal	\$19,100,000
Construction Contingency (10%)	\$1,910,000
Total Estimated Construction Value	\$21,011,000
Property Acquisition	\$400,000
Engineering (Detailed Design & Construction Administration - 12%)	\$2,521,000
Contingency of Preliminary Estimate (15%)	\$3,152,000
Total Preliminary Project Estimate (rounded)	\$27,090,000

4.0 Key Issues and Considerations

4.1 Property Impacts

The reduction of property requirements was a key consideration in the identification and evaluation of the alternative solutions by the project team. Property acquisition will be required from six property owners, with most of the lands owned by Western University. A request from Western University was received in the late stage of the project to review the inclusion of a centre median on Western Road between Lambton Drive and Sarnia Road. This will be reviewed further during detail design and may impact the amount of property to be acquired along this stretch of the corridor.

4.2 Public and Agency Consultation

Consultation was a key component of this Class EA study to provide an opportunity for stakeholder groups, the public and Indigenous communities to gain an understanding of the study process and provide feedback. The key stakeholders included residents, interested public, agencies, and those who may be affected by the project. Nine Indigenous communities were sent notifications about this project including Aamjiwnaang First Nation, Bkejwanong Territory (Walpole Island), Caldwell First Nation, Chippewas of Kettle and Stony Point, Chippewas of the Thames First Nation, Oneida Nation of the Thames, Eelunaapeewil Lahkeewiit (Delaware Nation or Moravian of the Thames), Munsee-Delaware Nation and Haudenosaunee Development Institute.

A Notice of Study Restart was issued on August 12, 2021. The study team received correspondence from the public and agencies indicating their interest in the study and requesting to be kept informed.

Public Information Centre (PIC) Number 1 was held virtually on December 1, 2021. The PIC introduced the project outlining the rationale behind it, identified existing conditions,

alternative solutions and the recommended planning alternative. It served as an opportunity for the public, stakeholders and Indigenous communities to review the project information, ask questions, and provide input to the members of the study team.

PIC Number 2 was held virtually on June 23, 2022. This PIC briefly recapped the existing conditions and alternative solutions before presenting the recommended design alternatives for the four corridor sections within the study area and all the recommended intersection improvements. It served as an opportunity for the public, stakeholders and Indigenous communities to review the project information, ask questions and provide feedback to the members of the study team.

Project information was presented to the following City of London Advisory Committees for feedback: Integrated Transportation Advisory Committee, Ecological Community Advisory Committee and the Community Advisory Committee on Planning.

Ongoing discussions with Western University, Brescia College and Huron College also formed an integral part of the consultation process for this project.

Agencies and stakeholders which required information updates pertaining to them were notified at study milestones and during specific phases of the study. In general, all agencies and stakeholders understand the need for intersection improvements. Some had concerns related to cut-through traffic on nearby roads and impacts during construction. Mitigation of potential impacts involves the avoidance or minimization of potential impacts through good design, construction practices, and/or restoration with enhancement activities. Detailed mitigation measures will be finalized in consultation with impacted property owners, City, Upper Thames Regional Conservation Authority (UTRCA), and Department of Fisheries and Oceans (DFO) as part of the detailed design process. During the upcoming 30-day public review, the ESR will be made available both on the City of London website and at the public library. The Environmental Study Report Executive Summary is attached as Appendix A.

If a member of the public chooses, they may make a request to the Ministry of the Environment, Conservation and Parks (MECP) for an order requiring a higher level of study (ie. 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

It is planned that the construction of the project will be phased over several years, with the first phase (Philip Aziz Avenue) tentatively scheduled to begin in 2024 and could be undertaken in one construction season. The remainder of the required upgrades on Western Road and Sarnia Road could be undertaken in 2025 and 2026. Coordination with adjacent City and Western University projects, property owners, and regulatory agencies is planned for early in the design process, providing additional time for further consultation. The final project schedule will be dependent on budgeting, environmental permitting, property acquisition and approvals and will be reviewed during the detailed design process.

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 the Western Road and Sarnia Road/Philip Aziz Avenue intersection and adjacent corridors are necessary to address operations and safety for all users, as well as to accommodate ongoing and future developments on the Western University lands. A Schedule “C” Municipal Class EA was undertaken to confirm the preferred long-term solution for the intersection and adjacent corridors. The Environmental Study Report has been completed and will be reviewed by the MECP prior to posting for the final public review.

In general terms, the recommended alternatives include the following design considerations:

- Pedestrian realms will be improved through the provision of new wider sidewalks along the corridors, improved illumination, larger waiting areas at the intersection and wider pedestrian crossings.
- Upgrades to the Philip Aziz Avenue corridor east of Western Road will provide sidewalks and cycle lanes on both sides of the street, along with street lighting improvements.
- Storm sewer upgrades on Western Road, Sarnia Road and Philip Aziz Avenue to address drainage issues within the entire study area and create better walking areas with the introduction of curbs.
- New separated cycling lanes on Western Road, Sarnia Road and Philip Aziz Avenue which will connect active transportation facilities through the study area to existing facilities. Intersection improvements will also be incorporated to accommodate cyclists.
- Three new bus bays along Western Road will accommodate LTC transit operations and accommodate the large numbers of passengers boarding and alighting at Western while also providing benefits to overall traffic operations during peak traffic hours.
- On Western Road, a longer southbound right turn lane for traffic onto Sarnia Road will be constructed to improve traffic operations during peak hours. This will require the closure of the driveway to Elborn College (1201 Western Road) which has been agreed upon by Western University.
- The City’s Climate Emergency Action Plan has been considered through the application of the Climate Emergency Screening Tool, which highlighted the importance of improving active transportation facilities and climate resiliency of the proposed stormwater system.
- A Multi-Modal Level of Service (MMLOS) evaluation has been completed comparing the existing conditions to the recommended design for pedestrians, cyclist, transit and vehicular traffic to the targets. The recommended improvements have been reviewed in the context of the targets for a Civic Boulevard and represent a improvement over the existing conditions.

Consultation was a key component of this study. The Class EA was prepared with input from Indigenous communities, advisory committees, agencies, utilities, emergency service providers 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 a 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.

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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 – Western Road and Sarnia Road/Philip Aziz Avenue Corridor and
Intersection Improvements Environmental Study Report - Executive Summary

c: John Pucchio, AECOM Canada Ltd
Karl Grabowski, City of London
Jane Fullick, City of London

Executive Summary

The City of London (the City), through their consultant AECOM Canada Ltd. (AECOM) has completed a Municipal Class Environmental Assessment (MCEA) Environmental Study and documented the process in an Environmental Study Report (ESR), to address necessary transportation infrastructure requirements for the Western Road and Sarnia Road / Philip Aziz Avenue Corridor and Intersection Improvements including drainage improvements with a storm sewer outlet to the Thames River. The proposed intersection and associated roadway improvements (hereafter the “Project”) are classified as a Schedule C project in the Municipal Engineers Association MCEA process (October 2000, as amended in 2007, 2011 and 2015), where project activities, are subject to the full environmental assessment planning process of the MCEA.

Project Background

In January 2015, the City retained AECOM for the completion of a Schedule C MCEA for improvements to Western Road from Platts Lane to Huron University College and Sarnia Road/Philip Aziz Avenue from Coombs Avenue east to the Thames River.

In 2016, the project was put on hold when alternatives for transit routes through the study area were being considered as they related to Rapid Transit (RT). For the purposes of this project, the northern routes for RT were deferred in 2019 awaiting recommendations from the Mobility Master Plan, which is currently underway. In August 2021, the City chose to reactivate this project.

To provide connectivity with the existing cycling facilities that currently start at Sleightholme Avenue, the original west limit of the project was expanded from Coombs Avenue to Sleightholme Avenue.

The busiest intersection within the study area is located at Western Road and Sarnia Road/Philip Aziz Avenue which supports a large volume of vehicles, pedestrians, bicycles and frequent transit services. These modes of traffic are expected to increase in the future.

Problem and Opportunity Statement

The problem and opportunities for the Western Road and Sarnia Road / Philip Aziz Avenue Corridor and Intersection are provided below:

Problems:

- The City of London Transportation Master Plan (2030 TMP) identified the need to improve the Western Road and Sarnia Road/Philip Aziz Avenue intersection in the next five years.
- This intersection accommodates pedestrians, cyclists, transit routes carrying thousands of passengers and over 41,000 vehicles per day.

- The intersection experiences traffic congestion, safety concerns, increased delays and decreasing levels of service for all users and this will continue if left untreated.
- The existing storm drainage in the area does not meet current design standards and requires upgrades.

Opportunities:

- Develop a range of planning and design alternatives that can improve pedestrian and cyclist facilities and safety, improve intersection operations, and provide additional capacity by removing constraints.
- Improve continuity with Western Road north and south of the study area, address stormwater drainage and enhance streetscape conditions.
- Consult the public and agencies and solicit feedback to select the best plan for the future.
- Follow the City of London's 'Complete Streets' guidelines, 'Urban Design' guidelines, and Western University's Master Plan Vision, to potentially create a gateway to the campus.
- Create a street/intersection that is as functional and comfortable as possible for all users (students, children, seniors, cyclists, motorists, transit users and pedestrians).

Alternative Planning Solutions

For the purposes of the Western Road and Sarnia Road / Philip Aziz Avenue Corridor and Intersection MCEA, planning solutions to the undertaking include:

Alternative 1: Do Nothing - This alternative provides a basis to which other alternative planning solutions can be compared.

Alternative 2: Expand Pedestrian, Cycle, and Transit Use - This alternative would involve diverting current traffic within the corridor from vehicles to pedestrian, bicycle and transit use.

Alternative 3: Operational Improvements - This alternative would consider operational improvements to the intersection and study corridor (improved turning lanes, intersection signalization optimization).

Alternative 4: Improvements to Parallel Roads - This alternative considers improvements to Wonderland Road, Platts Lane and Richmond Street to increase corridor capacity.

Alternative 5: Improvements to Access Management - This alternative would involve utilizing local roads to improve destination access.

Alternative 6: Improvements Along Philip Aziz Avenue - This alternative would involve widening Philip Aziz Avenue to provide improved traffic operations, increased sight distances, providing cycling facilities and support pedestrian usage with new sidewalks.

The above identified alternative solutions were screened against the problem and opportunity statement as outlined in Section 4 of this Report, with the recommended planning solutions being a combination of:

- **Alternative 2:** Expand Pedestrian, Cycle, and Transit Use.
- **Alternative 3:** Operational Improvements.
- **Alternative 5:** Improvements to Access Management.
- **Alternative 6:** Improvements Along Philip Aziz Avenue.

Alternative Design Concepts to address the Recommended Planning Solutions

Due to the complex nature and various needs of the study area, the alternative design concepts have been separated into four (4) distinct areas.

- Western Road.
- Sarnia Road.
- Philip Aziz Avenue.
- Western Road and Sarnia Road / Philip Aziz Avenue Intersection.

The alternative design concepts for each area are summarized below.

Western Road Alternative Design Concepts

- **Concept W1:** Extend Southbound Right turn lane

The addition of approximately 40 m of right turn queue storage (from southbound Western Road to westbound Sarnia Road) will improve the general flow of southbound vehicular traffic along Western Road and will reduce vehicle queuing within the southbound through lane.

- **Concept W2:** Added bus bays

Convert existing bus stops to bus bays which facilitates transit operations and accommodates the large number of transit users while also improving mainline traffic operations during peak periods.

- **Concept W3:** Active transportation improvements

Provide new raised bicycle lanes and wider pedestrian sidewalks with increased separation from the road, along the east and west sides of the Western Road corridor (with continuous connection to existing cycling lanes north and south of the study area).

- **Concept W4:** Access management

Restricting access to and from properties along Western Road improves traffic flow efficiencies. Given its proximity to Sarnia Road and location along the right turn lane, the closing of the southerly entrance to Elborn College will be implemented as part of construction.

Access to parking facilities along Western Road has contributed to increased traffic volumes in the peak travel times. To better manage traffic on Western Road, future developments on the west side of Western Road by Western University, Brescia College and Huron College should include plans for another access road from the west side of the properties.

Sarnia Road Alternative Design Concepts

- **Concept S1:** Maintain existing road cross-section with sidewalks.

Sarnia Road currently has two lanes of eastbound and westbound traffic, as well as pedestrian sidewalks on both sides. There are no dedicated cycle lanes with bicycles sharing the traffic lanes.

- **Concept S2:** Incorporate a full Urban cross-section with bicycle lanes extended to Sleightholme Avenue.

Provide new raised bicycle lanes and wider pedestrian sidewalks (with increased separation from the road) along the north and south sides of the Sarnia Road corridor (with continuous connection from the university campus to existing cycling lanes to west of the study area at Sleightholme Avenue).

Philip Aziz Avenue Alternative Design Concepts

- **Concept PA1:** Full urban road cross-section with reconstructed entrance to 150 Philip Aziz Avenue.

Reconstruct Philip Aziz Avenue with a full urban cross section with sidewalks and raised bicycle lanes on both sides of the road, including a curb and gutter system. The current left turn lane would extend further east providing added vehicle storage and improve the westbound flow of traffic for vehicles travelling through to Sarnia Road. The existing property driveway to 150 Philip Aziz Avenue would be reconfigured and reconstructed in the same location with a significantly steep grade, providing access to the heritage property including house and studio.

- **Concept PA2:** Full urban road cross-section with relocated entrance to 150 Philip Aziz Avenue.

Similar to Concept PA1, Philip Aziz Avenue would be reconstructed with a full urban cross section with sidewalks, bicycle lanes and an extended left turn lane. The existing property driveway to 150 Philip Aziz Avenue would be relocated west of the existing entrance and reconstructed utilizing an improved grade for the driveway (compared with Concept PA1) providing access to the heritage property including

house and studio.

- **Concept PA3:** Full urban road cross-section with relocated entrance to the rear of the Philip Aziz property.

Similar to Concept PA1, Philip Aziz Avenue would be reconstructed with a full urban cross section with sidewalks, bicycle lanes and an extended left turn lane. Access to 150 Philip Aziz Avenue would be relocated to the rear of the property, utilizing the Essex Hall parking lot as the new access point.

Western Road and Sarnia Road / Philip Aziz Avenue Intersection Alternative Design Concepts

- **Concept INT1:** Roundabout

Remove the signals and current intersection arrangement and construct a Roundabout arrangement whereby the vehicles would travel through the intersection in a counter-clockwise direction around a centre island. Pedestrian movement would be placed on the peripheral areas of the Roundabout outside radius.

- **Concept INT2:** Pedestrian Tunnel or Pedestrian Bridge

Construct a pedestrian tunnel or bridge across Western Road north of the Sarnia Road intersection. This will allow the movement of pedestrians in an east-west direction to reduce pedestrian congestion at the signalized intersection.

- **Concept INT3:** Double Northbound Left turn lanes

Reconstruct the intersection with two left turn lanes (from northbound Western Road to westbound Sarnia Road) to increase traffic flow and efficiency.

- **Concept INT4:** Single Northbound Left turn lanes

Maintain the existing single left turn lane arrangement (from northbound Western Road to westbound Sarnia Road).

- **Concept INT5:** Intersection Scramble

Permit pedestrians to cross the intersection in any direction during a designated period in the intersection signal timing.

Recommended Design Concepts

Western Road

When screened against the evaluation criteria, all four (4) Western Road alternative design concepts provided some level of improvement to traffic movement and active transportation along the corridor, while having little to no impact to the other screening criteria. Accordingly, all four alternatives have been recommended for use in the final design. Refer to **Figure 8-9** in Section 8 for the typical cross-section recommended for Western Road.

Sarnia Road

When Screened against the evaluation criteria, **Concept S2**: Full Urban Cross section with bicycle lanes extended to Sleightholme Avenue has been recommended for use in the final design. Refer to **Figure 8-10** in **Section 8** for the typical cross-section.

Concept S2 provides raised bicycle lanes and connectivity to existing cycle track west of the Study Area. It also promotes the use of active transportation, potentially reducing the number of cars using the corridor and requires minor property acquisition.

Philip Aziz Avenue

When Screened against the evaluation criteria, Design Concept PA2 Full Urban Cross section with relocated entrance to 150 Philip Aziz Avenue has been recommended for use in the final design. Refer to Figure 8-11 in Section 8 for the Typical Cross Section. Design Concept PA2 introduces improvements to the roadway and provides safe active transportation facilities with wider sidewalks and raised bicycle lanes. The proposed entrance driveway satisfies design standard parameters, permitting efficient vehicular access of all types onto the property, with applied mitigation measures for various heritage impacts.

Intersection Design

When screened against the evaluation criteria, the recommended intersection design concept is a single northbound left turn intersection. Refer to **Figure 8-12** in **Section 8** for the Recommended Intersection Design Concept.

The other design concepts (including roundabouts, scramble intersections, double left turn lanes and tunnels/bridges) were screened out due to identified negative impacts and/or insufficient increases to the level of service. This includes:

- Roundabouts require significant property and may lower comfort levels for active transportation.
- A tunnel was considered. The complexity and cost of constructing pedestrian tunnels and bridges is significant and requires significant property for accessible ramps and sightlines for a feeling of personal safety. The location for the placement of a tunnel in this project is largely limited to the north of the intersection. The location, ramping and depth would reduce convenience and likely reduce its functionality and use by many pedestrians.
- Double left turn lanes provide a very marginal improvement to the overall level of service during peak hours but increase the travel distance and crossing times for pedestrians.
- Finally, the pedestrian and traffic volumes at this intersection do not meet the criteria developed by the City of Toronto to warrant the use of a scramble intersection arrangement and provide overall benefits. This type of arrangement is also known as a pedestrian priority traffic signal phase or Barnes Dance and is a dedicated traffic signal phase that allows pedestrians to cross in any direction

including diagonally without coming into conflict with turning vehicles. One aspect of the Toronto volume criteria is consideration of a corresponding large increase in vehicular delay which can influence the viability of transit if the intersection is on important transit route as is the case for Sarnia and Western Roads. This type of intersection treatment also raises accessibility concerns for blind or visually impaired users due to variable paths of travel depending on signal phase.

Western Road Design Summary

The following is a summary of preliminary design recommendations for Western Road:

- Reconstruction of the roadway as a four-lane urban corridor and associated turn lanes.
- Extension of the existing southbound right turn lane (southbound Western Road to westbound Sarnia Road) to improve vehicle storage.
- Convert the three existing bus stops to bus bays and reinstate existing bus shelters.
- Reconstruction of one existing bus bay (northbound Western Road, north of Lambton Drive) and reinstate the existing bus shelter.
- Maintain all other existing bus stops, with reconstruction of bus platforms with reinstated shelters to suit road modifications.
- Construction of new cycle tracks within the right-of-way, with connection to existing active transportation facilities to the north and the south of the study area.
- Relocation of streetlighting, guy wire poles and some hydro poles along the reconstructed corridor.
- Construction of stormwater improvements including curb and gutter system along the entire corridor and local replacement of storm sewers.
- Access management improvements including closure of the southerly entrance to Elborn College and reconstruction of the northerly entrance.

Sarnia Road Design Summary

The following is a summary of preliminary design recommendations for Sarnia Road:

- Reconstruction of the roadway as a four-lane urban corridor and associated turn lanes.
- Modification of the east side of the parking lot at Elborn College.
- Construction of new cycle tracks with connection to existing active transportation facilities to the west of the study area (west of Sleightholme Avenue).
- Maintain existing bus stops, with reconstruction of bus platforms with reinstated shelters to suit road modifications.
- Relocation of streetlighting and guy wire poles along the reconstructed corridor.

Philip Aziz Avenue Design Summary

The following is a summary of preliminary design recommendations for Philip Aziz Avenue:

- Construction of a widened road platform with two lanes and a longer left turn lane at the Western Road intersection.
- Construction of new sidewalks and cycle tracks within the road right-of-way, with connection to existing active transportation facilities to the west and east ends.
- Construction of stormwater improvements including curb and gutter system, replacement of storm sewers and construction of a new storm outfall to the Thames River.
- Construction of retaining walls with railing systems on both sides of road.
- Relocation and reconstruction of the private entrance to heritage property located at 150 Philip Aziz Avenue including gate/pillar features.
- Relocation of hydro poles along the south side of the road.

Western Road and Sarnia Road / Philip Aziz Avenue Intersection Design Summary

The following is a summary of preliminary design recommendations for the Western Road and Sarnia Road / Philip Aziz Avenue Corridor and Intersection:

- Reconstruct the intersection to suit adjacent road alignments, while maintaining a single Western Road left turn lane (northbound Western Road to westbound Sarnia Road).
- Provide wider (5 m) pedestrian crossings and larger waiting areas on all four intersection corners to accommodate the large number of pedestrians using this intersection.
- Provide protected intersection design elements to improve pedestrian and cyclist safety.
- Provide improved cycle facility connectivity.
- Review traffic signal optimization during detailed design.
- Relocation and reconstruction of entrance signage/features to Western University.

Stormwater Drainage

The following stormwater drainage recommendations are proposed:

- Construct a new storm sewer on Western Road from Huron University College entrance to Sarnia Road (375 mm diameter increasing to 900 mm diameter);
- Construct a new storm sewer on Philip Aziz Avenue from Western Road to the outlet at the Thames River (1,050 mm diameter increasing to 1200 mm diameter);

- Construct a new storm sewer on Western Road from the Althouse College entrance to Sarnia Road (375 mm diameter).
- Construct a new storm sewer on Sarnia Road from Sleightholme Avenue to Philip Aziz Avenue (which requires further review in relation to combining duplicate storm sewer piping during detailed design).
- Construction of a new Thames River outfall 50 m to the south of existing (with abandonment and plugging of existing storm sewer and outfall); and
- Construction of several overland flow routes to deal with the potential for ponding and localized flooding at several locations including Western Road (east side north of Platts Lane), Western Road (southeast of the Sarnia Road / Philip Aziz Ave intersection) and Philip Aziz Avenue (east end near Thames River).

Alternative Route Through College/University Property

An alternative access point from the west side of Western Road to the City Street network was not part of this study. To better manage area traffic growth on Western Road, future developments on the west side of Western Road by Western University, Brescia College and Huron College will require implementation of another access to the south / west.

The City will review these future plans including any proposed connections to Sarnia Road to ensure that impacts to surrounding neighbourhoods including cut-through traffic are minimized.

Utility Relocation

Based on the current proposed road layout, including sidewalks and cycling tracks, efforts have been made to minimize disruption to existing utilities. Localized pole and aerial service line relocations will be required in areas along Western Road between Platts Lane and Sarnia Road as well as on Sarnia Road. The overhead hydro line along Philip Aziz Avenue will require relocation to suit the platform widening. London Hydro has been consulted with and shown the preferred design alternative concept, though the exact impacts will be determined during further detailed design review.

Urban Design

While the new proposed corridor appears to have significant space within the road and boulevards to implement urban design features, incorporating significant features may be difficult. Due to sidewalk and cycle lanes having separated alignments, the boulevards then have reduced space on either side to accommodate larger plantings or other features. Once the final roadway and boulevard layouts are confirmed, the following landscaping and urban design opportunities may include, but not limited to:

- **Boulevards:** Where there is opportunity and sufficient width, trees will be provided between the road and the pedestrian/cycling networks to create a buffer from vehicles where possible. Similarly, street trees will be provided on both sides of the pedestrian/cycling networks to create a double row of trees, and a larger canopy cover for pedestrian comfort.
- **Medians:** Given the proposed platform width on Western Road, there is limited opportunity for raised planters with vegetation and street trees within the medians. A short median planter is feasible on Western Road, just south of Lambton Drive.
- Opportunities to incorporate Low Impact Development (LID) options into the design will be reviewed during detailed design, such as allowing for run-off into curb cuts within the boulevard.

The implementation of these features may be limited by the available areas; however, opportunities should be explored during detailed design to provide enhancements along the corridor where possible.

Property Requirements

The improvements to Western Road, Sarnia Road and Philip Aziz Avenue will require the acquisition of some property fronting these roadways with further details provided in the ESR.

Preliminary Construction Cost Estimate

A preliminary construction cost estimate (in 2023 dollars) has been prepared and is shown in **Table ES1**.

The total preliminary construction cost estimate for this project is \$27.09 Million (excluding HST) including land acquisition, contingencies for preliminary estimates, engineering, and construction.

Table ES1: Preliminary Construction Costs (2023 Dollars, Rounded)

Item	Total Cost	Phase 1 (est. 2024)	Phase 2 (est. 2025/2026)
Removals	\$1,414,000	\$205,000	\$1,209,000
Sanitary Servicing	\$146,000	\$146,000	0
Storm Servicing	\$3,446,000	\$920,000	\$2,526,000
Water Servicing	\$800,000	0	\$800,000
Roadworks	\$10,463,150	\$2,287,000	\$8,176,000
Electrical	\$860,000	\$478,000	\$382,000
Utility Relocations	\$1,009,000	\$1,000,000	\$9,000
Landscaping	\$150,000	\$61,000	\$89,000
Miscellaneous	\$813,000	\$123,000	\$690,000
Subtotal	\$19,100,000	\$5,219,000	\$13,881,000
Construction Contingency (10%)	\$1,910,000	\$522,000	\$1,388,000
Total Estimated Capital Value	\$21,011,000	\$5,741,000	\$15,269,000
Engineering (Detailed Design/Construction) (12%)	\$2,521,000	\$689,000	\$1,832,000
Contingency of Preliminary Estimate (15%)	\$3,152,000	\$861,000	\$2,290,000
Total Preliminary Project Estimate (rounded)	\$26,690,000	\$7,300,000	\$19,390,000
Land Acquisition ~1100 m²	\$400,000		

Project Schedule

The project is expected to be completed in two phases. Phase 1 detailed design is planned to be underway in 2023, while construction is anticipated to begin 2024 or 2025 based upon environmental approvals and property requirements. This phase includes the Philip Aziz Avenue works to the Thames River including installing the new stormwater outfall. Phase 2 will encompass the rest of the work and is anticipated to begin in 2025-2026.

Summary

The Environmental Study Report outlines the process required to ensure that the planning process and proposed recommended solutions/design concepts meet the requirements of the *EAA*. The MCEA planning process has not identified any significant environmental concerns that cannot be addressed by incorporating established mitigation measures during construction.

The proposed project improvements will improve or resolve many of the issues identified in the problem and opportunity statement. A preliminary evaluation of potential impacts has been included in the evaluation, which indicates minor and predictable impacts that can be addressed by recommended mitigation measures as presented in Section 11 of the ESR.

The proposed mitigation measures will further be developed at the detailed design stage and will form commitments that will be adhered to by the City. Appropriate public notification and opportunity for comment was provided and no comments were received that could not adequately be addressed. Subject to receiving MCEA clearance following the 30-day review period, the City can start the detailed design and permitting- approval phase and proceed to construction as outlined in this report.