

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON MARCH 19, 2018
FROM:	KELLY SCHERR, P. ENG, MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	HIGHWAY 401 / HIGHWAY 4 INTERCHANGE IMPROVEMENTS & HIGHWAY 4 AND GLANWORTH DRIVE UNDERPASS REPLACEMENTS ENVIRONMENTAL ASSESSMENT

RECOMMENDATION

That on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer, the technically preferred alternative **BE ENDORSED** for the Highway 401 / Highway 4 Interchange Improvements and Highway 4 and Glanworth Drive Underpass Replacements Environmental Assessment.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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- Environment and Transportation Committee – January 12, 2004 – Highway 401 Improvements: Planning Study Completion
- Civic Works Committee – February 4, 2013 - Agreement with Ministry of Transportation

2015-19 STRATEGIC PLAN

The following report supports the Strategic Plan through the strategic focus area of Building a Sustainable City by improving access for Londoners and supporting growth in the area of Highway 401. The projects will also implement and enhance safe and convenient mobility choices for automobile users, pedestrians and cyclists for the short and longer term.

BACKGROUND

Purpose

This report provides information on the Highway 401 / Highway 4 Interchange Improvements including the Glanworth Drive Underpass Replacement being managed by the Ministry of Transportation (MTO) in London. MTO is undertaking an Environmental Assessment (EA) for the project. Two Public Information Centres (PICs) were held in 2013. A third PIC was held on February 1, 2018.

The report also provides a general update on the status of the other Highway 401 interchanges with improvements planned and implemented within the City of London.

DISCUSSION

The Ministry of Transportation is undertaking an EA for improvements at the interchange at Highway 401 and Highway 4 (Colonel Talbot Road) including the Glanworth Drive Underpass Bridge. This same interchange was studied in 2004 and some improvements were carried out at that time. The EA was revisited in 2012 leading to two PICs in 2013. In addition, several separate meetings were held with interested agencies, stakeholder groups and community associations. As a result, over 500 comments and submissions were received.

Since 2013, MTO worked with their consultant, Dillon Consulting Limited, to review data, comments and modify alternatives with the goal of providing a revised preferred alternative to better satisfy the safety and community needs. On February 1st, 2018, the MTO hosted an additional PIC reviewing background material and presenting all of the alternatives considered along with a Technically Preferred Alternative.

Attached as Appendix A is the display material presented at the February 1 PIC including Alternative 6 as the Technically Preferred Alternative. This alternative includes:

1. Colonel Talbot Road Bridge Realigned east of the existing bridge;
2. Littlewood Drive realignment;
3. E-N/S Ramp Realigned;
4. Burtwistle Lane Realigned;
5. Tempo Road Realigned; and,
6. New intersection at Glanworth Drive and Old Glanworth Drive.

Additional information is available on the project website at www.hwy401londonbridges.ca.

The PIC was well attended by residents and stakeholders to learn about the project and see the Technically Preferred Alternative.

City Transportation staff have reviewed the recommendation and are satisfied that the proposed new road network configuration meets the City's long-term needs considering the public input to MTO that was shared during the EA process. The new interchange design will improve interchange operations and will address an existing non-standard interaction of Glanworth Drive with the westbound off-ramp.

London Interchange Program

In 2013, The City and MTO entered into an Agreement for Highway 401 Interchange Improvement Projects in London. The interchanges include four Highway 401 locations across the City of London:

- Wonderland Road;
- Veterans Memorial Parkway;
- Highbury Avenue; and,
- Highwaywy 4 / Colonel Talbot Road.

The Wonderland Road Interchange was completed in 2016, and the project is now in the warranty period with the contractor. This new interchange has changed traffic flow in the area as it provides a direct connection between Wonderland Road and Highway 401 and provides an improved connection to the Southwest Area lands.

Construction was initiated on the Veterans Memorial Parkway Interchange in the fall of 2016 with the majority of the structure and roadwork completed in 2017. Final construction will be

completed by the summer of 2018. This new interchange is open to traffic and provides a new extension of Veterans Memorial Parkway to the south with an intersection at Wilton Grove Road. This connection to Wilton Grove Road will improve access to lands on the south side of Highway 401 including local industrial areas westerly along the roadway.

The Highbury Avenue Interchange Improvements project is still in the preliminary design phase. This interchange project will be coordinated with other Highway 401 improvements including a localized widening of Highway 401 and an expansion of the Pond Mills Road underpass. MTO is anticipated to begin the process to retain a design-build team later in 2018 and construction could start in 2019.

The Colonel Talbot Road Interchange is still in the Environmental Assessment stage as previously noted in this report. The earlier public consultation encountered concerns from some of the stakeholders which resulted in further evaluation and design before the recent PIC. The Technically Preferred Alternative provided at the February 1st PIC includes an overpass for Glanworth Drive to continue to travel over Highway 401. This roadway has been a very important route for the agricultural community and other residents in south London.

Interchange Agreement Financial Status

At the time of the creation of the interchange agreement, the cost of the four projects was estimated at a combined total of \$115 M. The value was subject to variation because of the preliminary nature of the projects at the time. The Highway 4/Colonel Talbot Interchange presented the largest uncertainty due to the uncertainty of the Glanworth Drive alignment and underpass structure. The technically preferred alternative presented in PIC 3 is similar to the configuration assumed at the time of the cost sharing estimates. Therefore, the February 1st PIC recommendation is not expected to significantly affect the previous cost estimates.

The primary cost sharing formula comprised a \$25 M contribution from the City toward the total cost of \$115 M. The City's contribution is to be adjusted proportionately to reflect an increase or decrease in the total cost provided such that the increase or decrease does not exceed a maximum of \$2 M.

While construction is far from complete on the four interchanges, the construction values provided for the first two projects at Wonderland Road and Veterans Memorial Parkway are trending below the previously estimated costs. The next two interchanges will be constructed in the coming years. Staff will continue to monitor and provide updates as the various projects proceed. If the current trend of less than estimated costs continue, the total City contribution could potentially be reduced to less than \$25 M.

CONCLUSION

The Province of Ontario and City of London are making investments to the provincial freeway system in London. These improvements will help improve the function of the freeway and enhance London's competitiveness.

Four interchanges are being created or improved within the City. The new Wonderland Road Interchange is complete. The construction of the Veterans Memorial Parkway Interchange is mostly complete with only final construction to be completed in 2018. Mobility benefits have been achieved with new transportation routes now open on both projects.

MTO and the City continue to work on the next two interchanges with construction anticipated in the coming years. City staff will continue to be part of the projects to ensure the City's interests are incorporated in the final projects.

The third PIC for the Highway 401 / Highway 4 Interchange Improvements EA illustrated additional analysis and design and provides an additional formal opportunity for stakeholders interested in the project to provide comment. The project team is reviewing and responding to comments and will subsequently finalize the preliminary design and prepare the Transportation Environmental Study Report (TESR) that summarizes the EA. Upon completion of the EA, the TESR will be placed on the public record for a 30-day review period.

Acknowledgements

This report was prepared with the assistance of Karl Grabowski, P.Eng., Transportation Design Engineer of the Transportation Planning & Design Division.

<p>PREPARED BY:</p>	<p>REVIEWED & CONCURRED BY:</p>
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<p>RECOMMENDED BY:</p>	
<p>KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER</p>	

Attach: Public Information Centre #3 Displays

- c: Jeff Matthews, P.Eng., Dillon Consulting Limited
- Frank Hochstenbach, P.Eng., Ministry of Transportation

APPENDIX A – Public Information Centre #3 Displays



Accessibility

Under the *Integrated Accessibility Standards Regulation* (2011), the Ministry of Transportation, Ontario (MTO) is committed to excellence in serving all customers, including people with disabilities, and to ensuring the Class Environmental Assessment process is accessible to all participants. This Public Information Centre incorporates the following accessibility features:

- Accessible venue location for people with disabilities. The venue includes wheelchair ramps, elevators , reserved seating , accessible washrooms and parking.
- For people requiring assistance, project team members will:
 - Verbally explain presentation board content
 - Assist with written submission of comment forms
- Reading aids are available, including magnifying glasses
- Presentation boards and materials printed in large, legible font
- We welcome people with disabilities and their service animals.

Welcome



- ✔ **PROVIDE** an update on work completed to date
- ✔ **SUMMARIZE** the input received to date
- ✔ **DISPLAY** alternatives considered
- ✔ **PRESENT** the comparative evaluation of alternatives and technically preferred alternative
- ✔ **OUTLINE** the next steps in the study.

Study Purpose

As presented at PICs in 2013, the purpose of this study is to...

Study Purpose

The purpose of this study is to:

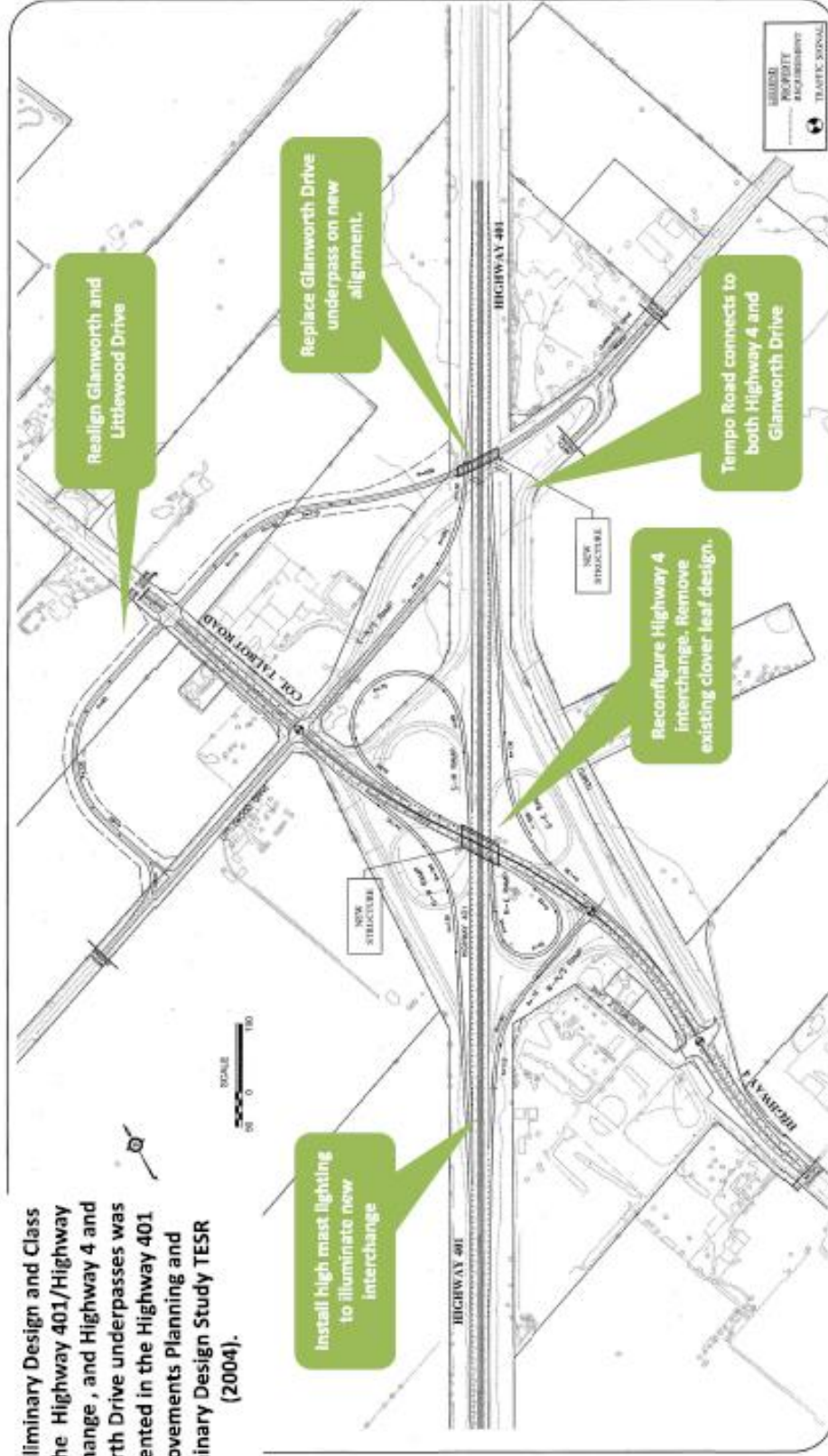
- Review and update the approved plan for the Highway 401/Colonel Talbot Road interchange and Glanworth Drive Underpass Bridge based on changes since the approval of the 2004 Transportation Environmental Study Report (TESR), including:
 - Changes in local road network and traffic patterns (new Wonderland Road interchange)
 - MTO access management best practices
 - Green Lane Landfill expansion and closure of Ford Talbotville plant
 - Interim improvements made in 2003, including:
 - realignment of the Highway 401 westbound ramp to tie into Littlewood Drive
 - traffic signals and illumination at the Highway 401/Colonel Talbot Road westbound ramp/Glanworth Drive/Littlewood Drive intersection
 - Continued deterioration of Colonel Talbot and Glanworth Drive Bridges (reaching the end of their service life)
- Consider alternatives to improve the function and operation of Colonel Talbot Road
- Update existing conditions in the Study Area since 2004
- Document any changes to the approved plan in an Addendum to the 2004 TESR



2004 Approved Plan Overview



The Preliminary Design and Class EA for the Highway 401/Highway 4 Interchange, and Highway 4 and Glamworth Drive underpasses was documented in the Highway 401 Improvements Planning and Preliminary Design Study TESR (2004).



HIGHWAY 401 IMPROVEMENTS
PLANNING STUDY
Highway 4 Easterly to Highbury Avenue
G.W.P. 476-89-00

Highway 4/Col. Talbot Road Interchange
Recommended Plan (2021)

FIGURE
9

Consultation To Date



- Two Public Information Centres (June and November 2013)
- Separate meetings with interested agencies, stakeholder groups and community associations including:
 - Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
 - City of London
 - Township of Southwold
 - Municipality of Central Elgin
 - County of Elgin
 - Local business owners/operators
 - Lambeth Community Association
 - London Agricultural Advisory Committee
 - Potentially impacted landowners.
- Over 500 comments and submissions have been received to date for the project.

Thank You, your input is appreciated and valued!

What We've Heard to Date

- Glanworth Drive functions as a regional artery for agricultural operations; direct east/west travel should be a priority movement accommodated by any improvement, supporting local agricultural operations
- Speed differential between traffic and farm equipment on Highway 4 is not desirable
- Cul-de-sacs on Tempo Road are not desirable
- Highway 4 interchange should be designed to facilitate both north/south and east/west movement of agricultural equipment (traffic signals, shoulder design, turning lanes)
- Local road realignments should not restrict opportunities for expansion of existing local businesses
- Interchange ramp reconfigurations should minimize potential increases in noise for adjacent businesses and residents.

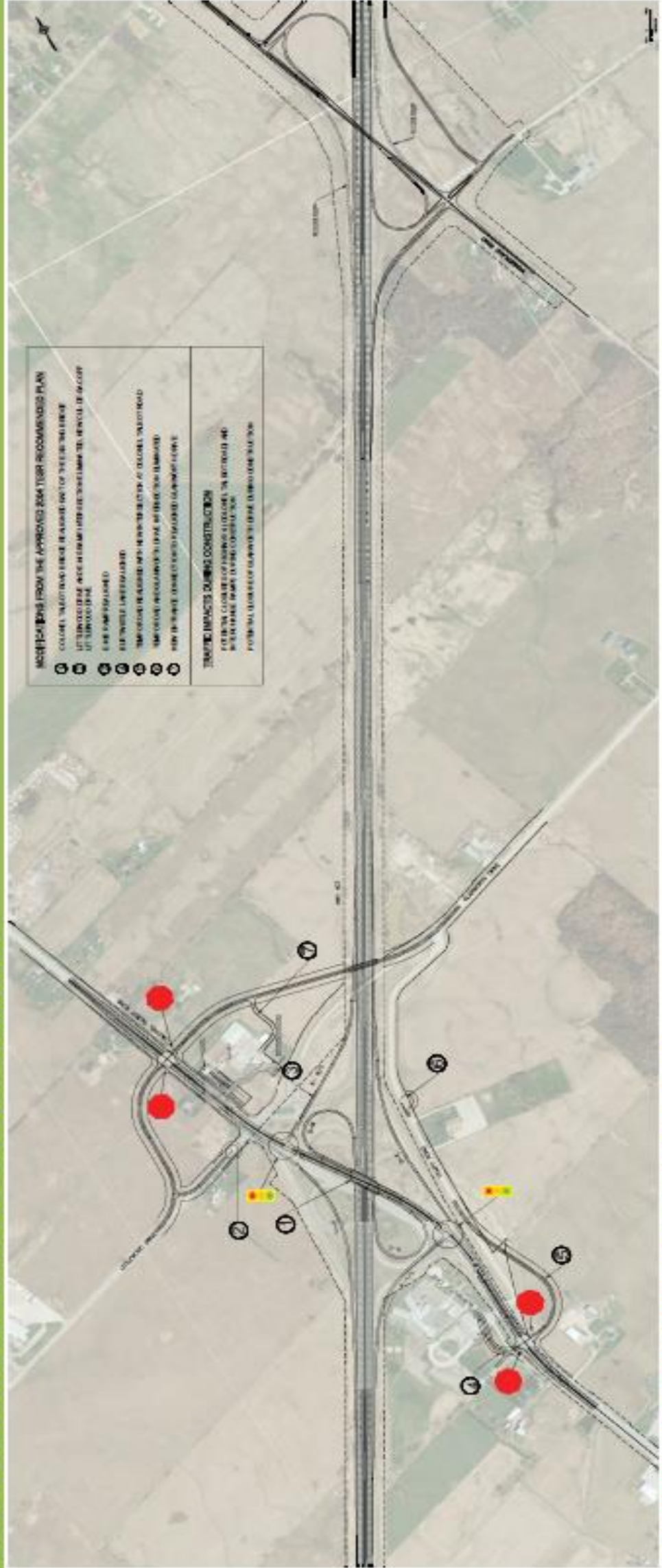
Project Update

Since the last Public Information Centre (November 2013) the project team has completed:

- Additional field studies
- Additional traffic counts, and analysis
- Traffic simulation modelling
- Additional consultation with interested stakeholders, community groups, and agencies
- Development of two additional alternatives and updated the comparative evaluation
- Identified a technically preferred alternative.



Alternative 1 – Interchange Improvements with Glanworth Drive and Littlewood Drive Realigned



This alternative was previously presented at PIC #2

Alternative 2 – Interchange Improvements with Permanent Closure of Glanworth Drive Bridge



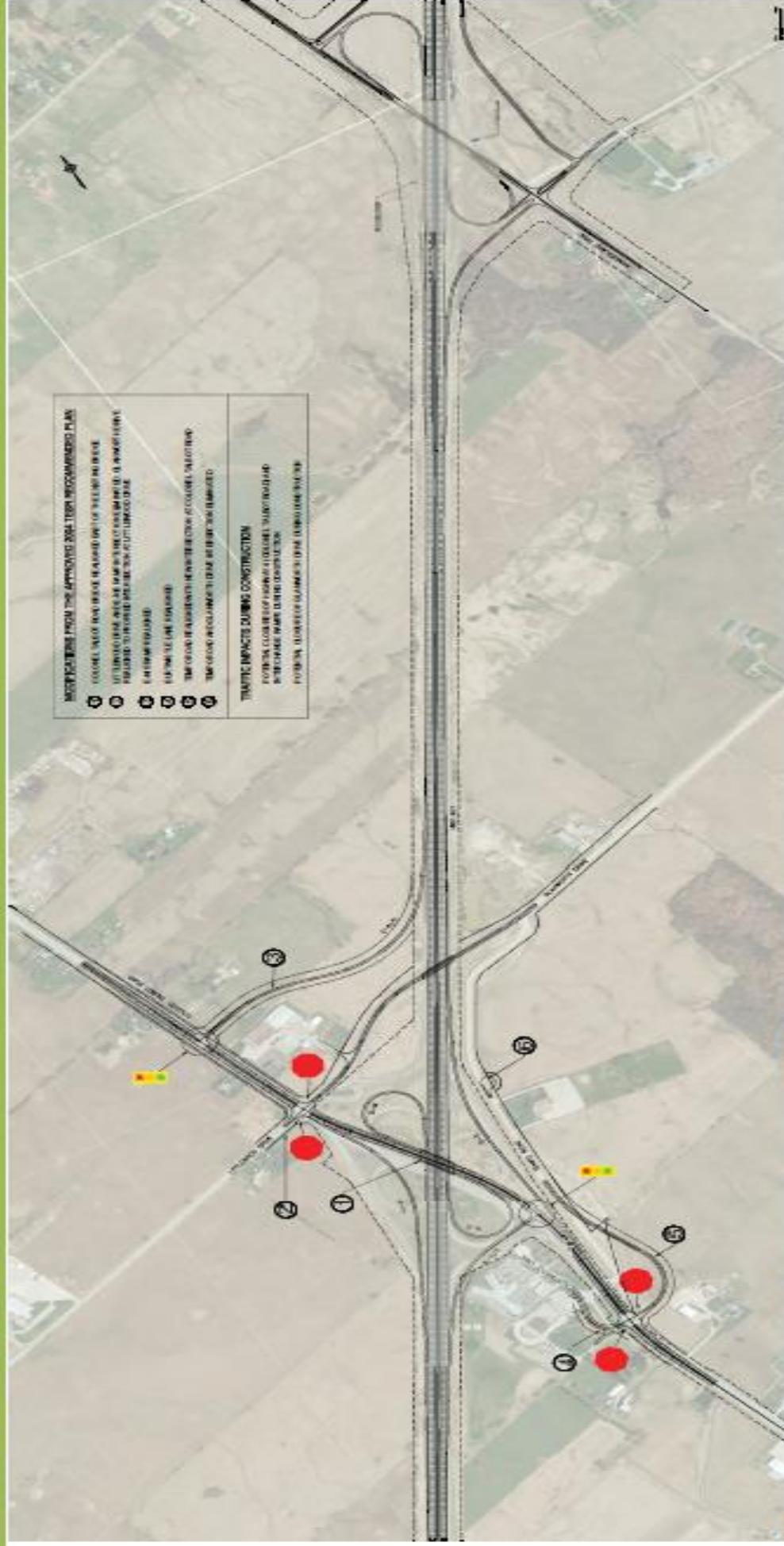
This alternative was previously presented at PIC #2

**Alternative 3 – Interchange Improvements with Permanent Closure of
Glanworth Drive Bridge and Littlewood Drive Realigned**



This alternative was previously presented at PIC #2

Alternative 4 – Interchange Improvements with Glanworth Drive Bridge



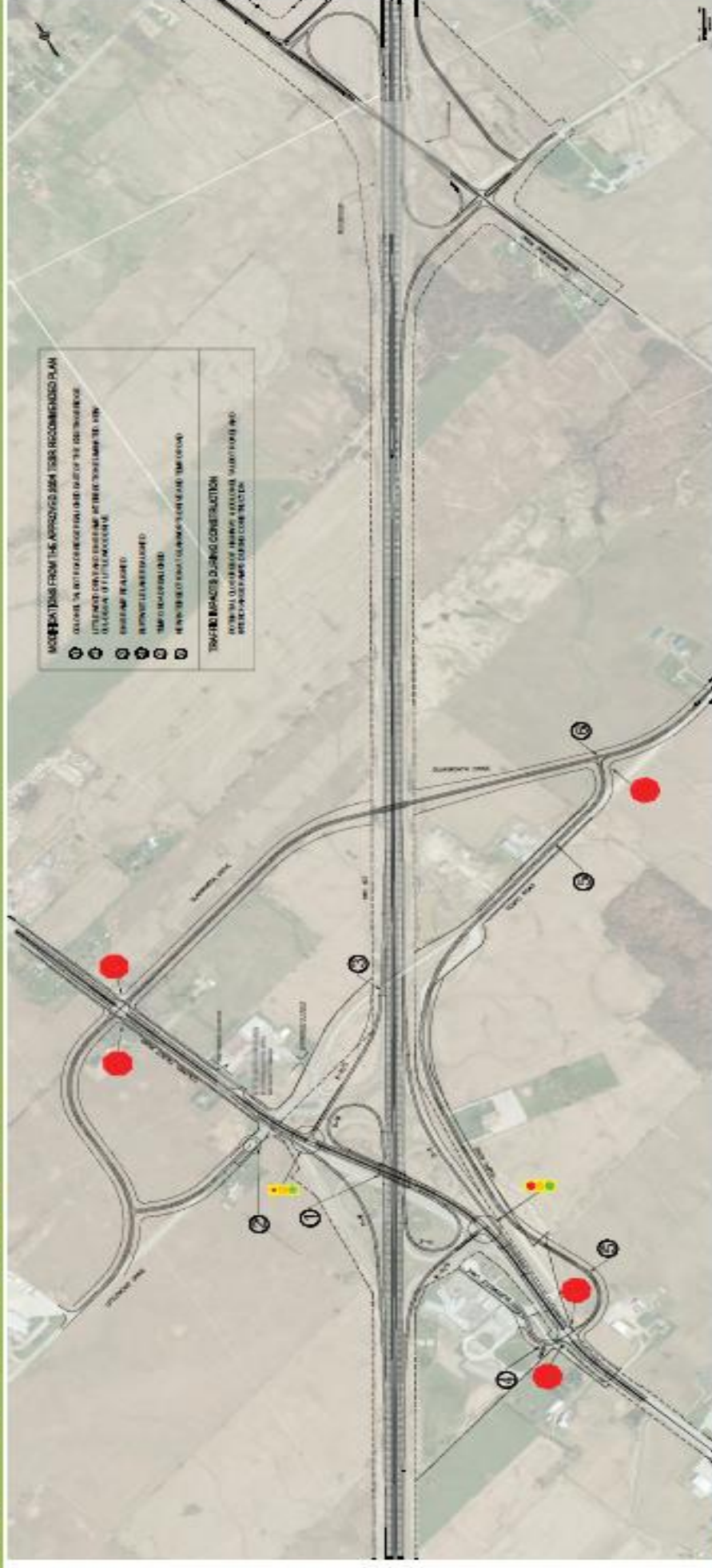
This alternative was previously presented at PIC #2

Alternative 5 – Glanworth Drive/Littlewood Drive Aligned & More Northerly Realignment of Westbound Exit (E-N/S Ramp)



NEW Alternative

Alternative 6 – More Northerly Glanworth Drive/Littlewood Drive Realignment



NEW Alternative

Alternative Evaluation Criteria



Based on background information collected and feedback received from public consultation to date on the project, an updated comparative evaluation has been completed which includes the addition of two new alternatives. The following criteria were used to assess the alternatives and identify the technically preferred:

	Criteria Considered	What Was Measured
Evaluation Factors	<ul style="list-style-type: none"> Municipal Road Connectivity 	<ul style="list-style-type: none"> Ability for the alternative to maintain the existing municipal road network (municipal roads are all non-provincial highways including Glanworth Drive, Littlewood Drive, Tempo Road, Burtwistle Lane, etc.)
	<ul style="list-style-type: none"> Engineering Standards, Practices and Policies 	<ul style="list-style-type: none"> Ability to adhere to highway design standards
	<ul style="list-style-type: none"> Movement of Farm Machinery 	<ul style="list-style-type: none"> Ability for farm machinery to move across the provincial road network in a safe and reliable manner
	<ul style="list-style-type: none"> New Infrastructure Requirements 	<ul style="list-style-type: none"> Ability to minimize the amount of new infrastructure created and ability to re-use existing infrastructure (e.g. built up embankments, berms, etc.)
	<ul style="list-style-type: none"> Impacts to utilities 	<ul style="list-style-type: none"> Ability to minimize required utility relocations
	<ul style="list-style-type: none"> Operation and Maintenance Costs 	<ul style="list-style-type: none"> Lowest overall operation and maintenance costs (short-term and long-term)
Transportation & Engineering	Criteria Considered	What Was Measured
	<ul style="list-style-type: none"> Impacts to Fish and Fish Habitat 	<ul style="list-style-type: none"> Ability to minimize impacts to existing fish and fish habitat
	<ul style="list-style-type: none"> Impacts to Terrestrial Resources 	<ul style="list-style-type: none"> Ability to minimize impacts to wildlife or wildlife habitat and terrestrial species at risk
Natural Environment		

Alternative Evaluation: Transportation & Engineering Factor Area



Below is a summary of the Comparative Evaluation completed for the Transportation & Engineering Factor Area. Note that for ease of public review the justification statements provided are intended to provide high level rationale on reasons one alternative was preferred over another. Not all considerations for each alternative are shown on this table. To discuss a specific justifications for an alternative or criteria measure please talk to a project team member.

Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Municipal Road Connectivity	<p>✓ Glanworthy/Littlewood connection maintained</p> <p>✗ Reduces driver visibility and does not fully comply with Access Management Guidelines</p>	<p>✗ Severs direct connection of Glanworthy/Littlewood</p> <p>✗ Interchange ramps in close proximity to municipal road and does not fully comply with Access Management Guidelines</p>	<p>✗ Severs direct connection of Glanworthy/Littlewood</p> <p>✗ Does not fully comply with Access Management Guidelines</p>	<p>✓ Glanworthy/Littlewood connection maintained</p> <p>✗ Interchange ramps in close proximity to municipal road and does not fully comply with Access Management Guidelines</p>	<p>✓ Glanworthy/Littlewood connection maintained</p> <p>✗ Reduces driver visibility and creates weaving potential on Highway 401 due to proximity of Wonderland Road. Does not fully comply with Access Management Guidelines</p>	<p>✓ Glanworthy/Littlewood connection maintained</p> <p>✓ Best meets access management guidelines. Driver visibility reduced due to proximity of Glanworthy Drive bridge but less impact compared to other alternatives</p>
Engineering Standards, Practices, and Policies						
Movement of Farm Machinery	<p>✓ Movement maintained. Stop controlled intersection at Highway 4 creates potential delays</p>	<p>✗ Elimination of Glanworthy Drive impacts ability of farm machinery to move east/west across Highway 401</p>	<p>✗ Elimination of Glanworthy Drive impacts ability of farm machinery to move east/west across Highway 401</p>	<p>✗ Movement maintained. Stop controlled intersection at Highway 4 creates longer delays compared to Alternatives 1 or 6</p>	<p>✗ Movement maintained. Stop controlled intersection at Highway 4 creates longer delays compared to Alternatives 1 or 6</p>	<p>✓ Movement maintained. Stop controlled intersection at Highway 4 creates potential delays</p>
New Infrastructure Requirements	<p>✗ Requires most new infrastructure</p>	<p>✓ Requires least new infrastructure</p>	<p>✗ Requires moderate amount of new infrastructure</p>	<p>✗ Requires moderate amount of new infrastructure</p>	<p>✗ Requires moderate amount of new infrastructure</p>	<p>✗ Requires most new infrastructure</p>
Impacts to Utilities	<p>✗ Most impacts to existing utility infrastructure</p>	<p>✓ Least impacts to existing utility infrastructure</p>	<p>✗ Moderate impacts to existing utility infrastructure</p>	<p>✓ Least impacts to existing utility infrastructure</p>	<p>✓ Least impacts to existing utility infrastructure</p>	<p>✗ Moderate impacts to existing utility infrastructure</p>
Operation and Maintenance Costs	<p>✗ High maintenance costs (two bridges)</p>	<p>✓ Lower maintenance costs (one bridge)</p>	<p>✓ Lower maintenance costs (one bridge)</p>	<p>✗ High maintenance costs (two bridges)</p>	<p>✗ High maintenance costs (two bridges)</p>	<p>✗ High maintenance costs (two bridges)</p>
Transportation & Engineering Factor Area Summary	<p>Alternative 2 or 6 are preferred. However, Alternative 6 is more preferred due to its ability to better address engineering standards and local community concerns surrounding movement of farm machinery.</p>					

Alternative Evaluation: Natural Environment Factor Area



Ontario

Below is a summary of the Comparative Evaluation completed for the Natural Environment Factor Area. Note that the justification statements provided are intended to provide high level rationale on reasons one alternative was preferred over another. Not all considerations for each alternative are shown on this table. To discuss a specific justifications for an alternative or criteria measure please talk to a project team member.

Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Impacts to Fish and Fish Habitat	✗ New culvert at westbound exit ramp creates minor footprint impacts	✓ Removal of culverts at Glanworth Drive improves fish habitat compared to existing conditions	✓ Removal of culverts at Glanworth Drive Improves Fish habitat compared to existing conditions	✗ New culvert at westbound exit ramp creates minor footprint impacts	✗ New culvert at westbound exit ramp creates minor footprint impacts	✗ New culvert at westbound exit ramp creates minor footprint impacts
Impacts to Terrestrial Resources	✓ Minimal impacts to terrestrial resources	✓ Minimal impacts to terrestrial resources	✓ Minimal impacts to terrestrial resources	✓ Minimal impacts to terrestrial resources	✗ Requires removal of pond with Candidate Turtle Overwintering Habitat	✗ Requires removal of pond with Candidate Turtle Overwintering Habitat
Natural Environment Factor Area Summary	Alternative 2 or 3 are preferred because they have the least potential to negatively impact the natural environment. It is noted that in all alternatives, the relative differences of impacts to the Natural Environment are not significant compared to other factor areas in the comparative evaluation.					

Alternative Evaluation: Cultural Environment Factor Area



Below is a summary of the Comparative Evaluation completed for the Cultural Environment Factor Area. Note that the justification statements provided are intended to provide high level rationale on reasons one alternative was preferred over another. Not all considerations for each alternative are shown on this table. To discuss a specific justifications for an alternative or criteria measure please talk to a project team member.

Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Archaeological Potential	✓ Requires minimal amount of land with archaeological potential	✓ Requires minimal amount of land with archaeological potential	✓ Requires minimal amount of land with archaeological potential	✓ Requires minimal amount of land with archaeological potential	✓ Requires minimal amount of land with archaeological potential	✗ Requires the most land with archaeological potential
Cultural Heritage Potential	✓ Minimal impacts to cultural heritage resources	✗ Removes Glanworth Drive bridge impacting overall landscape	✗ Removes Glanworth Drive bridge impacting overall landscape	✓ Minimal impacts to cultural heritage resources	✓ Minimal impacts to cultural heritage resources	✓ Minimal impacts to cultural heritage resources
Cultural Environment Factor Area Summary	Alternatives 1, 4 or 5 are preferred because they have the least potential to impact lands with potential cultural or archaeological resources. It is noted that in all alternatives, the impacts to the Cultural Environment are negligible compared to other factor areas in the comparative evaluation.					

Comparative Evaluation Summary



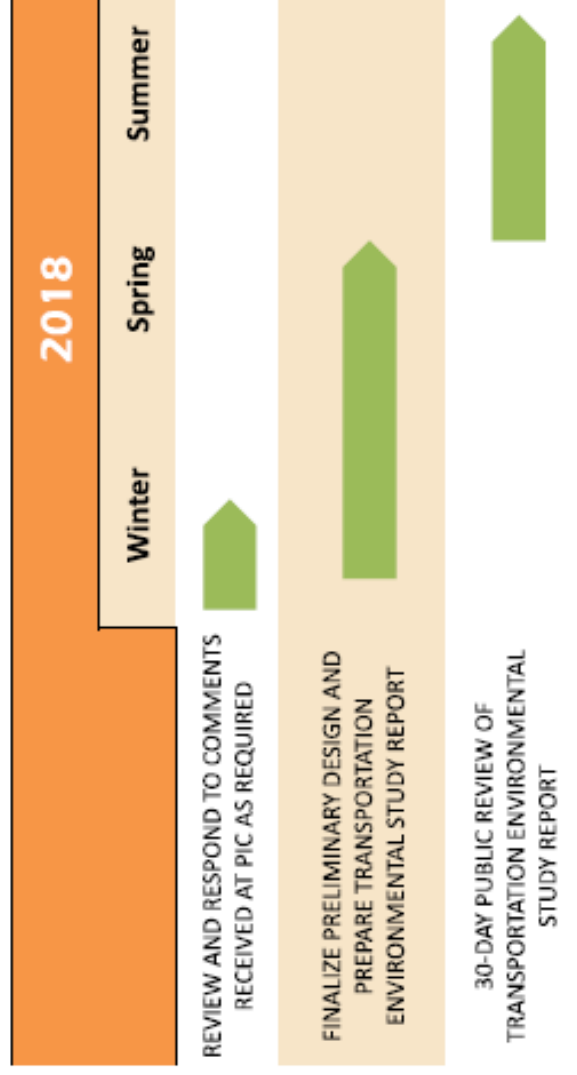
Transportation & Engineering Factor Area Summary	Alternative 6 is preferred because it best meets MTO Practices, Policies and guidelines while best maintaining local road networks and providing a reliable and efficient route for the movement of farm machinery.
Natural Environment Factor Area Summary	Alternative 2 or 3 are preferred because they have the least potential to negatively impact the natural environment. It is noted that in all alternatives, the impacts to the Natural Environment are negligible compared to other factor areas in the comparative evaluation.
Socio-Economic Environment Factor Area Summary	Alternative 2 is preferred because it has the fewest impacts to existing and future land uses, best conforms to land use planning policies and has the fewest short-term impacts to the local community.
Cultural Environment Factor Area Summary	Alternatives 1, 4 or 5 are preferred because they have the least potential to impact cultural or archaeological resources. It is noted that in all alternatives, the impacts to the Cultural Environment are negligible compared to other factor areas in the comparative evaluation.

Based on the comparative evaluation of alternatives, using a reasoned argument method, Alternative 6 has been selected as the Technically Preferred Alternative.

Alternative 6 is technically preferred over Alternative 2 because it:

- Adheres to engineering standards, policies and practices
- best maintains the local road network
- offers potential benefits for future development opportunities
- provides an efficient route for the movement of farm machinery
- addresses concerns of local stakeholders, as heard through public consultation activities

Next Steps



THANK YOU FOR ATTENDING

More information about the project can be found online at www.hwy401londonbridges.ca

Your input is important to the outcome of this project.

Please complete a comment form and return it by

February 15, 2018

Information on this project is being collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.