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Reference: Detroit River International Crossing Study

Subject: Assessment of Practical Access Road Alternatives - Improve Regional Mobility

Results of Assessment of Improve Regional Mobility and Community Traffic Impacts

The assessment of Improve Regional Mobility involved the consideration of the degree to which the Practical Alternatives assist in efficient operation of the overall highway network, as well as providing redundancy in the access road system. The assessment of crossing and plaza alternatives is discussed under separate cover. In undertaking this assessment, the Study Team analyzed the alternatives under the following performance measures:

1. Highway Network Effectiveness – An indication of overall, day-to-day operations for the 2035 horizon year; and
2. Continuous/Ongoing River Crossing Capacity – An indication of the degree of redundancy provided by the alternatives.

Overall, the assessment concluded:

- All alternatives provide similar level of improvement over both the existing condition and the future no-build scenario in terms Highway Network Effectiveness. This will enable the Huron Church Road/Highway 3 corridor to effectively serve its dual purpose as a high-order arterial road and the connecting route to the international border. This is achieved through the separation of local and international traffic with a service road-freeway system, which has sufficient capacity to meet future demand and effect improved capacity and traffic operations.
- In terms of Continuous/Ongoing River Crossing Capacity, all alternatives provide a similar level of redundancy to address interruptions and safety concerns within the international corridor, which may be expected in the future no-build scenario. This is achieved in each of the alternatives through the provision of a multi-lane, controlled access freeway from Highway 401 to a new crossing while maintaining a connection to and from the existing border crossing at the Ambassador Bridge, and through separation of local and international traffic to effect improved traffic flow and safety.
- Alternative 1B provides slight advantages over other alternatives in relation to both Highway Network Effectiveness and Continuous/Ongoing River Crossing Capacity. This alternative provides slightly more favourable traffic operations on the service roads than the other alternatives, which is attributed to the provision of intermediate interchanges with the new freeway at Todd Lane/Cabana Road West (partial) and at St. Clair College (full). These intermediate access points also provide a slightly higher degree of mobility between the service roads and the new freeway when compared with the other alternatives. This would improve system

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connectivity and provide a redundant system to address incidents, emergencies and maintenance works in the corridor. As well, unlike in Alternatives 2A and 2B, the intersection provided at Highway 401/Huron Church Road, allows northbound traffic from Highway 401 to continue directly onto northbound Huron Church Road (i.e. without making the right turn movement required in Alternatives 2A and 2B), resulting in higher level of service. Opportunities to incorporate these features, which distinguish Alternative 1B from the others, should be investigated in further refinements of the alternatives and in the selected preferred alternative.

- Consideration of community traffic impacts involved analyzing access to the service roads from existing crossing streets. While the intersection treatments of some alternatives require out-of-way travel, the amount of out-of-way travel would be 1.5 kilometres or less, and would result in slight increases (less than two minutes) in travel time. No substantial differences between the alternatives were identified in terms of community traffic impacts.

More detailed discussion of the analysis is provided in the following sections.

Analysis of Highway Network Effectiveness

The Highway Network Effectiveness performance measure compares improvements in capacity and overall traffic operations in the access road Practical Alternatives. The *Level 2 Traffic Operations Report (URS Canada Inc., Draft January 2007)* provides an examination of capacity and operations of the practical alternatives. Transportation service on the service roads and Highway 401 was analyzed by determining Level of Service (LOS), travel time and average speed from Howard Avenue to the E.C. Row Expressway interchange for the 2035 horizon year. A summary of the Analysis of Network Effectiveness is provided in Table 2 at the end of this memorandum.

The analysis indicated that:

1. Each alternative effectively separates local and international traffic by providing separate service roads (for local) and controlled access freeway facilities (for international) within the Highway 3/Huron Church Road corridor;
2. The proposed cross section of the service roads and the new freeway facility is sufficient to meet anticipated traffic demand for the 2035 horizon year and beyond.

New Freeway

There is no significant difference between the alternatives. Alternatives 1A, 1B, 2A and 2B have very similar travel times of 5.4 minutes, average speeds of 100 km/h and all operate at LOS C or better from Howard Avenue to E.C. Row Expressway in the 2035 horizon year. While Alternative 3 has a lower average speed of 90 km/h, the travel time is only slightly greater than the other alternatives at 6.0 minutes, and also operates at LOS C. The six-lane cross sections will have sufficient capacity to allow for free-flow speeds on the new freeway in all alternatives.

Service Roads

The operations on the service roads are also comparable among the alternatives, with travel times ranging from seven to ten minutes and average speeds ranging from 40 to 60 km/h. Alternatives 1A, 1B and 3 have higher Levels of Service over Alternatives 2A and 2B (LOS B or better versus LOS C or better), and travel times are slightly less (between 7.0 minutes and 8.3 minutes, versus between 7.6 and 9.6 minutes). For Alternatives 2A and 2B, the service road is discontinuous north of Labelle Street. Northbound service road traffic would need to make either a left turn to go eastbound on Highway 401, or a right turn to continue northbound on Huron Church Road. The configuration of this intersection and relatively short distance to the E.C. Row Expressway/Huron Church Road ramp terminals, is expected to result in poorer levels of service, longer queue lengths and longer travel times in comparison to Alternatives 1A, 1B and 3, which provide for a continuous service road alignment north of Labelle Street.

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Interchanges

Highway 401/Huron Church Road Interchange

Satisfactory levels of service are anticipated for intersections associated with the interchanges proposed at Huron Church Road and the new freeway for all alternatives. There is a slight disadvantage with Alternatives 2A and 2B, as queuing is expected on the Highway 401 E-N ramp to Huron Church Road. During peak periods, about half the length of the ramp would need to accommodate queuing vehicles.

Intermediate Interchange

For Alternatives 1A, 1B and 3 the intermediate interchange is located at the entrance to St. Clair College. This provides the most convenient access for St. Clair College, resulting in fewer vehicles on the service roads between Howard Avenue and Todd Lane/Cabana Road West. As St. Clair College is a major traffic generator, the relocation of traffic from the new freeway will divert traffic away from the Todd Lane/Cabana Road West and Huron Church Road intersection, and accommodate higher levels of service and shorter travel times. However, the relocation of this traffic may result in lower levels of service at the intersection of the service road and the entrance to St. Clair College in comparison to the 2035 Base Case. (The intersection of Highway 3 and St. Clair College would operate at LOS D during the PM peak hour under Alternatives 1A and 1B, while the intersection would operate at LOS B for Alternatives 2A, 2B and 3). The slip-on/slip-off ramps in Alternatives 1A, 1B and 3 introduce weave conditions for entering/exiting the new freeway, service road traffic and traffic entering/exiting the college. Weave conditions will be further reviewed in the Level 3 Analysis.

For Alternatives 2A and 2B, an interchange is located at Todd Lane/Cabana Road West, which is expected to be highly utilized with Highway 401 ramps carrying significant amounts of traffic during peak hours. The intersection of Highway 3 and Todd Lane/Cabana Road West would have critical movements operating at poor levels of service during peak periods. With Todd Lane/Cabana Road West as a major east-west regional arterial road, and with the interchange providing access between Highway 3 and the new plaza, local traffic accessing Huron Church Road/Highway 3 and the new freeway via Todd Lane/Cabana Road West, will find that it must compete with long distance and international traffic at this intersection. Alternative 1B includes a partial interchange between Pulford Street and Todd Lane/Cabana Road West, which provides for access to Highway 401 westbound and from Highway 401 eastbound. All signalized intersections in the vicinity were found to operate at satisfactory levels.

Highway 401/Highway 3/Howard Avenue Interchange

For all alternatives, the intersections associated with the Highway 401/Highway 3/Howard Avenue interchange are expected to operate at good levels of service.

Conclusions

In terms of Highway Network Effectiveness, Alternatives 1A, 1B and 3 are equally preferred; however, the operational advantages over Alternatives 2A and 2B are slight. Alternatives 2A and 2B could be improved by a better connection to Huron Church Road near E.C. Row Expressway.

All alternatives effectively separate international and local traffic and provide acceptable levels of service and mobility to accommodate future traffic demand for the 2035 horizon year.

Analysis of Continuous/Ongoing River Crossing Capacity

The Continuous/Ongoing River Crossing Capacity performance measure considers capacity and system connectivity. Unlike Highway Network Effectiveness, which measures the overall driving condition, Continuous/Ongoing River

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Crossing Capacity considers the “continuity” of the access road connection in terms of the potential for disruption to free flow of traffic and measures the ability of the practical alternative to address any interruptions in the border crossing system. Interruptions arising from traffic incidents and maintenance operations can lead to unacceptable delays in this important border transportation network.

Currently, operations on the Huron Church Road/Highway 3 corridor connecting to the Ambassador Bridge are constrained at certain intersections. In total, there are presently 17 signalized intersections along the corridor between Highway 401 and the Ambassador Bridge. These intersections create delays at critical locations, resulting in degraded traffic operations at intersections such as Tecumseh Road and Todd Lane/Cabana Road West¹. Delays are expected to increase in the future under the no-build scenario as traffic volumes increase with more intersections along the corridor at or approaching capacity. As traffic volumes increase, local and regional traffic may find it more desirable to use adjacent municipal arterial roads in an effort to avoid Huron Church Road congestion. The result is increased traffic infiltration to adjacent municipal streets and neighbourhoods and into other corridors. The corridor would break down as an international corridor, and fail to serve its role as defined by the City of Windsor, which is to carry high volumes of passenger and commercial traffic for intra-city travel at moderate speeds².

In an effort to provide for improved Continuous/Ongoing River Crossing Capacity, all practical access road alternatives were developed to include:

- The extension of Highway 401 as a multi-lane, controlled access freeway from the existing Highway 401/Highway 3 interchange to a new international crossing:
- Connection to and from the new freeway to Huron Church Road and the existing border crossing at the Ambassador Bridge is maintained:
- Flexibility in the freeway design to accommodate designated lanes, which benefit border crossing operations (i.e. express lane programs, such as NEXUS and FAST for frequent users, can be accommodated by the practical alternatives);
- A parallel service road system with access to the new freeway at critical locations via an intermediate interchange(s) to allow for the separation of local and international traffic.

New Freeway

Access to the new freeway was measured with an analysis of the access points (i.e. interchanges) provided in each alternative based on provincial design guidelines, discussions with municipal emergency services representatives and consideration to a road safety assessment.

Provincial Design Guidelines

Providing intermediate access between the new freeway and service roads enhances system connectivity and the ability of the access road alternatives to maintain continuous traffic flow, local and international, and in cases of incidents, emergency and maintenance. Greater mobility is also achieved with these access points providing the flexibility to accommodate a variety of travel patterns (i.e. local-to-local, local-to-long distance, long distance-to-local and long distance to long-distance traffic), as it is expected that this new section of freeway will accommodate a mix of long and short distance trips.

In developing the siting and spacing of interchanges in each of the practical access road alternatives, the Study Team considered guidelines available in the Geometric Design Manual for Ontario Highways. These Guidelines

¹ Level 2 Traffic Operations Analysis of Practical Alternatives, URS Canada Inc, January 2007.

² City of Windsor Official Plan

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suggest that for urban freeways where operating speeds are lower (than rural freeways), where there is a mix of short and long distance trips, where trip lengths are shorter and where drivers are accustomed to and anticipate the need for taking a variety of actions in rapid succession, interchange spacing between two and three kilometres is acceptable. If the spacing of arterial roads (where interchanges are typically located) are spaced less than two kilometres, it would be necessary to either omit some interchanges in favour of grade separations or adopt alternative means, including splitting interchange ramps or siting partial interchanges between successive arterials. The access points and their spacing for each of the alternatives are summarized in the Table 1. All alternatives provide interchange spacing consistent with these provincial design guidelines and an acceptable degree of access. Alternative 1B provides the greatest degree of access with a full interchange at St. Clair College and a partial interchange at Todd Lane/Cabana Road West.

TABLE 1 - INTERCHANGE SPACING AND TYPES OF ACCESS FOR PRACTICAL ACCESS ROAD ALTERNATIVES:

Highway Segments between Interchanges	1A	1B	2A	2B	3
Spring Garden Road			Partial Interchange	Partial Interchange	
Bethlehem Avenue/Labelle Street	Partial Interchange	Partial Interchange			Partial Interchange
Lambton Road/Grand Marais Road W	3.3	1.9	2.1	2.1	2.8
Pulford Street					
Reddock Street					
Todd Lane/Cabana Road W		Partial Interchange	Full Interchange	Full Interchange	
Huron Church Line Road		1.4			
St. Clair College	Full Interchange	Full Interchange			Full Interchange
Sandwich West Parkway	2.2	2.2	3.8	3.8	2.2
Cousineau Road					
Montgomery Drive					
Surrey Drive					
Grosvenor Drive					
Howard Avenue	Partial Interchange	Partial Interchange	Partial Interchange	Partial Interchange	Partial Interchange

	Partial or Full Interchange Location
3.8	Distance between Interchanges

Discussions with Municipal Emergency Services Representatives

The Study Team met with municipal staff and the municipal emergency services representatives to identify access requirements for local emergency services. These discussions identified that:

- A means of getting onto the new freeway eastbound and westbound at Todd Lane/Cabana Road West is desirable. Windsor Fire has a station just east of Huron Church Road on Cabana Road West and LaSalle Municipal Emergency Services has a facility at Malden Road/Normandy Road. Services based at these facilities would require access to the new freeway primarily via Todd Lane/Cabana Road West to best respond to incidents on the freeway.

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- A means of getting onto the new freeway westbound at Howard Avenue is also desirable. Such a connection would facilitate access to incidents in the westbound lanes between Howard Avenue and Cousineau Road/Sandwich West Parkway.

For Alternative 1A, an access point is provided at only at St. Clair College. There is no direct access at Todd Lane/Cabana Road West or Howard Avenue.

For Alternative 1B, a full intermediate interchange is provided at St. Clair College and a partial intermediate interchange is provided at Todd Lane/Cabana Road West. There is no direct access to Howard Avenue.

Alternatives 2A and 2B provide a full interchange at Todd Lane/Cabana Road West. There is no direct access at St. Clair College or Howard Avenue.

For Alternative 3, an access point is provided at only at St. Clair College. There is no direct access at Todd Lane/Cabana Road West or Howard Avenue.

Alternative 1B best meets access needs for local emergency services. The partial interchange at Todd Lane/Cabana Road West, coupled with the interchange at St. Clair College (1.4 kilometres away) provides better access for Todd Lane/Cabana Road West area than the other alternatives.

A fully directional interchange at St. Clair College improves mobility for local traffic, as St. Clair College is a major generator of traffic in the area and the interchange would enable more direct access between the service road and the mainline.

All alternatives do not address access needs for local emergency services at Howard Avenue. This need will be taken into consideration in subsequent phases of the study.

Road Safety Assessment

A safety assessment was undertaken for the Practical Alternatives (*Intus Road Engineering Inc., November 2006*). With respect to separating local and international traffic, the study suggests that long-distance traffic using arterial roads is generally less safe than freeways and controlled-access facilities. The study cites that freeways have a lower crash risk than arterial roads. Transferring the long-distance traffic from Huron Church Road/Highway 3 to a new section of six-lane, controlled-access freeway would be a significant safety benefit. This alone could result in a 30 to 60 percent reduction in non-intersection crashes. Any of the proposed alternatives for a new six-lane controlled-access freeway, therefore, would be substantially safer than the current condition³ and would result in fewer delays caused by incidents and emergencies.

The Road Safety Assessment also provided insight in the siting and spacing of interchanges. It found that collision risk on freeways is typically highest in the vicinity of the interchange speed change lanes where merging and diverging create turbulence in the traffic stream. Safety would be enhanced on the new freeway by limiting the number of entrances and exits. However, site specific and contextual considerations also influence safety. The interchanges in the access road alternatives serve an urban area – in contrast to typical rural conditions, operating speeds are expected to be lower, trip lengths are shorter and drivers are accustomed to taking a variety of actions in rapid succession. The safety issues relating to freeway entrances and exits are addressed by siting the interchanges in the access road alternatives consistent with the provincial design guidelines.

The Road Safety Assessment also provided a discussion on safety in tunneled freeway sections. The study found that ramps in tunnels provided no advantage or disadvantage for this option in comparison to the others. In addition, based on studies researched as a part of the Road Safety Assessment, there is no notable difference in the safety

³ Road Safety Assessment, Intus Road Safety Engineering Inc, November 2006.

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performances between urban freeways in tunnels or in open air sections. The collision risk near portals is higher than elsewhere within the tunnel⁴, principally due to the changes in lighting and an increase in mental workload for the drivers as they begin to focus on the tunnel entrance/exit. There are also differences in how incidents are addressed in tunnels; the Intus Report notes that it is much more difficult to control events in a tunnel crash, motorist escape is not simple, and it is more difficult for emergency services to reach the crash site. Thus, while the likelihood of a crash in a tunnel may be comparable to at-grade or depressed roadways, the consequences of crashes are generally more severe.

In addition, there are opportunities to incorporate Intelligent Transportation Systems to improve both safety and traffic operations. With real time traffic information being shared between commuters, emergency services and traffic authorities, incidents could be reduced and traffic flow managed to promote improved Highway Network Effectiveness and Continuous/Ongoing River Crossing Capacity for all alternatives. Intelligent Transportation Systems will be examined in greater detail during subsequent design stages.

The Road Safety Assessment also discusses the safety concerns associated with all of the access road and plaza alternatives. The access road alternatives were designed to include a high-speed, 400-series freeway that terminates at the border plaza. Since a border plaza is a required element of the design, methods of mitigating this design element include:

- Slowing approach speeds on the new freeway by introducing physical elements that are known to achieve this result; and
- Structuring the drivers' expectations concerning downstream traffic and physical conditions through advance warning/signing on the new freeway.

With respect to slowing approach speeds, the streaming of information/objects in peripheral vision or "optical flow" is the biggest influence on sense of speed. Therefore, introducing peripheral stimuli (such as trees) will increase the sense of speed and cause motorists to slow down.

Service Roads

All alternatives provide comparable access between the service roads and the local road network.

For all alternatives, the maximum out-of-way travel is 1.5 kilometres and is usually considerably less. At an average speed of 50 km/h, maximum travel time for any out-of-way travel would be less than two minutes. All alternatives offer shorter travel times (at least five minutes) over the future (2035) base case for a trip taken within the Huron Church Road/Highway 3 corridor with start and end points at E.C. Row Expressway and Howard Avenue⁵.

For Alternative 1A, direct access is not provided between the service road and Bethlehem Street and Labelle Street. In addition, direct access between Huron Church Road and Huron Church Line is not provided and there is only right-in, right-out access at Surrey Drive and Grosvenor Drive (the intersection in the base case condition allows for all moves) on the Highway 3 section.

For Alternative 3, all existing intersections will require slight modifications to accommodate the construction of the new freeway and service road; however, access between the service road and local road network will be similar to that which exists between the crossing roads and Huron Church Road/Highway 3 presently. Intersection modifications will result in minor out-of-way travel (ie. less than one kilometre), such as the relocation of the Huron Church Line/Highway 3 intersection.

⁴ Road Safety Assessment, Intus Road Safety Engineering Inc, November 2006.

⁵ Level 2 Traffic Operations Analysis of Practical Alternatives, URS Canada Inc, January 2007.

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Conclusions

Alternative 1B provides a slightly greater degree of access between the service roads and the new freeway than the other alternatives by the inclusion of a full interchange at St. Clair College and a partial interchange at Todd Lane/Cabana Road West.

There are no substantive differences in the safety performance between a tunnel and non-tunnel alternatives. While research suggests the frequency of crashes in a tunnel are similar to a non-tunnel, the consequences of crashes within a tunnel are generally more severe and challenging to deal with for emergency services. With separation of long distance and local traffic, the probability of incidents is reduced for all alternatives in comparison to do nothing.

Both Alternatives 1B and Alternative 3 provide a slight advantage over the other alternatives in terms of access between the cross streets and the service roads.

Therefore, in terms of Continuous/Ongoing River Crossing Capacity, Alternative 1B is slightly preferred.

Overall Conclusions

Although Alternative 1B provides slight advantages over other alternatives in relation to both Highway Network Effectiveness and Continuous/Ongoing River Crossing Capacity, all alternatives provide a significant improvement to regional mobility by getting long distance truck traffic off local streets and providing full freeway access to and from the border. The local and regional function of the existing Highway 3/Huron Church Road corridor is improved by providing parallel service roads, which can be designed to meet the needs of the community.

Table 2 – Summary of Local Access and Regional Mobility Impacts for Access Road Practical Alternatives

PRACTICAL ALTERNATIVE EVALUATION		Factor: Improve Regional Mobility										
Performance Measure	Criteria/Indicator	Measurement/Units	Alternative 1A		Alternative 1B		Alternative 2A		Alternative 2B		Alternative 3	
			Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2		
Highway Network Effectiveness	Transportation service on access road (See Note 1)	Level of Service (LOS), Travel Time, Average Speed (peak direction/peak hour)	Overall, good operations on freeway LOS C or better Travel time: 5.4 min Avg Speed: 100 km/h		Overall, good operations on freeway LOS C or better Travel time: 5.4 min Avg Speed: 100 km/h		Overall, good operations on freeway LOS C or better Travel time: 5.4 min Avg Speed: 100 km/h		Overall, good operations on freeway LOS C or better Travel time: 5.4 min Avg Speed: 100 km/h		Overall, good operations on freeway LOS C or better Travel time: 6.0 min Avg Speed: 90 km/h	
	Transportation service on service roads (See Note 1)	Level of Service, Travel Time, Average Speed (peak direction/peak hour)	Overall, good operations on service road, LOS B or better Travel time: 7.0 - 7.8 min Avg Speed: 50 - 58 km/h		Overall, good operations on service road, LOS B Travel time: 7.6 - 8.1 min Avg Speed: 48 - 53 km/h		Overall, good operations on service road, LOS C or better Travel time: 7.6 - 9.3 min Avg Speed: 43 - 51 km/h		Overall, good operations on service road, LOS C or better Travel time: 8.2 - 9.6 min Avg Speed: 41 - 48 km/h		Overall, good operations on service road, LOS B Travel time: 8.1 - 8.3 min Avg Speed: 48 - 49 km/h	
	Operations at interchanges and intersections	Subjective assessment based on analysis	Overall, service roads operate well		Overall, service roads operate well		Overall, service roads operate well. Localized congestion at the Cabana/Todd/Highway 401 interchange (queues on Cabana/Todd)		Overall, service roads operate well. Localized congestion at the Cabana/Todd/Highway 401 interchange (queues on Cabana/Todd)		Overall, service roads operate well	
Continuous/ongoing river crossing capacity (i.e. redundancy)	Assessment of access to/across access road in cases of incidents/emergency/maintenance	Qualitative	Probability of incidents are reduced in comparison to do nothing, there is a safety benefit from alternatives maintaining connection to/from the Ambassador Bridge crossing and providing access to/from the new crossing; improved regional mobility through additional capacity and separating international and local traffic.									
			All alternatives provide comparable access between the service roads and the cross streets with slight differences. Direct access is not provided between the service road and Bethlehem Street and Labelle Street. Direct access between Huron Church Road and Huron Church Lane is not provided and there is only right-in, right-out access at Surrey Drive and Grosvenor Drive (the intersection in the base case condition allows for all moves) on the Highway 3 section. This will require minor out-of-way travel.		All alternatives provide comparable access between the service roads and the cross streets with slight differences. Provides access to all cross streets, but with only right-in, right-out access at Surrey Drive and Grosvenor Drive (the intersection in the base case condition allows for all moves) on the Highway 3 section. This will require minor out-of-way travel.		All alternatives provide comparable access between the service roads and the cross streets with slight differences. No direct access Montgomery Drive, Surrey Drive and Grosvenor Drive do not provide direct access to the service road via these streets. This will require some out-of-way travel for residents of the neighborhood bounded by Highway 3, Howard Avenue, 8th Concession and Sandwich West Parkway		All alternatives provide comparable access between the service roads and the cross streets with slight differences. Intersection treatments at Montgomery Drive, Surrey Drive and Grosvenor Drive do not provide direct access to the service road via these streets. This will require some out-of-way travel for residents of the neighborhood bounded by Highway 3, Howard Avenue, 8th Concession and Sandwich West Parkway.		All alternatives provide comparable access between the service roads and the cross streets with slight differences. provides good access to all cross streets	
	Degree of separation of international and local traffic	Qualitative	Good separation of local and international traffic for all practical alternatives									

Notes:
1. Range based on 2035 northbound AM peak hour, and 2035 southbound PM peak hour.

PRACTICAL ALTERNATIVE EVALUATION		Factor: Protection of Community and Neighbourhood Characteristics									
Performance Measure	Criteria/Indicator	Measurement/Units	Alternative 1A		Alternative 1B		Alternative 2A		Alternative 2B		Alternative 3
			Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	Option 1	Option 2	
Traffic Impacts	Effect on Local Access	No of streets crossed, closed, or connected with an interchange	9 Crossings 11 Closings 20 Connections	9 Crossings 10 Closings 20 Connections	13 Crossings 10 Closings 14 Connections	13 Crossings 9 Closings 15 Connections	10 Crossings 15 Closings 15 Connections	10 Crossings 15 Closings 14 Connections	11 Crossings 14 Closings 10 Connections	11 Crossings 14 Closings 11 Connections	8 Crossings 9 Closings 13 Connections
	Effect on Local Access (out-of-way travel)	Subjective Assessment	Alternative maintains connection to/from the Ambassador Bridge crossing and provides access to/from the new crossing. Local access is improved through the separation of local and international traffic, primarily due to shifting international traffic away from Huron Church Road/Highway 3 corridor and onto the new freeway facility. Travel time on Service Road is at least five minutes less than on Huron Church Road from E.C. Row Expressway to Howard Avenue under the 2035 no-build condition, during the peak hour.	Alternative maintains connection to/from the Ambassador Bridge crossing and provides access to/from the new crossing. Local access is improved through the separation of local and international traffic, primarily due to shifting international traffic away from Huron Church Road/Highway 3 corridor and onto the new freeway facility. Travel time on Service Road is at least five minutes less than on Huron Church Road from E.C. Row Expressway to Howard Avenue under the 2035 no-build condition, during the peak hour.	Alternative maintains connection to/from the Ambassador Bridge crossing and provides access to/from the new crossing. Local access is improved through the separation of local and international traffic, primarily due to shifting international traffic away from Huron Church Road/Highway 3 corridor and onto the new freeway facility. Travel time on Service Road is at least five minutes less than on Huron Church Road from E.C. Row Expressway to Howard Avenue under the 2035 no-build condition, during the peak hour.	Alternative maintains connection to/from the Ambassador Bridge crossing and provides access to/from the new crossing. Local access is improved through the separation of local and international traffic, primarily due to shifting international traffic away from Huron Church Road/Highway 3 corridor and onto the new freeway facility. Travel time on Service Road is at least five minutes less than on Huron Church Road from E.C. Row Expressway to Howard Avenue under the 2035 no-build condition, during the peak hour.	Alternative maintains connection to/from the Ambassador Bridge crossing and provides access to/from the new crossing. Local access is improved through the separation of local and international traffic, primarily due to shifting international traffic away from Huron Church Road/Highway 3 corridor and onto the new freeway facility. Travel time on Service Road is at least five minutes less than on Huron Church Road from E.C. Row Expressway to Howard Avenue under the 2035 no-build condition, during the peak hour.	Alternative maintains connection to/from the Ambassador Bridge crossing and provides access to/from the new crossing. Local access is improved through the separation of local and international traffic, primarily due to shifting international traffic away from Huron Church Road/Highway 3 corridor and onto the new freeway facility. Travel time on Service Road is at least five minutes less than on Huron Church Road from E.C. Row Expressway to Howard Avenue under the 2035 no-build condition, during the peak hour.	Alternative maintains connection to/from the Ambassador Bridge crossing and provides access to/from the new crossing. Local access is improved through the separation of local and international traffic, primarily due to shifting international traffic away from Huron Church Road/Highway 3 corridor and onto the new freeway facility. Travel time on Service Road is at least five minutes less than on Huron Church Road from E.C. Row Expressway to Howard Avenue under the 2035 no-build condition, during the peak hour.	Alternative maintains connection to/from the Ambassador Bridge crossing and provides access to/from the new crossing. Local access is improved through the separation of local and international traffic, primarily due to shifting international traffic away from Huron Church Road/Highway 3 corridor and onto the new freeway facility. Travel time on Service Road is at least five minutes less than on Huron Church Road from E.C. Row Expressway to Howard Avenue under the 2035 no-build condition, during the peak hour.	Alternative maintains connection to/from the Ambassador Bridge crossing and provides access to/from the new crossing. Local access is improved through the separation of local and international traffic, primarily due to shifting international traffic away from Huron Church Road/Highway 3 corridor and onto the new freeway facility. Travel time on Service Road is at least five minutes less than on Huron Church Road from E.C. Row Expressway to Howard Avenue under the 2035 no-build condition, during the peak hour.