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## UPDATED DRAFT

## PAVEMENT ENGINEERING FOR PLANNING REPORT AREA OF CONTINUED ANALYSIS DETROIT RIVER INTERNATIONAL CROSSING WINDSOR, ONTARIO

Submitted to:

URS Canada Inc. 75 Commerce Valley Drive East Markham, Ontario L3T 7N9

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March 14, 2008

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URS Canada Inc. 75 Commerce Valley Drive East Markham, Ontario L3T 7N9

Attention: Mr. M. Thompson, P. Eng.

## RE: PAVEMENT ENGINEERING FOR PLANNING REPORT AREA OF CONTINUED ANALYSIS DETROIT RIVER INTERNATIONAL CROSSING WINDSOR, ONTARIO

Dear Sirs:

This updated draft report presents the results of the review of the readily available geotechnical information for the pavement engineering component of the Detroit River International Crossing project together with the results of the analyses of the traffic data provided and planning level pavement design recommendations. The location of the Area of Continued Analysis for the project is shown on the Location Plan, Figure 1.

The purpose of this report is to provide pavement engineering input in support of the Detroit River International Crossing transportation corridor study. A group of consulting firms, lead by URS Canada Inc., is completing the work on behalf of the Ontario Ministry of Transportation (MTO). The MTO is one of the four principal members of the international partnership organized to study potential transportation corridors to permit more efficient transit of travelers and goods between the highway systems in the Windsor and Detroit areas.





We trust that this updated draft report provides all of the information that you presently require. If you require any additional information, or when you wish us to finalize this report, please contact this office.

Yours truly,

GOLDER ASSOCIATES LTD.

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## TABLE OF CONTENTS

## **SECTION**

## PAGE

1.0	GEN	ERAL DATA 1
	1.1	Project Description1
		1.1.1 Alternative 1A1
		1.1.2 Alternative 1B2
		1.1.3 Alternative 2A2
		1.1.4 Alternative 2B2
		1.1.5 Alternative 32
		1.1.6 Parkway Alternative
	1.2	Background Information
	1.3	Scope of Work
2.0	GEO	TECHNICAL ENGINEERING CONDITIONS
	2.1	Subsurface Data Review4
	2.2	Geology of the Windsor Area4
	2.3	Sedimentary Geology
	2.4	General Subsurface Conditions
	2.5	Soil Characteristics Influencing Pavement Design
	2.6	Frost Susceptibility
	2.7	Frost Susceptibility
3.0	REVI	EW OF AVAILABLE BACKGROUND INFORMATION
	3.1	Golder Associates Report 04-1111-0608
		3.1.1 Borehole Information
		3.1.2 Field Vane and Piezocone Penetration Testing (CPT) Information
		10
	3.2	Ministry of Transportation Background Information10
	3.3	Review of Background Information From Golder Associates' Files14
4.0	PAVE	EMENT CONDITION SURVEY 19
5.0	TRAF	FIC VOLUMES
6.0	GRAI	NULAR MATERIALS
	6.1	Granular Base and Subbase23
	6.2	Asphaltic Concrete24
	6.3	Concrete
7.0	PAVE	EMENT DESIGN
	7.1	General26
	7.2	Discussion of Pavement Design Methods
		7.2.1 AASHTO (1993) Design Method
		7.2.2 Asphalt Institute (AI) Design Method
		7.2.3 Canadian Portland Cement Association (PCA) Design Method 28
		7.2.4 Comparison of Pavement Design Methods29

- i -

## TABLE OF CONTENTS CONTINUED

7.3	Discussion of Life Cycle Cost Methods29		
7.4	Concept Pavement Design	30	
7.5	Pavement Design Model	30	
	7.5.1 Traffic Loading	30	
	7.5.2 AASHTO Analyses – Flexible Pavements	31	
	7.5.3 Preliminary Flexible Pavement Design	34	
	7.5.4 AASHTO Analyses – Rigid Pavements	36	
	7.5.5 Preliminary Rigid Pavement Design	37	
7.6	Life Cycle Cost Analyses	39	
PREL	LIMINARY RECOMMENDATIONS	43	
8.1	Pavement Components	43	
8.2	Mixture Types	44	
8.3	Construction Considerations	45	
8.4			
8.5	Asphalt Cement Grades	45	
8.6	Tack Coat	46	
CUT	MATERIALS AND DESIGN	47	
9.1	Transition Point Treatment	47	
EMBA	ANKMENT MATERIALS AND DESIGN		
10.1	Embankment Construction	48	
DRAI	INAGE		
11.1	Ditches	49	
OTH	ER DESIGN FEATURES	50	
12.1	Recycling of Existing Pavement Materials	50	
	7.4 7.5 7.6 PRE 8.1 8.2 8.3 8.4 8.5 8.6 CUT 9.1 EMB 10.1 DRA 11.1 OTH	<ul> <li>7.4 Concept Pavement Design</li></ul>	

## LIST OF TABLES

Table I-A	Summary of Traffic Data – Alternative 1A
Table I-B	Summary of Traffic Data – Alternative 1B
Table I-C	Summary of Traffic Data – Alternative 2A
Table I-D	Summary of Traffic Data – Alternative 2B
Table I-E	Summary of Traffic Data – Alternative 3
Table I-F	Summary of Traffic Data – Parkway Alternative
Table II-A	Summary of ESAL Calculations – Flexible Pavements – Alternative 1A
Table II-B	Summary of ESAL Calculations – Flexible Pavements – Alternative 1B
Table II-C	Summary of ESAL Calculations – Flexible Pavements – Alternative 2A
Table II-D	Summary of ESAL Calculations – Flexible Pavements – Alternative 2B
Table II-E	Summary of ESAL Calculations – Flexible Pavements – Alternative 3
Table II-F	Summary of ESAL Calculations - Flexible Pavements - Parkway Alternative
Table III-A	Summary of ESAL Calculations – Rigid Pavements – Alternative 1A
Table III-B	Summary of ESAL Calculations – Rigid Pavements – Alternative 1B

## - ii -

## **TABLE OF CONTENTS CONTINUED**

- iii -

Table III-C	Summary of ESAL Calculations - Rigid Pavements - Alternative 2A
Table III-D	Summary of ESAL Calculations - Rigid Pavements - Alternative 2B
Table III-E	Summary of ESAL Calculations – Rigid Pavements – Alternative 3
Table III-F	Summary of ESAL Calculations - Rigid Pavements - Parkway Alternative

## **LIST OF FIGURES**

- Figure 2 Quaternary Geology
- Figure 3 Location Plan, Previous Boreholes
- Figure 4 Plasticity Chart
- Figure 5 Undrained Shear Strength Profile
- Figure 6 Undrained Shear Strength Profile
- Figure 7 Undrained Shear Strength Profile
- Figure 8 Comparison of Pavement Design Methods
- Figure 9 Pavement Structural Requirements vs. Cumulative ESALs - Condition 1
- Pavement Structural Requirements vs. Cumulative ESALs Condition 2 Figure 10
- Figure 11 Pavement Structural Requirements vs. Cumulative ESALs - Condition 3
- Figure 12 Summary of Life Cycle Cost Strategies

## LIST OF APPENDICES

Appendix A	Draft Interim Report - Pavement Engineering
Appendix B	Subsurface Database
Appendix C	Records of Boreholes (Golder Associates Ltd. Project No. 04-1111-060)
Appendix D	Site Photographs

### - 1 -

## 1.0 GENERAL DATA

## 1.1 **Project Description**

Current and projected cross-border traffic conditions in the greater Detroit and Windsor areas are such that a new crossing of the Detroit River is required. The pavement component of the project will generally consist of the upgrading of existing transportation routes and/or the construction of new roadways to connect Highway 401 in Ontario with the interstate highway system surrounding Detroit. The connection of the highway systems will require a new bridge crossing of the Detroit River and has the potential to include multiple overpass or underpass bridge structures and associated interchanges and/or grade separations along the connecting routes. Consideration may also be given to depressed pavement sections constructed between retaining structures to achieve grade separations. The Area of Continued Analysis (ACA) for the project is shown on the Key Plan, Figure 1.

At this time, six preliminary alternative transportation corridor configurations for the Ontario portion of the project have been established and are summarized as:

- Alternative 1a one way service roads on either side of six lane freeway, at grade;
- Alternative 1b one way service roads on either side of six lane freeway, below grade;
- Alternative 2a six lane freeway at grade adjacent to Huron Church Road/Highway 3;
- Alternative 2b six lane freeway below grade adjacent to Huron Church Road/Highway 3;
- Alternative 3 cut and cover tunnel below reconstructed Huron Church Road/Highway 3 corridor; and
- Parkway Alternative six lane freeway generally below grade between Highway 401 and Huron Church Road/E.C. Row Expressway interchange and at or above grade between Huron Church Road/E.C. Row Expressway interchange and Ojibway Parkway including 1.86 kilometres of short tunnels.

These alternatives are briefly discussed below:

## 1.1.1 Alternative 1A

Alternative 1A includes an at-grade freeway with below grade sections and one-way service roads on each side of the freeway. Interchanges are proposed at Highway 3, St. Clair College and Huron Church Road.

## 1.1.2 Alternative 1B

Alternative 1B includes a below grade freeway with one-way service roads on each side of the freeway. Interchanges are proposed at Highway 3, St. Clair College and Huron Church Road.

## 1.1.3 Alternative 2A

Alternative 2A includes an at-grade freeway with below grade sections which is predominantly aligned west of the existing Highway 3 and Huron Church Road. This section of Highway 3 and Huron Church Road would function as a service road to the freeway. Interchanges are proposed at Highway 3, Howard Avenue, Todd Lane/Cabana Road and Huron Church Road.

## 1.1.4 Alternative 2B

Alternative 2B includes a below grade freeway which is predominantly aligned west of the existing Highway 3 and Huron Church Road. This section of Highway 3 and Huron Church Road would function as a service road to the freeway. Interchanges are proposed at Highway 3, Howard Avenue, Todd Lane/Cabana Road and Huron Church Road.

## 1.1.5 Alternative 3

Alternative 3 is a cut and cover tunneled freeway with service roads (Highway 3 and Huron Church Road) constructed on top of the tunnel box. Interchanges are proposed at Highway 3, St. Clair College and Huron Church Road.

## 1.1.6 Parkway Alternative

The Parkway includes a below grade freeway with 1.86 kilometres of short tunnels. The freeway is predominantly aligned south of the existing Highway 3 and Huron Church Road. Existing Highway 3 and Huron Church Road would function as a service road to the freeway. Interchange ramps are proposed at Highway 3, Howard Avenue, St. Clair College, Todd Lane/Cabana Road and Huron Church Road.

## **1.2 Background Information**

During the initial phases of the planning study, Golder Associates Ltd. (Golder Associates) compiled, reviewed and summarized the background geotechnical information available for the whole study area and the results were summarized in Golder Associates Draft "Interim Report on Pavements Engineering, Detroit River International Crossing, Windsor, Ontario" dated August 2005 which is attached in Appendix A.

The relevant information has been included in this report together with the pertinent information from Golder Associates Report No. 04-1111-060 entitled "Preliminary Foundation Investigation and Design Report, Detroit River International Crossing, Bridge Approach Corridor" Geocres No. 40J6-18 and dated June 2007.

## 1.3 Scope of Work

The scope of work to complete the Pavement Engineering Planning Report consists of:

- Concentrate the remainder of the Field Review in the Area of Continued Analysis (ACA).
- Assemble and compile borehole data, including information from the ongoing foundation investigations for the ACA.
- Analyze the traffic data provided by URS Canada Inc.
- Review the concept pavement designs, both rigid and flexible, provided by MTO in the Request for Proposal (RFP) for the project and suggest modifications, as appropriate. Emphasis has been placed on the Highway 401 extension with consideration also being given to the major City of Windsor streets.
- Carry out Life Cycle Costing of the pavement options.
- Prepare a Pavement Engineering Planning Report and submit in draft format for review and input.
- Finalize the report following receipt of comments from URS and MTO.

## 2.0 GEOTECHNICAL ENGINEERING CONDITIONS

## 2.1 Subsurface Data Review

Existing subsurface data was compiled and used to develop the soil classification maps attached in Appendix A for the whole study area. The information presented was gathered from Ministry of Transportation Ontario files (through the GEOCRES system), Golder Associates project files, Ontario Ministry of Natural Resources (MNR), and published papers and texts. These data were used to assist in constructing an electronic database of subsurface information and to map the soil classification throughout the Windsor area at the following approximate intervals of depth: 0.3, 1.5, 3.0, and 6.0 metres below existing ground surface at the borehole locations.

Subsurface data existing in Golder Associates and the Ministry of Transportation Ontario (MTO) GEOCRES library files for projects completed in Windsor and surrounding areas over the last 40 years were reviewed for this project using the following criteria:

- Available boreholes and test pits drilled or excavated from ground surface to a minimum depth of 3 metres, and
- One representative borehole or test pit per minimum area of 0.25 square kilometres, where available, within the City of Windsor and Towns of LaSalle and Tecumseh.

For the purposes of this report, the database has been adjusted to reflect the conditions within the Area of Continued Analysis. The database for the Area of Continued Analysis is provided in Appendix A.

## 2.2 Geology of the Windsor Area

The subsurface conditions in the Windsor area are characterized by regionally extensive, flat-lying soils including:

- Surface layers of miscellaneous fill materials in localized areas, generally associated with industrial and urban growth;
- Native deposits of sand and silt present at or near the surface in some locations, particularly in the west end of the City of Windsor and the Town of LaSalle;
- Beneath the sand, where present, extensive deposits of clayey silt to silty clay; and
- Bedrock throughout the study area is generally encountered at depths of 20 to 35 metres.

Figure 2 illustrates the Quaternary geology and outlines the general surficial sedimentary geology of the study area based on geologic interpretation of widely-spaced sample locations and an understanding of geomorphologic processes. It should be noted that only the natural sediments encountered closest to the surface are identified, and that other sediments may underlie these layers.

- 5 -

## 2.3 Sedimentary Geology

The study area is located in the physiographic region of Southwestern Ontario known as the St. Clair Clay Plains<sup>1</sup>. Within this region, Essex County and the southwestern part of Kent County are normally discussed as a subregion known as the Essex Clay Plain. The clay plain was deposited during the retreat of the ice sheets during the late Pleistocene Era when a series of glacial lakes inundated the area. In general, the ice sheets deposited till in the area of Windsor and Detroit. Depending on the locations of the glacial ice sheets and depths of water in the ice-contact glacial lakes, the till may have been directly deposited at the contact between the ice sheet and the bedrock or, as the lake levels rose and the ice sheets retreated and floated, the soil and rock debris within and at the base of the ice may have been deposited through the lake water as lacustrine deposits. Glacial till, in its common usage, often indicates a very dense or hard condition resulting from consolidation and densification under the weight of the ice sheet. The mineral soil particles typically have a distribution of grain sizes ranging from cobbles to clay. However, in many areas of Windsor and Detroit, the soils described as "glacial till" were deposited through water and, as a result, have a softer consistency. A large end moraine of glacial till is mapped in the area of Windsor-Detroit, generally trending northwest to southeast near the outlet of Lake St. Clair as illustrated throughout Essex County near the terminus of Highway 401. In other areas, the lacustrine deposits overlie the hard glacial till. The major clay stratum, typically ranging in thickness from about 20 metres to 30 metres, exhibits a till-like structure exemplified by a random distribution of coarser particles within the primarily fine-grained silt and clay deposit.

Surficial layers or pockets of more typical layered lacustrine silty clay, silt or sand may be encountered overlying the extensive stratum of "till-like" silty clay. Silt and sand deposits, on the order of 2 to 4 metres thick, are often found near the ground surface in areas near the western side of Windsor and the southwestern limits of the Area of Continued Analysis.

<sup>&</sup>lt;sup>1</sup> Chapman, L. J. and Putnam, D.F., The Physiography of Southern Ontario, 1984.

## 2.4 General Subsurface Conditions

The following sections describe the general subsurface conditions in the Area of Continued Analysis (ACA) at intervals of depth of approximately 0.3, 1.5, 3.0 and 6.0 metres below existing ground surface. The information was gathered from previous geotechnical investigations carried out by Golder Associates and others using the sources outlined in Section 2.1. The following descriptions of the subsurface conditions are generalized and should not be interpreted to be exact, nor used in the detail design of the pavement structure of the proposed corridor. Further detailed, site specific geotechnical investigation is required once the preferred corridor has been selected.

The subsurface database is provided in Appendix B and the locations of the previous boreholes summarized in the database are shown on Figure 3.

Beneath the existing pavement structure(s), topsoil and/or surficial fill materials, granular materials consisting of sand and gravel, sands and silty sands were identified at a depth of approximately 0.3 metres below existing ground surface in the E.C. Row Expressway/Ojibway Parkway area. More localized areas of sands and silty sands were also identified, predominantly adjacent to the E.C. Row Expressway between Ojibway Parkway and Huron Church Road. Elsewhere in the ACA, the subsurface conditions at approximately 0.3 metres below ground surface generally consist of silty clay to clayey silt with localized areas of surficial granular soils.

At approximately 1.5 metres depth, sands and sandy silts were identified in the E.C. Row Expressway/Ojibway Parkway area. Elsewhere within the ACA, the subsurface conditions consist of clayey silt to silty clay.

At approximately three metres depth, the subsurface conditions generally consist of clayey silt and/or silty clay in the ACA. Figure 5 illustrates the subsurface soil conditions at approximately three metres below existing ground surface in the ACA.

At approximately six metres depth, the subsurface conditions generally consist of clayey silt and/or silty clay throughout the ACA.

Groundwater levels are expected to be located about 2 to 3 metres below ground surface in the clayey silt and silty clay materials and will generally be defined by the location of the transition of the soil colour from brown to grey. It should be noted that one of the boreholes drilled for the foundations engineering component of the project encountered artesian groundwater pressures in the clayey silt. This borehole was drilled near the intersection of Ojibway Parkway and E.C. Row Expressway in the northwestern portion of the project.

## 2.5 Soil Characteristics Influencing Pavement Design

The subsurface conditions as described in this report have an important influence on the design of the pavement structures for the proposed transportation corridor. Two main factors affecting roadway pavement design are:

- 7 -

- frost susceptibility of the subgrade soil, which influences the design of the pavement structure component thicknesses; and
- soil erodibility, which influences the design of embankment surfacing and drainage ditches that may be proposed in the design of a proposed corridor.

## 2.6 Frost Susceptibility

The generalized subsurface conditions have been categorized as low, moderate or high frost susceptibility. At depths of about 1.2 to 1.5 metres, the subsurface conditions in the E.C. Row Expressway/Ojibway Parkway area indicate the presence of localized area of sands and silty sands, which are considered to have low to moderate frost susceptibility. This area also has areas of silty clay and clayey silt which are considered to have a low susceptibility to frost action. These are also the soils that occur at depth.

## 2.7 Soil Erodibility

It is anticipated that drainage ditches and embankments will be incorporated in the design of the proposed corridor. The subsurface conditions in the Area of Continued Analysis consist largely of clayey silt and silty clay with localized surficial areas of sand and gravel, sands and silty sand. The silty clay, clayey silt, sand and gravel and sands are considered to be slightly erodible and the silty sands are considered to be moderately erodible.

## 3.0 REVIEW OF AVAILABLE BACKGROUND INFORMATION

Following the review of the available geological mapping and information from our files to delineate, in a preliminary fashion, the general subsurface conditions in the area of the site, a detailed review of the files in our Windsor office was carried out to attempt to determine the characteristics of the existing pavements in the ACA. In addition, requests were made to the City of Windsor by URS and to the MTO by Golder Associates for any available background information regarding the existing pavement conditions in the study area. To date, no information has been provided by the City of Windsor.

## 3.1 Golder Associates Report 04-1111-060

Four deep boreholes, numbered 1, 7, 14 and 23, were advanced in conjunction with the foundation investigation portion of this project, and their locations are shown on the Location Plan, Figure 1. The following paragraphs summarize the subsurface conditions encountered in the upper portion of these boreholes as they relate to pavement design. The Records of Boreholes are provided in Appendix C.

## 3.1.1 Borehole Information

Borehole 1 – Highway 3 and Howard Avenue Area

About 0.3 metres of clayey topsoil was encountered at ground surface. The surficial topsoil had a natural moisture content of about 20 per cent.

Beneath the topsoil, a 3.6 metre thick layer of firm to very stiff silty clay was encountered. A single standard penetration test completed in the silty clay indicated an N value of 28 blows per 0.3 metres. The moisture content of the silty clay was about 15 to 18 per cent.

An extensive deposit of stiff clayey silt was encountered beneath the silty clay. The upper portion of the clayey silt had N values of 9 to 15 blows per 0.3 metres with moisture contents of about 16 to 18 per cent. In situ vane shear strength testing carried out in the upper portion of the clayey silt indicated undrained shear strengths of about 75 to 80 kilopascals (kPa) with vane sensitivities of 1.0 to 1.5. Below about 10 metres depth, the undrained shear strength was about 55 kPa with a vane sensitivity of 1.7. The clayey silt had corresponding average plastic and liquid limits of 13 and 25 per cent, respectively, based on two Atterberg limits determinations. The Atterberg limits data are shown on the Plasticity Chart, Figure 4.

## Borehole 7 – Howard Avenue and Geraedts Drive Area

About 0.3 metres of clayey topsoil was encountered at ground surface. The surficial topsoil had an N value of 10 blows per 0.3 metres based on a standard penetration test partially completed in the topsoil with a natural moisture content of about 20 per cent.

Beneath the topsoil, a 3.6 metre thick layer of very stiff to hard clayey silt was encountered. The clayey silt had N values of 23 to 59 blows per 0.3 metres with moisture contents of about 13 per cent.

An extensive deposit of very stiff to firm clayey silt was encountered beneath the upper very stiff to hard clayey silt. The upper portion of the clayey silt had N values of 11 to 32 blows per 0.3 metres with moisture contents of about 14 to 19 per cent. In situ vane shear strength testing carried out in the upper portion of the clayey silt indicated undrained shear strengths of greater than 100 kPa above about 7 metres depth with a vane sensitivity of 1.3. Below about 7 metres depth, the undrained shear strength was about 55 to 70 kPa with vane sensitivities of 1.7 to 2.0. The clayey silt had corresponding average plastic and liquid limits of 12 and 25 per cent, respectively, based on three Atterberg limits determinations. The Atterberg limits data are shown on the Plasticity Chart, Figure 4.

## Borehole 14 – Huron Church Road and Balmoral Drive Area

About 1.1 metres of silty clay fill was encountered at ground surface in borehole 14. The fill had an N value of 13 blows per 0.3 metres with an in situ moisture content of about 16 per cent. Beneath the silty clay fill, a 0.3 metre thick layer of silty sand and gravel fill was encountered.

A soft to very stiff layer of clayey silt about 4.1 metres thick was encountered beneath the fill. Silty clay layers were noted within the clayey silt. The clayey silt had N values of 4 to 14 blows per 0.3 metres with moisture contents of about 22 to 26 per cent. In situ vane testing in the clayey silt indicated undrained shear strengths of 115 to 120 kPa with vane sensitivities of 1.4 to 2.7. The clayey silt had corresponding plastic and liquid limits of 21 and 41 per cent, respectively, based on a single Atterberg limits determination. The Atterberg limits data are provided on Figure 4.

Beneath the upper soft to very stiff clayey silt, an extensive deposit of firm to stiff clayey silt was encountered at 5.5 metres depth or at about elevation 176.6 metres. The upper portion of the clayey silt had an N value of 7 blows per 0.3 metres with moisture contents of about 20 to 23 per cent. In situ vane shear strength testing carried out in the upper portion of the clayey silt indicated undrained shear strengths of 58 to 77 kPa with vane sensitivities of 1.7 to 3.2. The clayey silt had corresponding average plastic and liquid

limits of 15 and 31 per cent, respectively, based on two Atterberg limits determinations. The Atterberg limits data are shown on the Plasticity Chart, Figure 4.

## Borehole 23 – E.C. Row Expressway and Ojibway Parkway Area

About 0.3 metres of silty sand fill was encountered at ground surface in borehole 23. Beneath the fill, about 0.3 metres of sandy topsoil and 1.1 metres of sandy silt was encountered.

A stiff to very stiff layer of clayey silt about 2.7 metres thick was encountered beneath the sandy silt. The clayey silt had N values of 6 to 15 blows per 0.3 metres with moisture contents of about 21 to 24 per cent. In situ vane testing in the clayey silt indicated undrained shear strengths of 105 to 120 kPa with vane sensitivities of 2.8 to 2.9. The clayey silt had corresponding plastic and liquid limits of 17 and 28 per cent, respectively, based on a single Atterberg limits determination. The Atterberg limits data are provided on Figure 4.

Beneath the upper stiff to very stiff clayey silt, an extensive deposit of soft to very stiff clayey silt was encountered at about 4.4 metres depth or about elevation 174.5 metres. This layer extended to about 20.7 metres depth or about elevation 158.2 metres. The upper portion of the clayey silt had N values of 1 to 5 blows per 0.3 metres with moisture contents of about 23 to 36 per cent. In situ vane shear strength testing carried out in the upper portion of the clayey silt indicated undrained shear strengths of 25 to 43 kPa with vane sensitivities of 1.8 to 3.5. The clayey silt had corresponding average plastic and liquid limits of 15 and 27 per cent, respectively, based on two Atterberg limits determinations. The Atterberg limits data are shown on the Plasticity Chart, Figure 4.

## 3.1.2 Field Vane and Piezocone Penetration Testing (CPT) Information

In addition to the above, rigorous in situ vane testing was carried out adjacent to each borehole and piezocone penetration testing (CPT) was carried out at regular intervals along the alignment. The locations of the CPTs and field vane testing are shown on the Plan, Figure 1. Summaries of the undrained shear strength measurements carried out during the investigation using field vane and CPT methods are provided on Figures 5, 6 and 7.

## 3.2 Ministry of Transportation Background Information

The MTO provided the available background information for sections of roadway under their jurisdiction in the form of Region Geotechnical Pavement Condition Reports. The relevant information from these are summarized in the following sections.

Highway 401 Eastbound Lanes - Walker Road to the terminus of Highway 401 (surveyed May 2005 and June 2007)

- Original grading carried out under Contract 55-138.
- Granular base and paving carried out under Contract 55-23 and consisted of 225 millimetres of plain jointed concrete pavement (JPCP) over 100 millimetres of Granular A and 125 millimetres of Granular C.
- Contract 73-172 consisted of an asphalt overlay consisting of 50 millimetres HL 4 modified, 40 millimetres HL 4 binder course and 40 millimetres of HL 1 surface course.
- Under Contract 90-41, four sections of pavement (total length of 700 metres) were resurfaced by milling 40 millimetres and paving 40 millimetres of HL 1 (reclaimed) in the driving lane. Prior to paving, all depressed transverse cracks were sawcut and reinstated with HL 4.
- Under Contract 2002-3002, the pavements were resurfaced between Station 9+995 and 14+000 by milling 50 millimetres and paving 50 millimetres of SuperPave 12.5 FC2.
- In 2004, microsurfacing was carried out.
- 2005 PCR = 95, 2007 PCR = 90

## Highway 401 Westbound Lanes - Walker Road to the terminus of Highway 401 (surveyed May 2005 and June 2007)

- Original grading carried out under Contract 55-138.
- Granular base and paving carried out under Contract 55-23 and consisted of 225 millimetres of plain jointed concrete pavement (JPCP) over 100 millimetres of Granular A and 125 millimetres of Granular C.
- Contract 73-172 consisted of an asphalt overlay consisting of 50 millimetres HL 4 modified, 40 millimetres HL 4 binder course and 40 millimetres of HL 1 surface course.
- Under Contract 90-41, a 200 metre long section was resurfaced by milling 40 millimetres and paving 40 millimetres of HL 1 (reclaimed) in the driving lane. Prior to paving, all depressed transverse cracks were sawcut, the asphalt removed and the areas reinstated with HL 4.
- Under Contract 2002-3002, 5 kilometres of the pavements were resurfaced by milling 50 millimetres and paving 50 millimetres of SuperPave 12.5 FC2.

- In 2004, the western 0.6 kilometres was resurfaced with SMA and the remainder was microsurfaced.
- 2005 PCR = 93, 2007 PCR = 88

## Highway 3 – West junction of Essex Road 34 to Highway 401 (surveyed September 2006 and May 2007)

- Existing pavement consisted of asphalt and/or concrete placed directly on subgrade. No details of the original construction were provided.
- The pavements were widened and resurfaced on the south side under Contract 76-115. The widening consisted of 150 millimetres of Granular A, 237 millimetres of HL 4 binder course and 40 millimetres of HL 1 surface course. The resurfacing consisted of HL 4 padding, HL 4 binder course and HL 1 surface course.
- The westerly 0.5 kilometres was resurfaced with 50 millimetres of DFC under Contract 98-19.
- Milling of 80 millimetres and paving 40 millimetres of HDBC and 40 millimetres of HL 1 was carried out at the Walker Road intersection in 1998 to address rutting.
- Dynapatching was carried out in 2002.
- Selective full depth repairs were carried out in the westbound lanes in 2004.
- Under Contract 2004-3009, the pavements were resurfaced by milling 50 millimetres and paving 60 millimetres of SuperPave 19.0 and 40 millimetres of SuperPave 12.5 FC2.
- Under Contract 2004-3039, intersection improvements were carried out at Outer Drive and Walker Road and the main line pavements were resurfaced by milling 50 millimetres and paving 60 millimetres of SuperPave 19.0 and 40 millimetres of SMA.
- 2006 PCR = 93, 2007 PCR = 89

# Highway 3 (Huron Church Road) Eastbound Lanes – Highway 401 to Todd Lane (surveyed September 2006 and July 2007)

- No details of the original construction were provided.
- Resurfacing was carried out consisting of HL 5 padding to correct crossfall, 20 millimetres HL 2 padding and 40 millimetres of surface course.
- Widening consisted of 312 millimetres of Granular A in the shoulders, 350 millimetres of HL 5 and 40 millimetres of surface course.

- Under Contract 90-14, the westerly 0.7 kilometres was widened and resurfaced with 40 millimetres of HDBC and 40 millimetres of DFC.
- Under Contract 98-19, all but the westerly 0.7 kilometres was resurfaced with 50 millimetres of HDBC and 40 millimetres of DFC.
- Whitetopping carried out at Cousineau Road and Todd Lane under District Contracts 2002-3383 (driving lane) and 2002-3399 (passing lane).
- Under Contract 2003-3022, the pavements were resurfaced by milling 50 millimetres and paving 50 millimetres of SMA.
- 2006 PCR = 92, 2007 PCR = 80

## Highway 3 (Huron Church Road) Westbound Lanes – Highway 401 to Todd Lane (surveyed September 2006 and July 2007)

- No details of the original construction were provided.
- Resurfacing was carried out consisting of HL 5 padding to correct crossfall, 20 millimetres HL 2 padding and 40 millimetres of surface course.
- Widening consisted of 312 millimetres of Granular A in the shoulders, 350 millimetres of HL 5 and 40 millimetres of surface course.
- Under Contract 90-14, the westerly 0.7 kilometres was widened and resurfaced with 40 millimetres of HDBC and 40 millimetres of DFC. Widening plugs consisted of 200 millimetres of hot mix asphalt over 700 millimetres of Granular A.
- Under Contract 98-19, all but the westerly 0.7 kilometres was resurfaced with 50 millimetres of HDBC and 40 millimetres of DFC.
- Whitetopping carried out at Howard Avenue intersection District Contracts 32-99-05 to address rutting.
- Whitetopping carried out at Cousineau Road and Todd Lane under District Contracts 2002-3383 (driving lane) and 2002-3399 (passing lane).
- Under Contract 2003-3022, the pavements were resurfaced by milling 50 millimetres and paving 50 millimetres of SMA.
- Whitetopping repaired at Howard Avenue under District Contract 2003-3355.
- 2006 PCR = 93, 2007 PCR = 82

## E.C. Row Expressway - Eastbound Lanes – Highway 3 (Huron Church Road) to Ojibway Parkway (surveyed September 1992)

- Pavement constructed under Contract 89-41 and consisted of 25 millimetres of OFC and 35 millimetres of HDBC over 225 millimetres of unreinforced concrete placed on 110 millimetres of OGDL. This structure includes the partially paved shoulders.
- 0.7 kilometre long structure approach at Highway 3 constructed under Contract 87-23 and consisted of 65 millimetres of hot mix asphalt over 230 millimetres of plain concrete and asphalt stabilized OGDL.
- 1992 PCR = 59

# E.C. Row Expressway - Westbound Lanes – Highway 3 (Huron Church Road) to Ojibway Parkway (surveyed September 1992)

- Original pavement consisted of 40 millimetres of DFC over 200 millimetres of unreinforced concrete placed on 150 millimetres of cement treated Granular A.
- Structure approach at Highway 3 constructed under Contract 87-23 and consisted of 65 millimetres of hot mix asphalt over 230 millimetres of plain concrete and asphalt stabilized OGDL.
- Rout and seal carried out between Matchette Road and Huron Church Line.
- Structure approaches patched full width at Malden Road and Matchette Road.
- Several slabs replaced under Contract 87-41.
- French drains installed in outer shoulder.
- 1992 PCR = 57

## 3.3 Review of Background Information From Golder Associates' Files

To supplement the background information for the pavements at the site, a review of the information in Golder Associates' files for the area of the site was carried out. The relevant information from that review is summarized in the following sections. The review included a summary of the recommended pavement design information for the various sections of roadway; however, these should not necessarily be construed to be the actual pavements constructed. Further, post report and construction modifications may have also been made.

No pavement information was provided by the City of Windsor.

## Huron Church Road at Todd Lane and Todd Lane

Reference: Golder Associates Report No. 754139/13 entitled "Geotechnical Investigation, Contract No. 10, Proposed Provincial Sewage Works Program, Township of Sandwich West, County of Essex, Ontario" dated September 21, 1982.

The boreholes drilled for this investigation generally encountered silty clay to clayey silt till materials at subgrade level.

The recommendations provided in the report indicated that the pavements impacted by sewer construction could be restored using a pavement structure consisting of 40 millimetres of surface course, 50 millimetres of binder course and 400 millimetres of Granular A base.

## Cousineau Road, East of Highway 3

Reference: Golder Associates Report No. 791-4096 entitled "Geotechnical Investigation, Proposed Heritage Estates Residential Development, Township of Sandwich West, County of Essex, Ontario" dated August 1979

This report indicated that the Cousineau Road realignment could be constructed using a flexible pavement structure or a rigid pavement. The rigid pavement could consist of 200 millimetres of concrete and 230 millimetres of Granular A base. The flexible pavement could consist of 40 millimetres of surface course, 100 millimetres of binder course and either 600 millimetres of Granular A base or 150 millimetres of Granular A and 600 millimetres of Granular B subbase.

#### Labelle Street, East of Huron Church Road

Reference: Golder Associates Report No. 801-4009 entitled "Geotechnical Investigation, Proposed Phase II Bellewood Land Assembly, Windsor, Ontario" dated February 1980.

Two pavement design alternatives were provided for Labelle Street as summarized below:

	THICKNESS (mm)		
<u>COMPONENT</u>	Alternative 1	Alternative 2	
Asphalt	100	100	
Granular A Base	600	150	
Granular B Subbase	-	660	

It is not known which alternative was ultimately constructed.

### Huron Church Road, Cabana Road to Grand Marais Drain and Pulford Street

Reference: Golder Associates Report No. 901-4256 entitled "Geotechnical Investigation, Proposed Phase 4 Reconstruction, Huron Church Road, Windsor, Ontario" dated January 1991.

Recommendations were provided in the above-noted report to reconstruct the subject section of Huron Church Road using a rigid pavement structure consisting of 275 millimetres of Portland cement concrete, 100 millimetres of drainage layer (19 millimetre clear stone or asphalt stabilized OGDL) and 275 millimetres of Granular A base.

The report also noted that the existing Pulford Street intersection at Huron Church Road would be widened and realigned to the north. The pavement structure recommended for the new section of Pulford Street consisted of 230 millimetres of Portland cement concrete and 300 millimetres of Granular A base.

## Howard Avenue, North Talbot Road to Highway 3

Reference: Golder Associates Report No. 921-4204 entitled "Geotechnical Investigation, Proposed Howard Avenue Sanitary Sewer, North Talbot to Highway No. 3, Windsor, Ontario" dated November 1992.

The above-noted report suggested that the new Howard Avenue pavement structure for the project consist of 150 millimetres of asphalt and 610 millimetres of Granular A base. In addition, it was suggested that continuous subdrains be provided at subgrade level to provide effective drainage of the pavement structure.

## E.C. Row Expressway, Ojibway Parkway to Huron Church Road

Reference: John Emery Geotechnical Engineering Limited (JEGEL) Report No. 198258 entitled "Pavement Evaluation, E.C. Row Expressway, Ojibway Parkway to Huron Church Road and Huron Church Road to Midpoint of Dominion Boulevard and Dougall Avenue" dated April 5, 1999.

The background information provided in the above-noted report indicates that the original construction of this section of the E.C. Row Expressway was carried out between 1979 and 1981 and consisted of 38 millimetres of DFC, 200 millimetres of plain jointed concrete pavement and 150 millimetres of cement treated Granular A. The construction was carried out to accommodate two lanes of traffic.

In 1987, a grade separation was constructed at the Huron Church Road intersection from 900 metres west to 700 metres east of Huron Church Road. The pavements for the grade separation consisted of 25 millimetres of OFC, 30 millimetres of HL 4 binder course, 225 millimetres of plain jointed concrete and 110 millimetres of asphalt stabilized OGDL.

In 1989, two additional lanes, creating the existing eastbound lanes were constructed as well as interchanges at Matchette Road and Malden Road. The mainline pavements consisted of 25 millimetres of OFC, 30 millimetres of HL 4 binder course, 225 millimetres of plain jointed concrete and 110 millimetres of asphalt stabilized OGDL. The speed change lanes consisted of 40 millimetres of DFC, 225 millimetres of plain jointed concrete and 150 millimetres of OGDL. The ramps consisted of 35 millimetres of DFC, 35 millimetres of HL 4 binder course, 225 millimetres of plain jointed concrete and 150 millimetres of DFC.

In 1997, a 50 millimetre HL 1 surface course overlay was provided between Ojibway Parkway and Matchette Road.

JEGEL provided several alternative pavement designs for the various sections of pavements to be reconstructed including two alternative flexible structures and a rigid structure as summarized in Table 6 of their Report No. 198258, as presented below:

## TABLE 6 MINIMUM PAVEMENT STRUCTURE REQUIREMENTS (All thickness in millimetres)

SECTION	PAVEMENT STRUCTURE ALTERNATIVES		
	RIGID	FLEXIBLE (THIN BASE)	FLEXIBLE (THICK BASE)
MAINLINES	250 PCC*	40 SMA**	40 SMA
Ojibway Parkway to	100 OGDL	120 HDBC (2 lifts)	110 HDBC (2 lifts)
East Ramps of Huron	200 100% Crushed Granular A	40 HL 8	100 OGDL
Church Road, Section I		100 OGDL	100 100% Crushed Granular A
		100 100% Crushed Granular A	450 100% Crushed Granular B
		300 100% Crushed Granular B	
East Ramps of Huron	270 PCC	40 SMA	40 SMA
Church Road to East	100 OGDL	120 HDBC (2 lifts)	90 HDBC (2 lifts)
Ramps of Dominion	200 100% Crushed Granular A	60 HL 8	40 HL 8
Boulevard, Section II		100 OGDL	100 OGDL
West		100 100% Crushed Granular A	100 100% Crushed Granular A
		300 100% Crushed Granular B	450 100% Crushed Granular B

Detroit River International Crossing

SECTION	PAVEMENT STRUCTURE ALTERNATIVES		
	RIGID	FLEXIBLE (THIN BASE)	FLEXIBLE (THICK BASE)
East Ramps of	285 PCC	40 SMA	40 SMA
Dominion Boulevard to	100 OGDL	120 HDBC (2 lifts)	110 HDBC (2 lifts)
Midpoint of Dominion	200 100% Crushed Granular A	80 HL 8	40 HL 8
Boulevard and Dougall		100 OGDL	100 OGDL
Road, Section II East		100 100% Crushed Granular A	100 100% Crushed Granular A
		300 100% Crushed Granular B	450 100% Crushed Granular B
RAMPS	225 PCC	40 SMA	40 SMA
Matchette Road	300 100% Crushed Granular A	90 HDBC	90 HDBC
Interchange		60 HL 8	40 HL 8
		100 100% Crushed Granular A	100100% Crushed Granular A
		300 100% Crushed Granular B	450 100% Crushed Granular B
Huron Church Road	270 PCC	40 SMA	40 SMA
Interchange	300 100% Crushed Granular A	120 HDBC	120 HDBC
		80 HL 8	40 HL 8
		100 100% Crushed Granular A	100 100% Crushed Granular A
		300 100% Crushed Granular B	450 100% Crushed Granular B
Dominion Boulevard	260 PCC	40 SMA	40 SMA
Interchange	300 100% Crushed Granular A	120 HDBC	120 HDBC
		80 HL 8	40 HL 8
		100 100% Crushed Granular A	100 100% Crushed Granular A
		300 100% Crushed Granular B	450 100% Crushed Granular B

\* Portland Cement Concrete with a compressive strength of 35 MPa at 28 days.

\*\* Stone Mastic Asphalt with Performance Graded Asphalt Cement.

Reproduced from JEGEL Report No. 198258

## 4.0 PAVEMENT CONDITION SURVEY

A pavement condition survey of the major pavements within the project was carried out by a senior pavement design engineer from our staff. At that time, the existing pavements were visually examined and digital photographs of characteristic and major distresses were obtained. Select site photographs are provided in Appendix D.

A summary of the items noted during the pavement condition survey are provided in the following table:

LOCATION	REMARKS
Highway 401 - North Talbot Road to Huron Church Line	<ul> <li>asphalt surfaced pavements</li> <li>good condition</li> <li>very slight to slight single and multiple transverse cracks throughout (see Photograph 1 in Appendix D)</li> <li>multiple very slight centerline joint cracks throughout</li> <li>short section of outer wheel path/pavement edge failure in curve beneath Talbot Road East in westbound lanes with severe rutting (see Photograph 2 in Appendix D)</li> </ul>
Huron Church Line (Highway 3) - Highway 401 to Huron Church Road	<ul> <li>asphalt surfaced pavements</li> <li>good condition</li> <li>intermittent slight transverse cracks in left turn lanes</li> <li>intermittent slight longitudinal cracks in left turn lanes</li> <li>slight to moderate wheel path rutting at intersections</li> <li>the white topping placed at the Howard Avenue, Cousineau Road and Todd Lane intersections has been replaced with asphalt.</li> </ul>
Huron Church Road - Huron Church Line to E.C. Row Expressway	<ul> <li>asphalt surfaced from Highway 3 to just west of Todd Lane</li> <li>good condition</li> <li>no distresses noted in asphalt section</li> <li>concrete pavements west of Todd Lane</li> <li>good condition</li> <li>few to intermittent, apparently full depth repairs in concrete</li> <li>few moderate corner cracks, intermittent slight corner cracks</li> </ul>
<i>Howard Avenue</i> - south of Huron Church Line	<ul> <li>asphalt surfaced</li> <li>recently resurfaced</li> <li>excellent condition</li> <li>see Photographs 3 and 4 in Appendix D</li> </ul>
- north of Huron Church Line	<ul> <li>see Photographs 5 and 4 in Appendix D</li> <li>asphalt surfaced</li> <li>severe midlane cracking in eastbound lanes throughout</li> <li>moderate to severe transverse cracks throughout</li> <li>moderate pavement edge/inner wheel path cracks in westbound lanes throughout</li> <li>see Photographs 5 and 6 in Appendix D</li> </ul>
Cousineau Road	<ul> <li>asphalt surfaced</li> <li>good condition</li> <li>slight transverse cracks</li> <li>see Photograph 7 in Appendix D</li> </ul>

LOCATION	REMARKS
Sandwich Parkway	<ul> <li>asphalt surfaced</li> <li>fair to good condition</li> <li>slight longitudinal cracks throughout</li> <li>extensive slight transverse cracks</li> <li>few moderate alligatored transverse cracks</li> <li>see Photographs 8 and 9 in Appendix D</li> </ul>
Cabana Road	<ul> <li>asphalt surfaced</li> <li>excellent condition</li> <li>recently resurfaced to about 25 metres from intersection</li> <li>no distresses noted</li> <li>see Photographs 10 and 11 in Appendix D</li> </ul>
Todd Lane	<ul> <li>asphalt surfaced</li> <li>fair condition</li> <li>recently resurfaced at Huron Church Road to end of radius</li> <li>slight alligatored pavement edge cracking throughout</li> <li>few very slight transverse cracks</li> <li>see Photographs 12 and 13 in Appendix D</li> </ul>
Pulford Street	<ul> <li>concrete pavement</li> <li>generally in good condition</li> <li>see Photographs 14 and 15 in Appendix D</li> <li>moderate to severe edge and corner cracks and joint distresses about 50 metres and 20 metres south of Northway Avenue (see Photographs 16 and 17 in Appendix D)</li> </ul>
Grand Marais Road West	<ul> <li>concrete radius at Huron Church Road and asphalt surfaced beyond</li> <li>good condition</li> <li>intermittent slight transverse cracks</li> <li>see Photographs 18 and 19 in Appendix D</li> </ul>
Lambton Street	<ul> <li>concrete radius at Huron Church Road and asphalt surfaced beyond</li> <li>fair condition</li> <li>extensive moderate to severe alligatored transverse cracks</li> <li>frequent moderate pavement edge cracks</li> <li>few distresses patched with cold mix asphalt</li> <li>map/random cracks at maintenance holes</li> <li>see Photographs 20 and 21 in Appendix D</li> </ul>
Spring Garden Road/Bethlehem Avenue	<ul> <li>concrete pavement to curve and asphalt surfaced beyond</li> <li>concrete pavement in good condition</li> <li>see Photographs 22 and 23 in Appendix D</li> <li>few spalled concrete joints (see Photograph 24 in Appendix D)</li> </ul>
Labelle Street	<ul> <li>concrete radius at Huron Church Road and asphalt surfaced beyond</li> <li>pavement in excellent condition</li> <li>see Photograph 25 in Appendix D</li> </ul>

Detroit River International Crossing

## - 21 -

LOCATION	REMARKS
Malden Road	
- south of E.C. Row Expressway	- asphalt surfaced
	- good to excellent condition
	<ul> <li>frequent slight transverse cracks</li> <li>see Photograph 26 in Appendix D</li> </ul>
- north of E.C. Row Expressway	- asphalt surfaced
	- pavements in poor condition
	- see Photographs 27 and 28 in Appendix D
	<ul> <li>severe to very severe single and alligatored transverse cracks throughout (see Photograph 29 in Appendix D)</li> </ul>
	<ul> <li>very severe longitudinal/meander cracks throughout (some</li> </ul>
	patched with cold mix -see Photograph 30 in Appendix D)
	- moderate pavement edge cracks (some patched with cold mix)
Matchette Road	
- north of E.C. Row Expressway	- asphalt surfaced
	- fair condition
	- see Photographs 31 and 32 in Appendix D
	<ul> <li>extensive slight transverse cracks</li> <li>intermittent alligatored wheel path cracks and slight rutting in</li> </ul>
	northbound lanes (see Photograph 33 in Appendix D)
- south of E.C. Row Expressway	- asphalt surfaced
	- fair condition
	<ul> <li>see Photographs 34 and 35 in Appendix D</li> <li>intermittent slight transverse cracks</li> </ul>
	- intermittent slight wheel path ruts
	- intermittent slight wheel path cracks
	- frequent moderate longitudinal cracks (see Photograph 36 in
	Appendix D)
E.C. Row Expressway	
- Huron Church Road to Ojibway Parkway	- asphalt surfaced pavements
	- excellent condition
	- intermittent slight transverse cracks
Ojibway Parkway North	
- E.C. Row Expressway to Prospect Avenue	- asphalt surfaced to just north of rail crossing
	- asphalt in poor condition
	<ul> <li>moderate transverse cracks throughout</li> <li>moderate longitudinal cracks throughout, some alligatored</li> </ul>
	<ul> <li>frequent moderate map cracks</li> </ul>
	- concrete pavements north of rail crossing
	- concrete pavements in poor condition
	<ul> <li>approximately 30 per cent of transverse joints failed (blow ups) with some concrete patches and poorly performing asphalt</li> </ul>
	patches (see Photographs 37 and 38 in Appendix D)
	- few moderate longitudinal/crescent cracks
Officiary Devices C. d	
<i>Ojibway Parkway South</i> - E.C. Row Expressway to Weaver Road	- asphalt surfaced pavements
L.C. Now Expressivity to weaver road	<ul> <li>poor condition in southbound lanes from E.C. Row Expressway</li> </ul>
	to Broadway Street
	- severe depressed transverse cracks throughout
	<ul> <li>extensive moderate longitudinal cracks</li> <li>northbound lanes and southbound lanes south of Broadway Street</li> </ul>
	in fair condition
	<ul> <li>slight single and multiple transverse cracks throughout, blow ups</li> </ul>
	- intermittent slight meander cracks
	- moderate centerline joint cracks throughout

## 5.0 TRAFFIC VOLUMES

The traffic data provided by URS Canada Inc. for the entire project are attached in Tables I-A to I-F following the text of this report. A summary of the projected 2015 traffic data for the proposed Highway 401 mainline extension/access route to the bridge for the various alternatives is provided below:

HIGHWAY 401 ACCESS ROUT		ALT	<u>1a</u>	<u>ALT</u>	<u>1b</u>	<u>ALT :</u>	<u>2a</u>	<u>ALT</u>	<u>2b</u>	ALT	3	<u>PKWA</u>	<u>Y ALT</u>
FROM	то	AADT	% COMM.	AADT	% COMM.	AADT	% COMM.	AADT	% COMM.	AADT	% COMM.	AADT	% COMM.
WESTBOUND LANES								~					
North Talbot Road	Howard Avenue	19,972	27.6	19,954	27.2	19,958	27.4	19,958	27.4	19,936	27.0	19,954	27.2
Howard Avenue	St. Clair College	19,026	27.4	19,664	27.6					19,359	26.8	14,993	27.6
St. Clair College	Pulford Street			16,522	25.2	<						9,858	29.5
Pulford Street	E.C. Row Expressway			22,550	19.8								
Howard Avenue	Todd Lane					17,735	24.4	17,735	24.4				
Todd Lane	E.C. Row Expressway					22,373	18.0	22,373	18.0				
St. Clair College	Highway 3/Huron Church Road	16,155	24.8		$\sim$	>						20,784	25.2
St. Clair College	E.C. Row Expressway									16,845	23.0	,	
Highway 3/Huron Church Road	Malden Road	7,502	55.7										
E.C. Row Expressway	Malden Road			7,414	53.3	7,274	53.8	7,274	53.8	7,336	55.3		
Malden Road	Ojibway Parkway	10,678	43.5	10,591	41.8	10,449	41.7	10,449	41.7	10,498	42.9		
Ojibway Parkway	EC Row Expressway	7,521	59.5	7,296	58.0	7,243	57.8	7,243	57.8	7,381	58.7	7,577	58.0
EC Row Expressway	Canadian Plaza	10,032	58.7	9,987	57.9	9,981	57.8	9,981	57.8	10,009	58.1	9,987	57.9
EASTBOUND LANES													
Canadian Plaza	Ojibway Parkway	18,007	52.4	17,980	52.0	18,028	52.8	18,028	52.8	18,010	52.4	17,980	52.0
Ojibway Parkway	EC Row Expressway	31,533	27.6	31,533	27.6	31,610	28.2	31,610	28.2	31,565	28.1	27,348	27.6
EC Row Expressway	Malden Road	18,914	51.3	18,914	51.3	18,476	52.2	18,476	52.2	18,546	53.3	14,333	51.3
Malden Road	Highway 3/Huron Church Road or E.C. Row Expressway	14,382	58.0	14,231	55.2	13,766	56.4	13,766	56.4	13,841	57.7	14,333	51.3
Highway 3/Huron Church Road	St Clair College	24,917	32.5							25,086	33.7	30,697	27.3
E.C. Row Expressway	Pulford Street			30,422	27.3								
Pulford Street	St Clair College			24,232	34.5							22,166	27.3
E.C. Row Expressway	Todd Lane					29,083	27.3	29,083	27.3				
Todd Lane	Howard Avenue					23,313	30.1	23,313	30.1				
Howard Avenue	Highway 3					27,051	25.3	27,051	25.3				
St Clair College	Howard Avenue	21,477	35.0	21,700	34.9					22,105	34.7	22,874	34.9
Howard Avenue	North Talbot Road	21,529	36.2	21,530	36.3	29,133	27.1	29,133	27.1	21,550	36.3	27,843	36.3

## 6.0 GRANULAR MATERIALS

The general area of the project lacks crushable gravel. Sandy material may be available from pits in the vicinity of Leamington. The high quality hot mix asphalt aggregates would have to be imported from great distances, either by truck or by water/truck transportation. The availability of aggregates from the following licensed sources needs to be investigated by bidders at the time of tendering. Aggregates transported by water from quarries in the USA, or from Canadian sources, need to be stockpiled and sampled at dock sites.

## 6.1 Granular Base and Subbase

Aggregate materials for Granular B Type I may be obtained from pits in the sandy delta deposit at Learnington, such as:

- Sterling Acres Farms Limited, Lot 24, Concession 5, Gosfield South Township, 4 kilometres northwest of Learnington.
- Erie Sand and Gravel Limited, Lots 23 and 24, Concessions 3 and 4, Gosfield South Township, 4 kilometres northwest of Learnington.
- Erie Sand and Gravel Limited, Lots 1, 2 and 3, Concession 2, Mersea Township, 2.4 kilometres west of Learnington.

This type of aggregate might also be obtained from pits under wayside permits from the same deposit provided the requirements of the Aggregate Resources of Ontario Provincial Standards under the Aggregate Resources Act are met by the Contractor. Careful selection would be required, as some of the sands are too fine for Granular B Type I.

Granular B Type II aggregates may be available from the following quarries:

- Amherst Quarries (1969) Anderdon quarry, Lots 9 and 10, Concession 7, Anderdon Township, 4 kilometres northwest of McGregor. It should be noted that this quarry has not reportedly been active recently for aggregate production.
- Amherst Quarries (1969) Limited quarry, Lots 21 and 22, Concession 2, Malden Township, 1.5 kilometres east of Amherstberg.
- The 671173 Ontario Limited quarry, Lot 27, the Ben Koop quarry, Lot 13 and the 670028 Ontario Limited quarry, Lots 1, 2, 12 and 13 in Registered Plan 35, Pelee Township, on Pelee Island, approximately 1 kilometre east of the Scudder dock. Transportation for these quarries is through the Kingsville dock. In the past, the main products from these quarries were armor stone, subbase and base aggregates for Pelee Island.
- Lafarge Canada Inc. Manitoulin Dolomite quarry, Lots 41 to 45, Concession 8, Dawson Township, 9.4 kilometres west of Meldrum Bay on Manitoulin Island, or quarries from the USA, all via the docks at Kingsville or the docks in Windsor.

Possible Granular A sources for the project are:

- Amherst Quarries (1969) Anderdon quarry; however excess material passing the 75 micrometre sieve may be problematic.
- Huron Gravel Limited pit in a large kame deposit, Lots 16, 17 and 18, Concession 13 LES, 11.5 kilometres east of Chatham. A dragline is currently in operation. The stone quality of pit run material is borderline for Granular A due to the presence of Kettle Point shale boulders. To improve the product, these boulders should be removed before crushing. The addition of screenings or suitable sand is required due to a lack of fines in order to meet Ministry specifications and to facilitate compaction.
- Lafarge Canada Inc. Manitoulin Dolomite quarry or quarries in the USA.
- Quarries on Pelee Island through the Kingsville dock; however, excess fines passing the 75 micrometre sieve may be problematic.

In addition to the use of virgin materials, since the majority of the pavements at the site are designated for removal and full reconstruction, recycling of the existing pavement materials into new granular base and subbase should be fully explored.

## 6.2 Asphaltic Concrete

SuperPave mixtures are to be used throughout and SuperPave aggregates would likely be producible from quarries or pits that can currently produce HDBC coarse and fine aggregates, subject to the materials meeting the additional testing requirements. For the top 100 millimetres of SuperPave asphalt, the fine aggregates could be obtained from HDBC fine aggregate sources, if properly processed.

Heavy duty binder course (HDBC) aggregates may be obtained from the following sources:

- Amherst Quarries (1969) Anderdon quarry; only the top bench consisting of Anderdon limestone is suitable.
- Lafarge Canada Inc. Manitoulin Dolomite quarry.
- Quarries in the USA.
- Beachvilime Limited, two quarries in Lots 13, 14 and 15, Broken Front, and Lots 14, 15, 17 and 18, Concessions 2 and 3, Oxford on Thames Geographic Township, 2.5 and 3.5 kilometres, respectively, south of Beachville. Aggregate may break down during handling.
- Global Stone Ingersoll Limited quarry, Lots 13, 14 and 15, Concessions 2, 3 and 4, North Oxford Geographic Township, 4.5 kilometres southwest of Beachville. Aggregate may break down during handling.

HDBC fine aggregates may be available from some of the quarries that can produce HDBC coarse aggregate, if properly processed. The Dufferin Aggregates Milton quarry and the Lafarge Canada Inc. Dundas quarry produce HDBC fine aggregates on a routine basis. The Beachvilime Limited and Global Stone Limited quarries have produced

HDBC fine aggregate, but specific approval for quality and gradation is required as the aggregate may break down during processing.

Asphalt pavement mixes may be produced by portable plants operated by contractors close to the project or by stationary plants in Chatham and/or Windsor. The location of portable asphalt plants in pits or other locations need to be cleared with local municipal authorities.

## 6.3 Concrete

Concrete aggregates may be available from the following sources:

- Lafarge Canada Inc. Manitoulin Dolomite Quarry;
- Lafarge Canada Inc., Lots 3 and 4, Concession 6, London Township;
- Huron Gravel Ltd., Harwich Township (fine aggregate);
- Osbourne Materials Company, Drummond Island quarry via Kingsville or Windsor;
- Presque Isle Corporation, Michigan, via Kingsville or Windsor;
- Michigan Limestone Operations, via Kingsville or Windsor;
- Smelter Bay Aggregates Inc., Sowerby pit, via Kingsville or Windsor;
- Blue Circle Aggregates, Lot 3, Concession 5, London Township;
- Erie Sand and Gravel Limited, Tyhurst Pit (fine aggregate);
- Lobo Sand and Gravel, Lots 11 and 12, Concession 9, Township of Lobo (fine aggregate); and
- Fowler Construction Company Ltd., 11 kilometres north of junction of Highway 12 and Simcoe County Road 44 (coarse aggregate).

- 25 -

## 7.0 PAVEMENT DESIGN

## 7.1 General

The proposed pavement sections have been analyzed using the American Association of State Highway and Transportation Officials (AASHTO) design methods, the Canadian Portland Cement Association (PCA) design method and the Asphalt Institute (1991) design method together with our knowledge of previous MTO experiences and standards and employing good engineering judgement. A discussion of the various pavement design methods used for this project is provided in Section 7.2.

It should be noted that only relatively limited cost information is available for SuperPave mixes at this time. Therefore, the life cycle costing analyses reported throughout this report are based on the costs utilized on recent adjacent projects.

The following are relevant SuperPave mixes together with the lift thicknesses currently specified by MTO:

	SUPERPAVE MIX	LIFT THICKNESS (mm)
	SuperPave 12.5 FC 2	38 to 50
	SuperPave 12.5 FC 1	38 to 50
	SuperPave 12.5	38 to 50
	SuperPave 19.0	50 to 75
	SuperPave 25.0	75 to 100
	SuperPave 9.5	nil to 30

## 7.2 Discussion of Pavement Design Methods

## 7.2.1 AASHTO (1993) Design Method

The AASHTO design method is a statistically based method calibrated using the results from the AASHTO Road Test carried out in the late 1950's and early 1960's. Thus, there are some limitations to the application of this design method. The limitations are discussed in Section 1.4.2 of the Guide and are summarized below:

- a) limited pavement types (asphaltic concrete, granular base and subbase only for flexible pavements, rigid pavements with and without reinforcement but always with dowels);
- b) limited subgrade types;

- c) traffic loadings (road test terminated at 1,114,000 axle applications, thus use of design equivalent single axle loads (ESALs) in excess of eight million requires extrapolation beyond the equations developed);
- d) age (aging effects are ignored as the road test was terminated after two years); and
- e) environment (road test carried out in Ottawa, Illinois, U.S.A.).

The design method has been updated several times since inception, and recently the MTO undertook a study to adapt the AASHTO method to Ontario conditions and the results were provided in ERES Consultants Final Report entitled "Adaptation and Verification of AASHTO Pavement Design Guide for Ontario Conditions" dated February 22, 2001.

The benefits of employing the AASHTO method, particularly when properly calibrated to Ontario conditions, are that advanced conditions such as reliability, drainage, frost susceptible subgrades and swelling may be incorporated directly.

Since the AASHTO design method has not, until very recently, been scrutinized under Ontario conditions, the computed pavement structure must be verified using experience, judgement and comparison with other accepted pavement design methods.

## Flexible Pavements

The results of the AASHTO design method for flexible pavements are sensitive to the input parameters, particularly subgrade resilient modulus and the initial and terminal serviceability factors. In addition, the scaling of layer coefficients is not consistent with the GBE concept. Designing for a specific GBE or structural number (SN) will cause discrepancies with other GBE based methods.

## Rigid Pavements

Based on the comparison by Darter, Hall and Kuo (1995) as summarized in the Adaptation of AASHTO for Ontario guide, the largest factors to be questioned in the rigid pavement model are the composite modulus of subgrade reaction, and the J factor. The above referenced review notes that the nomograph for composite modulus of subgrade reaction produces unrealistically high values and overestimates the support actually experienced in the field. In addition, the J factor, which is a stress load factor across cracks and/or joints, is not properly applied in the AASHTO method and is intended to account for corner cracking. Joint faulting is not considered in the AASHTO analyses.

The above and other factors were addressed in the 1998 supplement to the guide, and the 1998 method has been examined and calibrated for Ontario conditions.

## 7.2.2 Asphalt Institute (AI) Design Method

The AI design method is based on a theoretical multilayered elastic system. However, the results of analyses using the AI method tend to provide asphaltic thicknesses well in excess of those typically employed in current practice. The main reason is the perceived notion that base and/or subbase courses greater than 300 millimetres in thickness do not provide additional structural capacity to the pavement structure as stated in the following excerpt from the AI design guide:

"Some agencies employ greater thicknesses of untreated aggregate base to try to minimize the potential for frost damage in the pavement. Although thicknesses greater than 300 millimetres are used for this purpose, pavement analysis studies have shown that this additional thickness adds little benefit if any to the structural behavior of the pavement system....Reducing the asphalt concrete thickness because of very large thicknesses of untreated aggregate is discouraged by the Asphalt Institute and most pavement designers because the potential for other pavement problems will increase."

The results of the AI design method will be scaled using typical GBE factors to develop a more typical pavement section based on past MTO experience and current design philosophies.

## 7.2.3 Canadian Portland Cement Association (PCA) Design Method

As indicated in the PCA "Thickness Design for Concrete Highway and Street Pavements" manual, the pavement design methods are based on pavement theory, performance, and research experience from:

- theoretical pavement slab studies by Westergaard and Pichett & Ray, and the results of finite element analyses,
- model and full scale testing,
- experimental pavements, and
- performance of existing pavements.

It is indicated that an emphasis has been placed on calibration of the design model to the performance of existing pavements.

The design method allows independent consideration of subgrade and base courses, subgrade resilient modulus, traffic and includes consideration of fatigue (to control fatigue cracking) and erosion (to control subgrade and shoulder erosion, pumping and faulting). The analysis can also consider plain jointed, doweled and continuously reinforced pavements.

The results of the PCA design method will be compared to the results of the AASHTO analyses and MTO experience to determine an appropriate design slab thickness.

## 7.2.4 Comparison of Pavement Design Methods

Comparisons of the results of the various pavement design methods were carried out as part of the pavement design process. The results of the AASHTO and Asphalt Institute flexible pavement design methods and the results of the AASHTO and Canadian Portland Cement Association rigid pavement design methods are compared on Figure 8 for the project specific conditions. Subgrade condition 1, as described in Sections 7.5.2 and 7.5.4 below, were used for the comparison.

Based on the results of the comparisons and our experience in the Windsor area, the AASHTO method yields reasonable results and has been used as the primary design tool for assessing the various pavement design alternatives.

## 7.3 Discussion of Life Cycle Cost Methods

The life cycle costing has been carried out in accordance with ERES Consultants Inc. Report entitled "Review of Life Cycle Costing Analysis Procedures" dated December 1998. Consistent with MTO direction, the discount rate utilized in the analyses is 5.0 per cent and, for flexible pavements, rehabilitation strategies have consisted of milling 50 millimetres and paving 50 millimetres of SuperPave 19.0 and 40 millimetres of surface course appropriate for the traffic conditions. For concrete pavements, a 50 millimetre asphalt overlay is provided in year 38.

The unit rates used in the life cycle costing are:

MATERIAL/ACTIVITY	UNIT RATE
SuperPave 12.5 FC2	\$140/tonne
SuperPave 12.5 FC1	\$120/tonne
SuperPave 12.5	\$85/tonne
SuperPave 19.0	\$90/tonne
SuperPave 25.0	\$90/tonne
OGDL	\$13/tonne
Granular A Base	\$20/tonne
Granular B Type III Subbase	\$18/tonne
Concrete – 175 to 200 mm	$64/m^{2}$
Concrete – 200 to 225 mm	\$66/m <sup>2</sup>
Concrete – 225 to 260 mm	\$68/m <sup>2</sup>
Concrete – 260 to 290 mm	\$70/m <sup>2</sup>
Concrete – 290 to 330 mm	\$73/m <sup>2</sup>
rout and seal	\$1.50/m

\$1.75/m <sup>2</sup>
$2.25/m^2$
\$50/m <sup>2</sup>
\$5/m
\$5/m <sup>2</sup>
\$25/m

## 7.4 Concept Pavement Design

Based on the information provided in the Request for Proposal for this project, the MTO has advised that typical pavement designs for freeways in the area of this project consist of:

RIGID PAVEME	NT	FLEXIBLE PAVEMENT			
COMPONENT	THICKNESS		THICKNESS		
	(mm)		(mm)		
Plain Jointed Concrete	260	Stone Mastic Asphalt	40		
Open Graded Drainage Layer	100	SuperPave 19.0	70		
Granular A Base	300	SuperPave 25.0	190 (2@95)		
		Open Graded Drainage Layer	100		
		Granular A Base	500		

The above noted pavement structures include continuous subdrains hydraulically connected to the open graded drainage layer (OGDL) that discharges to a positive gravity outlet.

It should be noted that the rigid pavement design noted above is considered to be applicable for the better drained and typically stiffer upper weathered crust in the area and may not necessarily be appropriate for the typical weaker and not as well drained soils in the depressed profile areas.

## 7.5 Pavement Design Model

## 7.5.1 Traffic Loading

The average annual daily traffic (AADT) loadings and per cent commercial vehicles for the various pavements under consideration in the Area of Continued Analysis are detailed in Tables I-A to I-F, attached. Calculations of the traffic loadings in terms of equivalent single axle loads (ESALs) were completed using the traffic data provided by URS and appropriate truck factors and lane distribution factors determined based on the anticipated

volume and nature of the loadings and geometry of the proposed pavements. The truck and lane distribution factors utilized are summarized below:

ROAD CLASSIFICATION	NUMBER OF LANES (each direction)	<u>APPROXIMATE</u> <u>Flexible Pavt's</u>	<u>ESALs (millions)</u> <u>Rigid Pavt's</u>	TRUCK <u>FACTOR</u>	LANE DISTRIBUTION <u>FACTOR</u>
Local	1	less than 0.2	less than 10	1.5	1.0
Minor Collector	1	0.2 to 1	10 to 20	1.5	1.0
Major Collector	1 to 2	1 to 6	20 to 50	1.5	1.0
Minor Arterial	2	6 to 20	50 to 100	2.0	0.8 to 0.9
Major Arterial	2	20 to 50	100 to 200	2.0	0.8 to 0.9
Freeway	3	50 to 125	greater than 200	2.5	0.6 to 0.8

The truck factors in the table were based on the anticipated heavy traffic loading conditions for the various types of pavements. The lane distribution factors were determined based on the proposed pavement lane configurations, traffic volumes and Table 8-3 of the Ontario AASHTO design guidelines.

The cumulative ESAL loading were used to describe the roadway classification for the purposes of this report. While it may be more convenient for the reader to classify the pavements based on AADT or the like, varying percentage of commercial traffic, lane configuration and the like would not be taken into account, therefore, classification by ESALs was utilized.

The cumulative 19 and 21 year ESALs for the various flexible pavements are summarized in Tables II-A to II-F, attached. The freeway pavements have been based on an initial design life of 21 years and the remainder of the pavements based on an initial design life of 19 years, consistent with MTO standards.

The cumulative 25 year ESALs for the various rigid pavements are summarized in Tables III-A to III-F, attached.

# 7.5.2 AASHTO Analyses – Flexible Pavements

To carry out the AASHTO analyses, estimates of initial and terminal serviceability indices (ISI & TSI, respectively) and reliability (R) are required. The criteria for selecting the appropriate values of these parameters is dependent on the anticipated volume, the nature of the loadings and geometry of the proposed pavements. The initial and terminal serviceability indices and reliability used for the various pavements are summarized below:

ROAD CLASSIFICATION	INITIAL SERVICEABILITY INDEX	TERMINAL SERVICEABILITY INDEX	RELIABILITY
			(%)
Local	4.5	2.0	50
Minor Collector	4.5	2.0	75
Major Collector	4.5	2.0	75
Minor Arterial	4.5	2.2	85
Major Arterial	4.5	2.5	90
Freeway	4.5	2.5	95

The initial and terminal serviceability indices were selected in general accordance with the revised Table 8-4 of the Ontario AASHTO design guidelines. The design reliability was selected based on experience gained with other similar projects and the AASHTO design guidelines.

## Subgrade Resilient Modulus, MR

Based on the nature of the subgrade soils and our related experience in the Windsor area, a subgrade resilient modulus of 25 megapascals (MPa) is considered appropriate for the clayey crust soils that typically have an undrained shear strength in excess of about 100 kilopascals and is consistent with the recommendations for low to medium plasticity clays as indicated in Table 8.6 of the "Adaptation and Verification of AASHTO Pavement Design Guide for Ontario Conditions" document and is also consistent with the typical pavement thicknesses constructed by MTO in this area.

As indicated in Section 3.1.2 and on Figures 5, 6 and 7, the undrained shear strength beneath the upper weathered crust decreases significantly. While undrained shear strength cannot be directly correlated to resilient modulus, the shear strength data clearly indicates a reduction in support characteristics for the pavements. Therefore, for the various alternatives, the resilient moduli used in the analyses are:

SUBGRADE	SUBGRADE UNDRAINED	SUBGRADE RESILIENT
CONDITION	SHEAR STRENGTH	MODULUS
	(kPa)	(MPa)
1	greater than 100	25
2	75 to 100	20
3	less than 75	15

- 32 -

Based on the results of the investigation carried out for the foundations component of the project, the following table summarizes the subgrade conditions expected at various locations throughout the project for subgrade levels at grade, 3 metres below grade and 6 metres below grade:

		SUBGRADE CONDI	TION
LOCATION	At Grade	3 m Below Grade	6 m Below Grade
Proposed Highway 401			
Highway 401/Highway 3 to Geraedts	1	1	2
Drive			
Geraedts Drive to 700m west of Huron	1	1	3
Church Road			
700m west of Huron Church Road to	1	1	2
Cabana Road			
Cabana Road to 100 m north of Pulford	1	1	3
Street			
100m north of Pulford Street to 200m west	1	1	2
of Malden Road			
200 to 600 m west of Malden Road	1	2	2
600 m west of Malden Road to Ojibway	1	2	3
Parkway			
Ojibway Parkway (E.C. Row Expressway	1	2	3
to Sandwich Street)			
,			
Structural Number			

### Structural Number

The above-noted classifications and the required structural numbers suggested for each roadway class are summarized on Figures 9, 10 and 11, attached, for the three subgrade conditions considered.

Utilizing the above information, the following representative flexible pavement structural numbers were calculated for the major pavements to be constructed. The following structural numbers provide a general sense of the pavement structure required. Detailed information for the individual pavement sections analyzed is provided in Tables II-A to II-F:

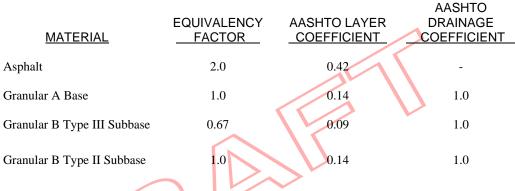
LOCATION	STRUCTURAL NUMBER (mm)			
	Condition 1	Condition 2	Condition 3	
Highway 401				
- westbound	208	222	240	
- eastbound	222	236	255	
Huron Church Road				
- northbound	144	154	167	
- southbound	177	189	205	
E.C. Row Expressway				
- westbound	148	158	172	
- eastbound	174	185	201	

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Detroit River International	Crossing	- 34 -
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LOCATION	STRUC	TURAL NUMBI	ER (mm)			
	Condition 1 Condition 2 Condition					
Ojibway Parkway						
- northbound	112	120	130			
- southbound	135	145	158			

The structural analyses for the proposed new pavement sections were carried out using the design nineteen year traffic loadings and the following equivalency factors and AASHTO layer coefficients:



# 7.5.3 Preliminary Flexible Pavement Design

As noted above, while it may be more convenient for the reader to classify the pavements based on AADT or the like, varying percentage of commercial traffic, lane configuration and the like would not be taken into account, therefore, classification by ESALs was utilized. To aid in the assessment of appropriate pavement structures for the various roadways under consideration, Tables II-A to II-F summarize the cumulative ESALs and roadway classification to be used for design.

Based on the results of the analyses, appropriate pavement structures for the various pavements within the project consist of:

• Subgrade Condition 1

ROAD CLASSIFICATION	RANGE <u>OF ESALs</u> (millions)	STRUCTURAL <u>NUMBER</u> (mm)	PA <u>Asp</u> <u>Surface</u>		OMPONENT TH OGDL	IICKNESS (mm) Granular A Base
Local	less than 0.2	<75	40	50	-	300
Minor Collector	0.2 to 1	75-95	40	90	-	300
Major Collector	1 to 6	95-120	40	110	-	400
Minor Arterial	6 to 20	120-150	40	120	-	550
Major Arterial	20 to 50	150-180	40	190	-	600
Freeway	50 to 125	>180	40	260	100	500

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#### Subgrade Condition 2 •

ROAD CLASSIFICATION	RANGE OF ESALs	STRUCTURAL NUMBER	PAVE	MENT COM	IPONENT THI	CKNESS (mm)
	(millions)	(mm)	Asp		OGDL	Granular A Base
			Surface	<u>Binder</u>		
Local	less than 0.2	<75	40	50	-	300
Minor Collector	0.2 to 1	75-95	40	90	-	350
Major Collector	1 to 6	95-130	40	120	-	450
Minor Arterial	6 to 20	130-160	40	150	-	600
Major Arterial	20 to 50	160-190	40	220	-	600
Freeway	50 to 125	>190	40	260	100	600

#### Subgrade Condition 3 •

• Subgrade C	Condition 3				$\langle \rangle$	
ROAD CLASSIFICATION	RANGE <u>OF ESALs</u> (millions)	STRUCTURAL <u>NUMBER</u> (mm)	Asph		MPONENT THI	CKNESS (mm) Granular A Base
		$\wedge$	Surface			
Local	less than 0.2	<75	40	50	-	350
Minor Collector	0.2 to 1	75-100	40	90	-	350
Major Collector	1 to 6	100-135	40	130	-	500
Minor Arterial	6 to 20	135-180	40	190	-	600
Major Arterial	20 to 50	180-220	40	260	-	600
Freeway	50 to 125	>220	40	300	100	650

Alternative 3 involves the construction of cut and cover tunnels to convey the traffic and it is understood that the Highway 401 main line pavements will be constructed over the tunnel base slab. Therefore, the Alternative 3 main line pavements should consist of:

COMPONENT	THICKNESS (mm)
Surface Asphalt	40
Binder Asphalt	160
OGDL	100

Tables II-A to II-F provide the detailed results of the ESAL calculations and the resultant pavement classification based on the above for each of the pavement sections examined.

In addition, for comparison, alternative pavement designs were considered for Subgrade Condition 1 that incorporate a granular subbase component. These are summarized as follows:

ROAD CLASSIFICATION	RANGE OF ESALs	PAV	EMENT CO	MPONENT THI	CKNESS (mm)
	(millions)			Granular A	Granular B Type III
		Asp		Base	Subbase
		<u>Surface</u>	<u>Binder</u>		
Local	less than 0.2	40	50	100	300
Minor Collector	0.2 to 1	40	90	100	300
Major Collector	1 to 6	40	110	150	400
Minor Arterial	6 to 20	40	120	150	650
Major Arterial	20 to 50	40	190	150	650
Freeway	50 to 125	40	260	100 OGDL	650
				100 Gran A	

# 7.5.4 AASHTO Analyses – Rigid Pavements

For the rigid pavement analyses, the initial and terminal serviceability indices and reliabilities used for the flexible pavement analyses were utilized.

# Modulus of Subgrade Reaction

Based on the nature of the subgrade soils and our related experience, a modulus of subgrade reaction of 30 megapascals per metre (MPa/m) is considered appropriate for the clayey crust soils that typically have an undrained shear strength in excess of about 100 kilopascals and is consistent with the recommendations for low to medium plasticity clays as indicated in Table 8.9 of the "Adaptation and Verification of AASHTO Pavement Design Guide for Ontario Conditions" document.

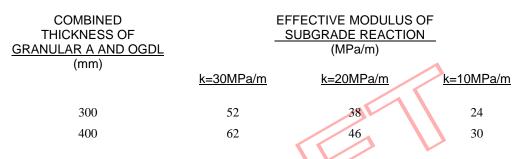
As indicated in Section 3.1.2 and on Figures 5, 6 and 7, the undrained shear strength beneath the upper weathered crust decreases significantly. While undrained shear strength cannot be directly correlated to modulus of subgrade reaction, the shear strength data clearly indicates a reduction in support characteristics for the pavements. Therefore, for the various alternatives, the moduli of subgrade reaction used in the analyses are:

SUBGRADE	SUBGRADE UNDRAINED	MODULUS OF
CONDITION	SHEAR STRENGTH	SUBGRADE REACTION
	(kPa)	(MPa/m)
1	greater than 100	30
2	75 to 100	20
3	less than 75	10

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The table previously provided in Section 7.5.2 summarizes the subgrade conditions expected at various locations throughout the project for subgrade levels of at grade, 3 metres below grade and 6 metres below grade.

The structural analyses for the proposed new pavement sections were carried out using the design twenty five year traffic loadings, in terms of ESALs, and the effective moduli of subgrade reaction for various Granular A and OGDL thicknesses beneath the slabs for the following effective moduli of subgrade reaction, k.



The values for effective modulus of subgrade reaction are based on Table 1 in the CPCA "Thickness Design for Concrete Highway and Street Pavements."

In addition to the above, the following input parameters were used in the AASHTO rigid pavement analyses:

PARAMETER_	VALUE
Modulus of Rupture, S <sub>c</sub> ' Elastic Modulus, E <sub>c</sub>	5 MPa 30,000 MPa
Load Transfer Coefficient, J	
- 0.5m monolithic shoulder	2.5
- no tied shoulder	3.2

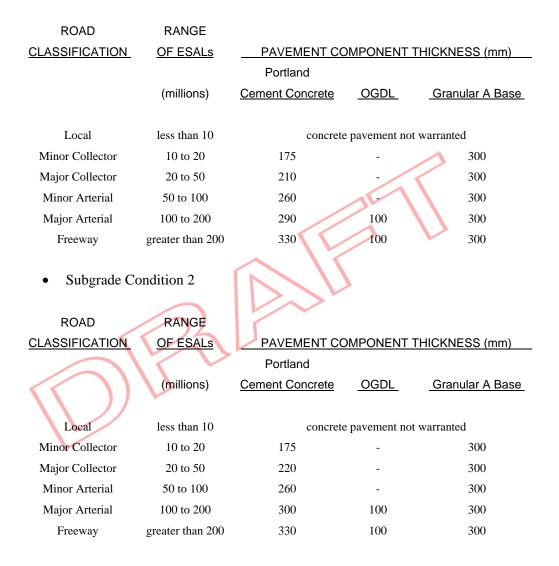
The appropriate pavement classifications and the required slab thicknesses suggested for each roadway class and subgrade condition, based on the above input information, are summarized on Figures 9, 10 and 11.

## 7.5.5 Preliminary Rigid Pavement Design

As noted above, while it may be more convenient for the reader to classify the pavements based on AADT or the like, varying percentage of commercial traffic, lane configuration and the like would not be taken into account, therefore, classification by ESALs was utilized. To aid in the assessment of appropriate pavement structures for the various roadways under consideration, Tables III-A to III-F summarize the cumulative ESALs and roadway classification to be used for design.

Based on the results of the analyses, appropriate pavement structures for the various pavements within the project consist of:

• Subgrade Condition 1



# • Subgrade Condition 3

ROAD	RANGE					
CLASSIFICATION	OF ESALs	PAVEMENT COMPONENT THICKNESS (mm)				
		Portland				
	(millions)	Cement Concrete OGDL Granular A Base				
Local	less than 10	concrete pavement not warranted				
Minor Collector	10 to 20	190	-	300		
Major Collector	20 to 50	225	-	300		
Minor Arterial	50 to 100	260	-	400		
Major Arterial	100 to 200	300	100	400		
Freeway	greater than 200	330	100	400		

Alternative 3 involves the construction of cut and cover tunnels to convey the traffic and it is understood that the Highway 401 main line pavements will be constructed over the tunnel base slab. Therefore, the Alternative 3 main line pavements should consist of:



Tables III-A to III-F provide the detailed results of the ESAL calculations and the resultant pavement classification based on the above for each of the pavement sections examined.

# 7.6 Life Cycle Cost Analyses

Life cycle cost analyses were carried out for the alternative pavement designs above consistent with the procedures outlined in Section 7.3. In accordance with MTO procedures, the following maintenance and rehabilitation strategies were utilized in assessing the life cycle costs:

<u>YEAR</u>	LIGHT AND MEDIUM	HEAVY DUTY	CONCRETE
	DUTY PAVEMENTS	PAVEMENTS (FREEWAY)	PAVEMENTS
3	Rout & Seal (59m)	Rout & Seal (59m)	
9	Mill 40mm and Patch (293m <sup>2</sup> )	Mill 40mm and Patch (293m <sup>2</sup> )	
	Rout & Seal (156m)	Rout & Seal (156m)	
12			Joint Reseal
			(50% of transverse joints,
			25% of longitudinal joints)
15	Mill 40mm and Patch (880 m <sup>2</sup> )	Mill 40mm and Patch (880m <sup>2</sup> )	
	Rout & Seal (352m)	Rout & Seal (352m)	
18			Diamond Grinding, Resealing,
			Patching
19	Mill 50mm and 90mm Overlay	Mill 40mm and Patch (440m <sup>2</sup> )	1
		Rout & Seal (244m)	
21		Mill 50mm and 90mm Overlay	
22	Rout & Seal (59m)	$\sim$	
24		Rout & Seal (59m)	
27	Mill 40mm and Patch (440m <sup>2</sup> )		
	Rout & Seal (244m)		
28	$(V_{n})$	Mill 40mm and Patch (440m <sup>2</sup> )	Extensive Patching, Diamond
	$\sim$	Rout & Seal (352m)	Grinding, Joint Resealing
31	Mill 50mm and 90mm Overlay	Rout & Seal (244m)	
34	Rout & Seal (59m)	Mill 50mm and 90mm Overlay	
37		Rout & Seal (59m)	
38	Mill 40mm and Patch (440m <sup>2</sup> )		50mm asphalt overlay
	Rout & Seal (244m)		
41			Rout & Seal
			(70% of transverse cracks)
42	Mill 50mm and 90mm Overlay	Mill 40mm and Patch (440m <sup>2</sup> )	
		Rout & Seal (352m)	
44		Rout & Seal (244m)	Rout & Seal
			(30% of transverse cracks,
			50% of longitudinal cracks)
45	Rout & Seal (59m)		
46		Mill 50mm and 90mm Overlay	
48	Mill 40mm and Patch (440m <sup>2</sup> )		
	Rout & Seal (244m)		
49		Rout & Seal (59m)	

These strategies are illustrated on Figure 12.

Using the above-noted rehabilitation strategies, the following life cycle costs were determined:

• Subgrade Condition 1

		LIFE CYCLE COST (\$ PER LANE KM)				
		Flexible				
	Granular Base	e Alternative	Granular Subba	ase Alternative	Rigid Pa	vement
ROAD		Total Life		Total Life		Total Life
<b>CLASSIFICATION</b>	Capital Cost	Cycle Cost	Capital Cost	Cycle Cost	Capital Cost	Cycle Cost
Local	109,400	192,964	122,020	205,529		
Minor Collector	137,890	221,330	150,704	234,088	272,990	334,651
Major Collector	180,694	271,672	201,952	292,837	280,959	344,616
Minor Arterial	201,689	292,576	233,057	323,807	275,471	339,151
Major Arterial	264,991	360,016	288,502	383,424	284,752	349,552
Freeway	382,246	479,759	413,684	511,060	346,807	411,337
Tunnel Section	208,601	306,871	208,601	306,871	270,326	335,189
			>			

- bold represents preferred alternative

Based on the life cycle costing, flexible pavements are preferred for the local roadways, minor and major collector and minor arterial pavements. Rigid pavements are preferred for the major arterial and freeway pavements.

• Subgrade Condition 2

	LIFE	LIFE CYCLE COST (\$ PER LANE KM)			
	Flexible I	Pavement	Rigid Pa	vement	
ROAD		Total Life		Total Life	
<b>CLASSIFICATION</b>	Capital Cost	Cycle Cost	Capital Cost	Cycle Cost	
Local	109,400	192,964	-	-	
Minor Collector	146,808	230,209	272,990	334,651	
Major Collector	197,284	288,190	281,488	345,142	
Minor Arterial	230,935	321,694*	275,471	339,151*	
Major Arterial	286,125	381,058	294,303	359,061	
Freeway	404,541	501,957	346,807	411,337	

\*these alternatives are considered equivalent since the life cycle costs are within 5 per cent.

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Based on the life cycle costing, flexible pavements are preferred for the local roadways and minor and major collector pavements. Rigid pavements are preferred for the major arterial and freeway pavements and the flexible and rigid pavement alternatives are considered to be equivalent for the minor arterial pavements.

- 42 -

• Subgrade Condition 3

	LIFE	LIFE CYCLE COST (\$ PER LANE KM)				
	Flexible F	Pavement	Rigid Pa	vement		
ROAD		Total Life		Total Life		
<b>CLASSIFICATION</b>	Capital Cost	Cycle Cost	Capital Cost	Cycle Cost		
Local	118,180	201,706	-	-		
Minor Collector	146,808	230,209	273,750	335,408		
Major Collector	214,123	304,955	281,755	345,408		
Minor Arterial	259,066	349,702*	291,406	355,017*		
Major Arterial	314,353	409,163	310,376	375,064		
Freeway	446,678	543,910	367,927	432,364		

\*these alternatives are considered equivalent since the life cycle costs are within 5 per cent.

Based on the life cycle costing, flexible pavements are preferred for the local roadways and minor and major collector pavements. Rigid pavements are preferred for the major arterial and freeway pavements and the flexible and rigid pavement alternatives are considered to be equivalent for the minor arterial pavements.

The above-noted total life cycle costs are referred to year 2011 dollars. The alternatives with the lowest total life cycle costs are indicated in **bold** for each road classification and each pavement type. However, based on both the MTO's and our experience in the Windsor area, rigid pavements are preferred at major intersections and any areas where frequent starting/stopping of heavy vehicles is expected.

# 8.0 PRELIMINARY RECOMMENDATIONS

# 8.1 Pavement Components

Based on the results of our analyses and the results of the life cycle costing, flexible pavements should be utilized for the local roadways, minor and major collectors and minor arterials, as follows:

_		THICKNES	S (mm)	
	1 1	Minor	Major	Min en Anteniel
<u>COMPONENT</u>	Local	Collector	Collector	Minor Arterial
Subgrade Condition 1	l			
Surface Asphalt	40	40	40	40
Binder Asphalt	50	90 (2 @ 45)	110 (2 @ 55)	120 (2 @ 60)
Granular A Base	300	300	400	550
			$\nearrow$ $\checkmark$	
Subgrade Condition 2	2	へへ		
Surface Asphalt	40	40	40	40
Binder Asphalt	50	90 (2 @ 45)	120 (2 @ 60)	150 (2 @ 75)
Granular A Base	300	350	450	600
	$\langle \rangle$			
Subgrade Condition 3				
Surface Asphalt	40	40	40	40
Binder Asphalt	50	90 (2 @ 45)	130 (2 @ 65)	190 (2 @ 60,
				1 @ 70)
Granular A Base	350	350	500	600

However, based on both the MTO's and our experience in the Windsor area, rigid pavements are preferred at major intersections and any areas where frequent starting/stopping of heavy vehicles is expected.

The major arterial and freeway pavements should consist of rigid pavements, as follows:

		THICKNESS (mm)	
COMPONENT	Major Arterial	Freeway	Tunnel
Subgrade Condition 1			
Concrete	290	330	260
OGDL	100	100	100
Granular A	300	300	-

	THICKNESS (mm)					
COMPONENT	Major Arterial	Freeway	Tunnel			
Subgrade Condition 2	2					
Concrete	300	330	260			
OGDL	100	100	100			
Granular A	300	300	-			
Subgrade Condition 3	;					
Concrete	300	330	260			
OGDL	100	100	100			
Granular	400	400	-			

All of the above-noted structures incorporate a 0.5 metre wide tied monolithic shoulder.

# 8.2 Mixture Types

Based on the anticipated traffic volumes and roadway usage, the following mixtures are recommended for the flexible pavements:

• Subgrade Condition 1

	SUR	FACE COURS	SE	BINE	DER COURSES	5
ROAD CLASSIFICATION	<u>Mixture</u>	Thickness	Traffic <u>Category</u>	Mixture	Thickness	Traffic <u>Category</u>
		(mm)			(mm)	
Local	SuperPave 12.5	40	А	SuperPave 19.0	50	А
Minor Collector	SuperPave 12.5	40	В	SuperPave 19.0	90 (2@45)	В
Major Collector	SuperPave 12.5	40	С	SuperPave 19.0	110 (2@55)	С
	FC1					
Minor Arterial	SuperPave 12.5	40	D	SuperPave 19.0	120 (2@60)	D
	FC1					

• Subgrade Condition 2

	SURFA	CE COURSE	-	BINE	DER COURSES	5
ROAD CLASSIFICATION	Mixture	<u>Thickness</u> (mm)	Traffic <u>Category</u>	Mixture	<u>Thickness</u> (mm)	Traffic <u>Category</u>
Local	SuperPave 12.5	40	А	SuperPave 19.0	50	А
Minor Collector	SuperPave 12.5	40	В	SuperPave 19.0	90 (2@45)	В
Major Collector	SuperPave 12.5 FC1	40	С	SuperPave 19.0	120 (2@60)	С
Minor Arterial	SuperPave 12.5 FC1	40	D	SuperPave 19.0	150 (2@75)	D

# - 45 -

# • Subgrade Condition 3

	SURFA	ACE COURSE		BIND	ER COURSES	
ROAD CLASSIFICATION	Mixture	<u>Thickness</u> (mm)	Traffic <u>Category</u>	Mixture	<u>Thickness</u> (mm)	Traffic <u>Category</u>
Local	SuperPave 12.5	40	А	SuperPave 19.0	50	А
Minor Collector	SuperPave 12.5	40	В	SuperPave 19.0	90 (2@45)	В
Major Collector	SuperPave 12.5 FC1	40	С	SuperPave 19.0	130 (2@65)	С
Minor Arterial	SuperPave 12.5 FC1	40	D	SuperPave 19.0	190	D
					(2@60,	
					1@70)	

# 8.3 Construction Considerations

The granular materials should extend laterally full width and daylight to ditches having inverts at least 0.5 metres below subgrade level. In urban sections or in areas where ditches are not practical or feasible, perforated, continuous subdrains should be installed with outlets at appropriate intervals.

For the flexible pavements, if the top lift of binder asphalt is exposed through a winter, thorough cleaning and visual inspection will be required prior to placement of tack coat and surface course asphalt.

# 8.4 Paved Shoulders

Paved shoulders throughout the project should consist of two lifts of asphalt. Lift thicknesses should be equivalent to the adjacent surface course and upper binder course. The surface and binder courses for the non-driveable paved shoulders should be SuperPave 12.5. In any areas where tracking onto paved shoulders is considered likely, such as the inner loops of interchange ramps, the full design lane asphalt thickness and mix type should be provided.

# 8.5 Asphalt Cement Grades

Performance grade asphalt cement is to be used on this project. The asphalt cement grades to be used on this project are:

LOCATION	COMPONENT	PGAC
Major Collector	Surface Course	64-28
and Minor Arterial	Upper Binder Course	64-28
	Lower Binder Courses	58-28

## **Golder Associates**

Detroit River International Crossing	- 46 -	March 2008 05-1140-003-1
LOCATION	COMPONENT	PGAC
Local Roads and Minor Collector	All components	58-28

# 8.6 Tack Coat

Tack coat should be applied between all asphaltic lifts and on any milled surfaces consistent with MTO Southwestern Region directives.



# 9.0 CUT MATERIALS AND DESIGN

# 9.1 Transition Point Treatment

Transition treatment from earth cuts to earth fills and at the limits of subexcavation areas are to be provided in accordance with Ontario Provincial Standard Drawing (OPSD) 205.01. The transition treatment depth, t, should be taken as 1.0 metres less the thickness of asphalt or concrete. For preliminary purposes, the thickness of organic, leached and accumulation layers,  $D_a$ , should be taken as 0.0 metres.

For this project, the frost penetration depth should be taken as 1.0 metres.

Reference should be made to the approach foundation engineering report for additional information regarding the requirement for cut stability and construction issues.

**Golder Associates** 

# 10.0 EMBANKMENT MATERIALS AND DESIGN

# **10.1** Embankment Construction

The embankments should be constructed using good quality, approved earth borrow. Based on the project location, it is anticipated that clayey borrow materials will be utilized. Following stripping of the surficial topsoil and any softened or unsuitable materials, the embankment fill material should be placed in maximum 300 millimetre thick loose lifts and compacted. Upon completion of filling to proposed subgrade level, the embankment side slopes should be trimmed to a final inclination of 2.5 horizontal to one vertical or flatter.

Reference should be made to the appropriate foundation engineering reports for additional information regarding requirement for embankment, settlements and construction issues.

**Golder Associates** 

# 11.0 DRAINAGE

# 11.1 Ditches

The ditches throughout the project should be constructed in accordance with the OPSD 200 series for earth grading with inverts at least 0.5 metres below subgrade level. Subdrains should be provided where this minimum ditch depth is not practical.

Pipe subdrains should be perforated, 100 millimetres in diameter, and placed in a geotextile lined trench 300 millimetres wide in accordance with OPSD 207.041. The trench should be backfilled with 19 millimetre clear stone or OGDL aggregates. At least 300 millimetres of overlap should be provided between the joints in the geotextile.

Any ditch areas which may be wet from conditions such as poor grading or from adjacent surface flows or the like, should be provided with an approved geotextile and appropriately sized rip rap consisting of angular stone or recycled concrete conforming to OPSS 1004.

Geotextile used for pipe subdrains should be Class I, non-woven with a FOS of 75 to 150 microns. Geotextile used under rip rap should be Class II, non-woven with a FOS of 75 to 150 microns.

## - 50 -

#### 12.0 **OTHER DESIGN FEATURES**

#### 12.1 **Recycling of Existing Pavement Materials**

Consideration may be given to recycling the existing asphalt, concrete and/or granular materials into the new pavements. A maximum of 20 per cent recycled asphalt pavement (RAP) may be utilized in the binder courses throughout below a depth of 150 millimetres. A maximum of 30 per cent RAP may be utilized in the granular base in any unpaved shoulders. The contractor must demonstrate that he can produce a suitable product that meets all of the appropriate material specifications on a consistent basis.

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05-1140-003-1

#### TABLE I-A

#### SUMMARY OF TRAFFIC DATA - ALTERNATIVE 1A

Detroit River International Crossing Windsor, Ontario

Pavement Section	LOCATION <u>From</u>	To	A	2 ADT	015 <u>Comm</u>	Vehicles	<u></u> A/	2 . <u>DT</u>	025 <u>Comm</u>	Vehicles	AA		035 <u>Comm</u>	Vehicles
Huron Church Road	Riverside Drive University Avenue Wyandotte Street AMB Off Ramp College Street	University Avenue Wyandotte Street AMB Off Ramp College Girardos Street	NB / WB 6,903 3,208 2,263 17,476 25,318		NB / WB 2.6% 4.3% 1.0% 15.0% 2.9%		NB / WB 6,921 3,185 2,244 18,520 26,148	SB / EB 5,488 3,974 3,139 6,297 24,855	NB / WB 2.7% 4.6% 1.0% 16.5% 3.2%	SB / EB 2.4% 4.1% 1.0% 1.6% 13.4%	NB / WB 6,884 3,071 2,110 19,645 26,159	SB / EB 5,682 4,106 3,240 6,460 25,893	NB / WB 2.9% 5.0% 1.0% 20.5% 3.4%	SB / EB 3.1% 5.0% 1.0% 1.7% 16.5%
	Concept Street Girardo's Street Dorchester Street Prince Road/Totten Street Malden Road Industrial Rd	Tecumseh Road Dorchester Street Prince Road/Totten Street Malden Road Industrial Road	23,518 24,203 27,458 27,503 30,089 24,695 27,133	24,050 23,788 27,231 28,501 31,859 26,711 28,866	2.5% 3.3% 3.5% 3.0% 3.1% 2.4%	12.3% 12.2% 10.6% 9.2% 8.4% 9.2% 8.9%	25,103 28,263 28,314 30,960 24,658 27,916	24,355 24,972 28,077 29,360 33,126 28,107 30,104	3.2% 3.7% 3.8% 3.3% 3.4% 2.5% 2.5%	13.4% 13.0% 11.2% 9.8% 8.6% 9.4% 9.0%	25,638 28,751 28,834 31,699 25,290	25,893 26,470 29,264 30,327 34,496 29,911 32,827	3.5% 3.6% 2.6% 2.6%	15.6% 13.3% 11.7% 10.2% 11.5%
South Service Road	EC Row North Ramp Terminal South of EC Row South Ramp Terminal North of Lambton Street	EC Row North Ramp Terminal EC Row South Ramp Terminal	20,198 24,716 N/A	34,938 26,836 10,483	2.2% 2.3% N/A	7.1% 7.5% 1.5%	20,480 27,674 N/A	37,897 28,928 12,380	2.3% 2.4% N/A	7.0% 7.1% 1.4%	28,563 21,332 29,933 N/A	41,573 32,061 14,423	2.3% 2.4% N/A	10.6% 8.1% 8.0% 1.4%
	Lambton Street Todd Lane/Cabana Road St Clair College Cousineau Drive	Todd Lane/Cabana Road St Clair College Cousineau Drive Howard Avenue	N/A N/A N/A	9,429 16,021 9,288 6,287	N/A N/A N/A N/A	1.3% 0.4% 1.9% 3.1%	N/A N/A N/A N/A	11,489 17,084 9,834 6,313	N/A N/A N/A N/A	1.2% 0.5% 2.1% 3.1%	N/A N/A N/A N/A	13,362 18,371 10,653 6,582	N/A N/A N/A N/A	1.2% 0.5% 2.2% 3.2%
North Service Road	East of Howard Avenue North of Labelle Street Labelle Street Grand Marais Road Ramp Pulford Street Todd Lane/Cabana Road St Clair College Cousineau Drive	Grand Marais Road Ramp Pulford Street Todd Lane/Cabana Road St Clair College Cousineau Drive Howard Avenue	N/A 25,245 24,277 12,425 12,314 6,976 14,452 7,417	12,060 N/A N/A N/A N/A N/A N/A N/A	N/A 1.9% 1.3% 1.2% 1.3% 1.0% 0.5% 2.4%	2.0% N/A N/A N/A N/A N/A N/A	N/A 28,297 27,609 13,788 14,331 7,167 14,675 7,599	13,024 N/A N/A N/A N/A N/A N/A	N/A 1.9% 1.2% 1.3% 1.0% 0.5% 2.6%	1.9% N/A N/A N/A N/A N/A N/A	N/A 30,429 29,689 14,568 15,197 7,428 15,278 8,010	14,106 N/A N/A N/A N/A N/A N/A	N/A 2.0% 1.4% 1.5% 1.0% 0.6% 3.1%	2.0% N/A N/A N/A N/A N/A N/A
Ojibway Parkway	East of Howard Avenue EC Row Expressway GN Booth Drive Sandwich Street North of Prospect Avenue	GN Booth Drive Sandwich Street Prospect Avenue	13,630 10,180 10,116 9,479 9,416	N/A 10,555 10,431 9,729 9,510	2.1% 2.2% 2.2% 0.8% 0.8%	N/A 5.3% 5.4% 0.8%	14,732 10,894 10,830 10,088 10,025	N/A 11,126 10,927 10,069 9,858	2.1% 2.3% 2.3% 0.7% 0.7%	N/A 6.0% 6.1% 0.7%	15,472 11,696 11,632 10,789 10,726	N/A 11,775 11,576 10,589 10,388	2.2% 2.4% 2.4% 0.7% 0.7%	N/A 6.6% 6.7% 0.7% 0.7%
CROSS ROADS			5 210	4.012	1.0%	1.00/	5 120	4 90 4	1.00/	1.0%	1.095	1.012	1.00/	1.00/
Wyandotte Street	West of Huron Church Road East of Huron Church Road West of Huron Church Road		5,210 3,635	4,912 5,183	1.0% 1.8%	1.0% 2.7%	5,139 3,633	4,894 5,254	1.0% 1.9%	1.0%	4,985 3,622	4,912 5,422	1.0% 2.1%	1.0%
University Avenue Riverside Drive	West of Huron Church Road East of Huron Church Road West of Huron Church Road E of HuronChurch		1,266 2,136 3,428 6,712	1,188 2,122 3,580 5,703	1.0% 5.7% 1.0% 1.0%	1.0% 6.5% 1.0% 1.0%	1,376 2,287 3,579 6,925	1,275 2,207 3,715 5,802	1.0% 7.2% 1.0% 1.0%	1.0% 6.6% 1.0% 1.0%	1,547 2,500 3,718 7,178	1,310 2,261 4,039 5,977	1.0% 8.2% 1.0% 1.0%	1.0% 6.8% 1.0% 1.0%
AMB Off Ramp	E of HuronChurch		N/A	10,153	N/A	24.1%	N/A	11,250	N/A	25.6%	N/A	12,464	N/A	30.7%
AMB On Ramp Patricia Street	E of HuronChurch AMB	Wyandotte Street	6,407 4,105	N/A 5,097	2.9% 4.7%	N/A 6.3%	6,739 4,135	N/A 4,980	3.4% 5.5%	N/A 7.2%	7,143 4,288	N/A 4,829	3.9% 5.7%	N/A 9.0%
College Street	East of Huron Church Road West of Huron Church Road		6,514 1,861	6,360 809	2.4%	4.2% 1.0%	6,603 2,066	6,529 963	2.5% 1.0%	5.2% 1.0%	6,758 2,275	6,585 1,078	2.5% 1.0%	6.5% 1.0%
Girardot Street	East of Huron Church Road West of Huron Church Road		1,127 2,346	1,169 2,275	1.0% 1.6%	1.0% 1.0%	1,147 2,297	1,159 2,203	1.0% 1.6%	1.0% 1.0%	1,155 2,291	1,167 2,171	1.0% 1.6%	1.0% 1.0%
Tecumseh Road	East of Huron Church Road West of Huron Church Road		5,829 6,613	6,836 6,995	2.3%	4.4% 1.0%	5,789 6,495	6,844 7,114	2.2%	5.0% 1.0%	6,209 6,677	7,294 7,354	2.2%	6.7% 1.0%
Dorchester Street	East of Huron Church Road West of Huron Church Road		1,684 1,419	1,556 807	1.0% 1.6%	1.0% 1.1%	1,717 1,419	1,582 808	1.0% 1.6%	1.0% 1.1%	1,740 1,419	1,600 808	1.0% 1.6%	1.0% 1.1%
Prince Road/Totten Street	East of Huron Church Road West of Huron Church Road		2,075 4,784	2,907 5,176	1.0%	1.0% 1.0%	2,214 5,516	2,353 5,545	1.0% 1.0%	1.0% 1.0%	2,312 5,054	2,888 5,711	1.0%	1.0% 1.0%
Malden Road	East of Huron Church Road West of Huron Church Road		1,376 7,884	1,126	1.0%	1.0% 1.0% 10.8%	1,632	1,359 8,859	1.0%	1.0%	1,859	1,512	1.0%	1.0%
Industrial Road	East of Huron Church Road		3,616	8,413 3,425	6.6% 1.7%	2.2%	8,212 3,925	3,673	7.1%	2.1%	8,621 4,361	9,302 3,862	1.2%	13.8% 2.2%
E.C. Row Expressway North Ramp Terminal	West of Huron Church Road East of Huron Church Road (W-N/S Off Ramp & N-W On F	Ramp)	4,072 14,179	3,169 2,041	3.9% 2.2%	12.3% 0.0%	4,262 15,964	3,467 2,066	4.0% 2.2%	13.0% 0.0%	4,490 16,497	3,603 2,213	4.1% 2.3%	14.4% 0.1%
E.C. Row Expressway South Ramp Terminal	West of Huron Church Road (S-W On Ramp) East of Huron Church Road (N-E On Ramp)		609 N/A	N/A 7,407	24.0% N/A	N/A 1.5%	584 N/A	N/A 10,547	27.8% N/A	N/A 1.5%	626 N/A	N/A 12,051	30.9% N/A	0.0% 1.9%
Labelle Street	West of Huron Church Road (S-E On Ramp & E-N/S Off Ra East of North Service Road	ump)	8,624 2,073	2,901 715	6.2% 1.0%	2.9% 1.0%	9,448 2,018	3,084 758	7.1%	2.7%	10,022 2,112	3,317 803	8.9% 1.0%	2.6%
Grand Marais Road Ramp Fazio Drive	East of North Service Road West of South Service Road		4,896 3,550	1,877 2,411	1.0% 1.6%	1.0% 1.2%	5,402 3,907	2,065 2,924	1.0% 1.6%	1.0% 1.2%	5,912 4,702	2,254 3,481	1.0% 1.6%	1.0% 1.1%
Pulford Street Todd Lane/Cabana Road	East of North Service Road East of North Service Road between North and South Service Road		493 8,970 9,971	1,011 7,585 13,458	1.0% 1.0% 1.0%	1.0% 1.0% 0.8%	476 9,635 10,668	1,099 7,247 14,999	1.0% 1.0% 1.0%	1.0% 1.0% 0.8%	476 10,835 11,958	1,205 8,271 16,763	1.0% 1.0% 1.0%	1.0% 1.0% 0.9%
St. Clair College	between South Service Road and Huron Church Line West of Huron Church Line East of North Service Rd		13,705 8,686 2,969	14,201 8,729 8,656	0.6% 1.0% 1.0%	0.7% 1.0% 1.0%	16,030 8,758 3,199	15,949 9,145 8,917	0.6% 1.0% 1.0%	0.7% 1.0% 1.0%	18,324 9,347 3,387	17,933 9,638 9,171	0.6% 1.0% 1.0%	0.8% 1.0% 1.0%
Cousineau Drive	between North and South Service Road East of North Service Road between North and South Service Road	$\sim V$	2,255 5,380 7,569	2,572 4,408 6,705	1.0% 1.0% 0.1%	1.0% 1.0% 1.6%	2,480 5,242 7,879	2,770 4,265 7,085	1.0% 1.0% 0.1%	1.0% 1.0% 1.8%	2,706 5,507 9,161	2,961 4,380 7,923	1.0% 1.0% 0.1%	1.0% 1.0% 2.0%
Howard Avenue	West of South Service Road East of North Service Rd between North and South Service Road	$\langle 0 \rangle \langle 1 \rangle$	9,746 7,718 11,604	6,412 8,482 7,215	0.2% 1.7% 1.7%	1.8% 1.9% 2.0%	10,617 8,580 12,668	7,091 9,789 7,994	0.2% 1.6% 1.7%	1.8% 1.9% 2.1%	12,108 9,246 13,631	8,103 10,454 8,725	0.2% 1.6% 1.7%	1.9% 1.9% 2.1%
E.C. Row Expressway	West of South Service Road East of Ojibway Parkway West of Ojibway Parkway East of Huron Church Road		11,359 13,304 20,534 34,989	13,477 8,173 11,155 43,027	2.1% 2.8% 1.6% 3.0%	2.1% 3.0% 2.2% 4.7%	12,503 12,503 17,700 25,738 43,140	15,356 9,006 12,305 50,618	2.1% 3.1% 1.5% 3.2%	2.1% 2.1% 3.4% 2.2% 5.2%	13,518 21,805 30,777 48,161	17,014 9,794 13,314 57,032	2.1% 2.9% 1.5% 3.3%	2.1% 2.7% 2.1% 5.6%
GN Booth Drive Sandwich Street	At Malden Rd West of Matchette Road West of Ojibway Parkway West of Ojibway Parkway		23,221 15,619 357 1,533	29,489 8,173 461 1,388	3.9% 4.8% 1.7% 9.6%	4.6% 3.0% 1.4% 6.6%	29,631 20,348 357 1,629	33,065 9,006 461 1,518	4.1% 5.1% 1.6% 9.3%	5.1% 3.4% 1.4% 6.4%	34,317 24,784 357 1,775	37,671 9,794 461 1,630	4.3% 5.4% 1.6% 8.8%	5.1% 2.7% 1.4% 6.2%
Prospect Avenue * - For consistency, Huron Church Rd/Talbot Rd	West of Ojibway Parkway I runs North-South and all crossing roads run East-West		342	437	1.7%	0.9%	342	437	1.6%	0.9%	342	437	1.6%	0.9%
HIGHWAY 401 Ramps														
Highway 3 merge/split Highway 401 northbound Off Ramp Highway 401 northbound On Ramp Highway 401 southbound Off Ramp Highway 401 southbound On Ramp	*		9,970 9,124 N/A N/A	N/A N/A 9,491 9,574	6.1% 1.9% N/A N/A	N/A N/A 2.0% 6.2%	11,166 9,328 N/A N/A	N/A N/A 9,841 10,600	7.1% 1.8% N/A N/A	N/A N/A 2.0% 7.2%	11,862 9,728 N/A N/A	N/A N/A 10,383 11,830	8.4% 1.9% N/A N/A	N/A N/A 2.1% 8.0%
At St. Clair College Highway 401 northbound Off Ramp Highway 401 northbound On Ramp Highway 401 southbound Off Ramp			6,964 4,318 N/A	N/A N/A 8,288	1.0% 0.5% N/A	N/A N/A 2.2%	7,216 4,457 N/A	N/A N/A 8,772	1.0% 0.5% N/A	N/A N/A 2.4%	7,753 4,850 N/A	N/A N/A 8,911	1.0% 0.5% N/A	N/A N/A 2.7%
Highway 401 southbound Off Ramp Highway 401 southbound On Ramp <i>At Huron Church Road</i> Highway 401 northbound Off Ramp			N/A N/A 8,892	8,288 5,019 N/A	N/A N/A 2.7%	2.2% 0.4% N/A	N/A N/A 10,331	8,772 5,449 N/A	N/A N/A 2.8%	2.4% 0.4% N/A	N/A N/A 11,496	8,911 5,824 N/A	N/A N/A 3.0%	2.7% 0.5% N/A
Highway 401 southbound On Ramp At Malden Road			N/A	11,044	N/A	11.8%	N/A	10,960	N/A	12.1%	N/A	11,499	N/A	14.1%
Highway 401 northbound On Ramp Highway 401 southbound Off Ramp Highway 401 to E.C. Row Expressway			3,176 N/A	N/A 4,140	14.7% N/A	N/A 13.8%	3,769 N/A	N/A 4,949	14.2% N/A	N/A 10.9%	4,147 N/A	N/A 5,453	15.6% N/A	N/A 9.8%
401 SB Off Ramp			N/A	13,343	N/A	7.7%	N/A	14,976	N/A	8.5%	N/A	18,144	N/A	8.9%
Ojibway Parkway Interchange Highway 401 northbound Off Ramp Uishway 401 northbound On Berry			4,660	N/A	9.9%	N/A	5,160	N/A	8.6%	N/A	5,459	N/A	9.2%	0.0%
Highway 401 northbound On Ramp Highway 401 southbound Off Ramp Highway 401 southbound On Ramp			1,503 N/A N/A	N/A 1,091 14,959	19.5% N/A N/A	N/A 0.7% 2.8%	1,688 N/A N/A	N/A 1,142 18,909	21.2% N/A N/A	N/A 1.6% 2.8%	1,807 N/A N/A	N/A 1,297 22,906	22.7% N/A N/A	0.0% 2.2% 2.9%
E.C. Row Expressway to Highway 401 Highway 401 northbound On Ramp			2,083	N/A	37.2%	2.870 N/A	2,521	N/A	38.4%	2.8%	3,029	22,900 N/A	38.4%	2.9% N/A
Highway 401 Mainline	South of Highway 3 merge/split	Highway 3/Highway 401 northbound Off Ramp	2,083	N/A	27.6%	N/A	2,521	N/A	28.5%	N/A	27,686	N/A	30.3%	N/A N/A
	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp St. Clair College/Highway 401 northbound Off Ramp St. Clair College/Highway 401 northbound On Ramp	Highway 3/Highway 401 northbound On Ramp St. Clair College/Highway 401 northbound Off Ramp St. Clair College/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound Off Ramp	9,889 19,026 11,651 16,155	N/A N/A N/A N/A	27.6% 43.4% 27.4% 28.7% 24.8%	N/A N/A N/A N/A	24,704 13,346 22,602 14,904 19,526	N/A N/A N/A N/A	28.5% 46.7% 31.1% 33.3% 28.7%	N/A N/A N/A N/A	27,686 16,034 25,681 17,359 22,404	N/A N/A N/A N/A	30.3% 48.0% 33.2% 35.6% 31.1%	N/A N/A N/A N/A
	Huron Church Road/Highway 401 northbound Off Ramp Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp	Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound OnRamp	7,502 10,678 6,018	N/A N/A N/A	55.7% 43.5% 69.5%	N/A N/A N/A	9,431 13,200 8,040	N/A N/A N/A	60.2% 47.1% 71.7%	N/A N/A N/A	11,228 15,375 9,916	N/A N/A N/A	63.0% 50.2% 72.8%	N/A N/A N/A

	Malden Road/Highway 401 northbound On Ramp	Ojibway Parkway/Highway 401 northbound Off Ramp	10,678	N/A	43.5%	N/A	13,200	N/A	47.1%	N/A	15,375	N/A	50.2%	N/A
	Ojibway Parkway/Highway 401 northbound Off Ramp	Ojibway Parkway/Highway 401 northbound OnRamp	6,018	N/A	69.5%	N/A	8,040	N/A	71.7%	N/A	9,916	N/A	72.8%	N/A
	Ojibway Parkway/Highway 401 northbound OnRamp	EC Row Expressway to Highway 401 northbound On Ramp	7,521	N/A	59.5%	N/A	9,728	N/A	63.0%	N/A	11,723	N/A	65.1%	N/A
	EC Row Expressway to Highway 401 northbound On Ramp	Canadian Plaza	10,032	N/A	58.7%	N/A	12,701	N/A	60.2%	N/A	14,830	N/A	61.4%	N/A
	Canadian Plaza	Ojibway Parkway/Highway 401 southbound Off Ramp	N/A	18,007	N/A	52.4%	N/A	21,543	N/A	57.1%	N/A	24,168	N/A	58.8%
	Ojibway Parkway/Highway 401 southbound Off Ramp	Ojibway Parkway/Highway 401 southbound On Ramp	N/A	16,722	N/A	52.6%	N/A	20,153	N/A	57.4%	N/A	22,602	N/A	59.1%
	Ojibway Parkway/Highway 401 southbound On Ramp	Highway 401 to EC Row Expressway southbound Off Ramp	N/A	31,533	N/A	27.6%	N/A	39,289	N/A	32.5%	N/A	46,534	N/A	36.5%
	Highway 401 to EC Row Expressway southbound Off Ramp	Malden Road/Highway 401 southbound Off Ramp	N/A	18,914	N/A	51.3%	N/A	24,273	N/A	55.4%	N/A	29,106	N/A	59.2%
	Malden Road/Highway 401 southbound Off Ramp	Huron Church Road/Highway 401 southbound On Ramp	N/A	14,382	N/A	58.0%	N/A	20,022	N/A	63.7%	N/A	23,149	N/A	66.6%
	Huron Church Road/Highway 401 southbound On Ramp	St Clair College/Highway 401 southbound Off Ramp	N/A	24,917	N/A	32.5%	N/A	29,871	N/A	37.3%	N/A	33,356	N/A	41.1%
	St Clair College/Highway 401 southbound Off Ramp	St Clair College/Highway 401 southbound On Ramp	N/A	16,134	N/A	39.9%	N/A	20,521	N/A	45.0%	N/A	23,809	N/A	48.8%
	St Clair College/Highway 401 southbound On Ramp	Highway 3/Highway 401 southbound Off Ramp	N/A	21,477	N/A	35.0%	N/A	26,333	N/A	39.7%	N/A	30,052	N/A	43.4%
	Highway 3/Highway 401 southbound Off Ramp	Highway 3/Highway 401 southbound On Ramp	N/A	14,245	N/A	50.5%	N/A	18,741	N/A	51.4%	N/A	22,060	N/A	53.8%
	Highway 3/Highway 401 southbound On Ramp	South of Highway 3 merge/split	N/A	21,529	N/A	36.2%	N/A	26,965	N/A	38.6%	N/A	30,966	N/A	41.5%
Grand Marais Road	East of connecting ramp		4,769	4,265	1.0%	1.0%	5,257	4,687	1.0%	1.0%	5,749	5,118	1.0%	1.0%
	West of connecting ramp		3,659	6,458	0.1%	0.6%	4,021	7,096	0.1%	0.6%	4,391	7,750	0.1%	0.6%
Broadway Street	West of Ojibway Parkway		330	352	1.0%	1.0%	330	352	1.0%	1.0%	330	352	1.0%	1.0%
Huron Church Line	South of Todd Lane		9,097	8,914	4.7%	5.0%	10,984	11,821	5.1%	5.8%	12,558	13,701	5.6%	6.8%
Millen Street	Felix Avenue	Huron Church Road	107	257	1.7%	1.4%	107	257	1.6%	1.4%	107	257	1.6%	1.4%
Malden Road	Chappus Street	Highway 401 South Ramp	9,796	11,386	2.6%	2.3%	10,514	12,368	2.6%	2.3%	9,268	13,116	2.5%	2.4%
	Highway 401 South Ramp	Highway 401 North Ramp	10,788	7,776	2.6%	2.3%	11,628	7,976	2.5%	2.3%	10,504	8,288	2.5%	2.4%
	North of Highway 401 North Ramp		8,014	8,481	2.6%	2.3%	8,383	8,854	2.5%	2.3%	6,946	9,254	2.4%	2.4%
Matchette Road	Chappus Street	EC Row Expressway South Ramp	8,514	7,907	1.0%	1.0%	9,852	9,480	1.0%	1.0%	10,463	9,981	1.0%	1.0%
	EC Row Expressway South Ramp	EC Row Expressway North Ramp	2,621	8,885	1.0%	1.0%	2,796	10,345	1.0%	1.0%	3,015	10,774	1.0%	1.0%
	EC Row Expressway North Ramp	Carmichael	4,793	3,284	1.0%	1.0%	5,098	3,121	1.0%	1.0%	5,379	3,291	1.0%	1.0%
Montgomery Drive	Surrey Drive	Talbot Street	92	179	1.1%	3.2%	101	197	1.1%	3.1%	110	206	1.1%	3.3%
Surrey Drive	Montgomery Drive	Talbot Street	74	44	1.2%	2.9%	74	44	1.2%	2.9%	74	44	1.1%	3.0%
Grosvenor Road	Montgomery Drive	Talbot Street	121	78	1.3%	2.2%	121	78	1.2%	2.1%	121	78	1.2%	2.2%

05-1140-003-1

#### TABLE I-B

### SUMMARY OF TRAFFIC DATA - ALTERNATIVE 1B

Detroit River International Crossing Windsor, Ontario

Norma         Norma <th< th=""><th>Pavement Section</th><th>LOCATION From</th><th>To</th><th></th><th></th><th>2015 Comm</th><th>1 Vehicles</th><th></th><th></th><th>025 Comm</th><th>Vehicles</th><th>• •</th><th></th><th>035 Comm</th><th>Vehicles</th></th<>	Pavement Section	LOCATION From	To			2015 Comm	1 Vehicles			025 Comm	Vehicles	• •		035 Comm	Vehicles
Index baseControl Control Control Control Control Control Control Control Control Control Control Control Control 		<u>FIUII</u>	10											NB / WB	Vehicles SB / EB
Norma         No         No        No        No         No	Huron Church Road													2.9%	3.0%
Mathem         Origin         Dia         Dia <thdia< th="">         Dia         Dia         <thdia< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>5.0%</td><td>4.8%</td></thdia<></thdia<>														5.0%	4.8%
Interfact														1.0% 20.5%	1.0% 1.6%
Image: Section of the section of th														3.3%	16.5%
Interprint Interprint Interprint Interprint Interprint Interprint Interprint Interprint Interprint Interprint 														3.9%	15.7%
InterfaceNotabination														4.0%	13.3%
Instruction         Instruction     <														3.5%	11.7%
Index before manual set of the set														3.6%	10.1%
Introve large of the second of the secon														2.6%	11.3%
Martie for some formation of the source of														2.6%	10.3% 7.2%
ubb she herthe field field framethe field field framethe field fi			Le Row Bouth Ramp Terminal											2.3%	6.8%
Image many many many 	outh Service Road													N/A	7.4%
Indiana Indiana International Internat														N/A	2.6%
Indication:Indication														N/A	0.4%
And base is a set of the set														N/A	0.5% 0.9%
AlternationAlternati														N/A N/A	0.9%
Brithwitz Area     Single Mark     S														N/A	3.7%
which idea weis     main and the sector is a sector		Cousineau Drive	Howard Avenue	N/A	6,282	N/A	4.6%	N/A	6,321	N/A	5.2%	N/A	6,597	N/A	5.9%
Index many       Gui Mani, Many       2.0       N.       N.0														N/A	2.0%
CalibrationCalibrati	orth Service Road													1.9%	N/A
Place SeemPlace SeePlace SeemPlace Seem<														1.2%	N/A N/A
Image: A problem of the sector of the sec														0.1%	N/A N/A
Image: Mark and any set of the set of t														1.2%	N/A
Acting base base       Diverse him base       Unit       No.       No.<		Huron Church Line												1.2%	N/A
and finder additional of the second secon				14,718										0.8%	N/A
ging phoneLing bar			Howard Avenue											1.3%	N/A
Chilong Dirie       Select Dirie       Select Dirie       Dirie <t< td=""><td>illura Dadama</td><td></td><td>CN Death Daine</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>2.0%</td><td>N/A</td></t<>	illura Dadama		CN Death Daine											2.0%	N/A
ResultPartial SamePart<	Jibway Parkway													2.5% 2.5%	6.7% 6.8%
matchasematchaseno <td></td> <td>2.5%</td> <td>0.7%</td>														2.5%	0.7%
Norma       and monuments       100														0.7%	0.7%
Namewith the function of the contract of the contrac		-													
and manyand filesfilefi															
memberexcl124 <t< td=""><td>Vyandotte Street</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1.0%</td><td>1.0%</td></t<>	Vyandotte Street													1.0%	1.0%
Here files Charles Like intermediate	Iniversity													2.0%	2.9%
bindweight of the base is the set of the ba	hiiversity													8.3%	6.8%
MBM find Main Main Main Main Main Main Main Main Main 	Riverside Drive													1.0%	1.0%
Main Constraint Constraint Main Constraint Main MainAnd Main M		east of Huron Church Line		6,770	5,671	1.0%	1.0%	6,981	5,782	1.0%	1.0%	7,225	5,957	1.0%	1.0%
ImmiMainMaine ManNine														N/A	30.7%
ding sinceend of land change6,510,50 <td></td> <td></td> <td>W. La C</td> <td></td> <td>4.0%</td> <td>N/A</td>			W. La C											4.0%	N/A
witch Name Amerikan       1307       108			wyandotte Street											5.8% 2.5%	9.0% 6.1%
indexand from Chank Mad1,131,141,041,141,141,141,141,141,141,151,141,151,141,151,141,151,141,151,141,151,141,151,141,151,141,151,141,151,141,151,141,151,151,141,151,151,141,151,141,151,141,151,141,151,141,151,141,151,141,151,141,151,141,151,141,151,161,151,161,151,161,151,161,151,161,151,161,151,161,151,161,151,16	concec outer													2.5%	6.1% 1.0%
setor func Chash bad       246       257       78       1/8       200       88       1/1       200 </td <td>Girardot Street</td> <td></td> <td>1.0%</td> <td>1.0%</td>	Girardot Street													1.0%	1.0%
fammedinformation <td></td> <td>1.8%</td> <td>1.2%</td>														1.8%	1.2%
Denderend filterLing <thling< th="">LingLing<thling< th=""><thling< td="" thr<=""><td>Cecumseh Road</td><td></td><td></td><td></td><td>6,836</td><td></td><td></td><td>5,786</td><td>6,844</td><td></td><td></td><td>6,210</td><td></td><td>2.2%</td><td>7.0%</td></thling<></thling<></thling<>	Cecumseh Road				6,836			5,786	6,844			6,210		2.2%	7.0%
media functional bandi and media international interna														1.0%	1.0%
bins for the control of the cont	Jorchester Street													1.0%	1.0%
with Chack bad       172       17       170	Prince Road/Totten Streat													1.9%	1.3%
Male fieldand many fieldinto <t< td=""><td>Thee Road Touch Street</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1.0%</td><td>1.0%</td></t<>	Thee Road Touch Street													1.0%	1.0%
weid filten: Church Radi       7,801       8,417       6,88       1,09       8,22       8,87       7,30       8,18       8,40       9,12         LC. Roe Expressively Nords Ray Term       4,01       1,16       4,05       1,18       4,01       4,11       1,18       4,01       4,11       1,18       4,01       4,11       1,18       4,01       1,18       4,01       1,18       4,01       1,18       4,01       1,18       4,01       1,18       4,01       1,18       4,01       1,18       4,01       1,18       4,01       1,18       4,01       1,18       4,01       1,18       4,01       1,18       4,01       1,18       4,01       1,18       4,01       1,10       1,1	Malden Road													1.0%	1.0%
c1. Gov Expression Stort Regiment       4.07       1.08       4.07       1.08       4.07       1.08       4.07       1.08 </td <td></td> <td>7.6%</td> <td>14.4%</td>														7.6%	14.4%
12. Row Expressionly More Ramp Terminal       end Fluora Chance Rood (NO Ramp)       14,334       202       908       1008       10.08	ndustrial Road													1.2%	2.2%
act of lines Chards Road J, Wo De Ramp)       007       NA       72,4%       NA       0,24       NA														4.0%	13.3%
12: Come Expressioned south Ramp Terminal       NA       7.407       NA       0.907       0.907       0.316       0.907       0.316       0.907       0.316       0.907       0.316       0.907       0.316       0.907       0.	S.C. Row Expressway North Ramp Terminal													1.9%	0.3%
and Hono Chuck Rad (VEI On Raims & WAIS Off Ramy)       8,37       29/14       2,38       2,86       0,83       7,29       2,7%       0,07       3,31       9,20         LadellS more Idhelmen Arume       asaf O Mich Service Rad       1,08       3,20       1,09       1,09       1,09       1,03       3,30       1,00       1,00       1,05       4,30       3,50       1,00 <td>C Row Expressway South Pamp Tarminal</td> <td></td> <td>30.0% N/A</td> <td>N/A 1.0%</td>	C Row Expressway South Pamp Tarminal													30.0% N/A	N/A 1.0%
Lakelic Street/Behleken Areme       200       1.16       105       106       1.07       1.08														9.3%	2.8%
beween North and South Service Road       1,403       3,202       1,08       1,08       1,09       1,573       3,93       1,13         Grand Manis Road Lambton Road       1,803       5,255       1,08       1,08       4,00       1,573       3,93       1,0         Grand Manis Road Lambton Road       1,803       5,255       1,08       1,08       4,00       3,02       1,08       4,00       3,02       1,08       4,00       3,09       1,08       4,00       3,09       1,08       1,00       1,08       4,00       1,08       4,00       1,08       4,00       1,08       4,00       1,08       4,00       1,08       4,00	_abelle Street/Bethlehem Avenue													1.0%	1.0%
And Manis Road Lambon Road       4,18       3,270       10%       10%       5,955       10%       0.94       0,907       3,227       1,14         Hund Streice Road       2,436       2,440       1,744       1,908       1,756       0,98       1,356       1,08       0,94       2,056       2,243       1,35       1,08       0,94       2,056       2,43       1,35       1,08       1,09       1,072       1,438       1,43		between North and South Service Road		1,403	3,202	1.0%	1.0%	1,232	3,565	1.0%	1.0%	1,573	3,934	1.0%	1.0%
between North and South Service Road       2,429       2,400       0,18       0,88       2,064       3,209       0,18       0,996       2,005       2,428       1,14         ulfard Street       aut of North Service Road       1,176       1,909       1,076       1,076       1,050       1,051       1,056       1,075       1,026       1,026       1,027       1,028       1,056 <td></td> <td>1.0%</td> <td>1.0%</td>														1.0%	1.0%
wet of South Service Road       1,714       1,90       1,78       0,98       1,276       2,193       1,80       0,00       2,135       1,145	irand Marais Road/Lambton Road		<b>~</b>											1.0%	1.0%
uford Street       1,463       1,90       1,08       1,00       1,05       1,08       1,23       1,08       1,00       1,08       1,23       1,08       1,08       1,20       1,08       1,20       1,08       1,20       1,08       1,20       1,08       1,20       1,08       1,20       1,08 </td <td></td> <td>0.1%</td> <td>1.0%</td>														0.1%	1.0%
between North and South Service Road (147) (147) (148) (148) (147) (148)	ulford Street			-,			015.74							1.8%	1.0%
Total Lane Cabana Road       est of North Service Road       8,72       7,17       10%														1.0%	1.0%
between North and South Service Road west of South Service Road and Charle Charles Road between North and South Service Road act Cair College east of North Service Road west of Ojinway Fatiway west of Ojinway Fatiway we				1,177	876	2.0%	0.8%	1,295	956	2.0%	0.9%	1,413	1,051	2.0%	1.0%
west of South Service Road       9,933       9,958       10%       10,76       11,875       1,295       10,76       10,70       10,71	odd Lane/Cabana Road													1.0%	1.0%
hunon Church Line       between North and South Service Road       1,219       5,242       3,4%       1,5%       1,28%       1,5%       1,48%       8,272       7,451       1,2%       1,4%       8,272       7,451       1,2%       1,4%       8,272       7,451       1,2%       1,4%       8,272       7,451       1,5%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       2,700       1,0%       1,0%       2,700       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       1,0%       0,0%       5,264       4,4%       1,0%       1,0%       1,0%       0,0%       5,264       4,4%       1,0%       0,0%       5,264       4,268       1,0%       0,0%       5,264       4,0%       1,0%       0,0%       1,0%       0,0%       1,0%       0,0%       1,0%       0,0%       1,0%       0,0%       1,0%       0,0%       1,0%       0,0%       1,0%       0,0%       1,0%       0,0%       1,0%														1.0%	1.0%
west of South Service Road       7,451       6,841       1,2%       1,4%       8,272       7,451       1,2%       1,9%       9,941       7,983       1,1         0 cusineau Drive       between North and South Service Road       2,958       8,655       1,09%       1,09%       2,490       2,790       1,0%       3,10%       2,706       2,988       1,0         0 cusineau Drive       east of North Service Road       7,608       6,705       1,0%       1,	luron Church Line													1.0% 3.6%	1.0% 1.5%
1. Clair College       east of North Service Road       2.968       8.655       1.0%       1.0%       1.0%       1.0%       3.387       9.168       1.10         Jousineau Drive       east of North Service Road       5.396       4.15       1.0%       1.0%       1.0%       1.0%       1.0%       2.988       1.0%       1.0%       1.0%       1.0%       2.988       1.0%       1.0%       1.0%       1.0%       2.988       1.0%       1.0%       1.0%       1.0%       2.988       1.0%       1.0%       1.0%       1.0%       1.0%       2.988       1.0%       1.0%       1.0%       1.0%       1.0%       1.0%       2.988       1.0% <t< td=""><td>auon Church Line</td><td></td><td>// 1/ 11</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>3.6%</td><td>1.5%</td></t<>	auon Church Line		// 1/ 11											3.6%	1.5%
between North and South Service Road cousineau Drive east of North Service Road west of South Service Road west of Ojibway Parkway west Of Ojib	t. Clair College													1.0%	1.0%
between North and South Service Road       7,608       6,705       1.0%       1.0%       1.0%       1.0%       0.2%       9,207       7,923       1.0         ioward Avenue       9,797       6,318       1.0%       1.0%       1.0%       0.2%       12,218       8,024       1.0         ioward Avenue       9,797       6,318       1.0%       1.0%       1.0%       0.2%       12,218       8,024       1.0         ises of North Service Road       7,718       8,482       1.7%       1.8%       8,580       9,789       1.7%       1.8%       8,580       9,789       1.7%       1.2%       11,617       7,215       1.8%       2.2%       12,618       8,725       1.1       11,133       1.34       1.6       1.1       1.33       1.334       8,173       2.2%       12,364       1.0       1.0       1.35       5.2%       2.180       9,073       3.3       1.334       8,173       2.2%       4.3,67       3.1%       5.2%       2.180       9,003       3.2%       5.2%       2.180       9,003       3.2%       5.0%       9,046       5.638       3.4         4.0       43,067       3.1%       4.5%       4.3,102       51,004       3.2%       5.0% <td>-</td> <td>between North and South Service Road</td> <td></td> <td>2,255</td> <td>2,587</td> <td>1.0%</td> <td>1.0%</td> <td>2,480</td> <td>2,790</td> <td>1.0%</td> <td>1.0%</td> <td>2,706</td> <td>2,988</td> <td>1.0%</td> <td>1.0%</td>	-	between North and South Service Road		2,255	2,587	1.0%	1.0%	2,480	2,790	1.0%	1.0%	2,706	2,988	1.0%	1.0%
west of South Service Road       9,797       6,318       1.0%       1.0%       1.0%       0.2%       12,218       8,024       14         Ioward Avenue       east of North Service Road       7,718       8,482       1.7%       1.8%       8,580       9,797       6,318       1.0%       1.0%       0.2%       12,218       8,024       14         Ioward Avenue       east of North Service Road       7,718       8,482       1.7%       1.8%       8,20%       12,11       7,994       1.7%       1.9%       9,246       10,454       1.7         ic. Row Expressway       east of Ojibway Parkway       east of Ojibway Parkway       11,382       13,477       2.2%       2.3%       12,530       1.5,56       2.1%       2.2%       13,546       17,01       4.3         ic. Row Expressway       east of Minchede       12,89%       4,767       1.6%       4,100       3.2%       5.2%       2.104       9,719       3.5         ic. Row Expressway       east of Minchede       15,844       8,173       2.7%       4,7%       4,005       3.5%       5.2%       2.404       9,719       3.5         ic. Row Expressway       15,844       8,173       2.7%       4,7%       20,81       9,003 <t< td=""><td>Cousineau Drive</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1.0%</td><td>1.0%</td></t<>	Cousineau Drive													1.0%	1.0%
Howard Avenue     east of North Service Road     7,718     8,482     1,7%     1,8%     8,580     9,789     1,7%     1,9%     9,246     10,454     1,1       between North and South Service Road     11,637     7,215     1,8%     2,2%     12,530     15,536     2,1%     2,2%     13,678     8,725     1,1       2.C. Row Expressway     east of Ojibway Parkway     13,304     8,173     2,2%     12,530     15,556     2,1%     2,2%     13,674     14,14     14       2.C. Row Expressway     east of Ojibway Parkway     13,304     8,173     2,2%     4,7%     1,8%     9,003     3,2%     5,2%     2,1,804     9,791     3,3       2.C. Row Expressway     east of Huron Church Road     35,042     43,067     3,1%     4,5%     43,102     51,004     3,2%     5,0%     49,462     56,583     3,4       west of Ojibway Parkway     15,8%     2,7%     4,7%     12,305     4,6%     6,0%     35,168     37,219     4,8       NBooth Drive     west of Ojibway Parkway     35,7     461     1,9%     1,7%     20,831     9,003     3,1%     5,2%     2,50,30     9,791     2,3       NBooth Drive     west of Ojibway Parkway     35,7     461     1,9%														1.0%	1.0%
between North and South Service Road west of South Service Road west of Ojibway Parkway west of Ojibway Parkway west of Ojibway Parkway       1       1.637       7.215       1.8%       2.2%       12.711       7.944       1.7%       2.2%       13.678       8,725       1.7         LC. Row Expressway       ast of Ojibway Parkway west of Ojibway Parkway       1.330       8,173       2.2%       2.3%       12.530       15.355       2.1%       2.2%       13.678       8,725       1.7       1.1       1.1       1.1       1.1       1.1       1.2       2.3%       1.2       2.3%       1.2       2.3%       1.2       2.3%       1.2       2.3%       1.2       1.3       1.3       1.3       1.3       1.5       1.5%       2.2%       2.3%       1.2       1.3       1.3       1.5%       3.2%       5.2%       2.1       1.3       1.4       1.4       1.5       1.5%       2.2%       4.3%       5.4%       4.3       2.2%       4.3%       5.4%       4.3%       5.4%       2.2%       3.5       8.1       3.5       4.6%       6.0%       3.5       8.3       3.4       4.3%       5.4%       2.4%       5.4%       2.92       3.3%       6.4%       1.7%       3.57       4.61       1.5       3.4%	loward Avanua													1.0%	1.0%
.C. Row Expressway       uset of South Service Road east of Ojibway Parkway west of Ojibway Parkway       11.382       13.477       2.2%       2.3%       12.530       15.356       2.1%       2.2%       13.546       17.014       2.1         .C. Row Expressway       east of Ojibway Parkway west of Ojibway Parkway       13.304       8.173       2.8%       4.7%       17.608       9.003       3.2%       5.2%       2.1%       4.34       1.6         .east of Huron Church Road at Malden Road west of Marchette       35.042       43.067       3.1%       4.5%       43.102       51.064       3.5%       5.0%       49.462       56.583       3.4         N Booth Drive west of Marchette       west of Ojibway Parkway       35.7       4.61       1.9%       1.7%       3.1%       5.2%       2.5.60       9.791       2.5         N Booth Drive west of Ojibway Parkway       35.7       4.61       1.9%       1.7%       3.57       4.61       1.9%       1.7%       3.57       4.61       1.9%       1.7%       3.57       4.61       1.9%       1.7%       3.57       4.61       1.9%       1.7%       3.57       4.61       1.5%       2.437       1.9%       1.7%       3.57       4.61       1.5%       2.437       1.9%       1.7%	iowaru Avenue													1.7% 1.7%	1.9% 2.2%
AC. Row Expressway       east of Ojibway Parkway       13.304       8.173       2.8%       4.7%       17.698       9.003       3.2%       5.2%       21.804       9.791       3.3         vest of Ojibway Parkway       20,538       11,155       1.5%       2.2%       25,741       12,305       1.5%       2.2%       30,784       13.314       1.6         20,538       11,155       1.5%       2.2%       43,067       3.1%       4.5%       43,102       51,004       3.2%       5.0%       49,462       56.38       3.4         west of Mitchette       west of Ojibway Parkway       west of Ojibway Parkway       3.1%       5.4%       5.4%       5.4%       5.4%       6.0%       35,168       37,219       4.8         N Booth Drive       west of Ojibway Parkway       3.37       461       1.9%       1.7%       3.1%       5.2%       2.50.0       9.01       3.2%       5.00       4.7%       1.5%       3.00       8.7%       4.61       1.5%       3.04       4.7%       1.5%       3.0%       6.4%       1.7%       3.57       4.61       1.5%       1.5%       4.3%       1.5%       3.2%       5.6%       4.7%       1.5%       3.2%       5.6%       3.7%       4.61														2.1%	2.2%
west of Ojibway Parkway       20.538       11,155       1.5%       2.2%       30,784       13,314       1.6         east of Huron Church Road       35,042       43,067       31%       4.5%       43,105       5.4%       29,297       33,650       4.6%       6.0%       35,168       37,219       4.8         west of Matchette       15,894       8,173       2.7%       4.7%       20,831       9,003       3.1%       5.2%       25,650       9,791       2.5         N Booth Drive       west of Ojibway Parkway       337       461       1.9%       1.7%       357       461       1.9%       1.7%       357       461       1.5         andwich Street       west of Ojibway Parkway       1.533       1.388       9,6%       6,6%       1,629       1,518       9,3%       6,4%       1,775       1,630       8.8         oxspect Avenue       west of Ojibway Parkway       342       437       2.0%       1.0%       342       437       1.9%       1.0%       342       437       1.9%       1.0%       342       437       1.9%       1.0%       342       437       1.9%       1.0%       342       437       1.9%       1.0%       342       437       1.5%	.C. Row Expressway													3.0%	4.4%
at Malden Road west of Matchette N Booth Drive west of Ojibway Parkway andwich Street west of Ojibway Parkway togspect Avenue IIGHWAY 401 Ramps		west of Ojibway Parkway		20,538	11,155	1.5%	2.2%	25,741	12,305	1.5%	2.2%	30,784	13,314	1.6%	2.2%
west of Matchette     15,894     8,173     2,7%     4,7%     20,831     9,003     3,1%     5,2%     25,630     9,791     2,5       N Booth Drive     west of Ojibway Parkway     357     461     1,9%     1,7%     357     461     1,9%       N Booth Drive     west of Ojibway Parkway     1,533     9,6%     6,6%     1,62%     1,7%     357     461     1,9%       rospect Avenue     west of Ojibway Parkway     1,388     9,6%     6,6%     1,6%     1,5%     2,6%     1,6%     1,5%     2,5%     2,630     9,791     2,5%       IGHWAY 401 Ramps     Ifghway 3 merge/split     Jampa 4,0%     Jampa														3.4%	5.4%
N Booth Drive       west of Ojibway Parkway       357       461       1.9%       1.7%       357       461       1.9%       1.7%       357       461       1.5         andwich Drive       west of Ojibway Parkway       1,533       1,388       9.6%       6.6%       1,629       1,518       9.3%       6.4%       1,775       1,630       8.8         sandwich Street       west of Ojibway Parkway       342       437       2.0%       1.0%       342       437       1.9%       1.0%       342       437       1.5%         IGHWAY 401 Ramps														4.8%	6.0%
andwich Street west of Ojibway Parkway 1,533 1,388 9,6% 6,6% 1,629 1,518 9,3% 6,4% 1,775 1,630 8,8 rospect Avenue west of Ojibway Parkway 342 437 1,9% 1,0% 342 437 1,9% IGHWAY 401 Ramps	N Rooth Drive													2.9%	4.4%
rospect Avenue west of Ojibway Parkway 342 437 2.0% 1.0% 342 437 1.9% 1.0% 342 437 1.5 IGHWAY 401 Ramps														1.9% 8.8%	1.7% 6.3%
IGHWAY 401 Ramps Iighway 3 merge/split														8.8%	6.3% 1.1%
lighway 3 merge/split					151	2.070	1.070	342	.57		1.070	542	.57		
lighway 3 merge/split															
	IGHWAY 401 Ramps														
	Salaran 2 manual / Pr														
ng may no				0.067	NI/A	6.0%	NI/A	11 204	N/A	7 104	N/A	11 969	N/A	8.3%	N/A
														8.3%	N/A N/A
														N/A	1.9%

Highway 401 Northbound Off Ramp Highway 401 Northbound On Ramp Highway 401 Southbound Off Ramp Highway 401 Southbound Off Ramp Highway 401 Southbound Off Ramp Highway 401 Northbound On Ramp Highway 401 Northbound On Ramp Highway 401 Southbound Off Ramp Highway 401 Southbound Off Ramp Highway 401 Southbound Off Ramp Ar Pulford Street Highway 401 Southbound Off Ramp Ar Huron Church Road Highway 401 Southbound Off Ramp Ar Huron Church Road Highway 401 Southbound Off Ramp Ar Malden Road Highway 401 Southbound Off Ramp Highway 401 Southbound Off Ramp

N/A 9,491 9,566 N/A N/A N/A N/A 1.9% 6.2% N/A N/A 10,063 10,832 N/A N/A 1.9% 7.2% N/A N/A 10,383 11,814 N/A N/A 1.9% 8.0% 6,964 4,069 N/A N/A N/A N/A 7,812 5,498 0.4% 0.8% N/A N/A N/A N/A 3.1% 0.5% 7,309 3,979 N/A N/A 0.6% 0.8% N/A N/A N/A N/A 3.7% 0.6% 7,753 4,124 N/A N/A N/A N/A 7,944 6,223 0.9% 0.8% N/A N/A N/A N/A 4.5% 0.6% N/A N/A 7,993 5,906 5,919 N/A N/A 6,238 1.2% N/A N/A 1.1% 7,507 N/A 1.3% N/A N/A 1.1% 7,737 N/A N/A 8,464 1.4% N/A N/A 1.0% N/A 7,227 15,039 N/A N/A 9.3% 17,194 N/A 18,741 N/A N/A 16,563 1.9% N/A N/A 18,468 2.0% N/A N/A 9.4% N/A 18,845 2.0% N/A N/A 10.1% 3,176 N/A 14.7% N/A N/A 13.8% 3,769 N/A 14.2% N/A 4,147 N/A 15.6% N/A N/A 9.8% N/A 4,140 N/A 4,949 N/A 10.9% N/A 5,453 N/A 13,364 N/A 7.8% N/A 15,782 N/A 8.7% N/A 18,179 N/A 9.1% 4,791 1,496 N/A N/A N/A N/A 1,092 14,959 9.6% 18.3% N/A N/A N/A N/A 0.9% 2.8% 5,356 1,689 N/A N/A N/A N/A 1,133 18,909 8.3% 20.4% N/A N/A N/A N/A 1.2% 2.9% 5,721 1,805 N/A N/A N/A N/A 1,294 22,906 8.8% 21.7% N/A N/A N/A N/A 1.7% 2.9% 2,083 N/A 2,521 38.4% N/A 3,029 N/A 38.4% N/A N/A 37.2% N/A

Highway 401 Mainline	South of Highway 3 merge/split	Highway 3/Highway 401 Northbound Off Ramp	19,954	N/A	27.2%	N/A	24,657	N/A	27.8%	N/A	27,629	N/A	29.6%	N/A
	Highway 3/Highway 401 Northbound Off Ramp	Highway 3/Highway 401 Northbound On Ramp	10,589	N/A	44.1%	N/A	13,212	N/A	45.5%	N/A	16,399	N/A	46.8%	N/A
	Highway 3/Highway 401 Northbound On Ramp	St. Clair College/Highway 401 Northbound Off Ramp	19,664	N/A	27.6%	N/A	22,641	N/A	30.6%	N/A	26,044	N/A	32.7%	N/A
	St. Clair College/Highway 401 Northbound Off Ramp	St. Clair College/Highway 401 Northbound On Ramp	12,307	N/A	29.5%	N/A	14,884	N/A	33.5%	N/A	17,780	N/A	35.9%	N/A
	St. Clair College/Highway 401 Northbound On Ramp	Pulford Street/Highway 401 Northbound On Ramp	16,522	N/A	25.2%	N/A	18,957	N/A	28.4%	N/A	21,972	N/A	30.5%	N/A
	Pulford Street/Highway 401 Northbound On Ramp	Huron Church Road/Highway 401 Northbound Off Ramp	22,550	N/A	19.8%	N/A	26,644	N/A	22.2%	N/A	29,920	N/A	24.1%	N/A
	Huron Church Road/Highway 401 Northbound Off Ramp	Malden Road/Highway 401 Northbound On Ramp	7,414	N/A	53.3%	N/A	9,413	N/A	57.9%	N/A	11,204	N/A	61.5%	N/A
	Malden Road/Highway 401 Northbound On Ramp	Ojibway Parkway/Highway 401 Northbound Off Ramp	10,591	N/A	41.8%	N/A	13,182	N/A	45.4%	N/A	15,351	N/A	49.1%	N/A
	Ojibway Parkway/Highway 401 Northbound Off Ramp	Ojibway Parkway/Highway 401 Northbound OnRamp	5,800	N/A	68.3%	N/A	7,825	N/A	70.9%	N/A	9,630	N/A	73.0%	N/A
	Ojibway Parkway/Highway 401 Northbound OnRamp	EC Row Expressway to Highway 401 Northbound On Ramp	7,296	N/A	58.0%	N/A	9,515	N/A	61.9%	N/A	11,436	N/A	64.9%	N/A
	EC Row Expressway to Highway 401 Northbound On Ramp	Canadian Plaza	9,987	N/A	57.9%	N/A	12,617	N/A	59.5%	N/A	14,744	N/A	60.8%	N/A
	Canadian Plaza	Ojibway Parkway/Highway 401 Southbound Off Ramp	N/A	17,980	N/A	52.0%	N/A	21,442	N/A	56.1%	N/A	24,132	N/A	58.4%
	Ojibway Parkway/Highway 401 Southbound Off Ramp	Ojibway Parkway/Highway 401 Southbound On Ramp	N/A	16,696	N/A	52.2%	N/A	20,060	N/A	56.4%	N/A	22,568	N/A	58.7%
	Ojibway Parkway/Highway 401 Southbound On Ramp	Highway 401 to EC Row Expressway Southbound Off Ramp	N/A	31,533	N/A	27.6%	N/A	39,289	N/A	32.5%	N/A	46,534	N/A	36.5%
	Highway 401 to EC Row Expressway Southbound Off Ramp	Malden Road/Highway 401 Southbound Off Ramp	N/A	18,914	N/A	51.3%	N/A	24,273	N/A	55.4%	N/A	29,106	N/A	59.2%
	Malden Road/Highway 401 Southbound Off Ramp	Huron Church Road/Highway 401 Southbound On Ramp	N/A	14,231	N/A	55.2%	N/A	18,666	N/A	59.8%	N/A	22,878	N/A	63.8%
	Huron Church Road/Highway 401 Southbound On Ramp	Pulford Street/Highway 401 Southbound Off Ramp	N/A	30,422	N/A	27.3%	N/A	36,538	N/A	31.0%	N/A	40,606	N/A	33.8%
	Pulford Street/Highway 401 Southbound Off Ramp	St Clair College/Highway 401 Southbound Off Ramp	N/A	24,232	N/A	34.5%	N/A	29,414	N/A	39.6%	N/A	32,261	N/A	43.6%
	St Clair College/Highway 401 Southbound Off Ramp	St Clair College/Highway 401 Southbound On Ramp	N/A	15,850	N/A	39.5%	N/A	20,763	N/A	44.4%	N/A	23,591	N/A	48.4%
	St Clair College/Highway 401 Southbound On Ramp	Highway 3/Highway 401 Southbound Off Ramp	N/A	21,700	N/A	34.9%	N/A	27,071	N/A	39.7%	N/A	30,301	N/A	43.5%
	Highway 3/Highway 401 Southbound Off Ramp	Highway 3/Highway 401 Southbound On Ramp	N/A	14,451	N/A	50.0%	N/A	19,128	N/A	50.9%	N/A	22,418	N/A	54.0%
	Highway 3/Highway 401 Southbound On Ramp	South of Highway 3 merge/split	N/A	21,530	N/A	36.3%	N/A	26,996	N/A	38.9%	N/A	31,034	N/A	42.1%
Malden Road	Chappus Street	Highway 401 South Ramp	8,966	11,480	3.9%	4.3%	9,084	11,528	3.7%	3.9%	9,447	12,207	3.9%	3.7%
	Highway 401 South Ramp	Highway 401 North Ramp	9,957	7,916	3.8%	4.3%	10,193	7,192	3.7%	3.9%	10,678	7,440	3.8%	3.7%
	North of Highway 401 North Ramp		7,195	8,613	3.8%	4.3%	6,982	8,058	3.7%	3.9%	7,149	8,393	3.8%	3.7%
Matchette Road	Chappus Street	EC Row Expressway South Ramp	8,512	7,933	1.0%	1.0%	9,261	9,268	1.0%	1.0%	9,542	10,489	1.0%	1.0%
	EC Row Expressway South Ramp	EC Row Expressway North Ramp	2,620	8,916	1.0%	1.0%	2,620	10,207	1.0%	1.0%	2,675	11,452	1.0%	1.0%
	EC Row Expressway North Ramp	Carmichael	4,861	3,303	1.0%	1.0%	5,152	3,168	1.0%	1.0%	5,719	3,318	1.0%	1.0%

05-1140-003-1

#### TABLE I-C

### SUMMARY OF TRAFFIC DATA - ALTERNATIVE 2A

Detroit River International Crossing Windsor, Ontario

Pavement Section	LOCATION From	To	A	ADT	2015 Comm	Vehicles	AA	2 \DT	025 Comm	Vehicles	A	20 ADT	035 Comm
			NB / WB	SB / EB	NB / WB	SB / EB	NB / WB	SB / EB	NB / WB	SB / EB	NB / WB	SB / EB	NB / WB
uron Church Road	Riverside Drive University Avenue	University Avenue Wyandotte Street	6,939 3,286	5,479 3,971	2.5% 3.3%	1.6%	7062 3349	5644 4081	2.6% 4.3%	2.4% 4.0%	7,038 3,312	5,893 4,280	2.8% 4.5%
	Wyandotte Street	AMB Off Ramp	2,256	3,176	1.0%	1.0%	2234	3201	1.0%	1.0%	2,292	3,415	1.0%
	AMB Off Ramp	College Street	17,371	6,347	13.8%	1.5%	18219	6483	16.6%	1.6%	19,697	6,722	19.2%
	College Street Girardot Street	Girardot Street Tecumseh Road	24,380 23.677	23,704 23,943	2.9% 3.4%	11.4%	25180 24378	25325 25437	3.2%	13.6% 13.1%	25,791 25,158	26,069 27.097	3.3%
	Tecumseh Road	Dorchester Street	27,103	27,831	3.5%	9.7%	27806	28711	3.8%	11.0%	28,406	31,078	4.0%
	Dorchester Street	Prince Road/Totten Street	27,021	29,147	3.1%	8.4%	27999	30476	3.3%	9.6%	28,518	32,810	3.5%
	Prince Road/Totten Street Malden Road	Malden Road Industrial Road	29,320 24,228	32,345 27,223	3.2% 2.4%	7.5% 8.0%	30399 25181	34133 28820	3.4% 2.5%	8.3% 9.0%	31,078 25,673	36,661 31,289	3.6%
	Industrial Road	EC Row Expressway North Ramp Terminal	24,228	29,090	2.4%	7.6%	27797	30892	2.5%	8.6%	23,673	33,495	2.6%
	EC Row Expressway North Ramp Terminal	EC Row Expressway South Ramp Terminal	19,860	35,172	2.1%	5.5%	21217	39953	2.3%	6.1%	21,241	42,144	2.3%
	EC Row Expressway South Ramp Terminal Highway 401 Off Ramp	Highway 401 Off Ramp Spring Garden Road/Labelle Street	25,710	26,218	1.7%	5.4%	28699	30391	1.8%	5.8%	30,263	32,833	1.9%
	Spring Garden Road/Labelle Street	Lambton Street/Grand Marais Road Ramp	11,401 9,600	7,335 7,377	0.7%	1.3%	12069 10251	8877 8762	0.7%	1.5%	12,489 10,516	9,489 9,720	0.8%
	Lambton Street/Grand Marais Road Ramp	Pulford Street	8,208	6,730	1.7%	0.6%	8577	8072	1.8%	0.6%	8,947	8,380	1.5%
	Pulford Street	Todd Lane/Cabana Road	8,186	7,395	1.9%	0.7%	8811	8686	1.9%	0.7%	9,368	9,494	1.9%
ot Road	Todd Lane/Cabana Road Huron Church Line	Huron Church Line St Clair College	11,076 6,414	13,226 7.682	1.1%	1.6%	12791 6864	14745 7897	1.2%	1.5%	14,484 7.245	17,025 8,548	1.3%
	St Clair College	Cousineau Drive	9,895	6,404	0.1%	1.0%	10440	7016	0.1%	1.0%	10,857	6,843	0.1%
	Cousineau Drive	Howard Avenue	9,831	5,472	0.2%	1.0%	10484	6166	0.4%	0.1%	10,911	6,141	0.6%
vay Parkway	Howard Avenue EC Row Expressway	EC Row Expressway GN Booth Drive	15,176 10,181	13,247 11,207	1.9%	2.1% 5.1%	16424 10894	14899 11526	2.0%	2.1% 5.8%	17,869 11,697	16,234 12,459	2.0%
way i aikway	GN Booth Drive	Sandwich Street	10,131	10,994	2.2%	5.2%	10834	11320	2.3%	5.9%	11,633	12,439	2.5%
	Sandwich Street	Prospect Avenue	9,487	9,723	0.8%	0.8%	10088	10109	0.7%	0.7%	10,780	10,639	0.7%
	North of Prospect Avenue		9,424	9,512	0.8%	0.8%	10025	9899	0.7%	0.7%	10,717	10,429	0.7%
SSING ROADS													
dotte Street	West of Huron Church Road		5,192	4,872	1.0%	1.0%	5112	4861	1.0%	1.0%	4,937	4,882	1.0%
5 A	East of Huron Church Road		3,616	5,077	1.1%	2.7%	3628	5148	1.9%	2.7%	3,627	5,297	2.0%
ersity Avenue	West of Huron Church Road East of Huron Church Road		1,267 2,139	1,128 2,145	1.0% 5.7%	1.0% 5.1%	1358 2312	1254 2356	1.0% 7.1%	1.0% 6.1%	1,504 2,457	1,357 2,367	1.0% 8.4%
side Drive	West of Huron Church Road		3,368	3,642	1.0%	1.0%	3548	3770	1.0%	1.0%	3,634	3,914	1.0%
Off D-ma	East of Huron Church Road		6,739	5,763	1.0%	1.0%	6951	5853	1.0%	1.0%	7,254	6,036	1.0%
3 Off Ramp 3 On Ramp	East of Huron Church Road East of Huron Church Road		N/A 6.302	10,035 N/A	N/A 3.0%	22.1% N/A	N/A 6604	10798 N/A	N/A 3.5%	26.4% N/A	N/A 6.927	12,337 N/A	N/A 4.0%
ia Street	AMB	Wyandotte Street	4,102	5,173	4.7%	5.6%	4153	5101	5.0%	7.0%	4,194	4,966	6.5%
ge Street	East of Huron Church Road		6,642	6,443	2.6%	4.4%	6747	6609	2.6%	4.9%	6,798	6,780	2.7%
ot Street	West of Huron Church Road East of Huron Church Road		1,777	805 1.161	1.0%	1.0% 1.0%	2013 1132	899 1167	1.0%	1.0%	2,239 1,153	990 1.174	1.0%
or subtr	East of Huron Church Road West of Huron Church Road		1,127 2,338	1,161 2,273	1.0%	1.0% 1.4%	1132 2282	1167 2206	1.0% 1.9%	1.0% 1.4%	1,153 2,292	1,174 2,172	2.1%
nseh Road	East of Huron Church Road		5,983	6,760	2.2%	4.3%	5758	6765	2.2%	5.8%	6,350	7,261	2.2%
actor Streat	West of Huron Church Road		6,444	6,926	1.0%	1.0%	6335	6833	1.0%	1.0%	6,629	7,220	1.0%
ester Street	East of Huron Church Road West of Huron Church Road		1,706 1,417	1,536 807	1.0% 2.2%	1.0% 1.4%	1738 1418	1562 807	1.0% 2.3%	1.0% 1.5%	1,746 1,422	1,586 806	1.0% 2.4%
Road/Totten Street	East of Huron Church Road		2,112	2,713	1.0%	1.0%	2259	2683	1.0%	1.0%	2,359	2,668	1.0%
- Dd	West of Huron Church Road		4,860	5,238	1.0%	1.0%	5023	5427	1.0%	1.0%	5,173	5,546	1.0%
en Road	East of Huron Church Road West of Huron Church Road		1,376 7,502	1,114 7.026	1.0% 7.1%	1.0% 10.9%	1681 7798	1348 7050	1.0% 7.4%	1.0% 12.4%	1,859 8,088	1,541 7,317	1.0% 7.7%
trial Road	East of Huron Church Road		3,634	3,450	1.4%	2.0%	3903	3861	1.4%	2.0%	4,318	4,030	1.4%
	West of Huron Church Road		3,911	3,157	3.8%	11.7%	4306	3451	4.0%	13.0%	4,481	3,597	4.0%
ow Expressway North Ramp Terminal	E-N/S Ramp N-W Ramp		13,740 N/A	N/A 768	1.9% N/A	N/A	16099 N/A	N/A 889	1.9% N/A	N/A	16,787 N/A	N/A 988	2.0% N/A
	N-W Ramp S-W Ramp		N/A 1,562	768 N/A	N/A 35.6%	1.0% N/A	N/A 1642	889 N/A	N/A 40.7%	1.0% N/A	N/A 1,691	988 N/A	N/A 44.1%
ow Expressway South Ramp Terminal	W-N/S Ramp		N/A	2,804	N/A	1.7%	N/A	2910	N/A	2.2%	N/A	2,860	N/A
r Gardan Road	S/N-E Ramp Wost of Huran Church Road		N/A	16,908	N/A	3.1%	N/A	19396	N/A	3.6%	N/A	21,212	N/A
g Garden Road lle Street	West of Huron Church Road East of Huron Church Road		2,322 3,606	3,118 1,866	1.0%	1.0% 1.0%	2322 3883	3118 2060	1.0%	1.0%	2,368 4,091	3,118 2,140	1.0%
oton Street/Grand Marais Road Ramp	East of Huron Church Road		5,266	4,439	1.0%	1.0%	5269	4900	1.0%	1.0%	5,271	5,542	1.0%
rd Street	East of Huron Church Road		3,301	1,925	1.0%	1.0%	2975	1517	1.0%	1.0%	3,004	1,495	1.0%
na Road	East of Huron Church Road between Huron Church Road and Highway 401 northbound Rai	nns	8,027 19.842	6,614 19,082	1.0% 0.2%	1.0%	8534 21977	7653 20565	1.0% 0.3%	1.0% 1.1%	9,275 23,942	8,802 23.009	1.0% 0.3%
Lane	between Huron Church Road and Highway 401 northbound Ran between Highway 401 northbound and southbound Ramps		19,842	19,082 16,536	0.2%	1.0%	21977 12917	20565	0.3%	1.1%	23,942 13,743	23,009 19,749	0.3%
	West of Highway 401 southbound Ramps		11,370	9,895	1.0%	1.0%	12182	10099	1.0%	1.0%	12,291	10,338	1.0%
n Church Line air College	West of Huron Church Road East of Talbot Road		7,444	6,031	1.6%	1.3%	8588 3254	7611 9546	1.5%	1.3%	10,341 3,214	9,022 9,802	1.6%
air College ineau Drive	East of Talbot Road East of Talbot Road		3,144 5,464	9,599 5,233	1.0%	1.0%	3254 5707	9546 5513	1.0%	1.0%	3,214 6,502	9,802 5,727	1.0%
	West of Talbot Road		7,233	6,365	1.0%	1.0%	8167	7000	0.0%	0.4%	8,832	7,650	0.0%
ard Avenue	East of Talbot Road between Talbot Road and Highway 401 southbound On Ramp		8,134	10,557	1.6%	1.8%	8765	11517	1.7%	1.9%	9,113	12,384	1.8%
	West of Highway 401 southbound On Ramp		14,444 12,559	7,334 14,692	1.4%	2.0%	15646 13654	8026 16628	1.5%	2.1%	17,352 15,378	8,434 18,277	1.6%
Row Expressway	East of Huron Church Road		34,790	44,695	3.1%	4.6%	43065	50397	3.2%	5.1%	48,073	56,669	3.4%
	At Malden Road		23,297	29,858	4.3%	5.4%	29382	32888	4.6%	5.8%	33,768	37,407	4.7%
	West of Matchette Drive		16,051	8,173	2.7%	4.9%	20854	9029	2.7%	4.5%	25,601	9,811	2.8%
or consistency, Huron Church Rd/Talbot R	d runs North-South and all crossing roads run East-West												
-													
HWAY 401 Ramps		$\langle \langle \rangle \langle \rangle \langle \rangle \rangle$											
way 3 merge/split													
1way 401 northbound Off Ramp			11,467	N/A	6.1%	N/A	12564	N/A	7.2%	N/A	14,074	N/A	8.6%
way 401 northbound On Ramp			9,736	N/A	2.0%	N/A	9748	N/A	2.0%	N/A	10,103	N/A	2.0%
way 401 southbound Off Ramp way 401 southbound On Ramp			N/A N/A	9,952 10,350	N/A N/A	1.8%	N/A N/A	10144 11816	N/A N/A	1.9% 7.7%	N/A N/A	10,701 13,164	N/A N/A
rd Avenue			.473	10,000		55.4.70				1.1.78			
IB Off Ramp			N/A	3,146	N/A	1.1%	N/A	3457	N/A	1.4%	N/A	3,755	N/A
dd Lane/Cabana Road way 401 northbound Off Ramp			6.875	N/A	1.1%	N/A	7973	NI/4	1.1%	N/A	7.877	N/A	1.3%
vay 401 northbound Off Ramp vay 401 northbound On Ramp			6,875 11,458	N/A N/A	1.1%	N/A N/A	7973 12703	N/A N/A	1.1%	N/A N/A	7,877 13,317	N/A N/A	1.3%
vay 401 southbound Off Ramp			N/A	13,410	N/A	1.5%	N/A	14847	N/A	1.7%	N/A	16,154	N/A
ay 401 southbound On Ramp			N/A	7,896	N/A	0.3%	N/A	8077	N/A	0.4%	N/A	8,737	N/A
ron Church Road ay 401 northbound Off Ramp			15,244	N/A	2.1%	N/A	17534	N/A	2.2%	N/A	18,589	N/A	2.2%
ay 401 southbound On Ramp			N/A	15,712	N/A	8.1%	N/A	17621	N/A	9.7%	N/A	18,987	N/A
alden Road								-				-	
ay 401 northbound On Ramp yay 401 southbound Off Ramp			3,175 N/A	N/A 4,144	14.2% N/A	N/A 13.6%	3749 N/A	N/A 4953	13.4% N/A	N/A 8.6%	4,144 N/A	N/A 5,460	12.3% N/A
w Expressway to Highway 401			14/A	-4,144	iw A	13.070	INA	4733	IN/A	0.070	iv A	3,400	ivA
ay 401 southbound On Ramp			N/A	13,781	N/A	7.8%	N/A	15448	N/A	9.2%	N/A	18,181	N/A
ay Parkway Interchange ay 401 northbound Off Ramp			4,701	N/A	9.6%	N/A	5280	N/A	9.1%	N/A	5.767	N/A	7.6%
ay 401 northbound Off Ramp ay 401 northbound On Ramp			4,701 1,495	N/A N/A	9.6% 18.3%	N/A N/A	5280 1689	N/A N/A	9.1% 20.3%	N/A N/A	5,767	N/A N/A	7.6%
ay 401 southbound Off Ramp			N/A	1,092	N/A	1.4%	N/A	1431	N/A	2.6%	N/A	1,291	N/A
ay 401 southbound On Ramp			N/A	14,959	N/A	2.9%	N/A	17791	N/A	1.9%	N/A	22,906	N/A
w Expressway Interchange ay 401 northbound On Ramp			2,178	N/A	36.3%	N/A	2537	N/A	41.0%	N/A	3,026	N/A	41.8%
-, ioraiosana on ramp			2,170	IN/A	30.370	1974	2001	13/A	41.070	1975	3,020	INA	-#1.070
ay 401 Mainline	South of Highway 3 merge/split	Highway 3/Highway 401 northbound Off Ramp	19,958	N/A	27.4%	N/A	24670	N/A	28.1%	N/A	27,671	N/A	30.1%
	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp	7,731	N/A N/A	35.9% 24.4%	N/A N/A	12076 21980	N/A N/A	39.6% 27.6%	N/A N/A	13,738 24,030	N/A N/A	42.2% 30.3%
	Todd Lane/Highway 401 northbound Off Ramp	Todd Lane/Highway 401 northbound On Ramp	10,510	N/A N/A	24.4%	N/A N/A	13570	N/A N/A	30.6%	N/A	15,706	N/A	34.4%
	Todd Lane/Highway 401 northbound On Ramp	Huron Church Road/Highway 401 northbound On Ramp	22,373	N/A	18.0%	N/A	26683	N/A	20.6%	N/A	29,403	N/A	22.6%
	Huron Church Road/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound On Ramp	Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp	7,274 10,449	N/A N/A	53.8% 41.7%	N/A N/A	9431 13180	N/A N/A	58.7% 45.8%	N/A N/A	11,213 15,357	N/A N/A	61.9% 48.5%
	Ojibway Parkway/Highway 401 northbound Off Ramp	Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound OnRamp	10,449 5,748	N/A N/A	41.7% 68.0%	N/A N/A	13180 7900	N/A N/A	45.8% 70.3%	N/A N/A	9,590	N/A N/A	48.5% 73.2%
	Ojibway Parkway/Highway 401 northbound OnRamp	EC Row Expressway to Highway 401 northbound On Ramp	7,243	N/A	57.8%	N/A	9589	N/A	61.5%	N/A	11,397	N/A	65.1%
	EC Row Expressway to Highway 401 northbound On Ramp	Canadian Plaza	9,981	N/A	57.8%	N/A	12615	N/A	59.5%	N/A	14,742	N/A	60.8%
	Canadian Plaza	Ojibway Parkway/Highway 401 southbound Off Ramp	N/A	18.028	N/A	52.8%	N/A	21461	N/A	56.3%	N/A	24,191	N/A
	Ojibway Parkway/Highway 401 southbound Off Ramp	Ojibway Parkway/Highway 401 southbound On Ramp	N/A N/A	16,743	N/A N/A	52.8%	N/A N/A	20077	N/A N/A	56.5%	N/A N/A	22,624	N/A N/A
	Ojibway Parkway/Highway 401 southbound On Ramp	Highway 401 to EC Row Expressway southbound Off Ramp	N/A	31,610	N/A	28.2%	N/A	39274	N/A	32.7%	N/A	46,563	N/A
	Highway 401 to EC Row Expressway southbound Off Ramp Malden Road/Highway 401 southbound Off Ramp	Malden Road/Highway 401 southbound Off Ramp Huron Church Road/Highway 401 southbound On Ramp	N/A N/A	18,476 13,766	N/A N/A	52.2% 56.4%	N/A N/A	24839 19308	N/A N/A	56.1% 61.4%	N/A N/A	29,133 23.011	N/A N/A
	Malden Road/Highway 401 southbound Off Ramp Huron Church Road/Highway 401 southbound On Ramp	Huron Church Road/Highway 401 southbound On Ramp Todd Lane/Highway 401 southbound Off Ramp	N/A N/A	13,766 29,083	N/A N/A	56.4% 27.3%	N/A N/A	19308 36031	N/A N/A	61.4% 31.2%	N/A N/A	23,011 40,739	N/A N/A
	Todd Lane/Highway 401 southbound Off Ramp	Todd Lane/Highway 401 southbound On Ramp	N/A	14,880	N/A	35.8%	N/A	20218	N/A	41.0%	N/A	23,531	N/A
	Todd Lane/Highway 401 southbound On Ramp Howard Avenue/Highway 401 southbound Off Ramp	Howard Avenue/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp	N/A	23,313	N/A	30.1%	N/A	28889	N/A	34.7%	N/A	32,962	N/A
					NT / #		NT/A		NT/A		NT / A		

	Todd Lane/Highway 401 southbound On Ramp Howard Avenue/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound On Ramp	Howard Avenue/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound On Ramp South of Highway 3 merge/split	N/A N/A N/A	23,313 27,051 15,799 29,133	N/A N/A N/A	30.1% 25.3% 46.0% 27.1%	N/A N/A N/A	28889 25374 18209 27043	N/A N/A N/A	34.7% 38.6% 53.5% 39.5%	N/A N/A N/A	32,962 29,133 21,770 31,056	N/A N/A N/A	38.2% 42.3% 55.6% 42.3%
Grand Marais Road	East of connecting ramp		3,799	6,872	1.0%	1.0%	4299	3821	1.0%	1.0%	4,299	4,417	1.0%	1.0%
	West of connecting ramp		2,354	4,624	1.5%	0.4%	2581	2363	1.7%	0.9%	2,627	1,655	1.8%	0.6%
Malden Road	Chappus Street	Highway 401 South Ramp	8,790	18,846	3.8%	2.3%	8678	11100	3.7%	3.9%	9,101	11,667	3.7%	3.6%
	Highway 401 South Ramp	Highway 401 North Ramp	9,781	6,822	3.8%	4.3%	9788	6764	3.7%	3.9%	10,331	6,899	3.7%	3.6%
	North of Highway 401 North Ramp		7,017	7,519	3.8%	4.3%	6584	7630	3.7%	3.9%	6,817	7,853	3.7%	3.6%
Matchette Street	Chappus Street	EC Row Expressway South Ramp	7,691	7,482	1.0%	1.0%	8264	9347	1.0%	1.0%	9,199	10,065	1.0%	1.0%
	EC Row Expressway South Ramp	EC Row Expressway North Ramp	2,330	8,609	1.0%	1.0%	2290	10334	1.0%	1.0%	2,646	10,982	1.0%	1.0%
	EC Row Expressway North Ramp	Carmichael	4,642	2,938	1.0%	1.0%	4752	3019	1.0%	1.0%	5,048	3,271	1.0%	1.0%

#### TABLE I-D

#### SUMMARY OF TRAFFIC DATA - ALTERNATIVE 2B

Detroit River International Crossing Windsor, Ontario

Pavement Section	LOCATION From	To	AA	2 ADT	015 <u>Comm</u>	Vehicles	AA	20 ADT	025 <u>Comm</u>	Vehicles	AA	20 ADT_	035 <u>Comm</u>	Vehicle
			NB / WB	SB / EB	NB / WB	SB / EB	NB / WB	SB / EB	NB / WB	SB / EB	NB / WB	SB / EB	NB / WB	SB/I
Iron Church Road	Riverside Drive University Avenue	University Avenue Wyandotte Street	6,939 3,286	5,479 3,971	2.5% 3.3%	1.6%	7,062 3,349	5,644 4,081	2.6%	2.4%	7,038 3,312	5,893 4,280	2.8% 4.5%	3.09 4.89
	Wyandotte Street	AMB Off Ramp	2,256	3,176	1.0%	1.0%	2,234	3,201	1.0%	1.0%	2,292	3,415	1.0%	1.09
	AMB Off Ramp College Street	College Street Girardot Street	17,371 24,380	6,347 23,704	13.8% 2.9%	1.5% 11.4%	18,219 25,180	6,483 25,325	16.6% 3.2%	1.6% 13.6%	19,697 25,791	6,722 26,069	19.2% 3.3%	1.69 15.9
	Girardot Street	Tecumseh Road	24,580	23,704 23,943	3.4%	11.4%	23,180	25,323	3.6%	13.0%	25,158	26,069	3.3%	15.2
	Tecumseh Road	Dorchester Street	27,103	27,831	3.5%	9.7%	27,806	28,711	3.8%	11.0%	28,406	31,078	4.0%	12.5
	Dorchester Street Prince Road/Totten Street	Prince Road/Totten Street Malden Road	27,021 29,320	29,147 32,345	3.1% 3.2%	8.4% 7.5%	27,999 30,399	30,476 34,133	3.3% 3.4%	9.6% 8.3%	28,518 31,078	32,810 36,661	3.5% 3.6%	11.1 <sup>9</sup> 9.59
	Malden Road	Industrial Road	24,228	27,223	2.4%	8.0%	25,181	28,820	2.5%	9.0%	25,673	31,289	2.6%	10.4
	Industrial Road	EC Row Expressway North Ramp Terminal	25,922	29,090	2.4%	7.6%	27,797	30,892	2.6%	8.6%	27,661	33,495	2.6%	9.79
	EC Row Expressway North Ramp Terminal EC Row Expressway South Ramp Terminal	EC Row Expressway South Ramp Terminal Highway 401 Off Ramp	19,860 25,710	35,172 26,218	2.1%	5.5% 5.4%	21,217 28,699	39,953 30,391	2.3%	6.1% 5.8%	21,241 30,263	42,144 32,461	2.3%	6.89 6.49
	Highway 401 Off Ramp	Spring Garden Road/Labelle Street	11,401	7,335	0.7%	1.3%	12,069	8,877	0.7%	1.5%	12,489	9,489	0.8%	1.69
	Spring Garden Road/Labelle Street	Lambton Street/Grand Marais Road Ramp	9,600	7,377	1.2%	1.8%	10,251	8,762	1.3%	2.2%	10,516	9,720	1.3%	2.29
	Lambton Street/Grand Marais Road Ramp Pulford Street	Pulford Street Todd Lane/Cabana Road	8,208 8,186	6,730 7,395	1.7% 1.9%	0.6% 0.7%	8,577 8,811	8,072 8,686	1.8% 1.9%	0.6% 0.7%	8,947 9,368	8,380 9,494	1.5%	0.79
	Todd Lane/Cabana Road	Huron Church Line	11,076	13,226	1.1%	1.6%	12,791	14,745	1.2%	1.5%	14,484	17,025	1.3%	1.69
lbot Road	Huron Church Line	St Clair College	6,414	7,682	0.1%	1.0%	6,864	7,897	0.2%	1.0%	7,245	8,548	0.2%	1.09
	St Clair College	Cousineau Drive	9,895	6,404	0.1%	1.0%	10,440	7,016	0.1%	1.0%	10,857	6,843	0.1%	1.09
	Cousineau Drive Howard Avenue	Howard Avenue Highway 3 split	9,831 15,176	5,472 13,247	0.2%	1.0% 2.1%	10,484 16,424	6,166 14,899	0.4%	0.1%	10,911 17,869	6,141 16,234	0.6%	0.19
bway Parkway	EC Row Expressway	GN Booth Drive	10,181	11,207	2.2%	5.1%	10,894	11,526	2.3%	5.8%	11,697	12,459	2.5%	6.3
	GN Booth Drive	Sandwich Street	10,116	10,994	2.2%	5.2%	10,830	11,322	2.3%	5.9% 0.7%	11,633	12,247	2.5%	6.4
	Sandwich Street North of Prospect Avenue	Prospect Avenue	9,487 9,424	9,723 9,512	0.8%	0.8%	10,088 10,025	10,109 9,899	0.7%	0.7%	10,780 10,717	10,639 10,429	0.7% 0.7%	0.7
OSSING ROADS	West of Huron Church Road		5,192	4,872	1.0%	1.0%	5,112	4,861	1.0%	1.0%	4,937	4,882	1.0%	1.09
indotte Street	East of Huron Church Road		5,192 3,616	4,872	1.0%	2.7%	3,628	4,861 5,148	1.0%	2.7%	4,937 3,627	4,882 5,297	2.0%	2.9
versity Avenue	West of Huron Church Road		1,267	1,128	1.0%	1.0%	1,358	1,254	1.0%	1.0%	1,504	1,357	1.0%	1.09
vreida Driva	East of Huron Church Road		2,139	2,145	5.7%	5.1%	2,312	2,356	7.1%	6.1%	2,457	2,367	8.4%	6.3
rside Drive	West of Huron Church Road East of Huron Church Road		3,368 6,739	3,642 5,763	1.0%	1.0%	3,548 6,951	3,770 5,853	1.0%	1.0%	3,634 7,254	3,914 6,036	1.0%	1.0 1.0
Off Ramp	East of Huron Church Road		N/A	10,035	N/A	22.1%	N/A	10,798	N/A	26.4%	N/A	12,337	N/A	29
On Ramp	East of Huron Church Road	Wyandotta Street	6,302	N/A	3.0%	N/A	6,604	N/A	3.5%	N/A	6,927	N/A	4.0%	N
cia Street ge Street	AMB East of Huron Church Road	Wyandotte Street	4,102 6,642	5,173 6,443	4.7% 2.6%	5.6% 4.4%	4,153 6,747	5,101 6,609	5.0% 2.6%	7.0% 4.9%	4,194 6,798	4,966 6,780	6.5% 2.7%	8. 5.
	West of Huron Church Road		1,777	805	1.0%	1.0%	2,013	899	1.0%	1.0%	2,239	990	1.0%	1.
dot Street	East of Huron Church Road		1,127	1,161	1.0%	1.0%	1,132	1,167	1.0%	1.0%	1,153	1,174	1.0%	10
nseh Road	West of Huron Church Road East of Huron Church Road		2,338 5,983	2,273 6,760	1.9% 2.2%	1.4%	2,282 5,758	2,206 6,765	1.9%	1.4% 5.8%	2,292 6,350	2,172 7,261	2.1%	1.
	West of Huron Church Road		6,444	6,926	1.0%	4.3%	6,335	6,833	1.0%	1.0%	6,629	7,201	1.0%	1.
ester Street	East of Huron Church Road		1,706	1,536	1.0%	1.0%	1,738	1,562	1.0%	1.0%	1,746	1,586	1.0%	1.
e Road/Totten Street	West of Huron Church Road East of Huron Church Road		1,417 2,112	807 2,713	2.2%	1.4%	1,418 2,259	807 2,683	2.3%	1.5%	1,422 2,359	806 2,668	2.4%	1.5
e Houer Fouch Breek	West of Huron Church Road		4,860	5,238	1.0%	1.0%	5,023	5,427	1.0%	1.0%	5,173	5,546	1.0%	1.0
den Road	East of Huron Church Road		1,376	1,114	1.0%	1.0%	1,681	1,348	1.0%	1.0%	1,859	1,541	1.0%	1.0
strial Road	West of Huron Church Road East of Huron Church Road		7,502 3,634	7,026 3,450	7.1% 1.4%	10.9% 2.0%	7,798 3,903	7,050 3,861	7.4% 1.4%	12.4% 2.0%	8,088 4,318	7,317 4,030	7.7% 1.4%	14.9
	West of Huron Church Road		3,911	3,157	3.8%	11.7%	4,306	3,451	4.0%	13.0%	4,481	3,597	4.0%	13.
Row Expressway North Ramp Te			13,740	N/A	1.9%	N/A	16,099	N/A	1.9%	N/A	16,787	N/A	2.0%	N/
	N-W Ramp S-W Ramp		N/A 1,562	768 N/A	N/A 35.6%	1.0% N/A	N/A 1,642	889 N/A	N/A 40.7%	1.0% N/A	N/A 1,691	988 N/A	N/A 44.1%	0.8 N/
ow Expressway South Ramp Te	ermi W-N/S Ramp		N/A	2,804	N/A	1.7%	N/A	2,910	N/A	2.2%	N/A	2,860	N/A	2.5
a Candan Baad	S/N-E Ramp West of Huron Church Road		N/A 2.322	16,908 3.118	N/A 1.0%	3.1%	N/A 2.322	19,396 3.118	N/A 1.0%	3.6%	N/A 2.368	21,212 3,118	N/A 1.0%	4.2
ng Garden Road Ile Street	East of Huron Church Road		3,606	1,866	1.0%	1.0%	3,883	2,060	1.0%	1.0%	4,091	2,140	1.0%	1.0
bton Street/Grand Marais Road	East of Huron Church Road		4,296	3,589	1.0%	1.0%	4,299	3,821	1.0%	1.0%	4,299	4,417	1.0%	1.0
10	West of Huron Church Road		2,354	2,360	1.5%	0.9%	2,581	2,363	1.7%	0.9%	2,627	2,362	1.8%	1.0
ord Street ana Road	East of Huron Church Road East of Huron Church Road		3,301 8,027	1,925 6,614	1.0%	1.0% 1.0%	2,975 8,534	1,517 7,653	1.0%	1.0%	3,004 9,275	1,495 8,802	1.0%	1.0
	between Huron Church Road and Highway 401 northbound I	lamps	19,842	19,082	0.2%	1.0%	21,977	20,565	0.3%	1.1%	23,942	23,009	0.3%	1.3
d Lane	between Highway 401 northbound and southbound Ramps		12,043	16,536	0.2%	1.0%	12,917	18,098	0.3%	1.0%	13,743	19,749	0.3%	1.1
on Church Line	West of Highway 401 southbound Ramps West of Huron Church Road	$\sim$	11,370 7,444	9,895 6,031	1.0% 1.6%	1.0% 1.3%	12,182 8,588	10,099 7,611	1.0% 1.5%	1.0% 1.3%	12,291 10,341	10,338 9,022	1.0% 1.6%	1.0
lair College	East of Talbot Road		3,144	9,599	1.0%	1.0%	3,254	9,546	1.0%	1.0%	3,214	9,802	1.0%	1.0
sineau Drive	East of Talbot Road		5,464	5,233	1.0%	1.0%	5,707	5,513	1.0%	1.0%	6,502	5,727	1.0%	1.0
ard Avenue	West of Talbot Road East of Talbot Road		7,233 8,134	6,365 10,557	1.0% 1.6%	1.0% 1.8%	8,167 8,765	7,000 11,517	0.0%	0.4%	8,832 9,113	7,650 12,384	0.0%	0.0
ard Avenue	between Talbot Road and Highway 401 southbound On Ram		14,444	7,334	1.4%	2.0%	15,646	8,026	1.5%	2.1%	17,352	8,434	1.6%	2.
	West of Highway 401 southbound On-Ramp		12,559	14,692	2.0%	2.0%	13,654	16,628	1.9%	2.0%	15,378	18,277	1.9%	2.0
Row Expressway	East of Huron Church Road At Malden Road		34,790 23,297	44,897 30,060	3.1% 4.3%	4.6% 5.4%	43,065 29,382	50,397 32,888	3.2% 4.6%	5.1% 5.8%	49,464 35,165	57,015 37,750	3.4% 4.8%	5. 5.
	West of Matchette Street	$\langle \langle \rangle \langle \rangle \langle \rangle \rangle$	16,051	8,173	4.3%	4.9%	29,382	9,029	2.7%	4.5%	25,601	9,811	4.8%	3.
or consistency, Huron Church P	d/Talbot Rd runs North-South and all crossing roads run East-Wa													
a consistency, naron church ka	a raiot ku funs forth-south and an crossing roads fun Lase in													
IWAY 401 Ramps														
num 3 marga/mlit														
way 3 merge/split way 401 northbound Off Ramp			11,467	N/A	6.1%	N/A	12,564	N/A	7.2%	N/A	14,074	N/A	8.6%	Ν
way 401 northbound On Ramp			9,736	N/A	2.0%	N/A	9,748	N/A	2.0%	N/A	10,103	N/A	2.0%	Ν
ay 401 southbound Off Ramp ay 401 southbound On Ramp			N/A N/A	9,952 10,350	N/A N/A	1.8% 6.1%	N/A N/A	10,144 11,816	N/A N/A	1.9% 7.7%	N/A N/A	10,701 13,164	N/A N/A	1
rd Avenue			in/A	10,550	in/A	0.170	n/A	11,610	iwA	1.170	IWA	13,104	iwA	/
ay 401 southbound Off Ramp			N/A	3,146	N/A	1.1%	N/A	3,457	N/A	1.4%	N/A	3,755	N/A	1
d Lane/Cabana Road ay 401 northbound Off Ramp			6075	NT/A	1.16	N7/A	7.072	NT/A	1.1~	NI/A	7 077	NT/ A	1.20	1
ay 401 northbound Off Ramp ay 401 northbound On Ramp			6,875 11,458	N/A N/A	1.1%	N/A N/A	7,973 12,703	N/A N/A	1.1%	N/A N/A	7,877	N/A N/A	1.3%	1
ay 401 southbound Off Ramp			N/A	13,410	N/A	1.5%	N/A	14,847	N/A	1.7%	N/A	16,154	N/A	1
ay 401 southbound On Ramp			N/A	7,896	N/A	0.3%	N/A	8,077	N/A	0.4%	N/A	8,737	N/A	0
ron Church Road ay 401 northbound Off Ramp			15,244	N/A	2.1%	N/A	17,534	N/A	2.2%	N/A	18,589	N/A	2.2%	;
ay 401 southbound On Ramp			N/A	15,712	N/A	8.1%	N/A	17,621	N/A	9.7%	N/A	18,653	N/A	ç
Iden Road														
ay 401 northbound On Ramp ay 401 southbound Off Ramp			3,175 N/A	N/A 4,144	14.2% N/A	N/A 13.6%	3,749 N/A	N/A 4,953	13.4% N/A	N/A 8.6%	4,144 N/A	N/A 5,460	12.3% N/A	1
w Expressway to Highway 401			ivA.	,1		4.5.070		-,733		0.078		2,400		8
ay 401 southbound Off Ramp			N/A	13,781	N/A	7.8%	N/A	15,448	N/A	9.2%	N/A	18,181	N/A	5
ay Parkway Interchange ay 401 northbound Off Ramp			4,701	N/A	9.6%	N/A	5,280	N/A	9.1%	N/A	5,767	N/A	7.6%	1
ay 401 northbound On Ramp			4,701	N/A N/A	9.6% 18.3%	N/A N/A	5,280 1,689	N/A N/A	9.1% 20.3%	N/A N/A	5,767	N/A N/A	21.8%	1
ay 401 southbound Off Ramp			N/A	1,092	N/A	1.4%	N/A	1,431	N/A	2.6%	N/A	1,291	N/A	1
ay 401 southbound On Ramp w Expressway Interchange			N/A	14,959	N/A	2.9%	N/A	17,791	N/A	1.9%	N/A	22,906	N/A	3
ay 401 northbound On Ramp			2,178	N/A	36.3%	N/A	2,537	N/A	41.0%	N/A	3,026	N/A	41.8%	r
ay 401 Mainline	Souht of Highway 3 merge/split Highway 3/Highway 401 northbound Off Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp	19,958	N/A	27.4%	N/A N/A	24,670	N/A	28.1%	N/A	27,671	N/A	30.1%	1
	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp	7,731 17,735	N/A N/A	35.9% 24.4%	N/A N/A	12,076 21,980	N/A N/A	39.6% 27.6%	N/A N/A	13,738 24,030	N/A N/A	42.2% 30.3%	1
	Todd Lane/Highway 401 northbound Off Ramp	Todd Lane/Highway 401 northbound On Ramp	10,510	N/A	24,4%	N/A N/A	13,570	N/A	30.6%	N/A N/A	15,706	N/A N/A	34.4%	N
	Todd Lane/Highway 401 northbound On Ramp	Huron Church Road/Highway 401 northbound On Ramp	22,373	N/A	18.0%	N/A	26,683	N/A	20.6%	N/A	29,403	N/A	22.6%	N
	Huron Church Road/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound On Ramp	Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp	7,274 10,449	N/A N/A	53.8% 41.7%	N/A N/A	9,431 13,180	N/A N/A	58.7% 45.8%	N/A N/A	11,213 15,357	N/A N/A	61.9% 48.5%	N
	Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp	Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound OnRamp	10,449 5,748	N/A N/A	41.7% 68.0%	N/A N/A	13,180 7,900	N/A N/A	45.8% 70.3%	N/A N/A	9,590	N/A N/A	48.5% 73.2%	N
	Ojibway Parkway/Highway 401 northbound OnRamp	EC Row Expressway to Highway 401 northbound On Ramp	7,243	N/A	57.8%	N/A	9,589	N/A	61.5%	N/A	11,397	N/A	65.1%	Ν
	EC Row Expressway to Highway 401 northbound On Ramp	Canadian Plaza	9,981	N/A	57.8%	N/A	12,615	N/A	59.5%	N/A	14,742	N/A	60.8%	N/

	Canadian Plaza	Ojibway Parkway/Highway 401 southbound Off Ramp	N/A	18,028	N/A	52.8%	N/A	21,461	N/A	56.3%	N/A	24,191	N/A	59.0%
	Ojibway Parkway/Highway 401 southbound Off Ramp	Ojibway Parkway/Highway 401 southbound On Ramp	N/A	16,743	N/A	53.0%	N/A	20,077	N/A	56.5%	N/A	22,624	N/A	59.3%
	Ojibway Parkway/Highway 401 southbound On Ramp	Highway 401 to EC Row Expressway southbound Off Ramp	N/A	31,610	N/A	28.2%	N/A	39,274	N/A	32.7%	N/A	46,563	N/A	36.7%
	Highway 401 to EC Row Expressway southbound Off Ramp	Malden Road/Highway 401 southbound Off Ramp	N/A	18,476	N/A	52.2%	N/A	24,839	N/A	56.1%	N/A	29,133	N/A	59.3%
	Malden Road/Highway 401 southbound Off Ramp	Huron Church Road/Highway 401 southbound On Ramp	N/A	13,766	N/A	56.4%	N/A	19,308	N/A	61.4%	N/A	23,011	N/A	65.0%
	Huron Church Road/Highway 401 southbound On Ramp	Todd Lane/Highway 401 southbound Off Ramp	N/A	29,083	N/A	27.3%	N/A	36,031	N/A	31.2%	N/A	40,387	N/A	34.0%
	Todd Lane/Highway 401 southbound Off Ramp	Todd Lane/Highway 401 southbound On Ramp	N/A	14,880	N/A	35.8%	N/A	20,218	N/A	41.0%	N/A	23,170	N/A	44.9%
	Todd Lane/Highway 401 southbound On Ramp	Howard Avenue/Highway 401 southbound Off Ramp	N/A	23,313	N/A	30.1%	N/A	28,889	N/A	34.7%	N/A	32,604	N/A	38.2%
	Howard Avenue/Highway 401 southbound Off Ramp	Highway 3/Highway 401 southbound Off Ramp	N/A	27,051	N/A	25.3%	N/A	25,374	N/A	38.6%	N/A	28,770	N/A	42.2%
	Highway 3/Highway 401 southbound Off Ramp	Highway 3/Highway 401 southbound On Ramp	N/A	15,799	N/A	46.0%	N/A	18,209	N/A	53.5%	N/A	21,570	N/A	56.1%
	Highway 3/Highway 401 southbound On Ramp	South of Highway 3 merge/split	N/A	29,133	N/A	27.1%	N/A	27,043	N/A	39.5%	N/A	31,056	N/A	42.3%
Malden Road	Chappus Street	Highway 401 South Ramp	8,439	10,340	3.8%	4.3%	8,678	11,091	3.7%	3.9%	9,101	11,717	3.7%	3.6%
	Highway 401 South Ramp	Highway 401 North Ramp	9,430	6,776	3.8%	4.3%	9,788	6,764	3.7%	3.9%	10,331	6,950	3.7%	3.5%
	North of Highway 401 North Ramp		6,667	7,473	3.8%	4.3%	6,584	7,630	3.7%	3.9%	6,810	7,903	3.7%	3.5%
Matchette Street	Chappus Street	EC Row Expressway South Ramp	7,871	7,570	1.0%	1.0%	8,264	9,347	1.0%	1.0%	9,495	11,002	1.0%	1.0%
	EC Row Expressway South Ramp	EC Row Expressway North Ramp	2,330	8,626	1.0%	1.0%	2,290	10,334	1.0%	1.0%	2,646	12,006	1.0%	1.0%
	EC Row Expressway North Ramp	Carmichael	4,625	2,938	1.0%	1.0%	4,752	3,019	1.0%	1.0%	5,363	3,271	1.0%	1.0%

05-1140-003-1

### TABLE I-E

## SUMMARY OF TRAFFIC DATA - ALTERNATIVE 3

Detroit River International Crossing Windsor, Ontario

Pavement Section	LOCATION	To			015 Comm	Vehicles	•		025 Comm	Vehicles	۵۸	20 ADT_	)35 Comm	Vehicles
	From FROM	то	NB/WB	<u>ADT</u> SB/EB	NB/WB	SB / EB	<u>AA</u> NB/WB	A <u>DT</u> SB / EB	NB/WB	SB / EB	NB / WB	SB / EB	NB/WB	SB / EB
Huron Church Road	Riverside Drive	University Avenue	6,918	5,396	2.6%	1.6%	6,961	5,530	2.6%	2.4%	6,880	5,780	2.9%	3.0%
	University Avenue Wyandotte Street	Wyandotte Street AMB Off Ramp	3,192 2,259	3,920 3,128	3.5%	3.1%	3,214 2,224	4,019 3,176	4.5%	4.0%	3,053 2,107	4,205 3,328	5.0% 1.0%	4.9% 1.0%
	AMB Off Ramp	College Street	17,523	6,248	15.0%	1.5%	18,564	6,353	16.4%	1.6%	19,717	6,581	20.7%	1.6%
	College Street Girardot Street	Girardot Street Tecumseh Road	24,195 23,064	23,449 23,964	2.9% 3.4%	12.4% 12.3%	24,955 24,408	24,843 25,958	3.2% 3.7%	13.4% 13.1%	25,463 25,119	26,103 27,680	3.3% 3.9%	16.8% 16.0%
	Tecumseh Road	Dorchester Street	26,282	27,186	3.5%	10.6%	27,651	29,331	3.8%	11.3%	28,380	30,495	4.0%	13.6%
	Dorchester Street Prince Road/Totten Street	Prince Road/Totten Street Malden Road	26,623 28,955	28,555 32,055	3.1% 3.2%	9.3% 8.5%	28,081 30,049	30,873 33,749	3.3% 3.4%	9.9% 8.6%	28,794 31,206	31,651 34,207	3.5% 3.7%	12.0% 10.5%
	Malden Road	Industrial Road	23,645	26,388	2.4%	9.0%	24,646	27,981	2.5%	9.4%	25,464	28,851	2.6%	11.7%
	Industrial Road EC Row Expressway North Ramp Terminal	EC Row Expressway North Ramp Terminal EC Row Expressway South Ramp Terminal	25,478 19,503	28,982 36,395	2.4% 2.2%	8.7% 6.3%	26,596 20,149	30,037 38,952	2.6% 2.3%	8.8% 6.4%	27,054 20,884	31,283 41,304	2.6% 2.3%	10.7% 7.7%
	EC Row Expressway North Ramp Terminal	Spring Gdn Rd/Labelle St	24,639	28,455	1.7%	6.3%	28,259	30,210	1.8%	6.2%	29,662	32,024	1.8%	7.3%
	Spring Gdn Rd/Labelle St Lambton Street/Grand Marais Road	Lambton Street/Grand Marais Road Pulford Street	22,690	11,287	1.3%	1.5%	26,134	13,261	1.4%	1.5%	27,720	13,928	1.4%	1.5%
	Pulford Street	Todd Lane/Cabana Road	10,760 10,912	11,989 12,726	1.4%	1.3%	12,557 12,763	14,320 15,081	1.5%	1.2%	13,439 13,680	15,346 16,161	1.5%	1.2%
	Todd Lane/Cabana Road	Huron Church Line	10,614	11,744	1.0%	0.8%	12,281	14,453	1.0%	0.7%	12,890	15,643	1.0%	0.7%
albot Road	Huron Church Line St Clair College	St Clair College Cousineau Drive	6,839 14,243	13,604 7,669	0.8%	0.6%	6,530 14,778	14,107 7,704	1.2%	0.6%	7,121	14,895 8,120	1.3%	0.7%
	Cousineau Drive	Howard Avenue	6,432	5,582	1.5%	4.8%	7,085	5,242	1.4%	5.3%	7,625	5,360	1.3%	5.7%
jibway Parkway	South of Howard Avenue EC Row Expressway	GN Booth Drive	13,491 9,914	12,505 10,556	2.1% 1.4%	2.0% 5.3%	14,875 10,857	13,903 11,127	2.0%	2.0%	15,866 11,827	14,939 11,522	2.0%	2.0% 6.8%
,	GN Booth Drive	Sandwich Street	9,850	10,366	1.4%	5.4%	10,758	10,889	1.3%	6.1%	11,744	11,274	1.3%	6.9%
	Sandwich Street North of Prospect Avenue	Prospect Avenue	9,183 9,120	9,681 9,480	0.8%	0.8%	10,039 9,975	10,079 9,897	0.7% 0.7%	0.7% 0.7%	10,920 10,857	10,280 10,051	0.7% 0.7%	0.7% 0.7%
ROSSING ROADS /yandotte Street	West of Huron Church Road		5,176	4.869	1.0%	1.0%	5,113	4,883	1.0%	1.0%	4,977	4,900	1.0%	1.0%
yandone Sheet	East of Huron Church Road		3,579	5,179	1.1%	2.7%	3,606	5,258	1.9%	2.7%	3,621	5,433	2.1%	2.8%
niversity Avenue	West of Huron Church Road		1,264	1,185	1.0%	1.0%	1,375	1,229	1.0%	1.0%	1,513	1,313	1.0%	1.0%
iverside Drive	East of Huron Church Road West of Huron Church Road		2,129 3,427	2,108 3,539	5.7%	5.3%	2,295 3,595	2,207 3,728	7.1%	6.6%	2,476 3,708	2,249 4,018	8.3%	6.9% 1.0%
	East of Huron Church Road		6,762	5,658	1.0%	1.0%	6,979	5,800	1.0%	1.0%	7,256	5,956	1.0%	1.0%
MB Off Ramp MB On Ramp	East of Huron Church Road East of Huron Church Road		N/A 6,319	10,176 N/A	N/A 2.9%	24.1% N/A	N/A 6,616	11,242 N/A	N/A 3.5%	25.5% N/A	N/A 7,019	12,540 N/A	N/A 4.0%	31.1% N/A
tricia Street	AMB	Wyandotte Street	4,109	5,115	4.7%	6.3%	4,135	5,001	5.5%	7.1%	4,206	4,833	5.8%	9.0%
llege Street	East of Huron Church Road West of Huron Church Road		6,585 1,839	6,227 751	2.4%	4.3%	6,690 2,051	6,390 935	2.5%	5.1%	6,834 2,260	6,532 1,021	2.5%	6.4%
ardot Street	West of Huron Church Road East of Huron Church Road		1,839 1,120	751 1,156	1.0%	1.0% 1.0%	2,051 1,150	935 1,153	1.0%	1.0%	2,260 1,159	1,021 1,160	1.0% 1.0%	1.0% 1.0%
	West of Huron Church Road		2,346	2,282	1.7%	1.1%	2,288	2,217	1.8%	1.2%	2,290	2,184	1.8%	1.2%
cumseh Road	East of Huron Church Road West of Huron Church Road		5,692 6,453	6,768 6,857	2.4%	4.4% 1.0%	5,683 6,537	6,763 6,961	2.4%	5.2%	6,150 6,800	7,222 7,321	2.3%	6.8% 1.0%
rchester Street	East of Huron Church Road		1,297	844	1.0%	1.0%	1,296	843	1.0%	1.0%	1,296	842	1.0%	1.0%
ince Road/Totten Street	West of Huron Church Road East of Huron Church Road		1,796 2,067	1,457 2,624	1.8%	1.2%	1,830 2,206	1,473 2,597	1.8%	1.3%	1,849 2,304	1,490 2,597	1.8%	1.3%
	West of Huron Church Road		4,684	4,687	1.0%	1.0%	4,726	4,924	1.0%	1.0%	4,856	4,953	1.0%	1.0%
alden Road	East of Huron Church Road West of Huron Church Road		1,377 7,305	1,093 6,667	1.0% 7.0%	1.0% 11.3%	1,632 7,621	1,318 6,939	1.0% 7.4%	1.0% 12.7%	1,868 8,033	1,462 7,260	1.0% 7.6%	1.0% 14.1%
lustrial Road	West of Huron Church Road East of Huron Church Road		7,305 3,700	6,667 3,485	7.0%	2.2%	4,029	6,939 3,803	7.4%	2.2%	8,033 4,394	7,260	7.6%	2.2%
	West of Huron Church Road		3,702	3,167	3.6%	12.1%	4,158	3,449	3.9%	12.0%	4,432	3,594	3.9%	13.3%
Row Expressway North Ramp Terminal	East of Huron Church Road (E-N/S Off Ramp & S-W On Ram West of Huron Church Road (N-W On Ramp)	mp)	14,514 846	1,487 N/A	1.9% 31.2%	1.0% N/A	16,498 948	1,503 N/A	1.9% 32.8%	0.1% N/A	17,403 1,072	1,647 N/A	2.0% 39.0%	0.2% N/A
Row Expressway South Ramp Terminal	East of Huron Church Road (S-E On Ramp)		N/A	7,757	N/A	0.8%	N/A	10,999	N/A	0.9%	N/A	11,842	N/A	1.0%
ring Garden Road/Labelle Street	West of Huron Church Road (N-E On Ramp & W-N/S Off Ra East of Huron Church Road	amp)	8,597 3,643	2,928 2,941	6.2%	2.5%	9,010 3,734	3,132 3,026	6.8% 1.0%	2.5%	9,507 3,434	3,316 3,160	8.7%	2.3%
-	West of Huron Church Road		3,659	4,143	1.0%	1.0%	3,734 3,994	3,026 4,329	1.0%	1.0%	3,434 4,255	4,248	1.0%	1.0%
ambton Street/Grand Marais Road	East of Huron Church Road Wast of Huron Church Road		4,381	3,824	1.0%	1.0%	4,948	3,919	1.0%	1.0%	5,418	4,073	1.0%	1.0%
alford Street	West of Huron Church Road East of Huron Church Road		2,028 2,192	4,081 1,948	1.8%	1.3%	2,077 2,210	3,924 1,992	1.8%	1.3%	2,126 2,227	3,871 2,037	1.8% 1.0%	1.4% 1.0%
odd Lane/Cabana Road	East of Huron Church Road		10,171	8,767	1.0%	1.0%	10,073	8,513	1.0%	1.0%	10,941	9,229	1.0%	1.0%
luron Church Line	West of Huron Church Road West of Huron Church Road		13,136 8,084	10,317 6,446	1.0% 1.2%	1.0% 1.3%	12,847 9,768	10,327 8,150	1.0% 1.2%	1.0% 1.3%	13,261 11,081	10,845 9,590	1.0% 1.2%	1.0% 1.3%
Clair College	East of Talbot Road		3,078	9,510	1.0%	1.0%	3,201	9,406	1.0%	1.0%	3,255	9,306	1.0%	1.0%
ousineau Drive	East of Talbot Road West of Talbot Road		7,837 10,718	5,831 8,338	1.0%	1.0% 0.5%	8,160 11,856	5,416 8,767	1.0%	1.0%	8,875 13.082	5,604 9,483	1.0%	1.0% 1.3%
oward Avenue	East of Talbot Road		7,649	9,487	1.7%	1.8%	8,186	10,256	1.6%	1.9%	8,905	11,116	1.7%	1.5%
	between Talbot Road and Highway 401 southbound On Ramp West of Highway 401 southbound On Ramp		10,770 9,648	6,885 12,566	1.8% 2.1%	2.2% 2.3%	11,524 10,488	7,289 14,834	1.7%	2.2% 2.2%	12,423 11,262	7,884 16,265	1.7% 2.1%	2.3% 2.2%
C. Row Expressway	East of Huron Church Road		35,580	35,332	3.0%	4.6%	43,452	42,975	3.2%	5.1%	50,269	48,093	3.4%	5.5%
	At Malden Road West of Matchette Street		23,319	29,881	4.2%	5.2%	29,307	34,264	4.5%	5.8%	35,432	38,618	4.8%	5.8%
For consistency, Huron Church Rd/Talbot F	Rd runs North-South and all crossing roads run East-West		16,032	8,173	2.3%	4.7%	20,751	9,029	2.3%	4.6%	25,742	9,811	2.3%	4.2%
	-													
GHWAY 401 Ramps		11 JA J												
ighway 3 merge/split														
ghway 401 northbound Off Ramp ghway 401 northbound On Ramp			9,808 9,225	N/A N/A	6.0% 1.9%	N/A N/A	11,216 9,408	N/A N/A	7.1% 1.9%	N/A N/A	12,186 9,811	N/A N/A	8.4% 1.9%	N/A N/A
hway 401 southbound Off Ramp			N/A	9,835	N/A	2.0%	N/A	9,929	N/A	1.8%	9,811 N/A	10,598	N/A	1.9%
hway 401 southbound On Ramp St. Clair College			N/A	9,516	N/A	6.1%	N/A	10,588	N/A	7.1%	N/A	11,840	N/A	7.9%
St. Clair College shway 401 northbound Off Ramp			6,260	N/A	0.7%	N/A	6,414	N/A	0.9%	N/A	6,745	N/A	1.0%	N/A
ghway 401 northbound On Ramp			4,021	N/A	0.8%	N/A	4,728	N/A	0.8%	N/A	5,077	N/A	0.8%	N/A
hway 401 southbound Off Ramp hway 401 southbound On Ramp			N/A N/A	6,455 3,835	N/A N/A	3.0% 0.5%	N/A N/A	6,331 4,424	N/A N/A	3.6% 0.6%	N/A N/A	6,552 4,893	N/A N/A	4.1% 0.7%
Huron Church Road														
ghway 401 northbound Off Ramp ghway 401 southbound On Ramp			9,757 N/A	N/A 11,483	2.6% N/A	N/A 12.8%	11,320 N/A	N/A 10,853	2.7% N/A	N/A 12.2%	12,988 N/A	N/A 11,289	2.7% N/A	N/A 14.6%
lden Road Interchange	×		19/A	11,403	ivA	42.070	ivA	20,035	ivA	/0	iwA.	11,209	iv A	14.0%
ghway 401 On Ramp ghway 401 Off Ramp			3,162	N/A	14.2%	N/A	3,762	N/A	15.6%	N/A	4,124	N/A	16.1%	N/A
hway 401 Off Ramp Row Expressway Interchange			N/A	4,138	N/A	13.5%	N/A	4,954	N/A	10.4%	N/A	5,467	N/A	9.3%
hway 401 southbound Off Ramp			N/A	13,755	N/A	7.8%	N/A	16,124	N/A	8.9%	N/A	19,059	N/A	8.9%
bway Parkway Interchange hway 401 northbound Off Ramp			4,607	N/A	9.9%	N/A	5,150	N/A	9.5%	N/A	5,454	N/A	9.5%	N/A
hway 401 northbound On Ramp			1,491	N/A	18.9%	N/A	1,685	N/A	21.1%	N/A	1,802	N/A	22.5%	N/A
hway 401 southbound Off Ramp hway 401 southbound On Ramp			N/A N/A	1,112 14,959	N/A N/A	6.4% 2.9%	N/A N/A	1,160 18,909	N/A N/A	7.6% 2.9%	N/A N/A	1,324 22,906	N/A N/A	8.0% 3.0%
Row Expressway Interchange														
hway 401 northbound On Ramp			2,181	N/A	35.8%	N/A	2,523	N/A	37.8%	N/A	3,019	N/A	39.3%	N/A
hway 401 Mainline	South of Highway 3 merge/split	Highway 3/Highway 401 northbound Off Ramp	19,936	N/A	27.0%	N/A	24,636	N/A	27.5%	N/A	27,604	N/A	29.3%	N/A
	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp	Highway 3/Highway 401 northbound On Ramp St. Clair College/Highway 401 northbound Off Ramp	10,106 19,359	N/A N/A	42.0% 26.8%	N/A N/A	12,984 22,414	N/A N/A	43.2% 29.6%	N/A N/A	16,139 25,909	N/A N/A	45.9% 32.3%	N/A N/A
	St. Clair College/Highway 401 northbound Off Ramp	St. Clair College/Highway 401 northbound On Ramp	12,756	N/A	28.2%	N/A	15,629	N/A	32.1%	N/A	18,741	N/A	35.3%	N/A
	St. Clair College/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound Off Ramp	Huron Church Road/Highway 401 northbound Off Ramp Malden Road/Highway 401 northbound On Ramp	16,845 7,336	N/A N/A	23.0% 55.3%	N/A N/A	20,488 9,512	N/A N/A	26.6% 60.1%	N/A N/A	23,866 11,315	N/A N/A	28.8% 63.5%	N/A N/A
	Malden Road/Highway 401 northbound On Ramp	Ojibway Parkway/Highway 401 northbound Off Ramp	10,498	N/A	42.9%	N/A	13,275	N/A	47.5%	N/A	15,439	N/A	50.9%	N/A
	Ojibway Parkway/Highway 401 northbound Off Ramp	Ojibway Parkway/Highway 401 northbound OnRamp	5,890	N/A	68.7%	N/A	8,125	N/A	71.6%	N/A	9,985	N/A	73.5%	N/A
	Ojibway Parkway/Highway 401 northbound OnRamp EC Row Expressway to Highway 401 northbound On Ramp	EC Row Expressway to Highway 401 northbound On Ramp Canadian Plaza	7,381 10,009	N/A N/A	58.7% 58.1%	N/A N/A	9,809 12,650	N/A N/A	62.9% 59.7%	N/A N/A	11,787 14,784	N/A N/A	65.7% 61.1%	N/A N/A
	Canadian Plaza Ojibway Parkway/Highway 401 southbound Off Ramp	Ojibway Parkway/Highway 401 southbound Off Ramp Ojibway Parkway/Highway 401 southbound On Ramp	N/A N/A	18,010 16,724	N/A N/A	52.4% 52.7%	N/A N/A	21,552 20,161	N/A N/A	57.3% 57.5%	N/A N/A	24,160 22,596	N/A N/A	58.7% 59.0%
	Ojibway Parkway/Highway 401 southbound On Ramp	Highway 401 to EC Row Expressway southbound Off Ramp	N/A	31,565	N/A	28.1%	N/A	39,386	N/A	33.4%	N/A	46,455	N/A	36.5%
	Highway 401 to EC Row Expressway southbound Off Ramp	Malden Road/Highway 401 southbound Off Ramp	N/A	18,546	N/A	53.3%	N/A	24,169	N/A	58.3%	N/A	28,226	N/A	61.1%
	Malden Road/Highway 401 southbound Off Ramp Huron Church Road/Highway 401 southbound On Ramp	Huron Church Road/Highway 401 southbound On Ramp St Clair College/Highway 401 southbound Off Ramp	N/A N/A	13,841 25,086	N/A N/A	57.7% 33.7%	N/A N/A	18,562 28,687	N/A N/A	63.7% 38.6%	N/A N/A	22,034 32,298	N/A N/A	66.9% 42.4%
	St Clair College/Highway 401 southbound Off Ramp	St Clair College/Highway 401 southbound On Ramp	N/A	18,267	N/A	39.4%	N/A	21,968	N/A	44.6%	N/A	25,302	N/A	48.2%
	St Clair College/Highway 401 southbound On Ramp	Highway 3/Highway 401 southbound Off Ramp	N/A	22,105	N/A	34.7%	N/A	26,452	N/A	39.4%	N/A	30,276	N/A	42.7%
	Highway 3/Highway 401 southbound Off Ramp	Highway 3/Highway 401 southbound On Ramp	N/A	14,521	N/A	50.0%	N/A	18,842	N/A	51.4%	N/A	22,219	N/A	53.5%

	St Clair College/Highway 401 southound On Kamp	Highway 5/Highway 401 southbound Off Ramp	N/A	22,105	N/A	54.7%	N/A	26,452	N/A	39.4%	N/A	30,276	N/A	42.7%
	Highway 3/Highway 401 southbound Off Ramp	Highway 3/Highway 401 southbound On Ramp	N/A	14,521	N/A	50.0%	N/A	18,842	N/A	51.4%	N/A	22,219	N/A	53.5%
	Highway 3/Highway 401 southbound On Ramp	South of Highway 3 merge/split	N/A	21,550	N/A	36.3%	N/A	26,971	N/A	38.7%	N/A	30,963	N/A	41.5%
Malden Road	Chappus Street	Highway 401 South Ramp	8,168	9,933	4.0%	4.1%	8,621	10,764	3.9%	3.9%	8,986	11,723	3.9%	3.8%
	Highway 401 South Ramp	Highway 401 North Ramp	9,159	6,366	3.9%	4.1%	9,729	6,427	3.9%	3.9%	10,214	6,953	3.9%	3.8%
	North of Highway 401 North Ramp		6,398	7,063	3.9%	4.1%	6,523	7,294	3.9%	3.9%	6,704	7,907	3.9%	3.8%
Matchette Street	Chappus Street	EC Row Expressway South Ramp	7,545	6,236	1.0%	1.0%	8,915	7,997	1.0%	1.0%	9,695	9,770	1.0%	1.0%
	EC Row Expressway South Ramp	EC Row Expressway North Ramp	2,539	8,038	1.0%	1.0%	2,706	9,624	1.0%	1.0%	3,096	11,386	1.0%	1.0%
	EC Row Expressway North Ramp	Carmichael	5,887	3,394	1.0%	1.0%	6,299	3,565	1.0%	1.0%	6,874	3,918	1.0%	1.0%
Montgomery Drive	Surrey Drive	Talbot Road	91	179	1.2%	2.5%	100	197	1.1%	2.6%	109	206	1.1%	2.9%
Surrey Drive	Montgomery Drive	Talbot Road	73	222	1.2%	1.8%	73	230	1.2%	1.9%	73	238	1.1%	1.9%
Grosvenor Road	Montgomery Drive	Talbot Road	127	224	1.2%	1.9%	127	223	1.2%	2.0%	127	223	1.2%	2.0%

05-1140-003-1

#### TABLE I-F

SUMMARY OF TRAFFIC DATA - PARKWAY ALTERNATIVE

Detroit River International Crossing Windsor, Ontario

Pavement Section	LOCATION <u>From</u>	To		ADT.		Vehicles	AA		Comm	Vehicles		ADT.	)35 <u>Comm '</u>	
Huron Church Road	FROM Riverside Drive	TO University Avenue	NB / WB 6,911	SB / EB 5,457	NB / WB 2.5%	SB / EB 1.6%	NB / WB 6,986	SB / EB 5,610	NB / WB 2.6%	SB / EB 2.3%	NB / WB 6,924	SB / EB 5,840	NB / WB 2.9%	SB / EB 3.0%
	University Avenue Wyandotte Street	Wyandotte Street AMB Off Ramp	3,258 2,322	3,990 3,177	3.4% 1.0%	3.0%	3,233 2,280	4,092 3,224	3.5%	4.0%	3,108 2,131	4,254 3,370	5.0%	4.8%
	AMB Off Ramp College Street	College Street Girardot Street Torumate Band	17,448 25,364	6,323 24,092	15.0% 2.9%	1.5%	18,348 26,218	6,447 24,966	17.3%	1.6%	19,543 26,227	6,656 25,933	20.5%	1.6%
	Girardot Street Tecumseh Road Dorchester Street	Tecumseh Road Dorchester Street Prince Road/Totten Street	24,197 27,469 27,511	23,801 27,266 28,532	3.4% 3.5% 3.1%	12.3% 10.6% 9.3%	25,129 28,309 28,358	25,158 28,199 29,470	3.7% 3.8% 3.4%	13.5% 11.6% 10.3%	25,638 28,797 28,875	26,525 29,299 30,357	3.9% 4.0% 3.5%	15.7% 13.3% 11.7%
	Prince Road/Totten Street Malden Road	Malden Road Industrial Road	27,511 30,088 24,739	26,332 31,791 26,772	3.1% 3.2% 2.4%	9.3% 8.5% 9.0%	28,558 30,998 24,761	29,470 33,157 28,255	3.4%	8.9% 9.7%	28,875 31,736 25,383	34,429 29,967	3.6%	10.1%
	Industrial Road E.C. Row Expressway North Ramp Terminal	E.C. Row Expressway North Ramp Terminal E.C. Row Expressway South Ramp Terminal	27,169 20,228	28,916 35,043	2.4%	8.6% 6.2%	28,022 20,486	30,240	2.5%	9.1% 6.5%	28,657	32,868 41.670	2.6%	10.3%
South Service Road	South of E.C. Row Expressway South Ramp Terminal North of Bethlehem Avenue	Le. for Expensively both famp formula	24,741 N/A	26,578 23,492	2.1% N/A	6.2%	27,739 N/A	28,701 25,122	2.2% N/A	6.4% 7.0%	30,005 N/A	32,155	2.3% N/A	6.8%
North Service Road	Bethlehem Avenue North of Labelle Street	Grand Marais Road	N/A 25,501	5,220 N/A	N/A 1.7%	2.4% N/A	N/A 28,317	5,610 N/A	N/A 1.8%	2.5% N/A	N/A 30,540	6,174 N/A	N/A 1.9%	2.6% N/A
Huron Church Road	Labelle Street Grand Marais Road	Grand Marais Road Ramp Pulford Street	23,298 6,176	N/A 4,265	1.0% 0.1%	N/A 0.6%	26,127 6,629	N/A 4,743	1.1% 0.1%	N/A 0.3%	28,297 7,103	N/A 5,374	1.2% 0.1%	N/A 0.4%
	Pulford Street Todd Lane/Cabana Road	Todd Lane/Cabana Road Huron Church Line	5,813 15,881	4,243 9,555	0.2% 1.1%	0.8% 0.9%	6,418 16,915	4,880 10,707	0.2% 1.2%	0.5% 0.9%	7,074 17,838	5,644 12,117	0.2% 1.2%	0.5% 0.9%
Talbot Road	Huron Church Line St Clair College	St Clair College Cousineau Drive	11,107 9,229	9,691 8,012	0.4% 0.8%	0.6% 2.8%	11,982 9,448	10,375 8,541	0.7% 0.9%	0.6%	12,692 9,792	11,023 9,249	1.2% 0.8%	0.7% 3.7%
	Cousineau Drive Howard Avenue	Howard Avenue Laurier Extension	8,722 11,607	2,696 11,385	1.5% 2.1%	4.6% 2.0%	8,810 12,429	2,709 12,257	1.5% 2.0%	5.2% 1.9%	9,366 13,137	2,847 13,283	1.3% 2.0%	5.9% 2.0%
Ojibway Parkway	South of Laurier Extension E.C. Row Expressway	GN Booth Drive	12,021 10,180	11,914 10,556	2.1% 2.2%	2.0% 5.3%	12,974 10,894	12,826 11,127	2.0% 2.3%	1.9% 6.0%	13,639 11,697	13,900 11,777	2.0% 2.5%	2.0% 6.7%
	GN Booth Drive Sandwich Street	Sandwich Street Prospect Avenue	10,116 9,478	10,433 9,729	2.2%	5.5% 0.8%	10,830 10,088	10,928	2.3%	6.1% 0.7%	11,632	11,578 10,588	2.5% 0.7%	6.8% 0.7%
	North of Prospect Avenue		9,415	9,510	0.8%	0.8%	10,025	9,858	0.7%	0.7%	10,725	10,387	0.7%	0.7%
Wyandotte Street	West of Huron Church Road East of Huron Church Road		5,168 3.574	4,869	1.0% 1.1%	1.0% 2.6%	5,099 3,562	4,858 5,201	1.0% 1.1%	1.0% 2.7%	5,008 3.648	4,886	1.0% 2.0%	1.0% 2.9%
University Avenue	West of Huron Church Road East of Huron Church Road		1,254	1,192 2,118	1.1% 1.0% 5.7%	1.0% 5.2%	1,365	1,272 2,214	1.0%	1.0%	1,511 2,481	1,306 2,273	1.0%	1.0% 6.8%
Riverside Drive	West of Huron Church Road East of Huron Church Road		3,390	3,487	1.0%	1.0%	3,552	3,655	1.0%	1.0%	3,642	3,993	1.0%	1.0%
AMB Off Ramp AMB On Ramp	East of Huron Church Road East of Huron Church Road		N/A 6,286	12,464 N/A	N/A 3.0%	30.7% N/A	N/A 6,558	12,464 N/A	N/A 3.5%	30.7% N/A	N/A 6,917	12,464 N/A	N/A 4.0%	30.7%
Patricia Street College Street	AMB East of Huron Church Road	Wyandotte Street	4,111 6,514	5,195 6,361	4.7% 2.6%	6.2% 4.2%	4,149 6,603	5,049 6,526	5.5% 2.5%	7.1% 4.9%	4,205 6,758	4,873 6,581	5.8% 2.5%	9.0% 6.1%
Girardot Street	West of Huron Church Road East of Huron Church Road		1,867 1,133	806 1,160	1.0% 1.0%	1.0% 1.0%	2,068 1,154	956 1,148	1.0% 1.0%	1.0% 1.0%	2,272 1,162	1,076 1,155	1.0% 1.0%	1.0% 1.0%
Tecumseh Road	West of Huron Church Road East of Huron Church Road		2,346 5,829	2,275 6,836	1.7% 2.4%	1.1% 4.4%	2,296 5,786	2,202 6,844	1.8% 2.4%	1.1% 5.2%	2,290 6,210	2,168 7,294	1.8% 2.2%	1.2%
Dorchester Street	West of Huron Church Road East of Huron Church Road		6,604 1,693	6,994 1,533	1.0% 1.0%	1.0%	6,488 1,726	7,115	1.0%	1.0%	6,679 1,748	7,355	1.0%	1.0%
Prince Road/Totten Street	West of Huron Church Road East of Huron Church Road		1,419 2,075	807 2,907	1.8%	1.2%	1,419 2,213	808 2,353	1.9%	1.3%	1,419 2,311	807 2,888	1.9%	1.3%
Malden Road	West of Huron Church Road East of Huron Church Road West of Huron Church Road		4,782 1,377 7,891	5,176 1,126 8,417	1.0% 1.0% 6.8%	1.0% 1.0% 11.6%	5,515 1,631 8,223	5,545 1,358 8,875	1.0% 1.0% 7.3%	1.0% 1.0% 13.1%	5,053 1,858 8,633	5,710 1,508 9,314	1.0% 1.0% 7.6%	1.0% 1.0% 14.4%
Industrial Road	East of Huron Church Road West of Huron Church Road		3,619	8,417 3,426 3,166	6.8% 1.5% 3.9%	2.1%	8,223 3,926 4,262	8,875 3,674 3,458	7.3% 1.4% 4.0%	2.1%	4,362 4,490	9,314 3,864 3,594	7.6% 1.2% 4.0%	2.2%
E.C. Row Expressway North Ramp Terminal	East of Huron Church Road West of Huron Church Road		4,072 14,334 607	2,042 N/A	1.9%	1.0% N/A	16,245 583	2,068 N/A	1.9% 27.0%	1.0% N/A	16,852 624	2,214 N/A	1.9%	0.3% N/A
E.C. Row Expressway South Ramp Terminal	East of Huron Church Road West of Huron Church Road		N/A 8.637	7,407	N/A 6.3%	0.9%	N/A 9,466	10,547	N/A 7.2%	1.0%	N/A 10.047	12,051	N/A 9.3%	1.0%
Labelle Street/Bethlehem Avenue	East of North Service Road Between North and South Service Road		2,903 1,403	2,203 3,202	1.0% 1.0%	1.0% 1.0%	3,112 1,232	2,438 3,565	1.0%	1.0%	3,336 1,573	2,617 3,934	1.0%	1.0% 1.0%
Grand Marais Road/Lambton Street	West of South Service Road East of Huron Church Road		1,804 3,982	3,255 3,270	1.0% 1.0%	1.0% 1.0%	1,678 4,372	4,360 3,595	1.0% 1.0%	1.0% 1.0%	2,055 5,010	3,283 3,929	1.0% 1.0%	1.0% 1.0%
Pulford Street	West of Huron Church Road East of Huron Church Road		1,714 2,407	1,960 1,762	1.7% 1.0%	0.9%	1,876 2,635	2,193 1,928	1.8% 1.0%	0.9%	2,056 2,876	2,428 2,107	1.8% 1.0%	1.0% 1.0%
Todd Lane/Cabana Road	East of Huron Church Road Between Huron Church Road and Highway 401 Off Ramp		8,767 9,350	7,221 12,549	1.0% 1.0%	1.0% 1.0%	9,440 9,855	7,526 15,424	1.0% 1.0%	1.0%	10,586 10,886	8,495 17,405	1.0% 1.0%	1.0% 1.0%
Huron Church Line	West of Highway 401 Off Ramp West of Huron Church Road		9,953 7,456	10,417 6,841	1.0%	1.0%	11,908 8,273	11,817 7,451	1.0%	1.0%	13,727 9,041	13,505 7,983	1.0%	1.0%
St Clair College Cousineau Drive	East of Talbot Road East of Talbot Road West of Talbot Road	<pre></pre>	3,009 6,321 7,099	9,320 5,777 5,807	1.0% 1.0% 1.0%	1.0% 1.0% 1.0%	3,240 6,134 7,697	9,608 5,580 6,496	1.0% 1.0% 1.0%	1.0% 1.0% 0.2%	3,428 6,470 8,816	9,882 5,725 7,424	1.0% 1.0% 1.0%	1.0% 1.0% 0.1%
Howard Avenue	East of Talbot Road West of Talbot Road		7,718	8,092 8,038	1.7%	1.8%	8,580 7,584	9,316 9,172	1.7%	1.9%	9,246 8,179	9,953 10,157	1.7%	1.9%
Laurier Extension E.C. Row Expressway	West of Talbot Road/Highway 3 West of Oilbway Parkway		6,658 17,859	6,543 15 300	2.2%	2.3%	7,307	7,473	2.1%	2.2%	7,881	8,274	2.1%	2.2%
in the proof	West of Broadway Street East of Huron Church Road		19,828 35,042	27,454 43,067	1.5% 3.1%	2.2% 4.5%	24,768 43,102	30,219 51,004	1.5% 3.2%	2.2% 5.0%	29,551 49,462	32,605 56,583	1.6% 3.4%	2.2% 5.4%
	At Malden Road West of Matchette Road		23,638 16,363	29,462 8,173	4.3% 2.7%	5.4% 4.7%	29,896 21,440	33,650 9,003	4.6% 3.1%	6.0% 5.2%	35,168 25,630	37,219 9,791	4.8% 2.9%	6.0% 4.4%
GN Booth Drive Sandwich Street	West of Ojibway Parkway West of Ojibway Parkway		357 1,533	461 1,388	1.9% 9.6%	1.7% 6.6%	357 1,629	461 1,518	1.9% 9.3%	1.7% 6.4%	357 1,775	461 1,630	1.9% 8.8%	1.7% 6.3%
Prospect Avenue	West of Ojibway Parkway		342	437	2.0%	1.0%	342	437	1.9%	1.0%	342	437	1.9%	1.1%
HIGHWAY 401 Ramps														
Highway 3 merge/split Highway 401 Northbound Off Ramp			14,237	N/A	6.0%	N/A	15,464	N/A	7.1%	N/A	16,787	N/A	8.3%	N/A
Highway 401 Northbound On Ramp Highway 401 Northbound On Ramp Highway 401 Southbound Off Ramp			8,722 N/A	N/A 8,660	1.9% N/A	N/A 1.9%	9,051 N/A	N/A 9,136	1.9% N/A	N/A 1.9%	9,298 N/A	N/A 9,309	1.9% N/A	N/A 1.9%
Highway 401 Southound On Ramp Highway 401 Southound On Ramp At Howard Avenue			N/A	5,656	N/A	6.2%	N/A	6,167	N/A	7.2%	N/A	6,996	N/A	8.0%
Highway 401 Northbound On Ramp Highway 401 Southbound On Ramp			745 N/A	N/A 4,521	1.9% N/A	N/A 6.2%	776 N/A	N/A 4,758	1.9% N/A	N/A 7.2%	795 N/A	N/A 5,488	1.9% N/A	N/A 8.0%
At St. Clair College Highway 401 Northbound Off Ramp			4,553	N/A	0.4%	N/A	5,033	N/A	0.6%	N/A	5,297	N/A	0.9%	N/A
Highway 401 Southbound Off Ramp Highway 401 Southbound On Ramp			N/A N/A	5,307 2,154	N/A N/A	1.1% 0.5%	N/A N/A	6,270 2,278	N/A N/A	1.1% 0.6%	N/A N/A	7,431 2,411	N/A N/A	1.0% 0.6%
At Todd Lane/Cabana Road Highway 401 Northbound On Ramp	~		8,950	N/A	1.2%	N/A	12,026	N/A	1.3%	N/A	11,929	N/A	1.4%	N/A
Highway 401 Southbound Off Ramp Highway 401 Southbound On Ramp			N/A N/A	7,857 3,344	N/A N/A	1.1%	N/A N/A	9,406 3,627	N/A N/A	1.1% 1.1%	N/A N/A	9,590 3,812	N/A N/A	1.0% 1.0%
At Huron Church Road Highway 401 Northbound Off Ramp Highway 401 Southbound On Ramp			12,114 N/A	N/A 16,563	1.9% N/A	N/A 9.3%	16,511 N/A	N/A 18,195	2.0% N/A	N/A 9.4%	18,040 N/A	N/A 18,845	2.0% N/A	N/A 10.1%
At Malden Road Highway 401 Northbound On Ramp			19/A	10,505	ivA	91076	IVA	10,193	ivA	3.478	IWA	10,043	1974	10.170
Highway 401 Northbound Off Ramp Highway 401 Southbound Off Ramp Highway 401 to E.C. Row Expressway														
Highway 401 Southbound Off Ramp Ojibway Parkway Interchange			N/A	13,364	N/A	7.8%	N/A	15,782	N/A	8.7%	N/A	18,179	N/A	9.1%
Highway 401 Northbound Off Ramp Highway 401 Northbound On Ramp			1,780 1,919	N/A N/A	9.6% 18.3%	N/A N/A	1,991 2,141	N/A N/A	8.3% 20.4%	N/A N/A	5,721 5,952	N/A N/A	8.8% 17.4%	N/A N/A
Highway 401 Southbound Off Ramp Highway 401 Southbound On Ramp			N/A N/A	2,047 12,043	N/A N/A	0.9% 2.8%	N/A N/A	2,106 15,267	N/A N/A	1.2% 2.9%	N/A N/A	6,747 22,906	N/A N/A	8.3% 2.9%
E.C. Row Expressway to Highway 401 Highway 401 Northbound On Ramp			2,174	N/A	37.2%	N/A	2,630	N/A	38.4%	N/A	3,029	N/A	38.4%	N/A
Highway 401 Mainline	South of Highway 3 merge/split	Highway 3/Highway 401 Northbound Off Ramp	19,954	N/A	27.2%	N/A	24,657	N/A	27.8%	N/A	28,867	N/A	29.6%	N/A
	Highway 3/Highway 401 Northbound Off Ramp Highway 3/Highway 401 Northbound On Ramp Houvard Avanua Northbound On Ramp	Highway 3/Highway 401 Northbound On Ramp Howard Avenue Northbound On Ramp St. Clair Collace/Highway 401 Northbound Off Ramp	5,337 14,215 14,993	N/A N/A N/A	44.1% 27.6% 27.6%	N/A N/A N/A	8,978 18,139 18,954	N/A N/A N/A	45.5% 30.6% 30.6%	N/A N/A N/A	12,071 21,434 22,229	N/A N/A N/A	46.8% 32.7% 31.6%	N/A N/A N/A
	Howard Avenue Northbound On Ramp St. Clair College/Highway 401 Northbound Off Ramp Pulford Street/Highway 401 Northbound On Ramp	St. Clair College/Highway 401 Northbound Off Ramp Pulford Street/Highway 401 Northbound On Ramp Huron Church Road/Highway 401 Northbound Off Ramp	14,993 9,858 20,784	N/A N/A N/A	27.6% 29.5% 25.2%	N/A N/A N/A	18,954 13,267 26,147	N/A N/A N/A	30.6% 33.5% 22.2%	N/A N/A N/A	22,229 15,990 29,176	N/A N/A N/A	31.6% 30.5% 24.1%	N/A N/A N/A
	Huron Church Road/Highway 401 Northbound Off Ramp Ojibway Parkway/Highway 401 Northbound Off Ramp	Ojibway Parkway/Highway 401 Northbound Off Ramp Ojibway Parkway/Highway 401 Northbound Off Ramp	20,784 6,834 5,515	N/A N/A N/A	25.2% 19.8% 68.3%	N/A N/A N/A	26,147 9,661 7,277	N/A N/A N/A	22.2% 57.9% 70.9%	N/A N/A N/A	29,176 11,204 8,780	N/A N/A N/A	24.1% 61.5% 73.0%	N/A N/A N/A
	Ojibway Parkway/Highway 401 Northbound On Ramp	E.C. Row Expressway to Highway 401 Northbound On Ramp	7,577	N/A	58.0%	N/A	9,581	N/A	61.9%	N/A	11,268	N/A	64.9%	N/A
	E.C. Row Expressway to Highway 401 Northbound On Ramp	Canadian Plaza	9,987	N/A	57.9%	N/A	12,617	N/A	59.5%	N/A	14,744	N/A	60.8%	N/A
	Canadian Plaza Ojibway Parkway/Highway 401 Southbound Off Ramp	Ojibway Parkway/Highway 401 Southbound Off Ramp Ojibway Parkway/Highway 401 Southbound On Ramp	N/A N/A	17,980 15,525	N/A N/A	52.0% 52.2%	N/A N/A	21,442 18,806	N/A N/A	56.1% 56.4%	N/A N/A	24,132 21,181	N/A N/A	58.4% 58.7%
	Ojibway Parkway/Highway 401 Southbound On Ramp	Highway 401 to E.C. Row Expressway Southbound Off Ramp	N/A	27,348	N/A	27.6%	N/A	34,180	N/A	32.5%	N/A	40,411	N/A	36.5%
	Highway 401 to E.C. Row Expressway Southbound Off Ramp Huron Church Road/Highway 401 Southbound On Ramp	Huron Church Road/Highway 401 Southbound On Ramp Pulford Street/Highway 401 Southbound Off Ramp	N/A N/A	14,333 30,697	N/A N/A	51.3% 27.3%	N/A N/A	18,677 36,588	N/A N/A	55.4% 31.0%	N/A N/A	22,370 40,606	N/A N/A	59.2% 33.8%

	N/A	14,333	N/A	51.3%	N/A	18,677	N/A	55.4%	N/A	22,370	N/A	59.2%
Pulford Street/Highway 401 Southbound Off Ramp	N/A	30,697	N/A	27.3%	N/A	36,588	N/A	31.0%	N/A	40,606	N/A	33.8%
Todd Lane/Highway 401 Southbound Off Ramp	N/A	22,166	N/A	27.3%	N/A	26,254	N/A	31.0%	N/A	29,962	N/A	33.8%
St. Clair College/Highway 401 Southbound Off Ramp	N/A	25,017	N/A	24.0%	N/A	29,442	N/A	28.0%	N/A	33,581	N/A	30.0%
St. Clair College/Highway 401 Southbound On Ramp	N/A	19,250	N/A	30.0%	N/A	22,404	N/A	35.0%	N/A	24,397	N/A	40.0%
Howard Avenue Southbound On Ramp	N/A	22,874	N/A	34.9%	N/A	26,502	N/A	39.7%	N/A	29,449	N/A	43.5%
Highway 3/Highway 401 Southbound Off Ramp	N/A	27,843	N/A	36.3%	N/A	31,625	N/A	38.9%	N/A	33,686	N/A	39.3%
Highway 3/Highway 401 Southbound On Ramp	N/A	18,004	N/A	35.5%	N/A	21,212	N/A	40.4%	N/A	23,741	N/A	45.9%
South of Highway 3 merge/split	N/A	21,530	N/A	36.3%	N/A	27,440	N/A	38.9%	N/A	32,317	N/A	42.1%
Ulahama 401 Sauth Dama	8.044	11.480	2.04	4.20	0.084	11 620	2.76	2.00	0.447	12 207	2.00	3.7%
												3.7%
Highway 401 North Ramp												
												3.7%
							1.0%				1.0%	1.0%
E.C. Row Expressway North Ramp	2,620	8,916	1.0%	1.0%	2,620	10,207	1.0%	1.0%	2,675	11,452	1.0%	1.0%
Carmichael Street	4,861	3,303	1.0%	1.0%	5,152	3,168	1.0%	1.0%	5,719	3,318	1.0%	1.0%
	8 751	N/A	6.0%	N/A	9.490	N/A	7.1%	N/A	10 247	N/A	8 3%	N/A
												N/A
	5,460		0.0%		5,915		7.170		0,009		0.379	
	Pulford Street/Highway 401 Southbound Off Ramp Todd Lane/Highway 401 Southbound Off Ramp St. Clair College/Highway 401 Southbound Off Ramp Howard Avenes Southbound On Ramp Highway 3/Highway 401 Southbound Off Ramp Highway 3/Highway 401 Southbound Off Ramp Highway 3/Highway 401 Southbound Of Ramp South of Highway 3 merge/split Highway 401 South Ramp Highway 401 North Ramp E.C. Row Expressway South Ramp E.C. Row Expressway South Ramp	Pulford Street/Highway 401 Southbound Off Ramp         NA           Todd Lane Highway 401 Southbound Off Ramp         NA           St. Clair College/Highway 401 Southbound Off Ramp         NA           St. Clair College/Highway 401 Southbound Onf Ramp         NA           Howard Avenue Southbound On Ramp         NA           Howard Avenue Southbound On Ramp         NA           Highway 3Highway 401 Southbound Of Ramp         NA           Highway 3Highway 401 Southbound Of Ramp         NA           Highway 3Highway 401 Southbound On Ramp         NA           South of Highway 3 merge/split         NA           Highway 401 South Ramp         8,965           Highway 401 North Ramp         7,195           E.C. Row Expressway North Ramp         8,812           E.C. Row Expressway North Ramp         2,620	Pulford Street/Highway 401 Southbound Off Ramp         NA         30,097           Todd Lane/Highway 401 Southbound Off Ramp         NA         22,166           St. Clair College/Highway 401 Southbound Off Ramp         NA         22,667           St. Clair College/Highway 401 Southbound Off Ramp         NA         22,87           Howard Avenue Southbound Of Ramp         NA         19,250           Howard Avenue Southbound Of Ramp         NA         22,843           Highway 3/Highway 401 Southbound Off Ramp         NA         22,843           Highway 3/Highway 401 Southbound Off Ramp         NA         21,530           South of Highway 3 merge/split         NA         21,530           Highway 401 South Ramp         8,966         11,480           Highway 401 South Ramp         8,965         11,480           Highway 401 South Ramp         8,512         7,933           E.C. Row Expressway South Ramp         8,512         7,933           E.C. Row Expressway North Ramp         8,512         8,916           Carmichael Street         4,861         3,303	Pulford Street/Highway 401 Southbound Off Ramp     NA     30,697     NA       Todd Lanet Highway 401 Southbound Off Ramp     NA     22,166     NA       St. Clair College/Highway 401 Southbound Off Ramp     NA     22,667     NA       St. Clair College/Highway 401 Southbound Off Ramp     NA     19,250     NA       Howard Avenes Southbound On Ramp     NA     22,874     NA       Howard Avenes Southbound On Ramp     NA     22,874     NA       Highway 3Highway 401 Southbound Off Ramp     NA     22,874     NA       Highway 3Highway 401 Southbound Off Ramp     NA     23,873     NA       Highway 3Highway 401 Southbound Off Ramp     NA     21,530     NA       Highway 401 Southbound Of Ramp     NA     21,530     NA       Highway 401 South Ramp     8,966     11,480     3.9%       Highway 401 South Ramp     9,957     7,916     3.8%       E.C. Row Expressway South Ramp     8,512     7,933     1.0%       E.C. Row Expressway North Ramp     8,512     7,933     1.0%       E.C. Row Expressway North Ramp     8,512     7,933     1.0%       Carmichael Street     4,861     3.303     1.0%	Pulford Street/Highway 401 Southbound Off Ramp         N/A         30.097         N/A         27.3%           Todd Land-Highway 401 Southbound Off Ramp         N/A         22.166         N/A         27.3%           St. Clair College/Highway 401 Southbound Off Ramp         N/A         22.166         N/A         27.3%           St. Clair College/Highway 401 Southbound Off Ramp         N/A         22.167         N/A         24.0%           St. Clair College/Highway 401 Southbound Off Ramp         N/A         19.250         N/A         30.9%           Howard Avene Southbound Off Ramp         N/A         22.874         N/A         34.9%           Highway 3/Highway 401 Southbound Off Ramp         N/A         27.8%         N/A         35.5%           Highway 3/Highway 401 Southbound Off Ramp         N/A         27.843         N/A         35.5%           South of Highway 30 Isouthbound Off Ramp         N/A         21.500         N/A         36.3%           Highway 3/Highway 401 Southbound Off Ramp         N/A         21.500         N/A         36.3%           Highway 401 South Ramp         8.966         11.480         3.9%         4.3%           Highway 401 South Ramp         8.512         7.933         1.0%         1.0%           E.C. Row Expressway South Ramp	Pulford Street/Highway 401 Southbound Off Ramp         NA         30,697         NA         27.3%         NA           Todd Lanet Highway 401 Southbound Off Ramp         NA         22.166         NA         27.3%         NA           St. Clair College/Highway 401 Southbound Off Ramp         NA         25.016         NA         27.3%         NA           St. Clair College/Highway 401 Southbound Off Ramp         NA         25.017         NA         24.0%         NA           Howard Avenes Southbound Of Ramp         NA         19.20         NA         30.0%         NA           Howard Avenes Southbound Of Ramp         NA         22.874         NA         34.9%         NA           Highway 3Highway 401 Southbound Of Ramp         NA         22.874         NA         36.3%         NA           Highway 3Highway 401 Southbound Of Ramp         NA         21.530         NA         36.3%         NA           South of Highway 401 Southbound Of Ramp         NA         21.530         NA         36.3%         NA           Highway 301 South Ramp         8.966         11.480         3.9%         4.3%         6.982           E.C. Row Expressway South Ramp         7.105         8.84         4.3%         6.982           E.C. Row Expressway North Ramp<	Pulford Street/Highway 401 Southbound Off Ramp         NA         30.697         NA         27.3%         NA         36.838           Todd Lane/Highway 401 Southbound Off Ramp         NA         22.166         NA         27.3%         NA         26.254           St. Clair College/Highway 401 Southbound Off Ramp         NA         25.017         NA         24.06%         NA         22.46           St. Clair College/Highway 401 Southbound Of Ramp         NA         19.250         NA         24.06%         NA         22.46           Howard Avenes Southbound Of Ramp         NA         19.250         NA         34.0%         NA         22.640           Highway 3/Highway 401 Southbound Of Ramp         NA         22.874         NA         34.9%         NA         22.642           Highway 3/Highway 401 Southbound Of Ramp         NA         22.874         NA         35.5%         NA         22.642           St. Clair College/Highway 401 Southbound Of Ramp         NA         22.874         NA         35.5%         NA         21.212           South of Highway 301 Southbound On Ramp         NA         21.530         NA         21.212         NA         21.530         NA         21.212           South of Highway 401 South Ramp         8.966         11.480	Pulford Street/Highway 401 Southbound Off Ramp         NA         30,697         NA         27,3%         NA         36,588         NA           Todd Lane/Highway 401 Southbound Off Ramp         NA         22,166         NA         27,3%         NA         26,254         NA           St. Clair College/Highway 401 Southbound Off Ramp         NA         25,017         NA         24,06%         NA         22,34%         NA         26,254         NA           St. Clair College/Highway 401 Southbound Off Ramp         NA         19,250         NA         24,04%         NA         22,442         NA           Howard Avenne Southbound Ofn Ramp         NA         22,374         NA         34,9%         NA         22,602         NA           Highway 3/Highway 401 Southbound Of Ramp         NA         22,874         NA         34,9%         NA         22,612         NA           Highway 3/Highway 401 Southbound Of Ramp         NA         21,530         NA         36,3%         NA         31,625         NA           Highway 3/Highway 401 Southbound Of Ramp         NA         21,530         NA         36,3%         NA         21,212         NA           South of Highway 401 Southbound On Ramp         NA         21,530         NA         36,3%	Pulford Street/Highway 401 Southbound Off Ramp         NA         30,697         NA         27,3%         NA         56,588         NA         31,0%           Todd LanderHighway 401 Southbound Off Ramp         NA         22,166         NA         27,3%         NA         26,588         NA         31,0%           St. Clair College/Highway 401 Southbound Off Ramp         NA         22,166         NA         27,3%         NA         26,588         NA         31,0%           St. Clair College/Highway 401 Southbound Of Ramp         NA         12,250         NA         30,0%         NA         22,444         NA         32,0%           Howard Avenus Southbound Of Ramp         NA         12,250         NA         30,0%         NA         22,444         NA         35,0%           Howard Avenus Southbound Of Ramp         NA         22,874         NA         34,0%         NA         31,625         NA         30,7%         38,9%           Highway 3/Highway 401 Southbound Of Ramp         NA         27,843         NA         35,5%         NA         31,625         NA         38,9%           Highway 3/Highway 401 Southbound Of Ramp         NA         21,530         NA         36,3%         NA         31,625         NA         31,625         N	Pullford Street/Highway 401 Southbound Off Ramp         NA         30.697         NA         27.3%         NA         36.588         NA         31.0%         NA           Todd Lane/Highway 401 Southbound Off Ramp         NA         22.166         NA         27.3%         NA         36.588         NA         31.0%         NA           St. Clair College/Highway 401 Southbound Off Ramp         NA         25.017         NA         24.0%         NA         22.468         NA         22.442         NA         28.0%         NA           St. Clair College/Highway 401 Southbound Of Ramp         NA         19.200         NA         30.0%         NA         22.442         NA         35.0%         NA           Howard Avenus Southbound Of Ramp         NA         22.874         NA         34.0%         NA         22.442         NA         35.0%         NA           Highway 301 Southbound Of Ramp         NA         22.874         NA         34.0%         NA         31.68         NA         35.5%         NA         31.0%         NA         31.68         NA         31.68         NA         31.68         NA         31.68         NA         36.5%         NA         31.68         NA         31.68         NA         31.68 <td< th=""><th>Pulford Street/Highway 401 Southbound Off Ramp         N/A         30,07         N/A         27,3%         N/A         36,588         N/A         31,0%         N/A         40,666           Todd Land-Highway 401 Southbound Off Ramp         N/A         22,166         N/A         27,3%         N/A         26,524         N/A         31,0%         N/A         40,666           St. Clair College/Highway 401 Southbound Off Ramp         N/A         22,617         N/A         24,0%         N/A         25,417         N/A         24,40%         N/A         25,0%         N/A         29,962           St. Clair College/Highway 401 Southbound Off Ramp         N/A         12,250         N/A         30,0%         N/A         22,404         N/A         35,0%         N/A         24,349           Highway 3/Highway 401 Southbound Off Ramp         N/A         22,574         N/A         34,9%         N/A         23,649         N/A         24,564         N/A         35,5%         N/A         31,625         N/A         38,9%         N/A         23,741           Highway 3/Highway 401 Southbound Off Ramp         N/A         21,530         N/A         36,3%         N/A         31,625         N/A         38,9%         N/A         33,65           South of Highway 3</th><th>Pulford Stree/Highway 401 Southbound Off Ramp         NA         30,677         NA         27,3%         NA         56,588         NA         31,0%         NA         40,606         NA           Todd LanderHighway 401 Southbound Off Ramp         NA         22,166         NA         27,3%         NA         26,558         NA         31,0%         NA         40,606         NA           St. Clair College/Highway 401 Southbound Off Ramp         NA         22,017         NA         24,0%         NA         29,42         NA         32,0%         NA         29,962         NA           St. Clair College/Highway 401 Southbound Of Ramp         NA         12,250         NA         30,0%         NA         22,444         NA         35,0%         NA         24,397         NA           Howard Avenue Southbound Of Ramp         NA         22,874         NA         34,0%         NA         31,625         NA         33,686         NA           Highway 3/Highway 401 Southbound Of Ramp         NA         27,843         NA         35,63%         NA         31,625         NA         38,56%         NA           South of Highway 3/Highway 401 Southbound Of Ramp         NA         21,530         NA         36,3%         NA         31,625         NA</th></td<>	Pulford Street/Highway 401 Southbound Off Ramp         N/A         30,07         N/A         27,3%         N/A         36,588         N/A         31,0%         N/A         40,666           Todd Land-Highway 401 Southbound Off Ramp         N/A         22,166         N/A         27,3%         N/A         26,524         N/A         31,0%         N/A         40,666           St. Clair College/Highway 401 Southbound Off Ramp         N/A         22,617         N/A         24,0%         N/A         25,417         N/A         24,40%         N/A         25,0%         N/A         29,962           St. Clair College/Highway 401 Southbound Off Ramp         N/A         12,250         N/A         30,0%         N/A         22,404         N/A         35,0%         N/A         24,349           Highway 3/Highway 401 Southbound Off Ramp         N/A         22,574         N/A         34,9%         N/A         23,649         N/A         24,564         N/A         35,5%         N/A         31,625         N/A         38,9%         N/A         23,741           Highway 3/Highway 401 Southbound Off Ramp         N/A         21,530         N/A         36,3%         N/A         31,625         N/A         38,9%         N/A         33,65           South of Highway 3	Pulford Stree/Highway 401 Southbound Off Ramp         NA         30,677         NA         27,3%         NA         56,588         NA         31,0%         NA         40,606         NA           Todd LanderHighway 401 Southbound Off Ramp         NA         22,166         NA         27,3%         NA         26,558         NA         31,0%         NA         40,606         NA           St. Clair College/Highway 401 Southbound Off Ramp         NA         22,017         NA         24,0%         NA         29,42         NA         32,0%         NA         29,962         NA           St. Clair College/Highway 401 Southbound Of Ramp         NA         12,250         NA         30,0%         NA         22,444         NA         35,0%         NA         24,397         NA           Howard Avenue Southbound Of Ramp         NA         22,874         NA         34,0%         NA         31,625         NA         33,686         NA           Highway 3/Highway 401 Southbound Of Ramp         NA         27,843         NA         35,63%         NA         31,625         NA         38,56%         NA           South of Highway 3/Highway 401 Southbound Of Ramp         NA         21,530         NA         36,3%         NA         31,625         NA

NOTE: Values highlighted in yellow indicate per cent commercial vehicles of nil - 1 per cent assumed for analysis

05-1140-003-1

## TABLE II-A

# SUMMARY OF ESAL CALCULATIONS - FLEXIBLE PAVEMENTS - ALTERNATIVE 1A

Detroit River International Crossing <u>Windsor, Ontario</u>

					Northbound/			<u> </u>			d/Eastbound	
Pavement Section	From	<u>To</u>	LDF	<u>TF</u>	Design Period (years)	ESALs	Class	LDF	<u>TF</u>	Design Period (years)	ESALs	Class
Huron Church Road	Riverside Drive University Avenue	University Avenue Wyandotte Street	0.9 0.9	2 2	19 19	2,355,841 1,822,880	Major Collector Major Collector	0.9 0.9	2 2	19 19	1,632,290 2,033,116	Major Collector Major Collector
	Wyandotte Street	AMB Off Ramp	0.9	2	19	277,133	Minor Collector	0.9	2	19	392,502	Minor Collector
	AMB Off Ramp College Street	College Girardot Street	0.8 0.8	2 2	19 19	35,164,062 9,169,220	Major Arterial Minor Arterial	0.9 0.8	2 2	19 19	1,267,536 38,378,611	Major Collector Major Arterial
	Girardot Street Tecumseh Road	Tecumseh Road Dorchester Street	0.8	2	19 19	10,093,451 11,751,221	Minor Arterial Minor Arterial	0.8	2	19 19	37,366,261 36,073,735	Major Arterial Major Arterial
	Dorchester Street	Prince Road/Totten Street	0.8	2	19	10,283,260	Minor Arterial	0.8	2	19	32,960,098	Major Arterial
	Prince Road/Totten Street Malden Road	Malden Road Industrial Road	0.8 0.8	2 2	19 19	11,554,694 6,862,058	Minor Arterial Minor Arterial	0.8 0.8	2 2	19 19	32,824,966 30,927,075	Major Arterial Major Arterial
	Industrial Rd	EC Row North Ramp Terminal	0.8	2	19	7,800,046	Minor Arterial	0.8	2	19	31,594,901	Major Arterial
	EC Row North Ramp Terminal South of EC Row South Ramp Terminal	EC Row South Ramp Terminal	0.8 0.8	2 2	19 19	5,146,190 7,123,330	Major Collector Minor Arterial	0.8 0.8	2 2	19 19	30,683,990 23,990,334	Major Arterial Major Arterial
South Service Road	North of Lambton Street		0.0	-	.,	no data	innoi i neinn	1	2	19	2,445,688	Major Collector
	Lambton Street Todd Lane/Cabana Road	Todd Lane/Cabana Road St Clair College				no data no data		1	2 2	19 19	1,869,677 1,172,194	Major Collector Major Collector
	St Clair College	Cousineau Drive				no data		1	2	19	2,834,974	Major Collector
	Cousineau Drive East of Howard Avenue	Howard Avenue				no data no data		1	2 2	19 19	2,776,739 3,518,137	Major Collector Major Collector
North Service Road	North of Labelle Street Labelle Street	Grand Marais Road Ramp	1	2 2	19 19	7,514,528 4,847,309	Minor Arterial Major Collector				no data	
	Grand Marais Road Ramp	Pulford Street	1	2	19	2,367,614	Major Collector				no data no data	
	Pulford Street Todd Lane/Cabana Road	Todd Lane/Cabana Road St Clair College	1	2 2	19 19	2,605,552 994,834	Major Collector Minor Collector				no data no data	
	St Clair College	Cousineau Drive	1	2	19	1,102,788	Major Collector				no data	
	Cousineau Drive East of Howard Avenue	Howard Avenue	1	2 2	19 19	2,834,656 4,353,530	Major Collector Major Collector				no data no data	
Ojibway Parkway	EC Row Expressway	GN Booth Drive	0.8	2	19	2,784,093	Major Collector	0.8	2	19	7,338,520	Minor Arterial
	GN Booth Drive Sandwich Street	Sandwich Street Prospect Avenue	0.8 0.8	2 2	19 19	2,789,884 814,358	Major Collector Minor Collector	0.8 0.8	2 2	19 19	7,376,860 821,465	Minor Arterial Minor Collector
	North of Prospect Avenue	Trospect Treate	0.8	2	19	809,496	Minor Collector	0.8	2	19	804,291	Minor Collector
CROSS ROADS												
Wyandotte Street	West of Huron Church Road		1	1.5	19	533,102	Minor Collector	1	1.5	19	509,976	Minor Collector
University Avenue	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	19 19	724,004 143,940	Minor Collector Local	1	1.5 1.5	19 19	1,531,451 131,043	Major Collector Local
	East of Huron Church Road		1	1.5	19	1,691,694	Major Collector	1	1.5	19	1,516,825	Major Collector
Riverside Drive	West of Huron Church Road E of HuronChurch		1	1.5 1.5	19 19	371,254 720,155	Minor Collector Minor Collector	1	1.5 1.5	19 19	389,942 604,732	Minor Collector Minor Collector
AMB Off Ramp	E of HuronChurch E of HuronChurch		1	1.5	19	no data		1	1.5	19	31,000,318	Major Arterial
AMB On Ramp Patricia Street	AMB	Wyandotte Street	1	1.5	19	2,387,572 2,316,801	Major Collector Major Collector	1	1.5	19	no data 3,813,587	Major Collector
College Street	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	19 19	1,708,003 213,918	Major Collector Minor Collector	1	1.5 1.5	19 19	3,553,628 98,502	Major Collector Local
Girardot Street	East of Huron Church Road		1	1.5	19	118,935	Local	1	1.5	19	121,049	Local
Tecumseh Road	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	19 19	381,998 1,348,886	Minor Collector Major Collector	1	1.5 1.5	19 19	223,541 3,776,582	Minor Collector Major Collector
	West of Huron Church Road		1	1.5	19	682,926	Minor Collector	1	1.5	19	742,094	Minor Collector
Dorchester Street	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	19 19	178,211 235,973	Local Minor Collector	1	1.5 1.5	19 19	164,294 89,597	Local Local
Prince Road/Totten Street	East of Huron Church Road		1	1.5	19	228,660	Minor Collector	1	1.5	19	271,824	Minor Collector
Malden Road	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	19 19	543,540 167,789	Minor Collector Local	1	1.5 1.5	19 19	570,391 138,372	Minor Collector Local
	West of Huron Church Road		1	1.5	19	5,996,945	Major Collector	1	1.5	19	11,347,383	Minor Arterial
Industrial Road	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	19 19	610,571 1,781,647	Minor Collector Major Collector	1	1.5 1.5	19 19	817,538 4,677,110	Minor Collector Major Collector
E.C. Row Expressway North Ramp Terminal	East of Huron Church Road (W-N/S Off Ramp & N-W On Ra	mp)	1	1.5 1.5	19 19	3,646,597	Major Collector	1	1.5	19	4,699	Local
E.C. Row Expressway South Ramp Terminal	West of Huron Church Road (S-W On Ramp) East of Huron Church Road (N-E On Ramp)		1	1.5	19	1,717,399 no data	Major Collector	1	1.5	19	no data 1,700,453	Major Collector
Labelle Street	West of Huron Church Road (S-E On Ramp & E-N/S Off Ram East of North Service Road	ıp)	1	1.5 1.5	19 19	7,160,163 213,501	Minor Arterial Minor Collector	1	1.5 1.5	19 19	879,060 78,655	Minor Collector Local
Grand Marais Road Ramp	East of North Service Road		1	1.5	19	559,400	Minor Collector	1	1.5	19	213,865	Minor Collector
Fazio Drive Pulford Street	West of South Service Road East of North Service Road		1	1.5	19 19	658,859 50,023	Minor Collector Local	1	1.5 1.5	19 19	352,201 114,248	Minor Collector Local
Todd Lane/Cabana Road	East of North Service Road		i	1.5	19	1,010,692	Major Collector	1	1.5	19	785,844	Minor Collector
	between North and South Service Road between South Service Road and Huron Church Line		1	1.5 1.5	19 19	1,119,285 V 956,746	Major Collector Minor Collector	1	1.5 1.5	19 19	1,265,943 1,206,016	Major Collector Major Collector
	West of Huron Church Line		1	1.5	19	922,144	Minor Collector	1	1.5	19	950,828	Minor Collector
St. Clair College	East of North Service Rd between North and South Service Road		1	1.5 1.5	19 19	330,663 256,814	Minor Collector Minor Collector	1	1.5 1.5	19 19	926,084 286,988	Minor Collector Minor Collector
Cousineau Drive	East of North Service Road		1	1.5	19	554,966	Minor Collector	1	1.5	19	450,109	Minor Collector
	between North and South Service Road West of South Service Road		1	1.5 1.5	19 19	49,734 203,916	Local Minor Collector	1	1.5 1.5	19 19	1,339,311 1,333,221	Major Collector Major Collector
Howard Avenue	East of North Service Rd between North and South Service Road			1.5 1.5	19 19	1,444,079 2,205,001	Major Collector Major Collector	1	1.5 1.5	19 19	1,921,514 1,705,104	Major Collector Major Collector
	West of South Service Road		1	1.5	19	2,203,001 2,702,072	Major Collector	1	1.5	19	3,278,335	Major Collector
E.C. Row Expressway	East of Ojibway Parkway West of Ojibway Parkway		0.8 0.8	2 2	19 19	5,757,431 4,230,045	Major Collector Major Collector	1	2 2	19 19	3,909,440 3,678,095	Major Collector Major Collector
	East of Huron Church Road		0.8	2	19	4,250,045	Minor Arterial	1	2	19	36,065,807	Major Arterial
	At Malden Rd West of Matchette Road		0.8 0.8	2 2	19 19	13,222,919 11,413,597	Minor Arterial Minor Arterial	1	2 2	19 19	23,049,269 3,909,440	Major Arterial Major Collector
GN Booth Drive	West of Ojibway Parkway		1	1.5	19	59,678	Local	1	1.5	19	66,610	Local
Sandwich Street Prospect Avenue	West of Ojibway Parkway West of Ojibway Parkway		1	1.5 1.5	19 19	1,575,586 57,268	Major Collector Local	1	1.5 1.5	19 19	1,001,131 40,772	Major Collector Local
	d runs North-South and all crossing roads run East-West		-		.,			-			,=	
HIGHWAY 401 Ramps		J J										
-												
Highway 3 merge/split Highway 401 northbound Off Ramp			1	2	19	10,917,727	Minor Arterial				no data	
Highway 401 northbound On Ramp			1	2	19	2,428,699	Major Collector		~	10	no data	Main C P
Highway 401 southbound Off Ramp Highway 401 southbound On Ramp						no data no data		1	2 2	19 19	2,769,473 10,549,830	Major Collector Minor Arterial
At St. Clair College					10		Mine C II					
Highway 401 northbound Off Ramp Highway 401 northbound On Ramp			1	1.5 1.5	19 19	755,609 229,431	Minor Collector Minor Collector				no data no data	
Highway 401 southbound Off Ramp						no data		1	1.5	19	2,176,331	Major Collector
Highway 401 southbound On Ramp At Huron Church Road						no data		1	1.5	19	234,069	Minor Collector
Highway 401 northbound Off Ramp			1	2	19	3,997,976	Major Collector	1	2	10	no data	Minus Astarial
Highway 401 southbound On Ramp At Malden Road								1	2	19	19,271,082	Minor Arterial
Highway 401 northbound On Ramp			1	1.5	19	5,640,656	Major Collector		1.7	10	no data	Major C-lli
Highway 401 southbound Off Ramp Highway 401 to E.C. Row Expressway						no data		1	1.5	19	5,686,088	Major Collector
401 SB Off Ramp						no data		1	2	19	17,729,368	Minor Arterial
Ojibway Parkway Interchange Highway 401 northbound Off Ramp			1	2	19	6,425,673	Minor Arterial				no data	
Highway 401 northbound On Ramp			1	2	19	4,883,853	Major Collector			10	no data	
Highway 401 southbound Off Ramp Highway 401 southbound On Ramp						no data no data		1	2 2	19 19	246,287 7,364,764	Minor Collector Minor Arterial
E.C. Row Expressway to Highway 401				2	10		Ma to the					
Highway 401 northbound On Ramp			1	2	19	13,290,981	Minor Arterial				no data	
Highway 401 Mainline	South of Highway 3 merge/split	Highway 3/Highway 401 northbound Off Ramp	0.6	2.5	21	81,055,789	Freeway				no data	
	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp	Highway 3/Highway 401 northbound On Ramp St. Clair College/Highway 401 northbound Off Ramp	0.7 0.6	2.5 2.5	21 21	83,032,379 80,708,006	Freeway Freeway				no data no data	
	St. Clair College/Highway 401 northbound Off Ramp St. Clair College/Highway 401 northbound On Ramp	St. Clair College/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound Off Ramp	0.7 0.7	2.5 2.5	21 21	66,025,895 75,196,212	Freeway Freeway				no data no data	
	Huron Church Road/Highway 401 northbound Off Ramp	Malden Road/Highway 401 northbound On Ramp	0.8	2.5	21	87,637,056	Freeway				no data	
	Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp	Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound OnRamp	0.7 0.8	2.5 2.5	21 21	84,016,315 89,010,502	Freeway Freeway				no data no data	
	Ojibway Parkway/Highway 401 northbound OnRamp	EC Row Expressway to Highway 401 northbound On Ramp	0.8	2.5	21	94,432,027	Freeway				no data	
	EC Row Expressway to Highway 401 northbound On Ramp	Canadian Plaza	0.7	2.5	21	102,518,161	Freeway				no data	
	Canadian Plaza	Ojibway Parkway/Highway 401 southbound Off Ramp				no data		0.6	2.5	21	139,823,881	Freeway

	Canadian Plaza	Ojibway Parkway/Highway 401 southbound Off Ramp				no data		0.6	2.5	21	139,823,881	Freeway
	Ojibway Parkway/Highway 401 southbound Off Ramp	Ojibway Parkway/Highway 401 southbound On Ramp				no data		0.7	2.5	21	153,128,914	Freeway
	Ojibway Parkway/Highway 401 southbound On Ramp	Highway 401 to EC Row Expressway southbound Off Ramp				no data		0.6	2.5	21	149,145,203	Freeway
	Highway 401 to EC Row Expressway southbound Off Ramp	Malden Road/Highway 401 southbound Off Ramp				no data		0.6	2.5	21	156,491,942	Freeway
	Malden Road/Highway 401 southbound Off Ramp	Huron Church Road/Highway 401 southbound On Ramp				no data		0.7	2.5	21	167,118,659	Freeway
	Huron Church Road/Highway 401 southbound On Ramp	St Clair College/Highway 401 southbound Off Ramp				no data		0.6	2.5	21	127,816,748	Freeway
	St Clair College/Highway 401 southbound Off Ramp	St Clair College/Highway 401 southbound On Ramp				no data		0.6	2.5	21	106,132,652	Freeway
	St Clair College/Highway 401 southbound On Ramp	Highway 3/Highway 401 southbound Off Ramp				no data		0.6	2.5	21	120,365,626	Freeway
	Highway 3/Highway 401 southbound Off Ramp	Highway 3/Highway 401 southbound On Ramp				no data		0.7	2.5	21	129,947,433	Freeway
	Highway 3/Highway 401 southbound On Ramp	South of Highway 3 merge/split				no data		0.6	2.5	21	120,362,887	Freeway
Grand Marais Road	East of connecting ramp		1	1.5	19	544,422	Minor Collector	1	1.5	19	485,540	Minor Collector
	West of connecting ramp		1	1.5	19	27,716	Local	1	1.5	19	420,374	Minor Collector
Broadway Street	West of Ojibway Parkway		1	1.5	19	34,310	Local	1	1.5	19	36,666	Local
Huron Church Line	South of Todd Lane		1	1.5	19	5,787,782	Major Collector	1	1.5	19	7,039,676	Minor Arterial
Millen Street	Felix Avenue	Huron Church Road	1	1.5	19	17,886	Local	1	1.5	19	37,630	Local
Malden Road	Chappus Street	Highway 401 South Ramp	1	1.5	19	2,672,733	Major Collector	1	1.5	19	2,961,102	Major Collector
	Highway 401 South Ramp	Highway 401 North Ramp	1	1.5	19	2,945,196	Major Collector	1	1.5	19	1,940,145	Major Collector
	North of Highway 401 North Ramp		1	1.5	19	2,088,158	Major Collector	1	1.5	19	2,143,604	Major Collector
Matchette Road	Chappus Street	EC Row Expressway South Ramp	1	1.5	19	1,001,785	Major Collector	1	1.5	19	954,170	Minor Collector
	EC Row Expressway South Ramp	EC Row Expressway North Ramp	1	1.5	19	290,915	Minor Collector	1	1.5	19	1,045,682	Major Collector
	EC Row Expressway North Ramp	Carmichael	1	1.5	19	528,215	Minor Collector	1	1.5	19	332,863	Minor Collector
Montgomery Drive	Surrey Drive	Talbot Street	1	1.5	19	11,353	Local	1	1.5	19	64,102	Local
Surrey Drive	Montgomery Drive	Talbot Street	1	1.5	19	8,924	Local	1	1.5	19	13,509	Local
Grosvenor Road	Montgomery Drive	Talbot Street	1	1.5	19	15,357	Local	1	1.5	19	17,570	Local

05-1140-003-1

## TABLE II-B

# SUMMARY OF ESAL CALCULATIONS - FLEXIBLE PAVEMENTS - ALTERNATIVE 1B

Detroit River International Crossing <u>Windsor, Ontario</u>

Pavement Section	LOCATION Erom	To	LDF		Northbound/W	estbound ESALs	Class	LDF	TE	Southbound/Ea	stbound ESALs	Class
Huron Church Road	Riverside Drive	University Avenue	0.9	2	(years) 19	2,318,723	Major Collector	0.9	2	(years) 19	1,613,018	Major Collector
	University Avenue Wyandotte Street	Wyandotte Street AMB Off Ramp	0.9 0.9	2 2	19 19	1,534,091 282,018	Major Collector Minor Collector	0.9 0.9	2 2	19 19	2,014,241 404,775	Major Collector Minor Collector
	AMB Off Ramp College Street	College Girardot Street	0.8	2 2	19 19	35,745,592 9,121,152	Major Arterial Minor Arterial	0.9	2	19 19	1,246,000 39,268,951	Major Collector Major Arterial
	Girardot Street	Tecumseh Road	0.8	2	19	10,108,420	Minor Arterial	0.8	2	19	38,247,717	Major Arterial
	Tecumseh Road Dorchester Street	Dorchester Street Prince Road/Totten Street	0.8 0.8	2 2	19 19	11,804,328 10,422,643	Minor Arterial Minor Arterial	0.8 0.8	2 2	19 19	36,838,170 33,845,734	Major Arterial Major Arterial
	Prince Road/Totten Street Malden Road	Malden Road Industrial Road	0.8 0.8	2 2	19 19	11,709,441 6,843,950	Minor Arterial Minor Arterial	0.8 0.8	2 2	19 19	33,464,371 31,147,517	Major Arterial Major Arterial
	Industrial Road EC Row North Ramp Terminal	EC Row North Ramp Terminal EC Row South Ramp Terminal	0.8 0.8	2 2	19 19	7,762,430 4,848,338	Minor Arterial Major Collector	0.8 0.8	2 2	19 19	31,385,533 27,775,883	Major Arterial Major Arterial
South Service Road	South of EC Row South Ramp Terminal north of Bethlehem Avenue		0.8	2	19	6,739,829 no data	Minor Arterial	0.8	2 2	19 19	20,972,160 24,643,746	Major Arterial Major Arterial
	Bethlehem Avenue Lambton Street	Lambton Street Pulford Street				no data no data		1	2 2	19 19	1,931,404 306,828	Major Collector Minor Collector
	Pulford Street Todd Lane/Cabana Road	Todd Lane/Cabana Road Huron Church Line				no data no data		1	2 2	19 19	1,031,576 1,685,810	Major Collector Major Collector
	Huron Church Line St. Clair College	St. Clair College Cousineau Drive				no data no data		1	2	19 19	1,564,142 4,524,555	Major Collector Major Collector
	Cousineau Drive east of Howard Avenue	Howard Avenue				no data no data		1	2	19 19	4,620,893 3,527,171	Major Collector Major Collector
North Service Road	north of Labelle Street Labelle Street	Grand Marais Road Ramp	1	2 2	19 19	7,040,640 3,876,909	Minor Arterial Major Collector	-	-	.,	no data no data	
	Grand Marais Road Ramp Pulford Street	Pulford Street Todd Lane/Cabana Road	1	2 2	19 19	108,248 170,430	Local				no data no data	
	Todd Lane/Cabana Road Huron Church Line	Huron Church Line St. Clair College	1	2 2	19 19	1,907,803 829,845	Major Collector Minor Collector				no data no data	
	St. Clair College	Cousineau Drive	1	2 2	19	1,822,141	Major Collector				no data	
0111 P. I.	Cousineau Drive east of Howard Avenue	Howard Avenue	1	2	19 19	1,516,256 4,148,596	Major Collector Major Collector			10	no data no data	
Ojibway Parkway	E.C. Row Expressway GN Booth Drive	GN Booth Drive Sandwich Street	0.8 0.8	2 2	19 19	2,822,038 2,827,820	Major Collector Major Collector	0.8 0.8	2 2	19 19	7,408,690 7,446,829	Minor Arterial Minor Arterial
	Sandwich Street north of Prospect Avenue	Prospect Avenue	0.8 0.8	2 2	19 19	827,232 822,281	Minor Collector Minor Collector	0.8 0.8	2 2	19 19	831,603 814,230	Minor Collector Minor Collector
CROSS ROADS	west of Huron Church Line		1	1.5	10	520.207	Mines Call	1	15	19	506 200	Minor Collector
Wyandotte Street	east of Huron Church Line		1	1.5	19 19	530,306 498,288	Minor Collector Minor Collector	1	1.5 1.5	19	506,299 1,497,725	Major Collector
University	west of Huron Church Line east of Huron Church Line		1	1.5 1.5	19 19	142,238 1,677,084	Local Major Collector	1	1.5 1.5	19 19	130,873 1,276,242	Local Major Collector
Riverside Drive	west of Huron Church Line east of Huron Church Line		1	1.5 1.5	19 19	367,095 725,809	Minor Collector Minor Collector	1	1.5 1.5	19 19	383,074 602,328	Minor Collector Minor Collector
AMB Off Ramp AMB On Ramp	east of Huron Church Line east of Huron Church Line		1	1.5	19	no data 2,384,754	Major Collector	1	1.5	19	39,778,029 no data	Major Arterial
Patricia College Street	AMB east of Huron Church Road	Wyandotte Street	1	1.5 1.5	19 19	2,320,936 1,731,091	Major Collector Major Collector	1	1.5 1.5	19 19	3,829,080 3,381,361	Major Collector Major Collector
Girardot Street	west of Huron Church Road east of Huron Church Road		1	1.5 1.5	19 19	214,141 119,621	Minor Collector Local	1	1.5 1.5	19 19	97,988 119,915	Local Local
Tecumseh Road	west of Huron Church Road east of Huron Church Road		1	1.5 1.5	19 19	430,888 1,431,479	Minor Collector Major Collector	1	1.5 1.5	19 19	264,100 3,940,554	Minor Collector Major Collector
Dorchester Street	west of Huron Church Road east of Huron Church Road		1	1.5 1.5	19 19	682,338 179,099	Minor Collector Local	1	1.5 1.5	19 19	742,123 161,663	Minor Collector Local
Prince Road/Totten Street	west of Huron Church Road east of Huron Church Road		1	1.5 1.5	19 19	273,395 228,617	Minor Collector Minor Collector	1	1.5 1.5	19 19	106,303 271,778	Local Minor Collector
Malden Road	west of Huron Church Road east of Huron Church Road		1	1.5 1.5	19 19	543,413 167,733	Minor Collector Local	1	1.5	19 19	570,409 138,262	Minor Collector Local
Industrial Road	west of Huron Church Road east of Huron Church Road		1	1.5	19 19	6,228,212 569,110	Minor Arterial Minor Collector	1	1.5 1.5	19 19	11,980,340 808,713	Minor Arterial Minor Collector
E.C. Row Expressway North Ramp Terminal	west of Huron Church Road east of Huron Church Road east of Huron Church Road (E-N/S Off Ramp & S-W On Ramp)		1	1.5 1.5	19 19	1,747,369 3,157,192	Major Collector Major Collector	1	1.5	19 19	4,358,199 2,197,579	Major Collector Major Collector
E.C. Row Expressway South Ramp Terminal	east of Huron Church Road (N-W On Ramp) east of Huron Church Road (S-E On Ramp) east of Huron Church Road (S-E On Ramp)		1	1.5	19	1,650,554 no data	Major Collector	1	2	19	no data 1,359,110	Major Collector
Labelle Street/Bethlehem Avenue	west of Huron Church Road (N-E On Ramp) east of North Service Road			1.5 1.5	19	7,304,349 323,003	Minor Arterial Minor Collector	1	2 1.5	19 19	1,180,968 243,335	Major Collector Minor Collector
Labelle Brites Delindrein Artende	between North and South Service Road west of South Service Road		1	1.5	19 19	140,366 186,351	Local	1	1.5 1.5	19 19	369,113 399,459	Minor Collector Minor Collector
Grand Marais Road/Lambton Road	east of North Service Road between North and South Service Road		1	1.5 1.5	19 19	475,792 24,743	Minor Collector Local	1	1.5 1.5	19 19	372,495 297,734	Minor Collector Minor Collector
Pulford Street	west of South Service Road east of North Service Road		1 1	1.5 1.5	19 19	344,115 166,004	Minor Collector Local	1	1.5 1.5	19 19	210,036 221,312	Minor Collector Minor Collector
	between North and South Service Road west of South Service Road		1	1.5 1.5	19 19	158,444 265,107	Local Minor Collector	1	1.5 1.5	19 19	140,517 87,247	Local Local
Todd Lane/Cabana Road	east of North Service Road between North and South Service Road			1.5 1.5	19 19	985,003 1,036,720	Minor Collector Major Collector	1	1.5 1.5	19 19	792,372 1,005,264	Minor Collector Major Collector
Huron Church Line	west of South Service Road between North and South Service Road		1	1.5 1.5	19 19	1,222,612 448,122	Major Collector Minor Collector	1	1.5 1.5	19 19	1,174,203 905,846	Major Collector Minor Collector
St. Clair College	west of South Service Road east of North Service Road	$\langle \langle \rangle \langle \rangle \rangle$	1	1.5 1.5	19 19	1,080,769 330,617	Major Collector Minor Collector	1	1.5 1.5	19 19	1,161,572 925,874	Major Collector Minor Collector
Cousineau Drive	between North and South Service Road east of North Service Road		1	1.5 1.5	19 19	256,814 556,250	Minor Collector Minor Collector	1	1.5 1.5	19 19	289,076 450,545	Minor Collector Minor Collector
	between North and South Service Road west of South Service Road		1	1.5 1.5	19 19	844,095 1,121,187	Minor Collector Major Collector	1	1.5 1.5	19 19	745,196 427,178	Minor Collector Minor Collector
Howard Avenue	east of North Service Road between North and South Service Road		1	1.5 1.5	19 19	1,492,660 2,306,946	Major Collector Major Collector	1	1.5 1.5	19 19	1,873,822 1,828,872	Major Collector Major Collector
E.C. Row Expressway	west of South Service Road east of Ojibway Parkway		1 0.8	1.5 2	19 19	2,741,117 5,866,348	Major Collector Major Collector	1 0.8	1.5 2	19 19	3,536,412 4,840,302	Major Collector Major Collector
	west of Ojibway Parkway east of Huron Church Road		0.8 0.8	2 2	19 19	4,342,634 15,217,182	Major Collector Minor Arterial	0.8 0.8	2 2	19 19	2,977,058 27,901,249	Major Collector Major Arterial
	at Malden Road west of Matchette		0.8 0.8	2 2	19 19	14,685,915 6,740,518	Minor Arterial Minor Arterial	0.8 0.8	2 2	19 19	21,605,735 4,840,302	Major Arterial Major Collector
GN Booth Drive Sandwich Street	west of Ojibway Parkway west of Ojibway Parkway		1	1.5 1.5	19 19	71,351 1,570,291	Local Major Collector	1 1	1.5 1.5	19 19	79,754 1,002,890	Local Major Collector
Prospect Avenue	west of Ojibway Parkway		1	1.5	19	69,348	Local	1	1.5	19	48,013	Local
HIGHWAY 401 Ramps												
Highway 3 merge/split Highway 401 Northbound Off Ramp			1	2	19	10,954,220	Minor Arterial	1	2	10	no data	
Highway 401 Northbound On Ramp			1	2	19	2,459,797	Major Collector	1	2	10	no data 2,628,824	M. C.B.
Highway 401 Southbound Off Ramp Highway 401 Southbound On Ramp						no data no data		1	2 2	19 19	10,636,980	Major Collector Minor Arterial
At St. Clair College Highway 401 Northbound Off Ramp			1	1.5	19	470,168	Minor Collector				no data	
Highway 401 Northbound On Ramp Highway 401 Southbound Off Ramp			1	1.5	19	334,642 no data	Minor Collector	1	1.5	19	no data 3,101,103	Major Collector
Highway 401 Southbound On Ramp At Pulford Street						no data		1	1.5	19	336,576	Minor Collector
Highway 401 Northbound On Ramp Highway 401 Southbound Off Ramp			1	1.5	19	952,472 no data	Minor Collector	1	1.5	19	no data 801,564	Minor Collector
At Huron Church Road Highway 401 Northbound Off Ramp			1	2	19	4,713,176	Major Collector				no data	
Highway 401 Southbound On Ramp At Malden Road					10	no data	Main C. P.	1	2	19	23,953,811	Major Arterial
Highway 401 Northbound On Ramp Highway 401 Southbound Off Ramp Highway 401 to E.C. Bow Expression			1	1.5	19	5,640,656 no data	Major Collector	1	1.5	19	no data 5,686,088	Major Collector
Highway 401 to E.C. Row Expressway 401 Southbound Off Ramp Oilburn Barburn Interschemen			1	2	10	no data		1	2	19	18,696,765	Minor Arterial
Ojibway Parkway Interchange Highway 401 Northbound Off Ramp Highway 401 Northbound On Ramp			1	2 2	19 19	6,413,696	Minor Arterial				no data no data	
Highway 401 Northbound On Ramp Highway 401 Southbound Off Ramp Highway 401 Southbound On Ramp			1	4	19	4,669,477 no data no data	Major Collector	1	2	19 19	no data 205,164 7,444,238	Minor Collector Minor Arterial
E.C. Row Expressway to Highway 401 Highway 401 Northbound On Ramp			1	2	19	no data 13,290,981	Minor Arterial	1	4	17	7,444,238 no data	annor raterial
ragaway 401 Normoonnu On Kamp			1	4	17	13,290,981	immor Arteflal				no uată	

Highway 401 Mainline	South of Highway 3 merge/split	Highway 3/Highway 401 Northbound Off Ramp	0.6	2.5	21	79,144,876	Freeway				no data	
	Highway 3/Highway 401 Northbound Off Ramp	Highway 3/Highway 401 Northbound On Ramp	0.7	2.5	21	82,697,651	Freeway				no data	
	Highway 3/Highway 401 Northbound On Ramp	St. Clair College/Highway 401 Northbound Off Ramp	0.6	2.5	21	80,594,029	Freeway				no data	
	St. Clair College/Highway 401 Northbound Off Ramp	St. Clair College/Highway 401 Northbound On Ramp	0.7	2.5	21	67,847,046	Freeway				no data	
	St. Clair College/Highway 401 Northbound On Ramp	Pulford Street/Highway 401 Northbound On Ramp	0.7	2.5	21	73,267,419	Freeway				no data	
	Pulford Street/Highway 401 Northbound On Ramp	Huron Church Road/Highway 401 Northbound Off Ramp	0.6	2.5	21	68,163,484	Freeway				no data	
	Huron Church Road/Highway 401 Northbound Off Ramp	Malden Road/Highway 401 Northbound On Ramp	0.8	2.5	21	84,313,935	Freeway				no data	
	Malden Road/Highway 401 Northbound On Ramp	Ojibway Parkway/Highway 401 Northbound Off Ramp	0.7	2.5	21	81,110,153	Freeway				no data	
	Ojibway Parkway/Highway 401 Northbound Off Ramp	Ojibway Parkway/Highway 401 Northbound OnRamp	0.8	2.5	21	85,690,630	Freeway				no data	
	Ojibway Parkway/Highway 401 Northbound OnRamp	EC Row Expressway to Highway 401 Northbound On Ramp	0.8	2.5	21	90,873,833	Freeway				no data	
	EC Row Expressway to Highway 401 Northbound On Ramp	Canadian Plaza	0.8	2.5	21	115,112,527	Freeway				no data	
						1.		0.6	2.5		127 650 005	r.
	Canadian Plaza	Ojibway Parkway/Highway 401 Southbound Off Ramp				no data		0.6	2.5	21	137,650,885	Freeway
	Ojibway Parkway/Highway 401 Southbound Off Ramp	Ojibway Parkway/Highway 401 Southbound On Ramp				no data		0.7	2.5	21	150,778,243	Freeway
	Ojibway Parkway/Highway 401 Southbound On Ramp	Highway 401 to EC Row Expressway Southbound Off Ramp				no data		0.6	2.5	21	149,145,203	Freeway
	Highway 401 to EC Row Expressway Southbound Off Ramp	Malden Road/Highway 401 Southbound Off Ramp				no data		0.6	2.5	21	156,491,942	Freeway
	Malden Road/Highway 401 Southbound Off Ramp	Huron Church Road/Highway 401 Southbound On Ramp				no data		0.7	2.5	21	152,225,381	Freeway
	Huron Church Road/Highway 401 Southbound On Ramp	Pulford Street/Highway 401 Southbound Off Ramp				no data		0.6	2.5	21	129,558,262	Freeway
	Pulford Street/Highway 401 Southbound Off Ramp	St Clair College/Highway 401 Southbound Off Ramp				no data		0.6	2.5	21	132,554,055	Freeway
	St Clair College/Highway 401 Southbound Off Ramp	St Clair College/Highway 401 Southbound On Ramp				no data		0.6	2.5	21	104,888,549	Freeway
	St Clair College/Highway 401 Southbound On Ramp	Highway 3/Highway 401 Southbound Off Ramp				no data		0.6	2.5	21	122,605,180	Freeway
	Highway 3/Highway 401 Southbound Off Ramp	Highway 3/Highway 401 Southbound On Ramp				no data		0.7	2.5	21	131,625,015	Freeway
	Highway 3/Highway 401 Southbound On Ramp	South of Highway 3 merge/split				no data		0.6	2.5	21	121,648,998	Freeway
Malden Road	Chappus Street	Highway 401 South Ramp	1	1.5	19	3,611,502	Major Collector	1	1.5	19	4,796,333	Major Collector
	Highway 401 South Ramp	Highway 401 North Ramp	1	1.5	19	4.035.122	Major Collector	1	1.5	19	3,059,261	Major Collector
	North of Highway 401 North Ramp	inginay for risia namp	1	1.5	19	2,783,241	Major Collector	1	1.5	19	3,405,068	Major Collector
Matchette Road	Chappus Street	EC Row Expressway South Ramp	1	1.5	19	949,140	Minor Collector	1	1.5	19	954.621	Minor Collector
materiolic road	EC Row Expressway South Ramp	EC Row Expressway South Ramp	1	1.5	19	273.758	Minor Collector	1	1.5	19	1,054,060	Major Collector
	EC Row Expressway South Ramp	Carmichael	1	1.5	19	540,579	Minor Collector	1	1.5	19	336.609	Minor Collector
	LC ROW Expressway from Ramp	Carmenaer	1	1.0	19	5-0,579	inition Collector	1	1.0	19	550,009	wintor collector

Prepared By: MEB Reviewed By: PRB

05-1140-003-1

# TABLE II-C

# SUMMARY OF ESAL CALCULATIONS - FLEXIBLE PAVEMENTS - ALTERNATIVE 2A

Detroit River International Crossing Windsor, Ontario

Pavement Section	LOCATION <u>From</u>	Το	LDF	TE	Northbound/V Design Period		Class	LDF	TE	Southbound/E Design Perior		Cla
			0.9	2	(years)				2	(years)		
uron Church Road	Riverside Drive University Avenue	University Avenue Wyandotte Street	0.9	2	19 19	2,267,830 1,700,172	Major Collector Major Collector	0.9 0.9	2	19 19	1,639,892 2,040,505	Major Co Major Co
	Wyandotte Street	AMB Off Ramp	0.9	2	19	281,104	Minor Collector	0.9	2	19	404,480	Minor Co
	AMB Off Ramp	College Street	0.8	2	19	33,653,502	Major Arterial	0.9	2	19	1,278,419	Major Co
	College Street Girardot Street	Girardot Street Tecumseh Road	0.8	2 2	19 19	8,754,323 9,776,177	Minor Arterial Minor Arterial	0.8 0.8	2	19 19	37,817,378 37,174,638	Major A Major A
	Tecumseh Road	Dorchester Street	0.8	2	19	11,532,926	Minor Arterial	0.8	2	19	35,655,663	Major A
	Dorchester Street	Prince Road/Totten Street	0.8	2	19	10,255,125	Minor Arterial	0.8	2	19	32,954,683	Major A
	Prince Road/Totten Street Malden Road	Malden Road Industrial Road	0.8	2 2	19 19	11,510,526 6,981,447	Minor Arterial Minor Arterial	0.8 0.8	2	19 19	31,784,965 29,233,379	Major A Major A
	Industrial Road	EC Row Expressway North Ramp Terminal	0.8	2	19	7,681,945	Minor Arterial	0.8	2	19	29,711,655	Major A
	EC Row Expressway North Ramp Terminal	EC Row Expressway South Ramp Terminal	0.8	2	19	5,165,251	Major Collector	0.8	2	19	26,667,735	Major A
	EC Row Expressway South Ramp Terminal	Highway 401 Off Ramp	0.8	2	19	5,714,013	Major Collector	0.8	2	19	19,444,054	Minor A
	Highway 401 Off Ramp Spring Garden Road/Labelle Street	Spring Garden Road/Labelle Street Lambton Street/Grand Marais Road Ramp	0.8	2 2	19 19	972,220 1,437,746	Minor Collector Major Collector	0.8	2	19 19	1,431,625 1,988,355	Major Co Major Co
	Lambton Street/Grand Marais Road Ramp	Pulford Street	0.8	2	19	1,589,255	Major Collector	0.8	2	19	529,408	Minor Co
	Pulford Street	Todd Lane/Cabana Road	0.8	2	19	1,825,214	Major Collector	0.8	2	19	670,657	Minor Co
albot Road	Todd Lane/Cabana Road Huron Church Line	Huron Church Line St Clair College	0.8	2 2	19 19	1,706,435 147,840	Major Collector Local	0.8 0.8	2	19 19	2,568,379 885,350	Major Co Minor Co
	St Clair College	Cousineau Drive	0.8	2	19	129,349	Local	0.9	2	19	851,084	Minor Co
	Cousineau Drive	Howard Avenue	0.8	2	19	496,098	Minor Collector	0.9	2	19	212,355	Minor Co
)jibway Parkway	Howard Avenue EC Row Expressway	EC Row Expressway GN Booth Drive	0.8	2	19 19	3,559,509 2,819,502	Major Collector Major Collector	0.8 0.8	2	19 19	3,466,485 7,399,089	Major Co Minor A
Jioway Faikway	GN Booth Drive	Sandwich Street	0.8	2	19	2,825,328	Major Collector	0.8	2	19	7,399,089	Minor A
	Sandwich Street	Prospect Avenue	0.8	2	19	825,929	Minor Collector	0.8	2	19	825,509	Minor C
	North of Prospect Avenue		0.8	2	19	820,995	Minor Collector	0.8	2	19	808,350	Minor C
ROSSING ROADS												
yandotte Street	West of Huron Church Road		1	1.5	19	530,103	Minor Collector	1	1.5	19	506,426	Minor C
	East of Huron Church Road		1	1.5	19	652,585	Minor Collector	1	1.5	19	1,482,823	Major C
niversity Avenue	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	19 19	141,998 1,699,799	Local Major Collector	1	1.5 1.5	19 19	129,314 1,416,255	Loc Major C
iverside Drive	West of Huron Church Road		1	1.5	19	366,045	Minor Collector	1	1.5	19	391,846	Minor C
	East of Huron Church Road		1	1.5	19	723,983	Minor Collector	1	1.5	19	610,459	Minor C
MB Off Ramp MB On Romp	East of Huron Church Road			15	10	no data	Major C-II	1	1.5	19	29,663,810	Major /
MB On Ramp tricia Street	East of Huron Church Road AMB	Wyandotte Street	1	1.5 1.5	19 19	2,388,073 2,278,257	Major Collector Major Collector	1	1.5	19	no data 3,722,913	Major C
ollege Street	East of Huron Church Road	· · · · ·	1	1.5	19	1,848,818	Major Collector	1	1.5	19	3,432,860	Major C
	West of Huron Church Road		1	1.5	19	207,927	Minor Collector	1	1.5	19	92,990	Lo
rardot Street	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	19 19	118,076 469,270	Local Minor Collector	1	1.5 1.5	19 19	121,403 325,412	Lo Minor O
cumseh Road	East of Huron Church Road		1	1.5	19	1,368,509	Major Collector	1	1.5	19	4,158,194	Major (
	West of Huron Church Road		1	1.5	19	668,482	Minor Collector	1	1.5	19	721,961	Minor O
orchester Street	East of Huron Church Road		1	1.5	19	180,124	Local Minor Collector	1	1.5	19	162,330	Lo
ince Road/Totten Street	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	19 19	339,175 233,196	Minor Collector Minor Collector	1	1.5 1.5	19 19	122,081 279,563	Lo Minor (
nice Rouge Police Direct	West of Huron Church Road		1	1.5	19	521,405	Minor Collector	1	1.5	19	562,003	Minor 0
alden Road	East of Huron Church Road		1	1.5	19	170,478	Local	1	1.5	19	138,108	Lo
dustrial Road	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	19 19	5,984,098 573,716	Major Collector Minor Collector	1	1.5 1.5	19 19	9,177,512 802,133	Minor Minor C
	West of Huron Church Road		1	1.5	19	1,733,054	Major Collector	1	1.5	19	4,573,116	Major C
C Row Expressway North Ramp Terminal	E-N/S Ramp N-W Ramp		1	2	19	4,248,046 no data	Major Collector	1	2	19	no data 116,689	Lo
C Row Expressway South Ramp Terminal	S-W Ramp W-N/S Ramp		1	2	19	9,113,907 no data	Minor Arterial	1	2	19	no data 846,675	Minor C
	S/N-E Ramp West of Huron Church Road			1.5	19	no data 242,551	Minor Collector	1	2 1.5	19 19	9,683,406	Minor Minor C
pring Garden Road abelle Street	East of Huron Church Road		1	1.5	19	400,962	Minor Collector	1	1.5	19	324,349 210,733	Minor C
ambton Street/Grand Marais Road Ramp	East of Huron Church Road		1	1.5	19	548,092	Minor Collector	1	1.5	19	511,362	Minor C
ulford Street	East of Huron Church Road		1	1.5 1.5	19 19	319,028 890,289	Minor Collector	1	1.5	19 19	168,468	Lo Minor O
abana Road	East of Huron Church Road between Huron Church Road and Highway 401 northbound Ra	mps	1	1.5	19	567,842	Minor Collector Minor Collector	1	1.5 1.5	19	793,161 2,319,084	Major C
odd Lane	between Highway 401 northbound and southbound Ramps		1	1.5	19	334,535	Minor Collector	1	1.5	19	1,954,325	Major C
	West of Highway 401 southbound Ramps		1	1.5	19	1,247,442	Major Collector	1	1.5	19	1,050,231	Major C
luron Church Line t Clair College	West of Huron Church Road East of Talbot Road		1	1.5 1.5	19 19	1,405,818 334,584	Major Collector Minor Collector	1	1.5 1.5	19 19	1,047,256 1,000,169	Major C Major C
ousineau Drive	East of Talbot Road		1	1.5	19	604,649	Minor Collector	1	1.5	19	570,581	Minor C
	West of Talbot Road		1	1.5	19	226,713	Minor Collector	1	1.5	19	451,135	Minor C
loward Avenue	East of Talbot Road between Talbot Road and Highway 401 southbound On Ramp		1	1.5 1.5	19 19	1,514,091 2,474,266	Major Collector Major Collector	1	1.5 1.5	19 19	2,241,544 1,721,976	Major C Major C
	West of Highway 401 southbound On Ramp		1	1.5	19	2,764,107	Major Collector	1	1.5	19	3,407,026	Major C
.C. Row Expressway	East of Huron Church Road		0.8	2	19	15,078,657	Minor Arterial	0.8	2	19	28,108,637	Major .
	At Malden Road West of Matchette Drive		0.8	2	19 19	14,619,885	Minor Arterial	0.8 0.8	2	19 19	20,918,124 4,392,185	Major
			0.8	2	19	6,283,330	Minor Arterial	0.8	2	19	4,392,185	Major C
For consistency, Huron Church Rd/Talbot R GHWAY 401 Ramps	d runs North-South and all crossing roads run East-West											
-												
Iighway 3 merge/split Iighway 401 northbound Off Ramp			1	2	19	12,770,680	Minor Arterial				no data	
lighway 401 northbound On Ramp			1	2	19	2,727,622	Major Collector				no data	
ighway 401 southbound Off Ramp						no data	-	1	2	19	2,670,979	Major G
ighway 401 southbound On Ramp						no data		1	2	19	11,911,133	Minor
oward Avenue 01 NB Off Ramp						no data		1	2	19	610,847	Minor (
Todd Lane/Cabana Road												
ighway 401 northbound Off Ramp			1	1.5 1.5	19	931,020	Minor Collector				no data	
ighway 401 northbound On Ramp ighway 401 southbound Off Ramp			1	1.3	19	1,395,145 no data	Major Collector	1	1.5	19	no data 2,577,794	Major O
ighway 401 southbound On Ramp						no data		1	1.5	19	348,733	Minor C
Huron Church Road							<b>W</b> : 6 "					
ghway 401 northbound Off Ramp ghway 401 southbound On Ramp			1	2	19	5,139,048	Major Collector	1	2	19	22 400 401	Moio-
ighway 401 southbound On Ramp t Malden Road								1	2	19	22,490,491	Major.
			1	1.5	19	5,101,197	Major Collector				no data	
ighway 401 northbound On Ramp			1			no data		1	1.5	19	4,905,375	Major C
ighway 401 northbound On Ramp ighway 401 southbound Off Ramp			1						2	19	19,232,457	Minor
ighway 401 northbound On Ramp ighway 401 southbound Off Ramp C Row Expressway to Highway 401			1			no data		1	-	.,		
ighway 401 northbound On Ramp ighway 401 southbound Off Ramp C Row Expressway to Highway 401 ighway 401 southbound On Ramp jibway Parkway Interchange			1			no data		1				
ighway 401 northbound On Ramp ighway 401 southbound Off Ramp <i>C Row Expressivay to Highway 401</i> ighway 401 southbound On Ramp jibway Parkway Interchange ighway 401 northbound Off Ramp			1	2	19	6,400,766	Minor Arterial	1			no data	
ighway 401 northbound On Ramp ighway 401 southbound Off Ramp <i>C Row Expressway to Highway 401</i> ighway 401 southbound On Ramp ighway 401 northbound Off Ramp ighway 401 northbound Off Ramp			1 1	2 2	19 19	6,400,766 4,666,462	Minor Arterial Major Collector	1	2	10	no data	
ghway 401 northbound On Ramp ghway 401 southbound Off Ramp <i>Row Expressivay to Highway 401</i> ghway 401 southbound On Ramp <i>linway Parkway Interchange</i> ghway 401 northbound Off Ramp ghway 401 onthbound On Ramp ghway 401 outhbound Off Ramp			1 1			6,400,766		1 1 1	2 2	19 19		Minor O Minor
ghway 401 northbound On Ramp ghway 401 southbound Off Ramp <i>Row Expressway to Highway 401</i> ghway 401 southbound On Ramp ghway 401 northbound Off Ramp ghway 401 northbound On Ramp ghway 401 southbound Off Ramp ghway 401 southbound On Ramp ghway 401 southbound On Ramp			1	2	19	6,400,766 4,666,462 no data no data	Major Collector	1			no data 389,928 6,144,891	Minor
ghway 401 northbound On Ramp ghway 401 southbound Off Ramp <i>Row Expressway to Highway 401</i> ghway 401 southbound On Ramp ghway 401 northbound Off Ramp ghway 401 northbound On Ramp ghway 401 southbound Off Ramp ghway 401 southbound On Ramp ghway 401 southbound On Ramp			1 1			6,400,766 4,666,462 no data		1			no data 389,928	Minor
dway 401 northbound On Ramp dway 401 southbound Off Ramp <i>Rew Expressway to Highway 401</i> dway 401 southbound On Ramp dway 401 northbound Off Ramp dway 401 northbound Off Ramp dway 401 southbound On Ramp dway 401 southbound On Ramp dway 401 southbound On Ramp dway 401 southbound On Ramp dway 401 northbound On Ramp	South of Highway 3 merge/split	Highway 3/Highway 401 northbound Off Ramp	1 1 1 0.6	2 2 2.5	19 19 21	6,400,766 4,666,462 no data no data 14,184,840 80,126,151	Major Collector Minor Arterial Freeway	1			no data 389,928 6,144,891 no data no data	Minor
gbway 401 northbound On Ramp gbway 401 southbound Off Ramp <i>Row Expressway to Highway 401</i> gbway 401 southbound On Ramp gbway 401 northbound Off Ramp gbway 401 northbound Off Ramp gbway 401 southbound On Ramp gbway 401 southbound On Ramp gbway 401 southbound On Ramp gbway 401 southbound On Ramp gbway 401 northbound On Ramp	Highway 3/Highway 401 northbound Off Ramp	Highway 3/Highway 401 northbound On Ramp	0.8	2 2 2.5 2.5	19 19 21 21	6,400,766 4,666,462 no data 14,184,840 80,126,151 70,304,443	Major Collector Minor Arterial Freeway Freeway	1			no data 389,928 6,144,891 no data no data no data	Minor
ighway 401 northbound On Ramp ighway 401 southbound Off Ramp <i>C Row Expressivay to Highway 401</i> ighway 401 southbound On Ramp jibway Parkway Interchange ighway 401 northbound Off Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp	0.8 0.6	2 2 2.5 2.5 2.5 2.5	19 19 21 21 21	6,400,766 4,666,462 no data no data 14,184,840 80,126,151 70,304,443 68,820,150	Major Collector Minor Arterial Freeway Freeway Freeway	1			no data 389,928 6,144,891 no data no data no data no data	Minor
ighway 401 northbound On Ramp ighway 401 southbound Off Ramp <i>C. Now Expressivay to Highway 401</i> ighway 401 southbound On Ramp ijhway Parkway Interchange ighway 401 northbound Off Ramp ighway 401 southbound Off Ramp ighway 401 southbound On Ramp C. Row Expressivay Interchange ighway 401 northbound On Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp	0.8	2 2.5 2.5 2.5 2.5 2.5 2.5 2.5	19 21 21 21 21 21 21 21	6,400,766 4,666,462 no data no data 14,184,840 80,126,151 70,304,443 68,820,150 55,643,124 62,806,125	Major Collector Minor Arterial Freeway Freeway	1			no data 389,928 6,144,891 no data no data no data	Minor
glway 401 northbound On Ramp glway 401 southbound Off Ramp <i>Row Expressivay to Highway 401</i> glway 401 southbound On Ramp <i>libway Parkway Interchange</i> glway 401 northbound Off Ramp glway 401 northbound Off Ramp glway 401 southbound On Ramp <i>C Now Expressivay Interchange</i> glway 401 northbound On Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp Huron Chuch Road/Highway 401 northbound On Ramp	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Of Ramp Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound On Ramp	0.8 0.6 0.7 0.6 0.8	2 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	19 21 21 21 21 21 21 21 21	6,400,766 4,666,462 no data 14,184,840 80,126,151 70,304,443 68,820,150 55,643,124 62,806,125 85,002,759	Major Collector Minor Arterial Freeway Freeway Freeway Freeway Freeway	1			no data 389,928 6,144,891 no data no data no data no data no data no data	Minor
gbway 401 northbound On Ramp gbway 401 southbound Off Ramp <i>Row Expressway to Highway 401</i> gbway 401 southbound On Ramp gbway 401 northbound Off Ramp gbway 401 northbound Off Ramp gbway 401 southbound On Ramp gbway 401 southbound On Ramp gbway 401 southbound On Ramp gbway 401 southbound On Ramp gbway 401 northbound On Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound On Ramp	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound Off Ramp	0.8 0.6 0.7 0.6 0.8 0.7	2 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	19 21 21 21 21 21 21 21 21 21	6,400,766 4,666,462 no data 14,184,840 80,126,151 70,304,443 68,820,150 55,643,124 62,806,125 85,002,759 80,974,510	Major Collector Minor Arterial Freeway Freeway Freeway Freeway Freeway Freeway Freeway	1			no data 389,928 6,144,891 no data no data no data no data no data no data no data no data	Minor
gbway 401 northbound On Ramp gbway 401 southbound Off Ramp <i>Row Expressway to Highway 401</i> gbway 401 southbound On Ramp gbway 401 northbound Off Ramp gbway 401 northbound Off Ramp gbway 401 southbound On Ramp gbway 401 southbound On Ramp gbway 401 southbound On Ramp gbway 401 southbound On Ramp gbway 401 northbound On Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Of Ramp Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound Off Ramp	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound Onf Ramp	0.8 0.6 0.7 0.6 0.8 0.7 0.8	2 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.	19 21 21 21 21 21 21 21 21 21 21	6.400,766 4.666,462 no data 14,184,840 80,126,151 70,304,443 68,820,150 55,643,124 62,806,125 85,002,759 80,974,510 85,533,717	Major Collector Minor Arterial Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway	1			no data 389,928 6,144,891 no data no data no data no data no data no data no data no data no data no data	Minor
glway 401 northbound On Ramp glway 401 southbound Off Ramp <i>Row Expressway to Highway 401</i> glway 401 southbound On Ramp glway 401 northbound Off Ramp glway 401 northbound Off Ramp glway 401 southbound On Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp Marken Road/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound On Ramp	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound Off Ramp	0.8 0.6 0.7 0.6 0.8 0.7	2 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	19 21 21 21 21 21 21 21 21 21	6,400,766 4,666,462 no data 14,184,840 80,126,151 70,304,443 68,820,150 55,643,124 62,806,125 85,002,759 80,974,510	Major Collector Minor Arterial Freeway Freeway Freeway Freeway Freeway Freeway Freeway	1			no data 389,928 6,144,891 no data no data no data no data no data no data no data no data	Minor
glway 401 northbound On Ramp glway 401 southbound Off Ramp <i>Row Expressway to Highway 401</i> glway 401 southbound On Ramp glway 401 northbound Off Ramp glway 401 northbound Off Ramp glway 401 southbound On Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound On Ramp Huron Chuch Road/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound Off Ramp Cole Strate S	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound Off Ramp EC Row Expressway to Highway 401 northbound On Ramp Canadian Plaza	0.8 0.6 0.7 0.6 0.8 0.7 0.8 0.8	2 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.	19 21 21 21 21 21 21 21 21 21	6,400,766 4,666,462 no data no data 14,184,840 80,126,151 70,304,443 68,820,150 55,643,124 62,806,125 85,002,759 80,974,510 85,533,717 90,719,615 115,087,677	Major Collector Minor Arterial Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway	1 1	2	19	no data 389,928 6,144,891 no data no data	Minor Minor
ghway 401 northbound On Ramp ghway 401 southbound Off Ramp <i>Row Expressway to Highway 401</i> ghway 401 southbound On Ramp ghway 401 northbound Off Ramp ghway 401 northbound Off Ramp ghway 401 southbound On Ramp ghway 401 southbound On Ramp ghway 401 southbound On Ramp ghway 401 southbound On Ramp ghway 401 northbound On Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound On Ramp EC Row Expressway to Highway 401 northbound On Ramp Canadian Plaza	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound On Ramp EC Row Expressway to Highway 401 northbound On Ramp Canadian Plaza Ojibway Parkway/Highway 401 southbound Off Ramp	0.8 0.6 0.7 0.6 0.8 0.7 0.8 0.8	2 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.	19 21 21 21 21 21 21 21 21 21	6,400,766 4,666,462 no data no data 14,184,840 80,126,151 70,304,443 68,820,150 55,643,124 62,806,125 85,002,759 80,974,510 85,533,717 90,719,615 115,087,677 no data	Major Collector Minor Arterial Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway	1 1	2	19	no data 389,928 6,144,891 no data no data ano data no data ano data	Minor Minor
glway 401 northbound On Ramp glway 401 southbound Off Ramp <i>Row Expressway to Highway 401</i> glway 401 southbound On Ramp glway 401 northbound Off Ramp glway 401 northbound Off Ramp glway 401 southbound On Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound Off Ramp E C Row Expressway to Highway 401 northbound On Ramp Canadian Plaza Ojibway Parkway/Highway 401 southbound Off Ramp	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Of Ramp Huron Church Road/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Of Ramp Ojibway Parkway/Highway 401 northbound Of Ramp EC Row Expressivay to Highway 401 northbound On Ramp Canadian Plaza Ojibway Parkway/Highway 401 southbound Off Ramp Ojibway Parkway/Highway 401 southbound On Ramp	0.8 0.6 0.7 0.6 0.8 0.7 0.8 0.8	2 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.	19 21 21 21 21 21 21 21 21 21	6,400,766 4,666,462 no data 14,184,840 80,126,151 70,304,443 68,820,125 55,643,124 62,806,125 85,002,759 80,974,510 85,533,717 90,719,615 115,087,677 no data no data	Major Collector Minor Arterial Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway	1 1 0.6 0.7	2 2.5 2.5	19 21 21	no data 389,928 6,144,891 no data no data 100 data no data no data 100 data 1	Minor Minor Fre
glway 401 northbound On Ramp glway 401 southbound Off Ramp <i>Row Expressway to Highway 401</i> glway 401 southbound On Ramp glway 401 northbound Off Ramp glway 401 northbound Off Ramp glway 401 southbound On Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound Off Ramp Huron Church Road/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp Canadian Plaza Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 southbound Off Ramp	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Of Ramp Todd Lane/Highway 401 northbound Of Ramp Huron Church Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Of Ramp Ojibway Parkway/Highway 401 northbound Of Ramp Ojibway Parkway/Highway 401 northbound On Ramp EC Row Expressway to Highway 401 northbound Of Ramp Canadian Plaza Ojibway Parkway/Highway 401 southbound Off Ramp Ojibway Parkway/Highway 401 southbound Off Ramp Highway 401 to EC Row Expressway southbound Off Ramp Malden Road/Highway 401 southbound Off Ramp	0.8 0.6 0.7 0.6 0.8 0.7 0.8 0.8	2 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.	19 21 21 21 21 21 21 21 21 21	6.400,766 4.666,462 no data 14,184,840 80,126,151 70,304,443 68,820,150 55,643,124 62,806,125 85,002,759 80,974,510 85,533,717 90,719,615 115,087,677 no data no data no data	Major Collector Minor Arterial Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway	1 1 0.6 0.7 0.6 0.6	2 2.5 2.5 2.5 2.5	19 21 21 21 21 21	no data 389.928 6,144,891 no data no data 10 data no data no data no data no data no data 138,907,322 152,148,062 159,292,075	Minor Minor Fre Fre Fre Fre
glway 401 northbound On Ramp glway 401 southbound Off Ramp <i>Row Expressway to Highway 401</i> glway 401 southbound On Ramp glway 401 northbound Off Ramp glway 401 northbound Off Ramp glway 401 southbound On Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound Off Ramp Canadian Plaza Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 southbound Off Ramp Ojibway Parkway/Highway 401 southbound Off Ramp Ojibway Parkway/Highway 401 southbound Off Ramp Highway 401 to EC Row Expressway southbound Off Ramp Malden Road/Highway 401 southbound Off Ramp	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Of Ramp Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Of Ramp Ojibway Parkway/Highway 401 northbound Of Ramp EC Row Expressiva to Highway 401 northbound Of Ramp Canadian Plaza Ojibway Parkway/Highway 401 southbound Of Ramp Highway 401 to EC Row Expressiva southbound Of Ramp Highway 401 to EC Row Expressiva southbound Of Ramp Highway 401 to EC Row Expressiva southbound Of Ramp Malden Road/Highway 401 southbound Of Ramp Huron Church Road/Highway 401 southbound Of Ramp	0.8 0.6 0.7 0.6 0.8 0.7 0.8 0.8	2 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.	19 21 21 21 21 21 21 21 21 21	6,400,766 4,666,462 no data 14,184,840 80,126,151 70,304,443 68,820,150 55,643,124 62,806,125 85,002,759 80,974,510 85,533,717 90,719,615 115,087,677 no data no data no data	Major Collector Minor Arterial Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway	1 1 0.6 0.7 0.6 0.6 0.7	2 2.5 2.5 2.5 2.5 2.5 2.5	19 21 21 21 21 21 21	no data 389,928 6,144,891 no data no data 138,907,322 152,148,062 150,620,962 157,660,444	Minor Minor Fre Fre Fre Fre Fre
ghway 401 northbound On Ramp ghway 401 southbound Off Ramp <i>Row Expressway to Highway 401</i> ghway 401 southbound On Ramp ghway 401 northbound Off Ramp ghway 401 northbound Off Ramp ghway 401 southbound On Ramp ghway 401 southbound On Ramp ghway 401 southbound On Ramp ghway 401 southbound On Ramp ghway 401 northbound On Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound Off Ramp Huron Church Road/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp Canadian Plaza Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 southbound Off Ramp	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Of Ramp Todd Lane/Highway 401 northbound Of Ramp Huron Church Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Of Ramp Ojibway Parkway/Highway 401 northbound Of Ramp Ojibway Parkway/Highway 401 northbound On Ramp EC Row Expressway to Highway 401 northbound Of Ramp Canadian Plaza Ojibway Parkway/Highway 401 southbound Off Ramp Ojibway Parkway/Highway 401 southbound Off Ramp Highway 401 to EC Row Expressway southbound Off Ramp Malden Road/Highway 401 southbound Off Ramp	0.8 0.6 0.7 0.6 0.8 0.7 0.8 0.8	2 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.	19 21 21 21 21 21 21 21 21 21	6.400,766 4.666,462 no data 14,184,840 80,126,151 70,304,443 68,820,150 55,643,124 62,806,125 85,002,759 80,974,510 85,533,717 90,719,615 115,087,677 no data no data no data	Major Collector Minor Arterial Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway	1 1 0.6 0.7 0.6 0.6	2 2.5 2.5 2.5 2.5	19 21 21 21 21 21	no data 389.928 6,144,891 no data no data 10 data no data no data no data no data no data 138,907,322 152,148,062 159,292,075	Minor Minor Free Free Free Free

	Todd Lane/Highway 401 southbound On Ramp Howard Avenue/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound On Ramp	Howard Avenue/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound On Ramp South of Highway 3 merge/split				no data no data no data no data		0.6 0.6 0.7 0.6	2.5 2.5 2.5 2.5	21 21 21 21	115,187,677 112,617,760 131,804,701 123,085,952	Freeway Freeway Freeway Freeway
Grand Marais Road	East of connecting ramp		1	1.5	19	433,492	Minor Collector	1	1.5	19	494,177	Minor Collector
	West of connecting ramp		1	1.5	19	441,195	Minor Collector	1	1.5	19	193,921	Local
Malden Road	Chappus Street	Highway 401 South Ramp	1	1.5	19	3,448,807	Major Collector	1	1.5	19	4,493,638	Major Collector
	Highway 401 South Ramp	Highway 401 North Ramp	1	1.5	19	3,868,909	Major Collector	1	1.5	19	2,787,882	Major Collector
	North of Highway 401 North Ramp		1	1.5	19	2,628,774	Major Collector	1	1.5	19	3,127,563	Major Collector
Matchette Street	Chappus Street	EC Row Expressway South Ramp	1	1.5	19	864,717	Minor Collector	1	1.5	19	937,223	Minor Collector
	EC Row Expressway South Ramp	EC Row Expressway North Ramp	1	1.5	19	247,166	Minor Collector	1	1.5	19	1,042,158	Major Collector
	EC Row Expressway North Ramp	Carmichael	1	1.5	19	497,893	Minor Collector	1	1.5	19	317,389	Minor Collector

#### TABLE II-D

#### SUMMARY OF ESAL CALCULATIONS - FLEXIBLE PAVEMENTS - ALTERNATIVE 2B

Detroit River International Crossing Windsor, Ontario

Pavement Section	LOCATION From	<u>To</u>	LDF	TE	Northbound/W Design Period		Class	LDF	TE	Southbound/E Design Period		Class
Iuron Church Road	Riverside Drive	University Avenue	0.9	2	(years) 19	2,267,830	Major Collector	0.9	2	(years) 19	1,639,892	Major Collecto
anon charch roud	University Avenue	Wyandotte Street	0.9	2	19	1,700,172	Major Collector	0.9	2	19	2,040,505	Major Collecto
	Wyandotte Street AMB Off Ramp	AMB Off Ramp College Street	0.9 0.8	2 2	19 19	281,104 33,653,502	Minor Collector Major Arterial	0.9 0.9	2 2	19 19	404,480 1,278,419	Minor Collecto Major Collecto
	College Street	Girardot Street	0.8	2	19	8,754,323	Minor Arterial	0.8	2	19	37,817,378	Major Arteria
	Girardot Street Tecumseh Road	Tecumseh Road Dorchester Street	0.8 0.8	2 2	19 19	9,776,177 11,532,926	Minor Arterial Minor Arterial	0.8 0.8	2 2	19 19	37,174,638 35,655,663	Major Arteria Major Arteria
	Dorchester Street	Prince Road/Totten Street	0.8	2	19	10,255,125	Minor Arterial	0.8	2	19	32,954,683	Major Arteria
	Prince Road/Totten Street Malden Road	Malden Road Industrial Road	0.8 0.8	2 2	19 19	11,510,526 6,981,447	Minor Arterial Minor Arterial	0.8 0.8	2 2	19 19	31,784,965 29,233,379	Major Arteria Major Arteria
	Industrial Road	EC Row Expressway North Ramp Terminal	0.8	2	19	7,681,945	Minor Arterial	0.8	2	19	29,711,655	Major Arteria
	EC Row Expressway North Ramp Terminal EC Row Expressway South Ramp Terminal	EC Row Expressway South Ramp Terminal Highway 401 Off Ramp	0.8 0.8	2 2	19 19	5,165,251 5,714,013	Major Collector Major Collector	0.8 0.8	2 2	19 19	26,667,735 19,368,387	Major Arteria Minor Arteria
	Highway 401 Off Ramp	Spring Garden Road/Labelle Street	0.8	2	19	972,220	Minor Collector	0.8	2	19	1,431,625	Major Collecto
	Spring Garden Road/Labelle Street Lambton Street/Grand Marais Road Ramp	Lambton Street/Grand Marais Road Ramp Pulford Street	0.8 0.8	2 2	19 19	1,437,746 1,589,255	Major Collector Major Collector	0.8 0.8	2 2	19 19	1,988,355 529,408	Major Collecto Minor Collecto
	Pulford Street	Todd Lane/Cabana Road	0.8	2	19	1,825,214	Major Collector	0.8	2	19	670,657	Minor Collecto
lbot Road	Todd Lane/Cabana Road Huron Church Line	Huron Church Line St Clair College	0.8 0.9	2 2	19 19	1,706,435 147,840	Major Collector Local	0.8 0.8	2 2	19 19	2,568,379 885,350	Major Collecto Minor Collecto
noor Road	St Clair College	Cousineau Drive	0.8	2	19	129,349	Local	0.9	2	19	851,084	Minor Collecto
	Cousineau Drive Howard Avenue	Howard Avenue Highway 3 split	0.8 0.8	2 2	19 19	496,098 3,559,509	Minor Collector Major Collector	0.9 0.8	2 2	19 19	212,355 3,466,485	Minor Collecto Major Collecto
ibway Parkway	EC Row Expressway	GN Booth Drive	0.8	2	19	2,819,502	Major Collector	0.8	2	19	7,399,089	Minor Arteria
	GN Booth Drive Sandwich Street	Sandwich Street Prospect Avenue	0.8 0.8	2 2	19 19	2,825,328 825,929	Major Collector Minor Collector	0.8 0.8	2 2	19 19	7,397,115 825,509	Minor Arteria Minor Collect
	North of Prospect Avenue	Hospect Avenue	0.8	2	19	820,995	Minor Collector	0.8	2	19	808,350	Minor Collect
OSSING ROADS												
andotte Street	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	19 19	530,103 652,585	Minor Collector Minor Collector	1	2 2	19 19	675,234 1,977,097	Minor Collecto Major Collecto
niversity Avenue	West of Huron Church Road		1	1.5	19	141,998	Local	1	2	19	172,419	Local
verside Drive	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	19 19	1,699,799 366,045	Major Collector Minor Collector	1	2 2	19 19	1,888,340 522,462	Major Collecto Minor Collecto
erside Drive	East of Huron Church Road		1	1.5	19	723,983	Minor Collector	1	2	19	522,462 813,946	Minor Collect
IB Off Ramp	East of Huron Church Road			2	10	no data	Major Call	1	2	19	39,551,747	Major Arteri
IB On Ramp ricia Street	East of Huron Church Road AMB	Wyandotte Street	1	2 1.5	19 19	3,184,098 2,278,257	Major Collector Major Collector	1	2	19	no data 4,963,884	Major Collect
ege Street	East of Huron Church Road		1	1.5	19	1,848,818	Major Collector	1	2	19	4,577,147	Major Collec
ardot Street	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	19 19	207,927 118,076	Minor Collector Local	1	2 2	19 19	123,987 161,870	Local Local
	West of Huron Church Road		1	1.5	19	469,270	Minor Collector	1	2	19	433,883	Minor Collec
umseh Road	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	19 19	1,368,509 668,482	Major Collector Minor Collector	1	2 2	19 19	5,544,259 962,615	Major Collec Minor Collec
chester Street	East of Huron Church Road		1	1.5	19	180,124	Local	1	2	19	216,440	Minor Collec
ce Road/Totten Street	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	19 19	339,175 233,196	Minor Collector Minor Collector	1	2 2	19 19	162,774 372,751	Local Minor Collec
ce Road/Totten Street	West of Huron Church Road		1	1.5	19	521,405	Minor Collector	1	2	19	749,337	Minor Collec
den Road	East of Huron Church Road		1	1.5	19	170,478	Local	1	2	19 19	184,144	Local
istrial Road	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	19 19	5,984,098 573,716	Major Collector Minor Collector	1	2 2	19	12,236,683 1,069,511	Minor Arteri Major Collec
	West of Huron Church Road		1	1.5	19	1,733,054	Major Collector	1	2	19	6,097,488	Minor Arter
Row Expressway North Ramp Te	N-W Ramp		1	2	19	4,248,046 no data	Major Collector	1	2	19	no data 116,689	Local
Row Expressway South Ramp Te	S-W Ramp ermi W-N/S Ramp		1	2	19	9,113,907 no data	Minor Arterial	1	2	19	no data 846,675	Minor Collec
Row Expressway South Ramp 10	S/N-E Ramp					no data		1	2	19	9,683,406	Minor Arter
ring Garden Road belle Street	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	19 19	242,551 400,962	Minor Collector Minor Collector	1	2 2	19 19	432,466 280,977	Minor Collec Minor Collec
nbton Street/Grand Marais Road			1	1.5	19	400,962	Minor Collector	1	2	19	539,088	Minor Collec
	West of Huron Church Road		1	1.5	19	441,195	Minor Collector	1	2	19	300,685	Minor Collec
ford Street bana Road	East of Huron Church Road East of Huron Church Road		1	1.5 1.5	19	319,028 890,289	Minor Collector Minor Collector	1	2 2	19 19	224,624 1,057,548	Minor Collect Major Collect
	between Huron Church Road and Highway 401 northbour		1	1.5	19	567,842	Minor Collector	1	2	19	3,092,112	Major Collect
ld Lane	between Highway 401 northbound and southbound Ramp. West of Highway 401 southbound Ramps	5	1	1.5 1.5	19 19	334,535 1,247,442	Minor Collector Major Collector	1	2 2	19 19	2,605,766 1,400,308	Major Collec Major Collec
ron Church Line	West of Huron Church Road		1	1.5	19	1,405,818	Major Collector	1	2	19	1,396,342	Major Collec
Clair College usineau Drive	East of Talbot Road East of Talbot Road		1	1.5 1.5	19 19	334,584 604,649	Minor Collector Minor Collector	1	2 2	19 19	1,333,559 760,775	Major Collec Minor Collec
Isilieau Drive	West of Talbot Road		1	1.5	19	226,713	Minor Collector	1	2	19	601,513	Minor Collec
ward Avenue	East of Talbot Road		1	1.5	19	1,514,091	Major Collector	1	2 2	19	2,988,725	Major Collec
	between Talbot Road and Highway 401 southbound On R West of Highway 401 southbound On-Ramp	imp		1.5 1.5	19 19	2,474,266 2,764,107	Major Collector Major Collector	1	2	19 19	2,295,969 4,542,701	Major Collec Major Collec
. Row Expressway	East of Huron Church Road		0.8	2	19	15,221,498	Minor Arterial	0.8	2	19	28,171,736	Major Arter
	At Malden Road West of Matchette Street	$\langle \langle \rangle \langle \rangle \langle \rangle \langle \rangle \rangle$	0.8 0.8	2 2	19 19	14,829,069 6,283,330	Minor Arterial Minor Arterial	0.8 0.8	2 2	19 19	20,989,330 4,392,185	Major Arter Major Collec
For consistency, Huron Church R	d/Talbot Rd runs North-South and all crossing roads run East-	West										
or consistency, maton charen re												
HWAY 401 Ramps		$\sim$ 111										
zhway 3 merge/split												
ghway 401 northbound Off Ramp			1	2	19	12,770,680	Minor Arterial				no data	
hway 401 northbound On Ramp			1	2	19	2,727,622	Major Collector			10	no data	Mindulla
hway 401 southbound Off Ramp hway 401 southbound On Ramp						no data no data		1	2 2	19 19	2,670,979 11,911,133	Major Collec Minor Arter
vard Avenue				_				-				
hway 401 southbound Off Ramp Codd Lane/Cabana Road			1	2	10	no data		1	2	19	610,847	Minor Collec
way 401 northbound Off Ramp			1	1.5	19	931,020	Minor Collector				no data	
way 401 northbound On Ramp			1	1.5	19	1,395,145	Major Collector		2	19	no data 3,437,058	Major Colle
1way 401 southbound Off Ramp 1way 401 southbound On Ramp						no data no data		1	2	19	3,437,058 464,977	Major Colle Minor Colle
Juron Church Road				2	10		Major Callert					
hway 401 northbound Off Ramp hway 401 southbound On Ramp			1	2	19	5,139,048 no data	Major Collector	1	2	19	no data 22,372,608	Major Arter
Malden Road							10.00					
hway 401 northbound On Ramp hway 401 southbound Off Ramp			1	1.5	19	5,101,197 no data	Major Collector	1	2	19	no data 6,540,500	Minor Arter
Row Expressway to Highway 401	1							-				
way 401 southbound Off Ramp way Parkway Interchange						no data		1	2	19	19,232,457	Minor Arter
way 401 northbound Off Ramp			1	2	19	6,400,766	Minor Arterial				no data	
way 401 northbound On Ramp way 401 southbound Off Ramp			1	2	19	4,666,462 no data	Major Collector		2	19	no data 389,928	Minor Collec
hway 401 southbound On Ramp						no data no data		1	2	19	589,928 6,144,891	Minor Collec Minor Arter
Row Expressway Interchange way 401 northbound On Ramp			1	2	19	14,184,840	Minor Arterial				no data	
			1	2	17	17,104,040	minor Arteriar				no udtă	
way 401 Mainline	Souht of Highway 3 merge/split	Highway 3/Highway 401 northbound Off Ramp	0.6	2.5	21	80,126,151	Freeway				no data	
, ,	Highway 3/Highway 401 northbound Off Ramp	Highway 3/Highway 401 northbound On Ramp	0.8	2.5	21	70,304,443	Freeway				no data	
	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp	Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp	0.6 0.7	2.5 2.5	21 21	68,820,150 55,643,124	Freeway Freeway				no data no data	
	Todd Lane/Highway 401 northbound On Ramp	Huron Church Road/Highway 401 northbound On Ramp	0.7	2.5	21	62,806,125	Freeway				no data no data	
	Huron Church Road/Highway 401 northbound On Ramp	Malden Road/Highway 401 northbound On Ramp	0.8	2.5	21	85,002,759	Freeway				no data	
	Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp	Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound OnRamp	0.7 0.8	2.5 2.5	21 21	80,974,510 85,533,717	Freeway Freeway				no data no data	
	Ojibway Parkway/Highway 401 northbound OnRamp	EC Row Expressway to Highway 401 northbound On Ramp	0.8	2.5	21	90,719,615	Freeway				no data	
	EC Row Expressway to Highway 401 northbound On Ran	np Canadian Plaza	0.8	2.5	21	115,087,677	Freeway				no data	
	Canadian Plaza	Ojibway Parkway/Highway 401 southbound Off Ramp				no data		0.6	2	21	111,125,858	Freeway

	Canadian Plaza Ojibway Parkway/Highway 401 southbound Off Ramp Ojibway Parkway/Highway 401 southbound On Ramp Highway 401 to EC Row Expressway southbound Off Ramp Malden Road/Highway 401 southbound Off Ramp Todd Lane/Highway 401 southbound Off Ramp Todd Lane/Highway 401 southbound On Ramp Howard Avenue/Highway 401 southbound On Ramp Highway 3/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp	Ojibway Parkway/Highway 401 southbound Off Ramp Ojibway Parkway/Highway 401 southbound On Ramp Highway 401 to EC Row Expressway southbound Off Ramp Malden Road/Highway 401 southbound Off Ramp Huron Church Road/Highway 401 southbound Off Ramp Todd Lane/Highway 401 southbound Off Ramp Howard Avenue/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp South of Highway 3 merge/split				no data no data no data no data no data no data no data no data no data no data		0.6 0.7 0.6 0.7 0.6 0.7 0.6 0.7 0.6 0.7 0.6	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	21 21 21 21 21 21 21 21 21 21 21 21 21	111,125,858 121,718,450 120,496,770 127,433,660 126,128,355 102,468,073 87,645,310 91,767,179 89,658,099 105,408,694 98,468,761	Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway Freeway
Malden Road Matchette Street	Chappus Street Highway 401 South Ramp North of Highway 401 North Ramp Chappus Street EC Row Expressway South Ramp EC Row Expressway North Ramp	Highway 401 South Ramp Highway 401 North Ramp EC Row Expressway South Ramp EC Row Expressway North Ramp Carmichael	1 1 1 1 1	1.5 1.5 1.5 1.5 1.5 1.5	19 19 19 19 19 19	3,414,229 3,834,331 2,593,504 876,197 247,166 504,389	Major Collector Major Collector Major Collector Minor Collector Minor Collector Minor Collector	1 1 1 1 1	2 2 2 2 2 2 2	19 19 19 19 19 19	5,984,036 3,712,641 4,165,552 1,280,529 1,420,411 423,185	Major Collector Major Collector Major Collector Major Collector Major Collector Minor Collector

05-1140-003-1

# TABLE II-E

## SUMMARY OF ESAL CALCULATIONS - FLEXIBLE PAVEMENTS - ALTERNATIVE 3

Detroit River International Crossing Windsor, Ontario

Pavement Section	LOCATION <u>From</u>	Το	LDF	TE	Northbound/W Design Period		Class	LDF	TE	Southbound/ Design Period		Class
Huron Church Road	Riverside Drive	University Avenue	0.9	2	(years) 19	2,328,597	Major Collector	0.9	2	(years) 19	1,618,731	Major Collector
	University Avenue	Wyandotte Street	0.9	2	19	1,729,616	Major Collector	0.9	2	19	2,017,711	Major Collector
	Wyandotte Street AMB Off Ramp	AMB Off Ramp College Street	0.9 0.8	2	19 19	275,654 35,279,857	Minor Collector Major Arterial	0.9 0.9	2 2	19 19	398,955 1,251,798	Minor Collector Major Collector
	College Street	Girardot Street	0.8	2	19	8,704,745	Minor Arterial	0.8	2	19	38,391,872	Major Arterial
	Girardot Street Tecumseh Road	Tecumseh Road Dorchester Street	0.8 0.8	2 2	19 19	9,764,254 11,448,950	Minor Arterial Minor Arterial	0.8 0.8	2 2	19 19	39,018,493 37,665,820	Major Arterial Major Arterial
	Dorchester Street	Prince Road/Totten Street	0.8	2	19	10,305,392	Minor Arterial	0.8	2	19	34,775,501	Major Arterial
	Prince Road/Totten Street Malden Road	Malden Road Industrial Road	0.8 0.8	2 2	19 19	11,452,792 6,886,568	Minor Arterial Minor Arterial	0.8 0.8	2 2	19 19	33,566,216 30,400,608	Major Arterial Major Arterial
	Industrial Road	EC Row Expressway North Ramp Terminal	0.8	2	19	7,443,207	Minor Arterial	0.8	2	19	30,790,999	Major Arterial
	EC Row Expressway North Ramp Terminal	EC Row Expressway South Ramp Terminal	0.8	2	19	5,105,886	Major Collector	0.8	2	19	28,727,049	Major Arterial
	EC Row Expressway South Ramp Terminal Spring Gdn Rd/Labelle St	Spring Gdn Rd/Labelle St Lambton Street/Grand Marais Road	0.8 0.8	2	19 19	5,486,062 3,903,420	Major Collector Major Collector	0.8 0.8	2 2	19 19	21,792,751 2,127,447	Major Arterial Major Collector
	Lambton Street/Grand Marais Road	Pulford Street	0.8	2	19	1,986,740	Major Collector	0.8	2	19	1,838,451	Major Collector
	Pulford Street Todd Lane/Cabana Road	Todd Lane/Cabana Road Huron Church Line	0.8 0.8	2	19 19	2,211,713 1,333,686	Major Collector Major Collector	0.8 0.8	2 2	19 19	2,041,324 1,145,767	Major Collector Major Collector
Talbot Road	Huron Church Line	St Clair College	0.9	2	19	914,123	Minor Collector	0.8	2	19	1,004,054	Major Collector
	St Clair College Cousineau Drive	Cousineau Drive Howard Avenue	0.8 0.9	2	19 19	1,401,753 1,234,811	Major Collector Major Collector	0.8 0.9	2 2	19 19	2,987,434 3,516,522	Major Collector Major Collector
	South of Howard Avenue		0.8	2	19	3,294,380	Major Collector	0.8	2	19	3,057,641	Major Collector
Ojibway Parkway	EC Row Expressway GN Booth Drive	GN Booth Drive Sandwich Street	0.8 0.8	2	19 19	1,556,798 1,547,381	Major Collector Major Collector	0.8 0.8	2 2	19 19	7,368,173 7,334,745	Minor Arterial Minor Arterial
	Sandwich Street	Prospect Avenue	0.8	2	19	812,617	Minor Collector	0.8	2	19	819,486	Minor Collector
	North of Prospect Avenue		0.8	2	19	807,717	Minor Collector	0.8	2	19	803,394	Minor Collector
CROSSING ROADS Wyandotte Street	West of Huron Church Road		1	1.5	19	530,606	Minor Collector	1	1.5	19	507,929	Minor Collector
University Avenue	East of Huron Church Road		1	1.5 1.5	19 19	654,254 143,041	Minor Collector	1	1.5	19 19	1,510,134	Major Collector
University Avenue	West of Huron Church Road East of Huron Church Road		1	1.5	19	143,041	Local Major Collector	1	1.5 1.5	19	128,492 1,438,770	Local Major Collector
Riverside Drive	West of Huron Church Road		1	1.5	19	371,873	Minor Collector	1	1.5	19	389,075	Minor Collector
AMB Off Ramp	East of Huron Church Road East of Huron Church Road		1	1.5	19	726,183 no data	Minor Collector	1	1.5 2	19 19	602,898 41,509,362	Minor Collector Major Arterial
AMB On Ramp	East of Huron Church Road		1	1.5	19	2,383,756	Major Collector	-			no data	-
Patricia Street College Street	AMB East of Huron Church Road	Wyandotte Street	1	1.5 1.5	19 19	2,314,747 1,730,252	Major Collector Major Collector	1	1.5 1.5	19 19	3,813,143 3,444,909	Major Collector Major Collector
-	West of Huron Church Road		1	1.5	19	212,177	Minor Collector	1	1.5	19	94,131	Local
Girardot Street	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	19 19	119,024	Local Minor Collector	1	1.5	19 19	120,186	Local Minor Collector
Fecumseh Road	West of Huron Church Road East of Huron Church Road		1	1.5	19	430,638 1,434,953	Minor Collector Major Collector	1	1.5 1.5	19	268,101 3,836,233	Minor Collector Major Collector
	West of Huron Church Road		1	1.5	19	683,536	Minor Collector	1	1.5	19	729,238	Minor Collector
Dorchester Street	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	19 19	134,876 345,078	Local Minor Collector	1	1.5 1.5	19 19	87,706 194,350	Local Local
Prince Road/Totten Street	East of Huron Church Road		1	1.5	19	227,839	Minor Collector	1	1.5	19	270,881	Minor Collector
Malden Road	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	19 19	493,332 167,983	Minor Collector Local	1	1.5 1.5	19 19	506,370 134,147	Minor Collector Local
	West of Huron Church Road		1	1.5	19	5,826,132	Major Collector	1	2	19	12,200,427	Minor Arterial
Industrial Road	East of Huron Church Road		1	1.5	19	591,230	Minor Collector	1	1.5	19	848,410	Minor Collector
EC Row Expressway North Ramp Terminal	West of Huron Church Road East of Huron Church Road (E-N/S Off Ramp & S-W On Ram	np)	1	1.5 1.5	19 19	1,637,563 3,228,505	Major Collector Major Collector	1	2 1.5	19 19	5,816,136 52,467	Major Collector Local
	West of Huron Church Road (N-W On Ramp)		1	1.5	19	3,357,780	Major Collector	1			no data	
EC Row Expressway South Ramp Terminal	East of Huron Church Road (S-E On Ramp) West of Huron Church Road (N-E On Ramp & W-N/S Off Ra	ump)	1	1.5	19	no data 6,688,163	Minor Arterial	1	1.5 1.5	19 19	1,006,600 790,823	Major Collector Minor Collector
Spring Garden Road/Labelle Street	East of Huron Church Road		1	1.5	19	379,314	Minor Collector	1	1.5	19	315,403	Minor Collector
Lambton Street/Grand Marais Road	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	19 19	412,103 509,620	Minor Collector Minor Collector	1	1.5 1.5	19 19	443,445 408,482	Minor Collector Minor Collector
	West of Huron Church Road		1	1.5	19	393,240	Minor Collector	1	1.5	19	544,797	Minor Collector
Pulford Street Todd Lane/Cabana Road	East of Huron Church Road East of Huron Church Road		1	1.5 1.5	19 19	229,782 1,069,749	Minor Collector Major Collector	1	1.5 1.5	19 19	207,050 908,393	Minor Collector Minor Collector
	West of Huron Church Road		1	1.5	19	1,353,508	Major Collector	1	1.5	19	1,085,497	Major Collector
Huron Church Line St Clair College	West of Huron Church Road East of Talbot Road		1	1.5	19 19	1,183,798 330,807	Major Collector Minor Collector	1	1.5 1.5	19 19	1,067,231 979,085	Major Collector Minor Collector
Cousineau Drive	East of Talbot Road		i	1.5	19	855,836	Minor Collector	1	1.5	19	578,911	Minor Collector
Howard Avenue	West of Talbot Road East of Talbot Road		1	1.5 1.5	19	1,229,340 1,413,123	Major Collector Major Collector	1	1.5 1.5	19 19	985,934 2,022,545	Minor Collector Major Collector
Howard Avenue	between Talbot Road and Highway 401 southbound On Ramp	,	i	1.5	19	2,075,442	Major Collector	1	1.5	19	1,696,281	Major Collector
E.C. Row Expressway	West of Highway 401 southbound On Ramp East of Huron Church Road	~	1 0.8	1.5 1.5	19 19	2,247,653 11,464,746	Major Collector Minor Arterial	1 0.8	1.5 2	19 19	3,372,469 23,959,134	Major Collector Major Arterial
·····	At Malden Road		0.8	1.5	19	10,907,982	Minor Arterial	0.8	2	19	21,440,297	Major Arterial
* - For consistency, Huron Church Rd/Talbot R	West of Matchette Street Rd runs North-South and all crossing roads run East-West		0.8	1.5	19	3,923,355	Major Collector	0.8	2	19	4,495,833	Major Collector
HIGHWAY 401 Ramps		$\sim$ $1/2$	く	>								
Highway 3 merge/split												
Highway 401 northbound Off Ramp			1	2	19	11,009,422	Minor Arterial				no data	
Highway 401 northbound On Ramp Highway 401 southbound Off Ramp		$\langle \langle \rangle \rangle \langle \rangle \rangle$	1	2	19	2,489,010 no data	Major Collector	1	2	19	no data 2,626,208	Major Collector
Highway 401 southbound Off Ramp Highway 401 southbound On Ramp						no data no data		1	2	19	2,626,208 10,435,344	Major Collector Minor Arterial
At St. Clair College					10		Mine C.P.					
Highway 401 northbound Off Ramp Highway 401 northbound On Ramp			1	1.5 1.5	19 19	583,831 383,897	Minor Collector Minor Collector				no data no data	
Highway 401 southbound Off Ramp				-		no data		1	1.5	19	2,375,643	Major Collector
Highway 401 southbound On Ramp At Huron Church Road						no data		1	1.5	19	264,876	Minor Collector
Highway 401 northbound Off Ramp			1	2	19	4,181,452	Major Collector		~	10	no data	Min
Highway 401 southbound On Ramp Malden Road Interchange						no data		1	2	19	19,946,487	Minor Arterial
Highway 401 On Ramp		-	1	1.5	19	5,897,729	Major Collector				no data	N
Highway 401 Off Ramp EC Row Expressway Interchange						no data		1	1.5	19	5,462,529	Major Collector
Highway 401 southbound Off Ramp						no data		1	1.5	19	14,486,209	Minor Arterial
Ojibway Parkway Interchange Highway 401 northbound Off Ramp			1	2	19	6,742,411	Minor Arterial				no data	
Highway 401 northbound On Ramp			1	2	19	6,742,411 4,812,914	Minor Arterial Major Collector				no data	
Highway 401 southbound Off Ramp						no data		1	2	19	1,216,567	Major Collector
Highway 401 southbound On Ramp EC Row Expressway Interchange						no data		1	2	19	7,514,146	Minor Arterial
Highway 401 northbound On Ramp			1	2	19	13,299,703	Minor Arterial				no data	
Highway 401 Mai-lin-	South of Highway 2 / lit	Highway 2/Highway /01th J C ** D	0.1	25	21	70 261 050	D					
Highway 401 Mainline	South of Highway 3 merge/split Highway 3/Highway 401 northbound Off Ramp	Highway 3/Highway 401 northbound Off Ramp Highway 3/Highway 401 northbound On Ramp	0.6 0.7	2.5 2.5	21 21	78,361,050 77,699,758	Freeway Freeway				no data no data	
	Highway 3/Highway 401 northbound On Ramp	St. Clair College/Highway 401 northbound Off Ramp	0.6	2.5	21	77,786,735	Freeway				no data	
	St. Clair College/Highway 401 northbound Off Ramp St. Clair College/Highway 401 northbound On Ramp	St. Clair College/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound Off Ramp	0.7 0.6	2.5 2.5	21 21	68,751,045 62,901,295	Freeway Freeway				no data no data	
	Huron Church Road/Highway 401 northbound Off Ramp	Malden Road/Highway 401 northbound On Ramp	0.8	2.5	21	87,954,907	Freeway				no data	
	Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp	Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound OnRamp	0.7 0.8	2.5 2.5	21 21	84,638,183 89,356,520	Freeway Freeway				no data no data	
	Ojibway Parkway/Highway 401 northbound OnRamp	EC Row Expressway to Highway 401 northbound On Ramp	0.8	2.5	21	94,702,193	Freeway				no data	
	EC Row Expressway to Highway 401 northbound On Ramp	Canadian Plaza	0.8	2.5	21	115,940,523	Freeway				no data	
	Canadian Plaza	Ojibway Parkway/Highway 401 southbound Off Ramp				no data		0.6	2.5	21	139,974,819	Freeway
	Ojibway Parkway/Highway 401 southbound Off Ramp	Ojibway Parkway/Highway 401 southbound On Ramp				no data		0.7	2.5	21	153,302,218	Freeway
	Ojibway Parkway/Highway 401 southbound On Ramp Highway 401 to EC Row Expressway southbound Off Ramp	Highway 401 to EC Row Expressway southbound Off Ramp Malden Road/Highway 401 southbound Off Ramp				no data no data		0.6 0.6	2.5 2.5	21 21	151,681,933 160,763,007	Freeway Freeway
	Malden Road/Highway 401 southbound Off Ramp	Huron Church Road/Highway 401 southbound On Ramp				no data		0.7	2.5	21	157,417,133	Freeway
	Huron Church Road/Highway 401 southbound On Ramp St Clair College/Highway 401 southbound Off Ramp	St Clair College/Highway 401 southbound Off Ramp St Clair College/Highway 401 southbound On Ramp				no data no data		0.6 0.6	2.5 2.5	21 21	128,453,501 113,177,636	Freeway Freeway
	St Clair College/Highway 401 southbound On Ramp	Highway 3/Highway 401 southbound Off Ramp				no data		0.6	2.5	21	120,298,347	Freeway
	Highway 3/Highway 401 southbound Off Ramp	Highway 3/Highway 401 southbound On Ramp				no data		0.7	2.5	21	130,486,398	Freeway
	Highway 3/Highway 401 southbound On Ramp	South of Highway 3 merge/split				no data		0.6	2.5	21	120,558,255	Freeway
Malden Road	Chappus Street	Highway 401 South Ramp	1	1.5	19	3,522,848	Major Collector	1	1.5	19	4,356,022	Major Collector
	Highway 401 South Ramp North of Highway 401 North Ramp	Highway 401 North Ramp	1	1.5 1.5	19 19	3,958,732 2,660,394	Major Collector Major Collector	1	1.5 1.5	19 19	2,643,558 2,984,519	Major Collector Major Collector
			:	1.0	10	2,000,374	M C II i	1	1.0	17	2,204,017	

Malden Road	Chappus Street	Highway 401 South Ramp	1	1.5	19	3,522,848	Major Collector	1	1.5	19	4,356,022	Major Collector
	Highway 401 South Ramp	Highway 401 North Ramp	1	1.5	19	3,958,732	Major Collector	1	1.5	19	2,643,558	Major Collector
	North of Highway 401 North Ramp		1	1.5	19	2,660,394	Major Collector	1	1.5	19	2,984,519	Major Collector
Matchette Street	Chappus Street	EC Row Expressway South Ramp	1	1.5	19	907,174	Minor Collector	1	1.5	19	822,976	Minor Collector
	EC Row Expressway South Ramp	EC Row Expressway North Ramp	1	1.5	19	285,526	Minor Collector	1	1.5	19	996,800	Minor Collector
	EC Row Expressway North Ramp	Carmichael	1	1.5	19	656,721	Minor Collector	1	1.5	19	374,039	Minor Collector
Montgomery Drive	Surrey Drive	Talbot Road	1	1.5	19	11,748	Local	1	1.5	19	53,927	Local
Surrey Drive	Montgomery Drive	Talbot Road	1	1.5	19	8,891	Local	1	1.5	19	44,214	Local
Grosvenor Road	Montgomery Drive	Talbot Road	1	1.5	19	15,831	Local	1	1.5	19	46,304	Local
Montgomery Drive Surrey Drive	Chappus Street EC Row Expressway South Ramp EC Row Expressway North Ramp Surrey Drive Montgomery Drive	EC Row Expressway North Ramp Carmichael Talbot Road Talbot Road	1 1 1 1 1	1.5 1.5 1.5 1.5 1.5	19 19 19 19 19 19	285,526 656,721 11,748 8,891	Minor Collector Minor Collector Minor Collector Local Local	1 1 1 1 1	1.5 1.5 1.5 1.5 1.5 1.5	19 19 19 19 19 19	996,800 374,039 53,927 44,214	N N

TABLE II-F

## SUMMARY OF ESAL CALCULATIONS - FLEXIBLE PAVEMENTS - PARKWAY ALTERNATIVE

Detroit River International Crossing Windsor, Ontario

Pavement Section	LOCATION From	<u>To</u>	LDF	TE	Northbound/W Design Period	estbound ESALs	Class	LDF	TE	Southbound/E Design Period		Cla
luron Church Road	Riverside Drive	University Avenue	0.9	2	(years) 19	2,318,723	Major Collector	0.9	2	(years) 19	713,289	Minor C
	University Avenue Wyandotte Street	Wyandotte Street AMB Off Ramp	0.9 0.9	2 2	19 19	1,534,091 282,018	Major Collector Minor Collector	0.9 0.9	2 2	19 19	930,889 210,268	Minor C Minor C
	AMB Off Ramp	College Street	0.9	2	19	35,745,592	Major Arterial	0.9	2	19	638,637	Minor C Minor C
	College Street Girardot Street	Girardot Street Tecumseh Road	0.8 0.8	2	19 19	9,121,152 10,108,420	Minor Arterial Minor Arterial	0.8 0.8	2 2	19 19	18,906,740 18,446,946	Minor A Minor A
	Tecumseh Road	Dorchester Street	0.8	2	19	11,804,328	Minor Arterial	0.8	2	19	18,047,941	Minor A
	Dorchester Street Prince Road/Totten Street	Prince Road/Totten Street Malden Road	0.8 0.8	2 2	19 19	10,422,643 11,709,441	Minor Arterial Minor Arterial	0.8 0.8	2 2	19 19	16,597,770 16,529,379	Minor A Minor A
	Malden Road	Industrial Road	0.8	2 2	19	6,843,950	Minor Arterial	0.8 0.8	2 2	19	15,088,668	Minor A
	Industrial Road E.C. Row Expressway North Ramp Terminal	E.C. Row Expressway North Ramp Terminal E.C. Row Expressway South Ramp Terminal	0.8 0.8	2	19 19	7,762,430 4,848,338	Minor Arterial Major Collector	0.8	2	19 19	15,328,346 13,493,316	Minor . Minor .
th Service Road	South of E.C. Row Expressway South Ramp Terminal North of Bethlehem Avenue		0.8	2	19	6,727,035	Minor Arterial	0.8 0.8	2 2	19 19	10,202,232 9,769,327	Minor Minor
	Bethlehem Avenue	Grand Marais Road						0.8	2	19	860,069	Minor (
th Service Road	North of Labelle Street Labelle Street	Grand Marais Road Ramp	0.8	2	19 19	5,632,512 3,101,527	Major Collector Major Collector					
on Church Road	Grand Marais Road	Pulford Street	0.9	2	19	112,172	Local	0.9	2	19	131,420	L
	Pulford Street Todd Lane/Cabana Road	Todd Lane/Cabana Road Huron Church Line	0.9	2 2	19 19	161,232 2,142,739	Local Major Collector	0.9 0.8	2 2	19 19	186,391 520,943	Lo Minor
oot Road	Huron Church Line	St Clair College	0.8	2	19	1,023,942	Major Collector	0.8	2	19	362,141	Minor
	St Clair College Cousineau Drive	Cousineau Drive Howard Avenue	0.8	2 2	19 19	913,912 1,412,327	Minor Collector Major Collector	0.8 0.9	2 2	19 19	1,473,280 872,827	Major Minor
	Howard Avenue South of Laurier Extension	Laurier Extension	0.8	2 2	19 19	2,810,705 2,924,554	Major Collector Major Collector	0.8 0.8	2 2	19 19	1,345,622 1,408,144	Major Major
oway Parkway	E.C. Row Expressway	GN Booth Drive	0.8	2	19	2,822,038	Major Collector	0.8	2	19	3,598,386	Major
	GN Booth Drive Sandwich Street	Sandwich Street Prospect Avenue	0.8	2 2	19 19	2,827,820 827,232	Major Collector Minor Collector	0.8 0.8	2 2	19 19	3,629,630 446,284	Major Minor
	North of Prospect Avenue		0.8	2	19	822,281	Minor Collector	0.8	2	19	436,634	Minor
- Jassa Charact	West of Huron Church Road		0.9	1.5	19	477,276	Minor Collector	0.9	1.5	19	239,671	Minor
ndotte Street	East of Huron Church Road		0.9	1.5	19	448,459	Minor Collector	0.9	1.5	19	684,670	Minor
versity Avenue	West of Huron Church Road East of Huron Church Road		0.9 0.9	1.5 1.5	19 19	128,014 1,509,376	Local Major Collector	0.9 0.9	1.5 1.5	19 19	60,705 553,937	L Minor
rside Drive	West of Huron Church Road East of Huron Church Road		0.9 0.9	1.5 1.5	19 19	330,386 653,228	Minor Collector Minor Collector	0.9 0.9	1.5 1.5	19 19	175,939 282,171	L Minor
3 Off Ramp	East of Huron Church Road							0.9	1.5	19 19	282,171 16,748,644	Minor Minor
3 On Ramp cia Street	East of Huron Church Road	Wyandotte Street	0.9	1.5 1.5	19 19	2,146,279 2,088,843	Major Collector Major Collector	0.9	1.5	19	1,680,859	Major
ege Street	AMB East of Huron Church Road	Wyandotte Street	0.9	1.5	19	1,557,982	Major Collector	0.9	1.5	19	1,444,258	Major
dot Street	West of Huron Church Road East of Huron Church Road		0.9	1.5 1.5	19 19	192,727 107,659	Local	0.9 0.9	1.5 1.5	19 19	43,408 56,860	I
	West of Huron Church Road		0.9	1.5	19	387,800	Minor Collector	0.9	1.5	19	123,807	I
nseh Road	East of Huron Church Road West of Huron Church Road		0.9 0.9	1.5 1.5	19 19	1,288,331 614,104	Major Collector Minor Collector	0.9 0.9	1.5 1.5	19 19	1,626,895 347,594	Major Minor
nester Street	East of Huron Church Road		0.9	1.5	19	161,189	Local	0.9	1.5	19	76,121	1
e Road/Totten Street	West of Huron Church Road East of Huron Church Road		0.9 0.9	1.5 1.5	19 19	246,056 205,755	Minor Collector Minor Collector	0.9 0.9	1.5 1.5	19 19	49,582 129,573	1
en Road	West of Huron Church Road		0.9	1.5	19 19	489,072	Minor Collector	0.9	1.5	19 19	264,150	Mino
	East of Huron Church Road West of Huron Church Road		0.8	1.5	19	150,960 4,982,570	Local Major Collector	0.8	1.5	19	61,202 4,670,576	l Major
trial Road	East of Huron Church Road West of Huron Church Road		0.9	1.5 1.5	19 19	512,199 1,572,632	Minor Collector Major Collector	0.9 0.9	1.5 1.5	19 19	372,001 1,944,892	Minor Major
Row Expressway North Ramp Terminal	East of Huron Church Road		0.9	1.5	19	2,525,753	Major Collector	0.9	1.5	19	1,944,892 101,270	Majoi
Row Expressway South Ramp Terminal	West of Huron Church Road East of Huron Church Road		0.9	1.5	19	1,485,499	Major Collector	0.8	1.5	19	371,375	Minor
	West of Huron Church Road		0.8	1.5	19	5,843,480	Major Collector	0.9	1.5	19	408,850	Minor
lle Street/Bethlehem Avenue	East of North Service Road Between North and South Service Road		0.9 0.9	1.5 1.5	19 19	290,703 126,329	Minor Collector Local	0.9 0.9	1.5 1.5	19 19	114,353 166,724	L
d Marria Dandifia, Ala di	West of South Service Road		0.9	1.5	19	167,716	Local	0.9	1.5	19	187,636	L
d Marais Road/Lambton Street	East of Huron Church Road West of Huron Church Road		0.9 0.9	1.5 1.5	19 19	412,436 309,703	Minor Collector Minor Collector	0.9 0.9	1.5 1.5	19 19	169,153 91,161	I
ord Street d Lane/Cabana Road	East of Huron Church Road East of Huron Church Road		0.9 0.8	1.5 1.5	19 19	245,871 791,191	Minor Collector Minor Collector	0.9 0.8	1.5 1.5	19 19	90,889 322,956	L Minor
. Lane/Cabana Rodu	Between Huron Church Road and Highway 401 Off Ramp		0.8	1.5	19	827,363	Minor Collector	0.8	1.5	19	612,609	Minor
on Church Line	West of Highway 401 Off Ramp West of Huron Church Road		0.8 0.8	1.5 1.5	19 19	980,455 864,788	Minor Collector Minor Collector	0.8 0.9	1.5 1.5	19 19	486,926 523,823	Minor Minor
lair College	East of Talbot Road		0.9	1.5	19	301,410	Minor Collector	0.8	1.5	19	414,509	Minor
sineau Drive	East of Talbot Road West of Talbot Road		0.9 0.8	1.5 1.5	19 19	585,613 647,287	Minor Collector Minor Collector	0.9 0.9	1.5 1.5	19 19	279,803 168,521	Minor L
ard Avenue	East of Talbot Road West of Talbot Road		0.8 0.8	1.5 1.5	19 19	1,194,128 1,327,646	Major Collector Major Collector	0.8 0.8	1.5 1.5	19 19	712,129 849,010	Minor Minor
ier Extension	West of Talbot Road/Highway 3	$\sim$	0.9	1.5	19	1,439,008	Major Collector	0.9	1.5	19	777,904	Minor
Row Expressway	West of Ojibway Parkway West of Broadway Street		0.8 0.8	1.5 1.5	19 19	5,114,156 3,134,123	Major Collector Major Collector	0.8 0.8	1.5 1.5	19 19	3,490,790 2,787,933	Major Major
	East of Huron Church Road		0.8	1.5	19	11,412,886	Minor Arterial	0.8	1.5	19	9,899,760	Mino
	At Malden Road West of Matchette Road		0.8	1.5 1.5	19 19	11,178,474 5,164,467	Minor Arterial Major Collector	0.8 0.8	1.5 1.5	19 19	7,877,891 1,866,920	Mino Major
Booth Drive wich Street	West of Ojibway Parkway West of Ojibway Parkway		0.9	1.5	19	64,216	Local Major Collector	0.9	1.5	19	37,756	I
bect Avenue	West of Ojibway Parkway West of Ojibway Parkway		0.9	1.5 1.5	19 19	1,413,262 62,413	Local	0.9 0.9	1.5 1.5	19 19	463,196 22,117	Minor I
HWAY 401 Ramps	•	$\langle \langle \rangle \langle \rangle \langle \rangle \rangle$										
-												
away 3 merge/split away 401 Northbound Off Ramp			0.8	2	19	12,204,976	Minor Arterial					
way 401 Northbound On Ramp way 401 Southbound Off Ramp			0.8	2	19	1,881,657	Major Collector	0.8	2	19	990,657	Minor
way 401 Southbound On Ramp								0.8	2	19	2,608,048	Minor Major
oward Avenue way 401 Northbound On Ramp			0.9	2	19	181,206	Local					
way 401 Southbound On Ramp			0.7	-	.,	.01,200		0.9	2	19	2,044,012	Major
. Clair College way 401 Northbound Off Ramp			0.9	2	19	384,385	Minor Collector					
way 401 Southbound Off Ramp								0.9	2	19	414,651	Minor
way 401 Southbound On Ramp dd Lane/Cabana Road								0.9	2	19	76,476	I
way 401 Northbound On Ramp			0.8	2	19	1,593,660	Major Collector	0.8	2	10	549,491	Minor
way 401 Southbound Off Ramp way 401 Southbound On Ramp								0.8	2	19 19	549,491 223,909	Minor Minor
uron Church Road way 401 Northbound Off Ramp			0.8	2	19	3,490,740	Major Collector					
way 401 Southbound On Ramp			0.0	2	17	5,770,740	major Concellor	0.8	2	19	9,522,161	Mino
alden Road vay 401 Northbound On Ramp												
way 401 Southbound Off Ramp												
way 401 to E.C. Row Expressway way 401 Southbound Off Ramp								0.8	2	19	7,069,865	Minor
way Parkway Interchange way 401 Northbound Off Ramp			0.9	2	19	2,986,757	Major Collector					
way 401 Northbound On Ramp			0.9	2	19	2,986,757 6,741,119	Major Collector Minor Arterial					
way 401 Southbound Off Ramp way 401 Southbound On Ramp								0.9 0.8	2 2	19 19	148,606 2,270,214	L. Major
Row Expressway to Highway 401								0.0	2	17	2,270,214	major
way 401 Northbound On Ramp			0.9	2	19	12,345,929	Minor Arterial					
way 401 Mainline	South of Highway 3 merge/split	Highway 3/Highway 401 Northbound Off Ramp	0.8	2.5	21	107,139,391	Freeway					
	Highway 3/Highway 401 Northbound Off Ramp Highway 3/Highway 401 Northbound On Ramp	Highway 3/Highway 401 Northbound On Ramp Howard Avenue Northbound On Ramp	0.8 0.8	2.5 2.5	21 21	63,145,928 85,361,160	Freeway Freeway					
	Howard Avenue Northbound On Ramp	St. Clair College/Highway 401 Northbound Off Ramp	0.8	2.5	21	88,105,923	Freeway					
	St. Clair College/Highway 401 Northbound Off Ramp Pulford Street/Highway 401 Northbound On Ramp	Pulford Street/Highway 401 Northbound On Ramp Huron Church Road/Highway 401 Northbound Off Ramp	0.8 0.8	2.5 2.5	21 21	64,629,545 92,084,546	Freeway Freeway					
	Huron Church Road/Highway 401 Northbound Off Ramp	Ojibway Parkway/Highway 401 Northbound Off Ramp	0.8	2.5	21	75,867,359	Freeway					
	Ojibway Parkway/Highway 401 Northbound Off Ramp Ojibway Parkway/Highway 401 Northbound On Ramp	Ojibway Parkway/Highway 401 Northbound On Ramp E.C. Row Expressway to Highway 401 Northbound On Ramp	0.9 0.8	2.5 2.5	21 21	89,351,413 91,287,233	Freeway Freeway					
	E.C. Row Expressway to Highway 401 Northbound On Ramp	Canadian Plaza	0.8	2.5	21	115,112,527	Freeway					
	Canadian Plaza Ojibway Parkway/Highway 401 Southbound Off Ramp	Ojibway Parkway/Highway 401 Southbound Off Ramp Ojibway Parkway/Highway 401 Southbound On Ramp						0.8 0.8	2.5 2.5	21 21	78,030,128 68,305,680	Fre
	Ojibway Parkway/Highway 401 Southbound On Ramp	Highway 401 to E.C. Row Expressway Southbound Off Ramp						0.8	2.5	21	68,137,178	Fre
	Highway 401 to E.C. Row Expressway Southbound Off Ramp Huron Church Road/Highway 401 Southbound On Ramp	Huron Church Road/Highway 401 Southbound On Ramp Pulford Street/Highway 401 Southbound Off Ramp						0.8 0.8	2.5 2.5	21 21	64,580,755 71,982,468	Fre
	Pulford Street/Highway 401 Southbound Off Ramp	Todd Lane/Highway 401 Souhtbound Off Ramp						0.8	2.5	21	51,791,439	Fre
	Todd Lane/Highway 401 Southbound Off Ramp St. Clair College/Highway 401 Southbound Off Ramp	St. Clair College/Highway 401 Southbound Off Ramp St. Clair College/Highway 401 Southbound On Ramp						0.8	2.5	21	52,004,616 37 274 895	Fre

	Canadian i faza	Olioway Larkway Ingliway 401 Southoothid On Kamp						0.0	2.0	21	70,050,120	TICCWay
	Ojibway Parkway/Highway 401 Southbound Off Ramp	Ojibway Parkway/Highway 401 Southbound On Ramp						0.8	2.5	21	68,305,680	Freeway
	Ojibway Parkway/Highway 401 Southbound On Ramp	Highway 401 to E.C. Row Expressway Southbound Off Ramp						0.8	2.5	21	68,137,178	Freeway
	Highway 401 to E.C. Row Expressway Southbound Off Ramp	Huron Church Road/Highway 401 Southbound On Ramp						0.8	2.5	21	64,580,755	Freeway
	Huron Church Road/Highway 401 Southbound On Ramp	Pulford Street/Highway 401 Southbound Off Ramp						0.8	2.5	21	71,982,468	Freeway
	Pulford Street/Highway 401 Southbound Off Ramp	Todd Lane/Highway 401 Souhtbound Off Ramp						0.8	2.5	21	51,791,439	Freeway
	Todd Lane/Highway 401 Souhtbound Off Ramp	St. Clair College/Highway 401 Southbound Off Ramp						0.8	2.5	21	52,004,616	Freeway
	St. Clair College/Highway 401 Southbound Off Ramp	St. Clair College/Highway 401 Southbound On Ramp						0.8	2.5	21	37,274,895	Freeway
	St. Clair College/Highway 401 Southbound On Ramp	Howard Avenue Southbound On Ramp						0.8	2.5	21	67,516,141	Freeway
	Howard Avenue Southbound On Ramp	Highway 3/Highway 401 Southbound Off Ramp						0.8	2.5	21	81,805,366	Freeway
	Highway 3/Highway 401 Southbound Off Ramp	Highway 3/Highway 401 Southbound On Ramp						0.8	2.5	21	54,621,274	Freeway
	Highway 3/Highway 401 Southbound On Ramp	South of Highway 3 merge/split						0.8	2.5	21	67,500,893	Freeway
Malden Road	Chappus Street	Highway 401 South Ramp	0.8	1.5	19	2,889,202	Major Collector	0.8	1.5	19	2,057,862	Major Collector
Waldeli Koad	Highway 401 South Ramp	Highway 401 South Ramp	0.8	1.5	19	3,228,097	Major Collector	0.8	1.5	19	1,357,099	Major Collector
	North of Highway 401 North Ramp	rigiway 401 North Kalip	0.9	1.5	10	2,504,917	Major Collector	0.8	1.5	19	1,495,715	Major Collector
Matchette Road	Chappus Street	E.C. Row Expressway South Ramp	0.9	1.5	19	759,312	Minor Collector	0.8	1.5	19	376,689	Minor Collector
Matchette Road			0.8	1.5	19	246,382	Minor Collector	0.8	1.5	19	418,801	Minor Collector
	E.C. Row Expressway South Ramp	E.C. Row Expressway North Ramp Carmichael Street			19	486,522	Minor Collector	0.8	1.5	19	159.441	Local
	E.C. Row Expressway North Ramp	Carmichael Street	0.9	1.5	19	480,522	Minor Conector	0.9	1.5	19	159,441	Locai
Highway 3 merge/split												
Highway 401 Northbound Off Ramp (to Highway 3)			0.8	1.5	19	5,611,520	Major Collector					
Highway 401 Northbound Off Ramp ( to Laurier split)			0.9	1.5	19	3,984,988	Major Collector					

05-1140-003-1

## TABLE III-A

# SUMMARY OF ESAL CALCULATIONS - RIGID PAVEMENTS - ALTERNATIVE 1A

Detroit River International Crossing Windsor, Ontario

Pavement Section	LOCATION From	Το	LDF	TE	Northbound/V Design Period	Vestbound ESALs	Class	LDF	TF	Southbound/		Class
Huron Church Road	Riverside Drive	University Avenue	0.9	2	(years) 25	3,117,453	Local	0.9	2	(years) 25	2,254,132	Local
Huron Church Road	University Avenue	Wyandotte Street	0.9	2	25	2,399,654	Local	0.9	2	25	2,779,561	Local
	Wyandotte Street AMB Off Ramp	AMB Off Ramp College	0.9 0.8	2 2	25 25	359,239 48,079,092	Local Major Collector	0.9 0.9	2 2	25 25	521,038 1,687,231	Local Local
	College Street Girardot Street	Girardot Street Tecumseh Road	0.8 0.8	2	25 25	12,194,775 13,506,429	Minor Collector Minor Collector	0.8 0.8	2	25 25	52,067,728 50,846,605	Minor Arterial Minor Arterial
	Tecumseh Road	Dorchester Street	0.8	2	25	15,697,773	Minor Collector	0.8	2	25	48,774,322	Major Collector
	Dorchester Street Prince Road/Totten Street	Prince Road/Totten Street Malden Road	0.8 0.8	2	25 25	13,739,260 15,457,424	Minor Collector Minor Collector	0.8 0.8	2 2	25 25	44,471,810 44,288,711	Major Collector Major Collector
	Malden Road	Industrial Road	0.8	2 2	25 25	9,140,266	Local	0.8	2	25	42,081,106	Major Collector
	Industrial Rd EC Row North Ramp Terminal	EC Row North Ramp Terminal EC Row South Ramp Terminal	0.8 0.8	2	25	10,382,904 6,864,154	Minor Collector Local	0.8 0.8	2	25 25	43,096,526 41,905,372	Major Collector Major Collector
South Service Road	South of EC Row South Ramp Terminal North of Lambton Street		0.8	2	25	9,661,319 no data	Local	0.8	2	25 25	32,686,882 3,361,831	Major Collector Local
	Lambton Street Todd Lane/Cabana Road	Todd Lane/Cabana Road				no data		1	2	25 25	2,565,983	Local
	St Clair College	St Clair College Cousineau Drive				no data no data		1	2	25	1,594,062 3,848,588	Local Local
	Cousineau Drive East of Howard Avenue	Howard Avenue				no data no data		1	2	25 25	3,702,725 4,742,195	Local Local
North Service Road	North of Labelle Street		1	2	25	10,189,391	Minor Collector	-	-		no data	
	Labelle Street Grand Marais Road Ramp	Grand Marais Road Ramp Pulford Street	1	2 2	25 25	6,581,372 3,202,876	Local Local				no data no data	
	Pulford Street Todd Lane/Cabana Road	Todd Lane/Cabana Road St Clair College	1	2 2	25 25	3,535,629 1,322,461	Local Local				no data no data	
	St Clair College	Cousineau Drive	1	2	25	1,476,198	Local				no data	
	Cousineau Drive East of Howard Avenue	Howard Avenue	1	2 2	25 25	3,844,431 5,846,113	Local Local				no data no data	
Ojibway Parkway	EC Row Expressway GN Booth Drive	GN Booth Drive Sandwich Street	0.8 0.8	2 2	25 25	3,764,555 3,772,856	Local Local	0.8 0.8	2 2	25 25	9,962,805 10,007,985	Local Minor Collector
	Sandwich Street	Prospect Avenue	0.8	2	25	1,084,016	Local	0.8	2	25	1,084,947	Local
	North of Prospect Avenue		0.8	2	25	1,077,681	Local	0.8	2	25	1,062,852	Local
CROSS ROADS Wyandotte Street	West of Huron Church Road			1.5	25	695,827	Local	1	1.5	25	671,438	Local
	East of Huron Church Road		1	1.5	25	961,158	Local	1	1.5	25	2,036,625	Local
University Avenue	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	195,894 2,337,709	Local Local	1 1	1.5 1.5	25 25	174,293 2,018,393	Local Local
Riverside Drive	West of Huron Church Road		1	1.5	25	494,289	Local	1	1.5	25	524,764	Local
AMB Off Ramp	E of HuronChurch E of HuronChurch		1	1.5	25	957,599 no data	Local	1 1	1.5 1.5	25 25	802,240 42,792,199	Local Major Collector
AMB On Ramp Patricia Street	E of HuronChurch AMB	Wyandotte Street	1	1.5 1.5	25 25	3,257,588 3,114,950	Local Local	1	1.5	25	no data 5,087,475	Local
College Street	East of Huron Church Road		1	1.5	25	2,267,380	Local	1	1.5	25	4,822,021	Local
Girardot Street	West of Huron Church Road East of Huron Church Road		1 1	1.5 1.5	25 25	290,017 156,929	Local Local	1 1	1.5 1.5	25 25	134,678 159,439	Local Local
Tecumseh Road	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	500,793 1,799,183	Local Local	1	1.5 1.5	25 25	293,116 5,197,008	Local Local
	West of Huron Church Road		1	1.5	25	903,470	Local	1	1.5	25	985,238	Local
Dorchester Street	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	25 25	235,516 309,657	Local Local	1	1.5 1.5	25 25	216,974 117,990	Local Local
Prince Road/Totten Street	East of Huron Church Road West of Huron Church Road		1	1.5	25	305,239	Local	1	1.5	25	370,210	Local
Malden Road	East of Huron Church Road		1	1.5 1.5	25 25	706,546 230,346	Local	1	1.5 1.5	25 25	759,101 189,044	Local Local
Industrial Road	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	8,057,424 809,523	Local Local	1	1.5 1.5	25 25	15,390,563 1,094,178	Minor Collector Local
	West of Huron Church Road		1	1.5	25	2,386,253	Local	1	1.5	25	6,308,735	Local
E.C. Row Expressway North Ramp Terminal	East of Huron Church Road (W-N/S Off Ramp & N-W On R West of Huron Church Road (S-W On Ramp)	tamp)	1	1.5 1.5	25 25	4,880,352 2,329,183	Local Local	1	1.5	25	7,795 no data	Local
E.C. Row Expressway South Ramp Terminal	East of Huron Church Road (N-E On Ramp) West of Huron Church Road (S-E On Ramp & E-N/S Off Ra	mp)	1	1.5	25	no data 9,843,128	Local	1	1.5 1.5	25 25	2,400,438 1,174,014	Local Local
Labelle Street	East of North Service Road	inp)	1	1.5	25	283,512	Local	1	1.5	25	105,327	Local
Grand Marais Road Ramp Fazio Drive	East of North Service Road West of South Service Road		1	1.5 1.5	25 25	756,940 910,867	Local Local	1	1.5 1.5	25 25	289,151 488,493	Local Local
Pulford Street	East of North Service Road		i	1.5	25	65,667	Local	1	1.5	25	154,516	Local
Todd Lane/Cabana Road	East of North Service Road between North and South Service Road		1	1.5 1.5	25 25	1,374,490 1,520,587	Local Local	1	1.5 1.5	25 25	1,064,284 1,735,320	Local Local
	between South Service Road and Huron Church Line West of Huron Church Line		1	1.5 1.5	25 25	1,305,726 1,233,066	Local Local	1	1.5 1.5	25 25	1,657,523 1,270,672	Local Local
St. Clair College	East of North Service Rd		1	1.5	25	443,171	Local	1	1.5	25	1,229,006	Local
Cousineau Drive	between North and South Service Road East of North Service Road		1	1.5 1.5	25 25	347,171 737,621	Local Local	1	1.5 1.5	25 25	385,521 594,742	Local Local
	between North and South Service Road West of South Service Road			1.5 1.5	25 25	69,310 282,541	Local Local	1	1.5 1.5	25 25	1,847,195 1,832,195	Local Local
Howard Avenue	East of North Service Rd			1.5	25	1,946,169	Local	1	1.5	25	2,595,807	Local
	between North and South Service Road West of South Service Road		1	1.5 1.5	25 25	2,962,691 3,638,448	Local Local	1	1.5 1.5	25 25	2,310,443 4,461,412	Local Local
E.C. Row Expressway	East of Ojibway Parkway West of Ojibway Parkway		0.8 0.8	2	25 25	8,136,868 5,885,764	Local Local	0.8 0.8	2 2	25 25	4,196,993 3,960,448	Local Local
	East of Huron Church Road		0.8	2	25	20,385,475	Major Collector	0.8	2	25	39,930,631	Major Collector
	At Malden Rd West of Matchette Road		0.8 0.8	2 2	25 25	18,439,279 16,151,443	Minor Collector Minor Collector	0.8 0.8	2 2	25 25	25,386,109 4,196,993	Major Collector Local
GN Booth Drive Sandwich Street	West of Ojibway Parkway West of Ojibway Parkway		1	1.5 1.5	25 25	78,218 2,112,306	Local Local	1 1	1.5 1.5	25 25	87,447 1,343,419	Local Local
Prospect Avenue	West of Ojibway Parkway		1	1.5	25	75,023	Local	1	1.5	25	53,829	Local
* - For consistency, Huron Church Rd/Talbot Rd	d runs North-South and all crossing roads run East-West											
HIGHWAY 401 Ramps												
Highway 3 merge/split												
Highway 401 northbound Off Ramp Highway 401 northbound On Ramp		-	1	2 2	25 25	14,980,568 3,231,714	Minor Collector Local				no data no data	
Highway 401 southbound Off Ramp			-			no data		1	2 2	25 25	3,712,763	Local Minor Collector
Highway 401 southbound On Ramp At St. Clair College						no data		1	2	25	14,587,791	Minor Collector
Highway 401 northbound Off Ramp Highway 401 northbound On Ramp			1	1.5 1.5	25 25	1,013,820 310,943	Local Local				no data no data	
Highway 401 southbound Off Ramp			1	1.5	23	no data	Local	1	1.5	25	2,915,927	Local
Highway 401 southbound On Ramp At Huron Church Road						no data		1	1.5	25	319,467	Local
Highway 401 northbound Off Ramp			1	2	25	5,482,344	Local		~	25	no data	Main C P
Highway 401 southbound On Ramp At Malden Road								1	2	25	25,939,860	Major Collector
Highway 401 northbound On Ramp Highway 401 southbound Off Ramp			1	1.5	25	7,709,238 no data	Local	1	1.5	25	no data 7,574,667	Local
Highway 401 to E.C. Row Expressway								1				
401 SB Off Ramp Ojibway Parkway Interchange						no data		1	2	25	24,883,693	Major Collector
Highway 401 northbound Off Ramp			1	2	25	8,585,263	Local				no data	
Highway 401 northbound On Ramp Highway 401 southbound Off Ramp			1	2	25	6,644,726 no data	Local	1	2	25	no data 356,351	Local
Highway 401 southbound On Ramp E.C. Row Expressway to Highway 401						no data		1	2	25	10,331,127	Minor Collector
E.C. Row Expressway to Highway 401 Highway 401 northbound On Ramp			1	2	25	18,555,239	Minor Collector				no data	
Highway 401 Mainline	South of Highway 3 merge/split	Highway 3/Highway 401 northbound Off Ramp	0.6	2.5	25	99,490,307	Minor Arterial				no data	
5 · · · · · · · · · · · · · · · · · · ·	Highway 3/Highway 401 northbound Off Ramp	Highway 3/Highway 401 northbound On Ramp	0.7	2.5	25	103,437,879	Major Arterial				no data	
	Highway 3/Highway 401 northbound On Ramp St. Clair College/Highway 401 northbound Off Ramp	St. Clair College/Highway 401 northbound Off Ramp St. Clair College/Highway 401 northbound On Ramp	0.6 0.7	2.5 2.5	25 25	99,496,823 82,013,278	Minor Arterial Minor Arterial				no data no data	
	St. Clair College/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound Off Ramp	Huron Church Road/Highway 401 northbound Off Ramp Malden Road/Highway 401 northbound On Ramp	0.7 0.8	2.5 2.5	25 25	93,024,545 108,849,158	Minor Arterial Major Arterial				no data no data	
	Malden Road/Highway 401 northbound On Ramp	Ojibway Parkway/Highway 401 northbound Off Ramp	0.7	2.5	25	103,985,370	Major Arterial				no data	
	Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound OnRamp	Ojibway Parkway/Highway 401 northbound OnRamp EC Row Expressway to Highway 401 northbound On Ramp	0.8 0.8	2.5 2.5	25 25	111,138,783 117,499,457	Major Arterial Major Arterial				no data no data	
	EC Row Expressway to Highway 401 northbound On Ramp		0.7	2.5	25	126,568,533	Major Arterial				no data	
	Canadian Plaza	Ojibway Parkway/Highway 401 southbound Off Ramp				no data		0.6	2.5	25	171,523,028	Major Arterial

	Canadian Plaza Ojibway Parkway/Highway 401 southbound Off Ramp Ojibway Parkway/Highway 401 southbound On Ramp Highway 401 to EC Row Expressway southbound Off Ramp Malden Road/Highway 401 southbound On Ramp Huron Church Road/Highway 401 southbound On Ramp St Clair College/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Of Ramp	Ojibway Parkway/Highway 401 southbound Off Ramp Ojibway Parkway/Highway 401 southbound On Ramp Highway 401 to EC Row Expressways southbound Off Ramp Malden Road/Highway 401 southbound Off Ramp Huron Church Road/Highway 401 southbound Off Ramp St Clair College/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp South of Highway 401 southbound Off Ramp South of Highway 401 southbound Off Ramp				no data no data no data no data no data no data no data no data no data no data		$\begin{array}{c} 0.6 \\ 0.7 \\ 0.6 \\ 0.7 \\ 0.6 \\ 0.6 \\ 0.6 \\ 0.6 \\ 0.7 \\ 0.6 \end{array}$	2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	25 25 25 25 25 25 25 25 25 25 25 25	171,523,028 187,887,095 186,117,157 194,920,971 207,293,102 157,404,536 131,662,311 148,797,356 160,996,656 148,647,817	Major Arterial Major Arterial Major Arterial Freeway Major Arterial Major Arterial Major Arterial Major Arterial Major Arterial
Grand Marais Road	East of connecting ramp		1	1.5	25	736,515	Local	1	1.5	25	656,481	Local
	West of connecting ramp		1	1.5	25	37,086	Local	1	1.5	25	571,506	Local
Broadway Street	West of Ojibway Parkway		1	1.5	25	45,138	Local	1	1.5	25	48,245	Local
Huron Church Line	South of Todd Lane		1	1.5	25	8,061,503	Local	1	1.5	25	9,964,750	Local
Millen Street	Felix Avenue	Huron Church Road	1	1.5	25	23,444	Local	1	1.5	25	49,394	Local
Malden Road	Chappus Street	Highway 401 South Ramp	1	1.5	25	3,422,880	Local	1	1.5	25	3,983,558	Local
	Highway 401 South Ramp	Highway 401 North Ramp	1	1.5	25	3,793,940	Local	1	1.5	25	2,586,496	Local
	North of Highway 401 North Ramp		1	1.5	25	2,630,488	Local	1	1.5	25	2,865,444	Local
Matchette Road	Chappus Street	EC Row Expressway South Ramp	1	1.5	25	1,349,524	Local	1	1.5	25	1,285,328	Local
	EC Row Expressway South Ramp	EC Row Expressway North Ramp	1	1.5	25	391,397	Local	1	1.5	25	1,402,426	Local
	EC Row Expressway North Ramp	Carmichael	1	1.5	25	706,748	Local	1	1.5	25	442,072	Local
Montgomery Drive	Surrey Drive	Talbot Street	1	1.5	25	15,259	Local	1	1.5	25	86,008	Local
Surrey Drive	Montgomery Drive	Talbot Street	1	1.5	25	11,709	Local	1	1.5	25	17,812	Local
Grosvenor Road	Montgomery Drive	Talbot Street	1	1.5	25	20,158	Local	1	1.5	25	23,093	Local

05-1140-003-1

# TABLE III-B

# SUMMARY OF ESAL CALCULATIONS - RIGID PAVEMENTS - ALTERNATIVE 1B

Detroit River International Crossing <u>Windsor, Ontario</u>

Descrete O	LOCATION	τ.		TE	Northbound/W		0			Southbound/Ea		0
Pavement Section Huron Church Road	<u>From</u> Riverside Drive	<u>To</u> University Avenue	<u>LDF</u> 0.9	<u>TF</u> 2	Design Period (years) 25	ESALs 3,077,400	<u>Class</u> Local	<u>LDF</u> 0.9	<u>TE</u> 2	Design Period (years) 25	ESALs 2,230,914	<u>Class</u> Local
	Universita Drive University Avenue Wyandotte Street	Wyandotte Street AMB Off Ramp	0.9	2 2 2	25 25 25	2,048,765 364,841	Local Local	0.9	2 2 2	25 25 25	2,250,914 2,757,478 538,754	Local Local
	MB Off Ramp College Street	College Girardot Street	0.9 0.8 0.8	2 2 2	25 25 25	48,879,305 12,121,728	Major Collector Minor Collector	0.9	2 2 2	25 25 25	538,754 1,660,578 53,231,477	Local Local Minor Arterial
	Girardot Street	Tecumseh Road Dorchester Street	0.8 0.8 0.8	2 2 2	25 25 25	13,512,891	Minor Collector Minor Collector Minor Collector	0.8 0.8	2 2 2	25 25 25	51,973,153	Minor Arterial
	Tecumseh Road Dorchester Street	Prince Road/Totten Street	0.8	2	25	15,758,333 13,910,123	Minor Collector	0.8	2	25	49,725,238 45,600,590	Major Collector Major Collector
	Prince Road/Totten Street Malden Road	Malden Road Industrial Road	0.8 0.8	2 2	25 25	15,647,014 9,110,936	Minor Collector Local	0.8 0.8	2 2	25 25	45,073,767 42,326,986	Major Collector Major Collector
	Industrial Road EC Row North Ramp Terminal	EC Row North Ramp Terminal EC Row South Ramp Terminal	0.8 0.8	2 2	25 25	10,321,304 6,463,195	Minor Collector Local	0.8 0.8	2 2	25 25	42,761,724 37,941,684	Major Collector Major Collector
South Service Road	South of EC Row South Ramp Terminal north of Bethlehem Avenue		0.8	2	25	9,136,857 no data	Local	0.8 1	2 2	25 25	28,585,674 33,535,751	Major Collector Major Collector
	Bethlehem Avenue Lambton Street	Lambton Street Pulford Street				no data no data		1 1	2 2	25 25	2,628,900 404,576	Local Local
	Pulford Street Todd Lane/Cabana Road	Todd Lane/Cabana Road Huron Church Line				no data no data		1	2 2	25 25	1,368,682 2,292,795	Local Local
	Huron Church Line St. Clair College	St. Clair College Cousineau Drive				no data no data		1	2 2	25 25	2,116,089 6,211,048	Local Local
	Cousineau Drive east of Howard Avenue	Howard Avenue				no data no data		1	2 2	25 25	6,244,242 4,758,694	Local Local
North Service Road	north of Labelle Street Labelle Street	Grand Marais Road Ramp	1 1	2 2	25 25	9,538,715 5,283,431	Local Local				no data no data	
	Grand Marais Road Ramp Pulford Street	Pulford Street Todd Lane/Cabana Road	1	2 2	25 25	144,326 229,861	Local Local				no data no data	
	Todd Lane/Cabana Road Huron Church Line	Huron Church Line St. Clair College	1	2	25 25	2,566,311 1,182,947	Local				no data no data	
	St. Clair College Cousineau Drive	Cousineau Drive Howard Avenue	1	2 2	25 25	2,423,331 2,001,317	Local Local				no data no data	
Oiibway Parkway	east of Howard Avenue E.C. Row Expressway	GN Booth Drive	1 0.8	2 2	25 25 25	5,543,938 3,818,692	Local	0.8	2	25	no data 10,057,279	Minor Collector
Ojibway Parkway	GN Booth Drive	Sandwich Street	0.8	2	25 25 25	3,827,016	Local	0.8	2	25 25 25	10,102,168	Minor Collector
	Sandwich Street north of Prospect Avenue	Prospect Avenue	0.8 0.8	2 2	25	1,101,865 1,095,414	Local Local	0.8 0.8	2 2	25 25	1,098,205 1,075,855	Local Local
CROSS ROADS	west of Harry Church T				25	(01.000				25	<i></i>	¥ .
Wyandotte Street	west of Huron Church Line east of Huron Church Line		1	1.5 1.5	25 25	694,232 689,819	Local Local	1	1.5 1.5	25 25	666,967 2,002,780	Local Local
University	west of Huron Church Line east of Huron Church Line		1	1.5 1.5	25 25	192,850 2,309,980	Local	1	1.5 1.5	25 25	174,005 1,725,370	Local Local
Riverside Drive	west of Huron Church Line east of Huron Church Line		1	1.5 1.5	25 25	487,330 964,742	Local Local	1 1	1.5 1.5	25 25	516,473 799,175	Local Local
AMB Off Ramp AMB On Ramp	east of Huron Church Line east of Huron Church Line		1	1.5	25	no data 3,250,192	Local	1	1.5	25	52,339,512 no data	Minor Arterial
Patricia College Street	AMB east of Huron Church Road	Wyandotte Street	1 1	1.5 1.5	25 25	3,107,462 2,289,981	Local Local	1 1	1.5 1.5	25 25	5,102,108 4,573,190	Local Local
Girardot Street	west of Huron Church Road east of Huron Church Road		1 1	1.5 1.5	25 25	290,101 157,849	Local Local	1	1.5 1.5	25 25	134,115 157,910	Local Local
Tecumseh Road	west of Huron Church Road east of Huron Church Road		1 1	1.5 1.5	25 25	567,343 1,907,420	Local Local	1	1.5 1.5	25 25	347,457 5,430,573	Local Local
Dorchester Street	west of Huron Church Road east of Huron Church Road		1	1.5 1.5	25 25	902,982 236,654	Local Local	1	1.5 1.5	25 25	985,320 213,476	Local Local
Prince Road/Totten Street	west of Huron Church Road east of Huron Church Road		1	1.5 1.5	25 25	360,048 305,193	Local Local	1	1.5 1.5	25 25	140,416 370,182	Local Local
Malden Road	west of Huron Church Road east of Huron Church Road		1	1.5 1.5	25 25	706,374 230,260	Local	1	1.5	25 25	759,081 188,801	Local
Industrial Road	west of Huron Church Road east of Huron Church Road		1	1.5 1.5	25 25	8,368,583 759,283	Local	1	1.5	25 25	16,223,749 1,082,288	Minor Collector Local
E.C. Row Expressway North Ramp Terminal	west of Huron Church Road east of Huron Church Road (E-N/S Off Ramp & S-W On Ramp)		1	1.5 1.5	25 25	2,339,227 4,231,065	Local Local	1	1.5	25 25 25	5,865,251 2,686,293	Local
E.C. Row Expressway South Ramp Terminal	west of Huron Church Road (N-W On Ramp) east of Huron Church Road (S-E On Ramp)		1	1.5	25	2,243,827 no data	Local	1	2	25	no data 1,902,158	Local
Labelle Street/Bethlehem Avenue	west of Nuron Church Road (N-E On Ramp) east of North Service Road		1	1.5 1.5	25 25	10,061,304 434,060	Minor Collector Local	1	2 1.5	25 25 25	1,585,368 331,135	Local Local
Labelle Street/Beullehein Avenue	between North and South Service Road west of South Service Road		1	1.5	25 25 25	194,281 256,338	Local Local	1	1.5 1.5 1.5	25 25 25	500,781 500,236	Local Local
Grand Marais Road/Lambton Road	east of North Service Road		1	1.5	25 25 25	643,114	Local	1	1.5	25 25 25	503,736	Local
D 10 10	between North and South Service Road west of South Service Road		1	1.5 1.5	25	32,625 467,037	Local Local	1	1.5 1.5	25	407,601 288,094	Local
Pulford Street	east of North Service Road between North and South Service Road		1	1.5 1.5	25 25	224,412 214,309	Local	1	1.5 1.5	25 25	299,120 190,063	Local
Todd Lane/Cabana Road	west of South Service Road east of North Service Road		1	1.5 1.5	25 25	357,634 1,340,613	Local Local	1	1.5 1.5	25 25	119,543 1,078,092	Local Local
	between North and South Service Road west of South Service Road		1	1.5 1.5	25 25	1,402,500 1,684,692	Local Local	1	1.5 1.5	25 25	1,383,140 1,609,216	Local Local
Huron Church Line	between North and South Service Road west of South Service Road	<u> </u>	1	1.5 1.5	25 25	606,870 1,468,443	Local Local	1 1	1.5 1.5	25 25	1,227,699 1,568,008	Local Local
St. Clair College	east of North Service Road between North and South Service Road		1	1.5 1.5	25 25	443,110 347,171	Local Local	1 1	1.5 1.5	25 25	1,228,701 388,546	Local Local
Cousineau Drive	east of North Service Road between North and South Service Road		1	1.5 1.5	25 25	739,163 1,154,957	Local Local	1 1	1.5 1.5	25 25	595,221 1,010,971	Local Local
Howard Avenue	west of South Service Road east of North Service Road		1	1.5 1.5	25 25	1,532,626 2,011,428	Local Local	1	1.5 1.5	25 25	591,297 2,531,151	Local Local
	between North and South Service Road west of South Service Road		1	1.5 1.5	25 25	3,098,594 3,687,059	Local Local	1	1.5 1.5	25 25	2,472,906 4,799,149	Local Local
E.C. Row Expressway	east of Ojibway Parkway west of Ojibway Parkway		0.8 0.8	2 2	25 25	8,300,384 6,069,160	Local Local	0.8 0.8	2 2	25 25	6,506,690 4,011,686	Local Local
	east of Huron Church Road at Malden Road		0.8 0.8	2 2	25 25	21,109,329 20,667,760	Major Collector Major Collector	0.8 0.8	2 2	25 25	38,468,583 29,568,892	Major Collector Major Collector
GN Booth Drive	west of Matchette west of Ojibway Parkway		0.8	2 1.5	25 25	9,528,949 93,809	Local	0.8	2 1.5	25 25	6,506,690 104,949	Local Local
Sandwich Street Prospect Avenue	west of Ojibway Parkway west of Ojibway Parkway west of Ojibway Parkway		1	1.5 1.5 1.5	25 25 25	2,104,888 91,116	Local Local	1	1.5 1.5 1.5	25 25 25	1,345,831 63,622	Local Local
	пол ос одинау г шкнаў		1	1.0	23	>1,110	LUCAI	I	1.3	23	03,022	Local
HIGHWAY 401 Ramps												
Highway 3 merge/split Highway 401 Northbound Off Ramp			1	2	25	14,990,226	Minor Collector	1	2	25	no data	
Highway 401 Northbound On Ramp Highway 401 Southbound Off Ramp			1	2	25	3,268,470 no data	Local	1 1	2 2	25 25	no data 3,494,101	Local
Highway 401 Southbound On Ramp At St. Clair College						no data		1	2	25	14,635,604	Minor Collector
Highway 401 Northbound Off Ramp Highway 401 Northbound On Ramp			1 1	1.5 1.5	25 25	665,998 444,106	Local Local				no data no data	
Highway 401 Southbound Off Ramp Highway 401 Southbound On Ramp						no data no data		1 1	1.5 1.5	25 25	4,174,822 456,116	Local Local
At Pulford Street Highway 401 Northbound On Ramp			1	1.5	25	1,290,271	Local				no data	
Highway 401 Southbound Off Ramp At Huron Church Road						no data		1	1.5	25	1,099,706	Local
Highway 401 Northbound Off Ramp Highway 401 Southbound On Ramp			1	2	25	6,406,190 no data	Local	1	2	25	no data 32,045,783	Major Collector
At Malden Road Highway 401 Northbound On Ramp			1	1.5	25	7,709,238	Local		~		no data	
Highway 401 Northbound Off Ramp Highway 401 Southbound Off Ramp Highway 401 to E.C. Row Expressway			1	1.2	23	no data	Local	1	1.5	25	no data 7,574,667	Local
401 Southbound Off Ramp Ojibway Parkway Interchange			1	2	25	no data		1	2	25	25,970,343	Major Collector
Highway 401 Northbound Off Ramp			1	2 2	25 25	8,585,316	Local				no data	
Highway 401 Northbound On Ramp Highway 401 Southbound Off Ramp Highway 401 Southbound On Ramp			1	2	23	6,357,549 no data	Local	1	2	25 25	no data 290,753	Local Minor Collector
Highway 401 Southbound On Ramp E.C. Row Expressway to Highway 401				~	~~	no data	NC 0.1	1	2	25	10,439,918	Minor Collector
Highway 401 Northbound On Ramp			1	2	25	18,555,239	Minor Collector				no data	

Highway 401 Mainline	South of Highway 3 merge/split	Highway 3/Highway 401 Northbound Off Ramp	0.6	2.5	25	97,095,712	Minor Arterial				no data	
	Highway 3/Highway 401 Northbound Off Ramp	Highway 3/Highway 401 Northbound On Ramp	0.7	2.5	25	103,187,744	Major Arterial				no data	
	Highway 3/Highway 401 Northbound On Ramp	St. Clair College/Highway 401 Northbound Off Ramp	0.6	2.5	25	99,383,182	Minor Arterial				no data	
	St. Clair College/Highway 401 Northbound Off Ramp	St. Clair College/Highway 401 Northbound On Ramp	0.7	2.5	25	84,440,194	Minor Arterial				no data	
	St. Clair College/Highway 401 Northbound On Ramp	Pulford Street/Highway 401 Northbound On Ramp	0.7	2.5	25	90,527,267	Minor Arterial				no data	
	Pulford Street/Highway 401 Northbound On Ramp	Huron Church Road/Highway 401 Northbound Off Ramp	0.6	2.5	25	83,868,146	Minor Arterial				no data	
	Huron Church Road/Highway 401 Northbound Off Ramp	Malden Road/Highway 401 Northbound On Ramp	0.8	2.5	25	104,833,669	Major Arterial				no data	
	Malden Road/Highway 401 Northbound On Ramp	Ojibway Parkway/Highway 401 Northbound Off Ramp	0.7	2.5	25	100,482,518	Major Arterial				no data	
	Ojibway Parkway/Highway 401 Northbound Off Ramp	Ojibway Parkway/Highway 401 Northbound OnRamp	0.8	2.5	25	107,082,154	Major Arterial				no data	
	Ojibway Parkway/Highway 401 Northbound OnRamp	EC Row Expressway to Highway 401 Northbound On Ramp	0.8	2.5	25	113,154,501	Major Arterial				no data	
	EC Row Expressway to Highway 401 Northbound On Ramp	Canadian Plaza	0.8	2.5	25	142,143,615	Major Arterial				no data	
	Canadian Plaza	Ojibway Parkway/Highway 401 Southbound Off Ramp				no data		0.6	2.5	25	168,957,100	Major Arterial
	Ojibway Parkway/Highway 401 Southbound Off Ramp	Ojibway Parkway/Highway 401 Southbound On Ramp				no data		0.7	2.5	25	185,111,151	Major Arterial
	Ojibway Parkway/Highway 401 Southbound On Ramp	Highway 401 to EC Row Expressway Southbound Off Ramp				no data		0.6	2.5	25	186,117,157	Major Arterial
	Highway 401 to EC Row Expressway Southbound Off Ramp	Malden Road/Highway 401 Southbound Off Ramp				no data		0.6	2.5	25	194,920,971	Major Arterial
	Malden Road/Highway 401 Southbound Off Ramp	Huron Church Road/Highway 401 Southbound On Ramp				no data		0.7	2.5	25	190,484,445	Major Arterial
	Huron Church Road/Highway 401 Southbound On Ramp	Pulford Street/Highway 401 Southbound Off Ramp				no data		0.6	2.5	25	159,298,422	Major Arterial
	Pulford Street/Highway 401 Southbound Off Ramp	St Clair College/Highway 401 Southbound Off Ramp				no data		0.6	2.5	25	162,789,962	Major Arterial
	St Clair College/Highway 401 Southbound Off Ramp	St Clair College/Highway 401 Southbound On Ramp				no data		0.6	2.5	25	129,793,424	Major Arterial
	St Clair College/Highway 401 Southbound On Ramp	Highway 3/Highway 401 Southbound Off Ramp				no data		0.6	2.5	25	151,171,244	Major Arterial
	Highway 3/Highway 401 Southbound Off Ramp	Highway 3/Highway 401 Southbound On Ramp				no data		0.7	2.5	25	163,089,572	Major Arterial
	Highway 3/Highway 401 Southbound On Ramp	South of Highway 3 merge/split				no data		0.6	2.5	25	150,343,223	Major Arterial
Malden Road	Chappus Street	Highway 401 South Ramp	1	1.5	25	4,801,801	Local	1	1.5	25	6,342,823	Local
	Highway 401 South Ramp	Highway 401 North Ramp	1	1.5	25	5,377,206	Local	1	1.5	25	3,991,013	Local
	North of Highway 401 North Ramp		1	1.5	25	3,675,716	Local	1	1.5	25	4.460.046	Local
Matchette Road	Chappus Street	EC Row Expressway South Ramp	1	1.5	25	1,264,455	Local	1	1.5	25	1,307,221	Local
	EC Row Expressway South Ramp	EC Row Expressway North Ramp	1	1.5	25	361,981	Local	1	1.5	25	1.438.422	Local
	EC Row Expressway North Ramp	Carmichael	1	1.5	25	732,178	Local	1	1.5	25	446,606	Local
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Prepared By: MEB Reviewed By: PRB

05-1140-003-1

# TABLE III-C

## SUMMARY OF ESAL CALCULATIONS - RIGID PAVEMENTS - ALTERNATIVE 2A

Detroit River International Crossing Windsor, Ontario

Dovement C	LOCATION	То		TE	Northbound/M		Close		TC	Southbound/E		Close
Pavement Section	From	To	<u>LDF</u>	<u>TF</u>	Design Period (years)		<u>Class</u>	LDF	<u>TF</u>	Design Period (years)		Class
Huron Church Road	Riverside Drive University Avenue	University Avenue Wyandotte Street	0.9	2	25 25	3,003,414 2,273,977	Local Local	0.9	2 2	25 25	2,267,626 2,797,191	Local Local
	Wyandotte Street AMB Off Ramp	AMB Off Ramp College Street	0.9	2	25 25	371,922 46,237,229	Local Major Collector	0.9	2	25 25	540,775 1,705,458	Local Local
	College Street	Girardot Street	0.8	2	25	11,706,946	Minor Collector	0.8	2	25	51,381,316	Minor Arterial
	Girardot Street Tecumseh Road	Tecumseh Road Dorchester Street	0.8	2	25 25	13,088,483 15,393,542	Minor Collector Minor Collector	0.8	2 2	25 25	50,850,389 48,718,427	Minor Arterial Major Collector
	Dorchester Street Prince Road/Totten Street	Prince Road/Totten Street Malden Road	0.8	2 2	25 25	13,682,470 15,375,948	Minor Collector Minor Collector	0.8 0.8	2	25 25	45,070,741 43,366,525	Major Collector Major Collector
	Malden Road	Industrial Road	0.8	2	25	9,300,337	Local	0.8	2	25	40,087,258	Major Collector
	Industrial Road EC Row Expressway North Ramp Terminal	EC Row Expressway North Ramp Terminal EC Row Expressway South Ramp Terminal	0.8	2	25 25	10,173,324 6,849,753	Minor Collector Local	0.8	2 2	25 25	40,658,732 36,316,054	Major Collector Major Collector
	EC Row Expressway South Ramp Terminal Highway 401 Off Ramp	Highway 401 Off Ramp Spring Garden Road/Labelle Street	0.8 0.8	2	25 25	7,699,909 1,303,925	Local Local	0.8 0.8	2	25 25	26,592,454 1,954,826	Major Collector Local
	Spring Garden Road/Labelle Street	Lambton Street/Grand Marais Road Ramp	0.8	2	25	1,928,836	Local	0.8	2	25	2,738,677	Local
	Lambton Street/Grand Marais Road Ramp Pulford Street	Pulford Street Todd Lane/Cabana Road	0.8 0.8	2	25 25	2,103,320 2,451,298	Local Local	0.8 0.8	2 2	25 25	717,384 914,155	Local Local
Talbot Road	Todd Lane/Cabana Road Huron Church Line	Huron Church Line St Clair College	0.8	2	25 25	2,350,950 202,126	Local Local	0.8	2	25 25	3,538,796 1,189,454	Local Local
Turbo Rolu	St Clair College	Cousineau Drive	0.8	2	25	174,323	Local	0.9	2	25	1,119,464	Local
	Cousineau Drive Howard Avenue	Howard Avenue EC Row Expressway	0.8	2	25 25	702,188 4,817,363	Local Local	0.9 0.8	2 2	25 25	226,825 4,698,514	Local Local
Ojibway Parkway	EC Row Expressway GN Booth Drive	GN Booth Drive Sandwich Street	0.8	2	25 25	3,816,612 3,825,020	Local Local	0.8	2 2	25 25	10,078,277 10,077,909	Minor Collector Minor Collector
	Sandwich Street North of Prospect Avenue	Prospect Avenue	0.8	2 2	25 25	1,099,952 1,093,523	Local Local	0.8 0.8	2	25 25	1,090,292 1,067,942	Local Local
CROSSING ROADS	Note of Prospect Avenue		0.8	2	25	1,095,525	Local	0.8	2	25	1,007,942	Local
Wyandotte Street	West of Huron Church Road		1	1.5	25	691,154	Local	1	1.5	25	666,955	Local
University Avenue	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	25 25	889,042 192,347	Local Local	1	1.5 1.5	25 25	1,974,611 174,581	Local Local
Riverside Drive	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	25 25	2,336,177 486,003	Local Local	1	1.5 1.5	25 25	1,899,605 521,381	Local Local
	East of Huron Church Road		1	1.5	25	486,003 964,270	Local	1	1.5	25	809,963	Local
AMB Off Ramp AMB On Ramp	East of Huron Church Road East of Huron Church Road		1	1.5	25	no data 3,250,546	Local	1	1.5	25	41,238,608 no data	Major Collector
Patricia Street College Street	AMB East of Huron Church Road	Wyandotte Street	1	1.5 1.5	25 25	3,073,521 2,441,619	Local Local	1	1.5 1.5	25 25	5,000,645 4,634,076	Local Local
	West of Huron Church Road		1	1.5	25	282,978	Local	1	1.5	25	126,110	Local
Girardot Street	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	25 25	156,077 619,854	Local Local	1	1.5 1.5	25 25	160,033 425,668	Local Local
Tecumseh Road	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	25 25	1,835,031 888,172	Local Local	1	1.5 1.5	25 25	5,771,568 961,699	Local Local
Dorchester Street	East of Huron Church Road		1	1.5	25	237,510	Local	1	1.5	25	214,598	Local
Prince Road/Totten Street	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	448,850 311,330	Local Local	1	1.5 1.5	25 25	160,658 367,127	Local Local
Malden Road	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	692,330 232,719	Local Local	1	1.5 1.5	25 25	744,979 190,007	Local Local
Industrial Road	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	8,002,565 776,309	Local Local	1	1.5 1.5	25 25	12,382,485 1,077,069	Minor Collector Local
	West of Huron Church Road		1	1.5	25	2,324,857	Local	1	1.5	25	6,177,174	Local
EC Row Expressway North Ramp Terminal	E-N/S Ramp N-W Ramp		1	2	25	5,716,274 no data	Local	1	2	25	no data 157,118	Local
EC Row Expressway South Ramp Terminal	S-W Ramp W-N/S Ramp		1	2	25	12,276,704 no data	Minor Collector	1	2	25	no data 1,139,060	Local
Spring Garden Road	S/N-E Ramp West of Huron Church Road		,	1.5	25	no data 320,631	Local	1	2 1.5	25 25	13,390,680 426,779	Minor Collector Local
Labelle Street	East of Huron Church Road		1	1.5	25	536,707	Local	1	1.5	25	281,556	Local
Lambton Street/Grand Marais Road Ramp Pulford Street	East of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	721,249 417,886	Local Local	1	1.5 1.5	25 25	697,644 217,417	Local Local
Cabana Road	East of Huron Church Road between Huron Church Road and Highway 401 northbound Ra	amos	1	1.5 1.5	25 25	1,199,851 786,233	Local Local	1	1.5 1.5	25 25	1,089,842 3,181,065	Local Local
Todd Lane	between Highway 401 northbound and southbound Ramps		1	1.5	25	459,538 1,651,936	Local	i	1.5	25 25	2,667,887 1,391,395	Local
Huron Church Line	West of Highway 401 southbound Ramps West of Huron Church Road		1	1.5	25	1,956,835	Local	1	1.5	25	1,459,340	Local
St Clair College Cousineau Drive	East of Talbot Road East of Talbot Road		1	1.5 1.5	25 25	439,914 823,446	Local Local	1	1.5 1.5	25 25	1,323,857 760,123	Local Local
Howard Avenue	West of Talbot Road East of Talbot Road		1	1.5	25 25	239,550 2,034,139	Local Local	1	1.5 1.5	25 25	587,207 3,021,866	Local Local
	between Talbot Road and Highway 401 southbound On Ramp West of Highway 401 southbound On Ramp		i	1.5 1.5	25 25	3,373,932 3,761,568	Local	1	1.5	25 25	2,310,325 4,624,392	Local
E.C. Row Expressway	East of Huron Church Road		0.8	1.5	25	20,767,916	Major Collector	0.8	2	25	38,740,646	Major Collector
	At Malden Road West of Matchette Drive		0.8	2 2	25 25	20,314,284 8,877,795	Major Collector Local	0.8 0.8	2 2	25 25	28,736,837 5,838,068	Major Collector Local
* - For consistency, Huron Church Rd/Talbot R	d runs North-South and all crossing roads run East-West											
HIGHWAY 401 Ramps												
-												
Highway 3 merge/split Highway 401 northbound Off Ramp			1	2	25	17,763,332	Minor Collector				no data	
Highway 401 northbound On Ramp Highway 401 southbound Off Ramp			1	2	25	3,627,312 no data	Local		2	25	no data 3,573,480	Local
Highway 401 southbound On Ramp						no data		1	2	25	16,446,401	Minor Collector
Howard Avenue 401 NB Off Ramp						no data		1	2	25	834,906	Local
At Todd Lane/Cabana Road Highway 401 northbound Off Ramp			1	1.5	25	1.248.804	Local				no data	
Highway 401 northbound On Ramp Highway 401 southbound Off Ramp			1	1.5	25	1,885,405	Local				no data	
Highway 401 southbound On Ramp						no data no data		1	1.5 1.5	25 25	3,507,977 477,804	Local Local
At Huron Church Road Highway 401 northbound Off Ramp			1	2	25	6,930,905	Local					
Highway 401 southbound On Ramp At Malden Road								1	2	25	30,663,730	Major Collector
Highway 401 northbound On Ramp			1	1.5	25	6,884,017	Local				no data	
Highway 401 southbound Off Ramp EC Row Expressway to Highway 401						no data		1	1.5	25	6,476,966	Local
Highway 401 southbound On Ramp Ojibway Parkway Interchange						no data		1	2	25	26,795,424	Major Collector
Highway 401 northbound Off Ramp Highway 401 northbound On Ramp			1	2	25 25	8,532,329 6,358,614	Local Local				no data no data	
Highway 401 southbound Off Ramp			1	2	23	no data	Locar	1	2	25	512,325	Local
Highway 401 southbound On Ramp EC Row Expressway Interchange						no data		1	2	25	8,775,237	Local
Highway 401 northbound On Ramp			1	2	25	19,854,252	Minor Collector				no data	
Highway 401 Mainline	South of Highway 3 merge/split	Highway 3/Highway 401 northbound Off Ramp	0.6	2.5	25	98,354,919	Minor Arterial				no data	
menway tor mainine	Highway 3/Highway 401 northbound Off Ramp	Highway 3/Highway 401 northbound On Ramp	0.8	2.5	25	87,330,456	Minor Arterial				no data	
	Highway 3/Highway 401 northbound On Ramp Todd Lane/Highway 401 northbound Off Ramp	Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp	0.6	2.5 2.5	25 25	84,475,424 69,263,131	Minor Arterial Minor Arterial				no data no data	
	Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp	Huron Church Road/Highway 401 northbound On Ramp Malden Road/Highway 401 northbound On Ramp	0.6 0.8	2.5 2.5	25 25	77,127,923 105,736,754	Minor Arterial Major Arterial				no data no data	
	Malden Road/Highway 401 northbound On Ramp	Ojibway Parkway/Highway 401 northbound Off Ramp	0.7	2.5	25	100,314,701	Major Arterial				no data	
	Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound OnRamp	Ojibway Parkway/Highway 401 northbound OnRamp EC Row Expressway to Highway 401 northbound On Ramp	0.8 0.8	2.5 2.5	25 25	106,732,924 112,836,998	Major Arterial Major Arterial				no data no data	
	EC Row Expressway to Highway 401 northbound On Ramp	Canadian Plaza	0.8	2.5	25	142,122,712	Major Arterial				no data	
	Canadian Plaza Ojibway Parkway/Highway 401 southbound Off Ramp	Ojibway Parkway/Highway 401 southbound Off Ramp Ojibway Parkway/Highway 401 southbound On Ramp				no data no data		0.6 0.7	2.5 2.5	25 25	170,518,752 186,813,315	Major Arterial Major Arterial
	Ojibway Parkway/Highway 401 southbound On Ramp	Highway 401 to EC Row Expressway southbound Off Ramp				no data		0.6	2.5	25	187,882,061	Major Arterial
	Highway 401 to EC Row Expressway southbound Off Ramp Malden Road/Highway 401 southbound Off Ramp	Malden Road/Highway 401 southbound Off Ramp Huron Church Road/Highway 401 southbound On Ramp				no data no data		0.6 0.7	2.5 2.5	25 25	197,822,411 196,703,745	Major Arterial Major Arterial
	Huron Church Road/Highway 401 southbound On Ramp Todd Lane/Highway 401 southbound Off Ramp	Todd Lane/Highway 401 southbound Off Ramp Todd Lane/Highway 401 southbound On Ramp				no data no data		0.6 0.7	2.5 2.5	25 25	158,668,372 137,197,143	Major Arterial Major Arterial
	Todd Lane/Highway 401 southbound On Ramp Howard Avenue/Highway 401 southbound Off Ramp	Howard Avenue/Highway 401 southbound Off Ramp				no data		0.6	2.5	25	142,567,589	Major Arterial

	Highway 401 to EC Row Expressway southbound Off Ramp	Malden Road/Highway 401 southbound Off Ramp				no data		0.6	2.5	25	197,822,411	Major Arterial
	Malden Road/Highway 401 southbound Off Ramp	Huron Church Road/Highway 401 southbound On Ramp				no data		0.7	2.5	25	196,703,745	Major Arterial
	Huron Church Road/Highway 401 southbound On Ramp	Todd Lane/Highway 401 southbound Off Ramp				no data		0.6	2.5	25	158,668,372	Major Arterial
	Todd Lane/Highway 401 southbound Off Ramp	Todd Lane/Highway 401 southbound On Ramp				no data		0.7	2.5	25	137,197,143	Major Arterial
	Todd Lane/Highway 401 southbound On Ramp	Howard Avenue/Highway 401 southbound Off Ramp				no data		0.6	2.5	25	142,567,589	Major Arterial
	Howard Avenue/Highway 401 southbound Off Ramp	Highway 3/Highway 401 southbound Off Ramp				no data		0.6	2.5	25	139,508,081	Major Arterial
	Highway 3/Highway 401 southbound Off Ramp	Highway 3/Highway 401 southbound On Ramp				no data		0.7	2.5	25	163,699,560	Major Arterial
	Highway 3/Highway 401 southbound On Ramp	South of Highway 3 merge/split				no data		0.6	2.5	25	152,048,713	Major Arterial
Grand Marais Road	East of connecting ramp West of connecting ramp		1	1.5 1.5	25 25	574,737 592.967	Local Local	1	1.5	25 25	643,174 232,471	Local Local
Malden Road	Chappus Street	Highway 401 South Ramp	1	1.5	25	4,579,686	Local	1	1.5	25	5,940,681	Local
	Highway 401 South Ramp	Highway 401 North Ramp	1	1.5	25	5,148,177	Local	1	1.5	25	3,639,500	Local
	North of Highway 401 North Ramp		1	1.5	25	3,466,710	Local	1	1.5	25	4,098,620	Local
Matchette Street	Chappus Street	EC Row Expressway South Ramp	1	1.5	25	1,173,068	Local	1	1.5	25	1,272,576	Local
	EC Row Expressway South Ramp	EC Row Expressway North Ramp	1	1.5	25	336,411	Local	1	1.5	25	1,407,186	Local
	EC Row Expressway North Ramp	Carmichael	1	1.5	25	665,684	Local	1	1.5	25	426,482	Local

#### TABLE III-D

#### SUMMARY OF ESAL CALCULATIONS - RIGID PAVEMENTS - ALTERNATIVE 2B

Detroit River International Crossing Windsor, Ontario

Pavement Section	LOCATION From	To	LDF	TE	Northbound/W Design Period	estbound ESALs	Class	LDF	TE	Southbound/E Design Period		Class
Huron Church Road	Riverside Drive	University Avenue	0.9	2	(years)	3,003,414	Local	0.9	2	(years)	2,267,626	Local
luron Church Road	University Avenue	Wyandotte Street	0.9	2	25	2,273,977	Local	0.9	2	25	2,267,626 2,797,191	Local
	Wyandotte Street AMB Off Ramp	AMB Off Ramp College Street	0.9	2	25 25	371,922 46,237,229	Local Major Collector	0.9	2 2	25 25	540,775 1,705,458	Local Local
	College Street	Girardot Street	0.8	2	25	11,706,946	Minor Collector	0.9	2	25	51,381,316	Minor Arterial
	Girardot Street Tecumseh Road	Tecumseh Road Dorchester Street	0.8	2	25 25	13,088,483 15,393,542	Minor Collector Minor Collector	0.8	2	25 25	50,850,389 48,718,427	Minor Arterial Major Collecto
	Dorchester Street	Prince Road/Totten Street	0.8	2	25	13,593,342	Minor Collector	0.8	2	25	45,070,741	Major Collecto
	Prince Road/Totten Street Malden Road	Malden Road Industrial Road	0.8 0.8	2	25 25	15,375,948 9,300,337	Minor Collector Local	0.8	2 2	25 25	43,366,525 40,087,258	Major Collecto Major Collecto
	Industrial Road	EC Row Expressway North Ramp Terminal	0.8	2	25	9,300,337	Minor Collector	0.8	2	25	40,658,732	Major Collecto
	EC Row Expressway North Ramp Terminal	EC Row Expressway South Ramp Terminal	0.8	2 2	25	6,849,753	Local	0.8	2	25	36,316,054	Major Collecto
	EC Row Expressway South Ramp Terminal Highway 401 Off Ramp	Highway 401 Off Ramp Spring Garden Road/Labelle Street	0.8 0.8	2	25 25	7,699,909 1,303,925	Local Local	0.8 0.8	2	25 25	26,405,895 1,954,826	Major Collecto Local
	Spring Garden Road/Labelle Street	Lambton Street/Grand Marais Road Ramp Pulford Street	0.8	2	25	1,928,836	Local	0.8	2	25	2,738,677	Local
	Lambton Street/Grand Marais Road Ramp Pulford Street	Todd Lane/Cabana Road	0.8 0.8	2	25 25	2,103,320 2,451,298	Local Local	0.8 0.8	2 2	25 25	717,384 914,155	Local Local
11. ( D )	Todd Lane/Cabana Road	Huron Church Line	0.8	2	25	2,350,950	Local	0.8	2	25	3,538,796	Local
albot Road	Huron Church Line St Clair College	St Clair College Cousineau Drive	0.9 0.8	2 2	25 25	202,126 174,323	Local Local	0.8	2 2	25 25	1,189,454 1,119,464	Local Local
	Cousineau Drive Howard Avenue	Howard Avenue Highway 3 split	0.8	2	25 25	702,188	Local Local	0.9	2	25 25	226,825	Local Local
ibway Parkway	EC Row Expressway	GN Booth Drive	0.8	2	25	4,817,363 3,816,612	Local	0.8	2	25	4,698,514 10,078,277	Minor Collecto
	GN Booth Drive	Sandwich Street	0.8	2	25	3,825,020	Local	0.8	2	25	10,077,909	Minor Collecto
	Sandwich Street North of Prospect Avenue	Prospect Avenue	0.8	2 2	25 25	1,099,952 1,093,523	Local Local	0.8	2	25 25	1,090,292 1,067,942	Local Local
OSSING ROADS												
andotte Street	West of Huron Church Road		1	1.5	25	691,154	Local	1	2	25	889,273	Local
	East of Huron Church Road		1	1.5	25	889,042	Local	1	2	25	2,632,815	Local
iversity Avenue	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	192,347 2,336,177	Local Local	1	2	25 25	232,775 2,532,807	Local Local
verside Drive	West of Huron Church Road		1	1.5	25	486,003	Local	1	2	25	695,175	Local
MB Off Ramp	East of Huron Church Road East of Huron Church Road		1	1.5	25	964,270 no data	Local	1	2	25 25	1,079,951 54,984,811	Local Minor Arteria
MB On Ramp	East of Huron Church Road	Wess have from the	1	2	25	4,334,061	Local				no data	
tricia Street bllege Street	AMB East of Huron Church Road	Wyandotte Street	1	1.5 1.5	25 25	3,073,521 2,441,619	Local Local	1	2	25 25	6,667,526 6,178,769	Local Local
-	West of Huron Church Road		1	1.5	25	282,978	Local	1	2	25	168,147	Local
rardot Street	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	25 25	156,077 619,854	Local Local	1	2 2	25 25	213,377 567,558	Local Local
cumseh Road	East of Huron Church Road		1	1.5	25	1,835,031	Local	1	2	25	7,695,424	Local
rchester Street	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	888,172 237,510	Local Local	1	2	25 25	1,282,265 286,131	Local Local
	West of Huron Church Road		1	1.5	25	448,850	Local	1	2	25	214,211	Local
nce Road/Totten Street	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	25 25	311,330 692,330	Local Local	1	2	25 25	489,502 993,305	Local Local
llden Road	East of Huron Church Road		1	1.5	25	232,719	Local	1	2	25	253,343	Local
lustrial Road	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	8,002,565 776,309	Local Local	1	2 2	25 25	16,509,980 1,436,092	Minor Collecte Local
usulai Koad	West of Huron Church Road		1	1.5	25	2,324,857	Local	1	2	25	8,236,231	Local
Row Expressway North Ramp Te	ermi E-N/S Ramp N-W Ramp		1	2	25	5,716,274 no data	Local	,	2	25	no data 157,118	Local
	S-W Ramp		1	2	25	12,276,704	Minor Collector	1	2	23	no data	Locai
C Row Expressway South Ramp Te	ermi W-N/S Ramp S/N-E Ramp					no data no data		1	2	25 25	1,139,060 13,390,680	Local Minor Collecto
oring Garden Road	West of Huron Church Road		1	1.5	25	320,631	Local	1	2	25	569,038	Local
ibelle Street	East of Huron Church Road		1	1.5	25	536,707	Local	1	2	25	375,408	Local
mbton Street/Grand Marais Road	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	25 25	588,358 592,967	Local Local	1	2	25 25	737,751 398,163	Local Local
lford Street	East of Huron Church Road		1	1.5	25	417,886	Local	1	2	25	289,889	Local
ibana Road	East of Huron Church Road between Huron Church Road and Highway 401 northbound	d Ramps	1	1.5	25 25	1,199,851 786,233	Local Local	1	2	25 25	1,453,123 4,241,419	Local Local
odd Lane	between Highway 401 northbound and southbound Ramps	F*	i	1.5	25	459,538	Local	1	2	25	3,557,183	Local
uron Church Line	West of Highway 401 southbound Ramps West of Huron Church Road	$\sim$	1	1.5 1.5	25 25	1,651,936 1,956,835	Local Local	1	2	25 25	1,855,193 1,945,787	Local Local
Clair College	East of Talbot Road		i	1.5	25	439,914	Local	1	2	25	1,765,143	Local
ousineau Drive	East of Talbot Road West of Talbot Road		1	1.5	25 25	823,446 239,550	Local Local	1	2	25 25	1,013,498 782,943	Local Local
oward Avenue	East of Talbot Road		i	1.5	25	2,034,139	Local	1	2	25	4,029,154	Local
	between Talbot Road and Highway 401 southbound On Ra West of Highway 401 southbound On-Ramp	mp		1.5 1.5	25 25	3,373,932 3,761,568	Local Local	1	2	25 25	3,080,434 6,165,856	Local Local
.C. Row Expressway	East of Huron Church Road		0.8	2	25	21,129,303	Major Collector	0.8	2	25	38,872,371	Major Collecto
	At Malden Road West of Matchette Street		0.8	2	25 25	20,840,008 8,877,795	Major Collector Local	0.8	2	25 25	28,885,180 5,838,068	Major Collecto Local
E	NT II - DI N. d. C. d I. II ' I T. d.											
For consistency, Huron Church R	td/Talbot Rd runs North-South and all crossing roads run East-	West										
CUNVAN 401 D		$\sim$ 111										
IGHWAY 401 Ramps												
ighway 3 merge/split												
ghway 401 northbound Off Ramp ghway 401 northbound On Ramp			1	2	25 25	17,763,332 3,627,312	Minor Collector Local				no data no data	
ghway 401 southbound Off Ramp						no data		1	2	25	3,573,480	Local
ghway 401 southbound On Ramp oward Avenue						no data		1	2	25	16,446,401	Minor Collecto
ghway 401 southbound Off Ramp			1	2	25	no data		1	2	25	834,906	Local
Todd Lane/Cabana Road ghway 401 northbound Off Ramp			1	1.5	25	1,248,804	Local				no data	
ighway 401 northbound On Ramp			1	1.5	25	1,885,405	Local				no data	
ghway 401 southbound Off Ramp ghway 401 southbound On Ramp						no data no data		1	2 2	25 25	4,677,303 637,072	Local Local
Huron Church Road									-			
ghway 401 northbound Off Ramp ghway 401 southbound On Ramp			1	2	25	6,930,905 no data	Local	1	2	25	no data 30,360,347	Major Collecto
Malden Road									-			
ghway 401 northbound On Ramp ghway 401 southbound Off Ramp			1	1.5	25	6,884,017 no data	Local	1	2	25	no data 8,635,955	Local
Row Expressway to Highway 401	1											
ghway 401 southbound Off Ramp bway Parkway Interchange						no data		1	2	25	26,795,424	Major Collecto
ghway 401 northbound Off Ramp			1	2	25	8,532,329	Local				no data	
ghway 401 northbound On Ramp ghway 401 southbound Off Ramp			1	2	25	6,358,614 no data	Local		2	25	no data 512,325	Local
ghway 401 southbound On Ramp						no data no data		1	2	25 25	512,325 8,775,237	Local
C Row Expressway Interchange ghway 401 northbound On Ramp			,	2	25	19,854,252	Minor Collector				no d-t-	
511way 401 normbound On Kamp			1	2	25	19,854,252	winor Conector				no data	
hway 401 Mainline	Souht of Highway 3 merge/split	Highway 3/Highway 401 northbound Off Ramp	0.6	2.5	25	98,354,919	Minor Arterial				no data	
ay <del>4</del> 01 Manufile	Highway 3/Highway 401 northbound Off Ramp	Highway 3/Highway 401 northbound On Ramp	0.6	2.5 2.5	25	98,354,919 87,330,456	Minor Arterial				no data no data	
	Highway 3/Highway 401 northbound On Ramp	Todd Lane/Highway 401 northbound Off Ramp	0.6	2.5	25	84,475,424	Minor Arterial				no data	
	Todd Lane/Highway 401 northbound Off Ramp Todd Lane/Highway 401 northbound On Ramp	Todd Lane/Highway 401 northbound On Ramp Huron Church Road/Highway 401 northbound On Ramp	0.7	2.5 2.5	25 25	69,263,131 77,127,923	Minor Arterial Minor Arterial				no data no data	
	Huron Church Road/Highway 401 northbound On Ramp	Malden Road/Highway 401 northbound On Ramp	0.8	2.5	25	105,736,754	Major Arterial				no data	
	Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp	Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound OnRamp	0.7	2.5 2.5	25 25	100,314,701 106,732,924	Major Arterial Major Arterial				no data no data	
	Ojibway Parkway/Highway 401 northbound OnRamp	EC Row Expressway to Highway 401 northbound On Ramp	0.8	2.5	25	112,836,998	Major Arterial				no data	
	EC Row Expressway to Highway 401 northbound On Ram	p Canadian Plaza	0.8	2.5	25	142,122,712	Major Arterial				no data	
	Canadian Plaza	Ojibway Parkway/Highway 401 southbound Off Ramp				no data		0.6	2	25	136,415,002	Major Arteria

	Canadian Plaza Ojibway Parkway/Highway 401 southbound Off Ramp Ojibway Parkway/Highway 401 southbound On Ramp Highway 401 to EC Row Expressway southbound Off Ramp Malden Road/Highway 401 southbound Off Ramp Todd Lane/Highway 401 southbound Off Ramp Todd Lane/Highway 401 southbound On Ramp Howard Avenue/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp	Ojibway Parkway/Highway 401 southbound Off Ramp Ojibway Parkway/Highway 401 southbound On Ramp Highway 401 to EC Row Expressway southbound Off Ramp Malden Road/Highway 401 southbound Off Ramp Todd Lane/Highway 401 southbound Off Ramp Todd Lane/Highway 401 southbound Off Ramp Howard Avenue/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp Highway 3/Highway 401 southbound Off Ramp South of Highway 301 southbound Off Ramp South of Highway 31 merge/split				no data no data		0.6 0.7 0.6 0.7 0.6 0.7 0.6 0.6 0.6 0.7 0.6	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	25 25 25 25 25 25 25 25 25 25 25 25 25 2	136,415,002 149,450,652 150,305,649 158,257,929 157,362,996 126,333,818 108,821,101 113,358,649 110,816,590 130,758,491 121,638,970	Major Arterial Major Arterial Major Arterial Major Arterial Major Arterial Major Arterial Major Arterial Major Arterial Major Arterial Major Arterial
Malden Road Matchette Street	Chappus Street Highway 401 South Ramp North of Highway 401 North Ramp Chappus Street EC Row Expressway South Ramp EC Row Expressway North Ramp	Highway 401 South Ramp Highway 401 North Ramp EC Row Expressway South Ramp EC Row Expressway North Ramp Carmichael	1 1 1 1 1	1.5 1.5 1.5 1.5 1.5 1.5	25 25 25 25 25 25 25	4,545,108 5,113,599 3,430,329 1,196,214 336,411 684,578	Local Local Local Local Local Local	1 1 1 1 1	2 2 2 2 2 2 2	25 25 25 25 25 25 25	7,920,293 4,855,028 5,467,173 1,776,894 1,960,901 568,643	Local Local Local Local Local Local

#### March 2008

05-1140-003-1

### TABLE III-E

### SUMMARY OF ESAL CALCULATIONS - RIGID PAVEMENTS - ALTERNATIVE 3

Detroit River International Crossing Windsor, Ontario

Pavement Section	LOCATION <u>From</u>	Το	LDF	TE	Northbound/W Design Period		Class	LDF	TE	Southbound/E Design Period	astbound ESALs	Clas
ron Church Road	Riverside Drive	University Avenue	0.9	2	(years) 25	3,077,854	Local	0.9	-	(years) 25	2,240,674	Loca
Ton Church Roau	University Avenue	Wyandotte Street	0.9	2	25	2,298,797	Local	0.9	2	25	2,240,674 2,765,978	Loca
	Wyandotte Street AMB Off Ramp	AMB Off Ramp College Street	0.9	2 2	25 25	357,802 48,314,738	Local Major Collector	0.9	2	25 25	531,350 1,669,621	Loca
	College Street	Girardot Street	0.8	2	25	11,624,061	Minor Collector	0.8	2	25	52,357,898	Minor A
	Girardot Street Tecumseh Road	Tecumseh Road Dorchester Street	0.8 0.8	2 2	25 25	13,086,035 15,321,817	Minor Collector Minor Collector	0.8 0.8	2	25 25	53,338,799 51,089,731	Minor A Minor A
	Dorchester Street	Prince Road/Totten Street	0.8	2	25	13,794,967	Minor Collector	0.8	2	25	47,029,220	Major Co
	Prince Road/Totten Street Maldan Road	Malden Road	0.8	2	25	15,366,113	Minor Collector	0.8	2	25	45,086,556	Major Co Major Co
	Malden Road Industrial Road	Industrial Road EC Row Expressway North Ramp Terminal	0.8	2 2	25 25	9,211,776 9,897,068	Local Local	0.8	2	25 25	41,165,442 41,597,660	Major Co Major Co
	EC Row Expressway North Ramp Terminal	EC Row Expressway South Ramp Terminal	0.8	2	25	6,816,457	Local	0.8	2	25	39,048,204	Major Co
	EC Row Expressway South Ramp Terminal Spring Gdn Rd/Labelle St	Spring Gdn Rd/Labelle St Lambton Street/Grand Marais Road	0.8	2	25 25	7,397,321 5,279,275	Local Local	0.8	2	25 25	29,483,508 2,852,004	Major Co Loc
	Lambton Street/Grand Marais Road	Pulford Street	0.8	2	25	2,696,780	Local	0.8	2	25	2,470,273	Loc
	Pulford Street Todd Lane/Cabana Road	Todd Lane/Cabana Road Huron Church Line	0.8	2	25 25	2,999,285 1,800,509	Local Local	0.8	2	25 25	2,735,616 1,543,435	Lou Lou
t Road	Huron Church Line	St Clair College	0.9	2	25	1,260,298	Local	0.8	2	25	1,365,942	Lo
	St Clair College Cousineau Drive	Cousineau Drive Howard Avenue	0.8	2 2	25 25	1,861,070 1,651,370	Local Local	0.8	2	25 25	4,046,296 4,685,701	Lo. Lo:
	South of Howard Avenue	Howard Avenue	0.9	2	25	4,426,756	Local	0.8	2	25	4,124,981	Lo
ay Parkway	EC Row Expressway	GN Booth Drive	0.8	2	25	2,093,984	Local	0.8	2	25	9,960,405	Lo
	GN Booth Drive Sandwich Street	Sandwich Street Prospect Avenue	0.8	2 2	25 25	2,081,887 1,088,643	Local Local	0.8	2	25 25	9,909,079 1,074,749	Lo Lo
	North of Prospect Avenue	-	0.8	2	25	1,082,258	Local	0.8	2	25	1,052,767	Lo
SING ROADS												
lotte Street	West of Huron Church Road		1	1.5	25	693,224	Local	1	1.5	25	669,025	Lo
rsity Avenue	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	25 25	892,583 193,642	Local Local	1	1.5 1.5	25 25	2,008,801 172,170	Lo Lo
	East of Huron Church Road		1	1.5	25	2,316,614	Local	1	1.5	25	1,937,132	L
ide Drive	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	494,443 966,358	Local Local	1	1.5 1.5	25 25	522,956 799,583	L
Off Ramp	East of Huron Church Road East of Huron Church Road		1	1.5	25	966,358 no data	Local	1	1.5 2	25 25	799,583 57,455,194	Lo Minor
On Ramp	East of Huron Church Road	Wenned attachter	1	1.5	25	3,252,300	Local	-			no data	
a Street e Street	AMB East of Huron Church Road	Wyandotte Street	1	1.5 1.5	25 25	3,100,023 2,296,152	Local Local	1	1.5 1.5	25 25	5,083,323 4,684,466	L L
	West of Huron Church Road		1	1.5	25	287,771	Local	1	1.5	25	128,247	L
ot Street	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	25 25	157,153 567,325	Local Local	1	1.5 1.5	25 25	158,354 352,916	L
seh Road	East of Huron Church Road		1	1.5	25	1,915,853	Local	1	1.5	25	5,278,764	L
ster Street	West of Huron Church Road		1	1.5	25	908,650	Local	1	1.5	25	972,099	L
aici Sutet	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	25 25	177,465 456,470	Local Local	1	1.5 1.5	25 25	115,374 257,750	L
Road/Totten Street	East of Huron Church Road		1	1.5	25	304,157	Local	1	1.5	25	356,179	L
n Road	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	653,717 230,890	Local Local	1	1.5 1.5	25 25	669,254 183,101	L
	West of Huron Church Road		1	1.5	25	7,825,593	Local	1	2	25	16,500,848	Minor
ial Road	East of Huron Church Road West of Huron Church Road		1	1.5 1.5	25 25	783,674 2,217,029	Local Local	1	1.5 2	25 25	1,136,520 7,819,422	L
w Expressway North Ramp Terminal	East of Huron Church Road (E-N/S Off Ramp & S-W On Ram	ıp)	1	1.5	25	4,346,581	Local	1	1.5	25	7,819,422 58,859	L
	West of Huron Church Road (N-W On Ramp)		1	1.5	25	4,657,548	Local				no data	
w Expressway South Ramp Terminal	East of Huron Church Road (S-E On Ramp) West of Huron Church Road (N-E On Ramp & W-N/S Off Ra	mp)	1	1.5	25	no data 9,150,700	Local	1	1.5 1.5	25 25	1,389,261 1,053,091	L
Garden Road/Labelle Street	East of Huron Church Road		1	1.5	25	490,166	Local	1	1.5	25	420,080	L
on Street/Grand Marais Road	West of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	553,594 690,709	Local Local	1	1.5 1.5	25 25	582,444 543,272	L
	West of Huron Church Road		1	1.5	25	522,332	Local	1	1.5	25	715,926	L
d Street Lane/Cabana Road	East of Huron Church Road East of Huron Church Road		1	1.5 1.5	25 25	303,060 1,434,862	Local	1	1.5 1.5	25 25	274,270 1,216,248	L
	West of Huron Church Road		1	1.5	25	1,791,868	Local	1	1.5	25	1,445,151	Lo
h Church Line	West of Huron Church Road		1	1.5	25	1,624,212	Local	1	1.5	25	1,485,323	L
ir College neau Drive	East of Talbot Road East of Talbot Road		1	1.5 1.5	25 25	438,079 1,152,081	Local Local	1	1.5 1.5	25 25	1,284,110 764,228	ь ь
	West of Talbot Road		1	1.5	25	1,667,119	Local	1	1.5	25	1,388,966	L
rd Avenue	East of Talbot Road between Talbot Road and Highway 401 southbound On Ramp			1.5 1.5	25 25	1,906,879 2,790,801	Local Local	1	1.5 1.5	25 25	2,735,766 2,283,670	L
	West of Highway 401 southbound On Ramp	·	1	1.5	25	3,020,136	Local	1	1.5	25	4,581,230	Lo
Row Expressway	East of Huron Church Road At Malden Road		0.8	1.5 1.5	25 25	15,937,192 15,376,513	Minor Collector Minor Collector	0.8	2 2	25 25	33,144,634 29,477,730	Major Major
	West of Matchette Street		0.8	1.5	25	5,539,329	Local	0.8	2	25	6,025,739	Lo
r consistency, Huron Church Rd/Talbot R	td runs North-South and all crossing roads run East-West											
IWAY 401 Ramps			$\sim$	>								
way 3 merge/split												
way 401 northbound Off Ramp			1	2	25	15,223,164	Minor Collector				no data	
way 401 northbound On Ramp		$\langle \langle \rangle \langle \rangle \langle \rangle \rangle$	1	2	25	3,316,671	Local				no data	
way 401 southbound Off Ramp way 401 southbound On Ramp						no data no data		1	2	25 25	3,507,406 14,444,993	Lo Minor (
Clair College							<b>.</b> .					
way 401 northbound Off Ramp way 401 northbound On Ramp			1	1.5 1.5	25 25	801,352 517,399	Local Local				no data no data	
vay 401 southbound Off Ramp			1			no data	2000	1	1.5	25	3,213,902	L
vay 401 southbound On Ramp ron Church Road						no data		1	1.5	25	366,203	L
ron Church Road vay 401 northbound Off Ramp		//	1	2	25	5,765,139	Local				no data	
ay 401 southbound On Ramp						no data		1	2	25	26,643,826	Major
n Road Interchange ay 401 On Ramp			1	1.5	25	8,081,700	Local				no data	
ay 401 Off Ramp			-	-		no data		1	1.5	25	7,267,134	L
w Expressway Interchange yay 401 southbound Off Ramp						no data		1	1.5	25	20,210,842	Major
ay Parkway Interchange									1.3	20		major
vay 401 northbound Off Ramp			1	2	25	9,035,576	Local				no data	
way 401 northbound On Ramp way 401 southbound Off Ramp			1	2	25	6,557,314 no data	Local	1	2	25	no data 1,680,972	Le
vay 401 southbound On Ramp						no data		1	2	25	10,548,859	Minor
w Expressway Interchange vay 401 northbound On Ramp			1	2	25	18,573,804	Minor Collector				no data	
- · · · · · · · · · · · · · · · · · · ·			-			.,						
ay 401 Mainline	South of Highway 3 merge/split	Highway 3/Highway 401 northbound Off Ramp	0.6	2.5	25	96,136,699	Minor Arterial				no data	
-,	Highway 3/Highway 401 northbound Off Ramp	Highway 3/Highway 401 northbound On Ramp	0.7	2.5	25	97,214,232	Minor Arterial				no data no data	
	Highway 3/Highway 401 northbound On Ramp St. Clair College/Highway 401 northbound Off Ramp	St. Clair College/Highway 401 northbound Off Ramp St. Clair College/Highway 401 northbound On Ramp	0.6	2.5 2.5	25 25	96,098,132 85,760,495	Minor Arterial Minor Arterial				no data no data	
	St. Clair College/Highway 401 northbound On Ramp	St. Clair College/Fighway 401 northbound On Ramp Huron Church Road/Highway 401 northbound Off Ramp	0.7	2.5	25 25	85,760,495 78,044,023	Minor Arterial Minor Arterial				no data no data	
	Huron Church Road/Highway 401 northbound Off Ramp	Malden Road/Highway 401 northbound On Ramp	0.8	2.5	25	109,412,212	Major Arterial				no data	
	Malden Road/Highway 401 northbound On Ramp Ojibway Parkway/Highway 401 northbound Off Ramp	Ojibway Parkway/Highway 401 northbound Off Ramp Ojibway Parkway/Highway 401 northbound OnRamp	0.7	2.5 2.5	25 25	104,907,134 111,714,229	Major Arterial Major Arterial				no data no data	
	Ojibway Parkway/Highway 401 northbound OnRamp	EC Row Expressway to Highway 401 northbound On Ramp	0.8	2.5	25	117,990,244	Major Arterial				no data	
	EC Row Expressway to Highway 401 northbound On Ramp	Canadian Plaza	0.8	2.5	25	143,175,515	Major Arterial				no data	
	Canadian Plaza	Ojibway Parkway/Highway 401 southbound Off Ramp				no data		0.6	2.5	25	171,676,321	Major
	Ojibway Parkway/Highway 401 southbound Off Ramp	Ojibway Parkway/Highway 401 southbound On Ramp				no data		0.7	2.5	25	188,065,906	Major
	Ojibway Parkway/Highway 401 southbound On Ramp Highway 401 to EC Row Expressway southbound Off Ramp	Highway 401 to EC Row Expressway southbound Off Ramp Malden Road/Highway 401 southbound Off Ramp				no data no data		0.6	2.5 2.5	25 25	188,987,639 199,337,006	Major Major
	Malden Road/Highway 401 southbound Off Ramp	Huron Church Road/Highway 401 southbound On Ramp				no data		0.7	2.5	25	195,998,031	Major
	Huron Church Road/Highway 401 southbound On Ramp St Clair College/Highway 401 southbound Off Ramp	St Clair College/Highway 401 southbound Off Ramp St Clair College/Highway 401 southbound On Ramp				no data no data		0.6 0.6	2.5 2.5	25 25	158,135,477 139,974,536	Major Major
	St Clair College/Highway 401 southbound Off Ramp St Clair College/Highway 401 southbound On Ramp	Highway 3/Highway 401 southbound Off Ramp				no data no data		0.6	2.5	25	139,974,536 148,627,621	Major Major
	Highway 3/Highway 401 southbound Off Ramp	Highway 3/Highway 401 southbound On Ramp				no data		0.7	2.5	25	161,672,664	Major
	Highway 3/Highway 401 southbound On Ramp	South of Highway 3 merge/split				no data		0.6	2.5	25	148,857,660	Major

Malden Road	Chappus Street	Highway 401 South Ramp	1	1.5	25	4,695,316	Local	1	1.5	25	5,848,671	Local
	Highway 401 South Ramp	Highway 401 North Ramp	1	1.5	25	5,287,141	Local	1	1.5	25	3,524,808	Local
	North of Highway 401 North Ramp		1	1.5	25	3,525,754	Local	1	1.5	25	3,988,349	Local
Matchette Street	Chappus Street	EC Row Expressway South Ramp	1	1.5	25	1,230,775	Local	1	1.5	25	1,155,560	Local
	EC Row Expressway South Ramp	EC Row Expressway North Ramp	1	1.5	25	389,776	Local	1	1.5	25	1,382,397	Local
	EC Row Expressway North Ramp	Carmichael	1	1.5	25	886,298	Local	1	1.5	25	505,078	Local
Montgomery Drive	Surrey Drive	Talbot Road	1	1.5	25	15,770	Local	1	1.5	25	72,784	Local
Surrey Drive	Montgomery Drive	Talbot Road	1	1.5	25	11,646	Local	1	1.5	25	58,847	Local
Grosvenor Road	Montgomery Drive	Talbot Road	1	1.5	25	20,745	Local	1	1.5	25	61,111	Local

Prepared By: MEB Reviewed By: PRB

#### March 2008

05-1140-003-1

TABLE III-F

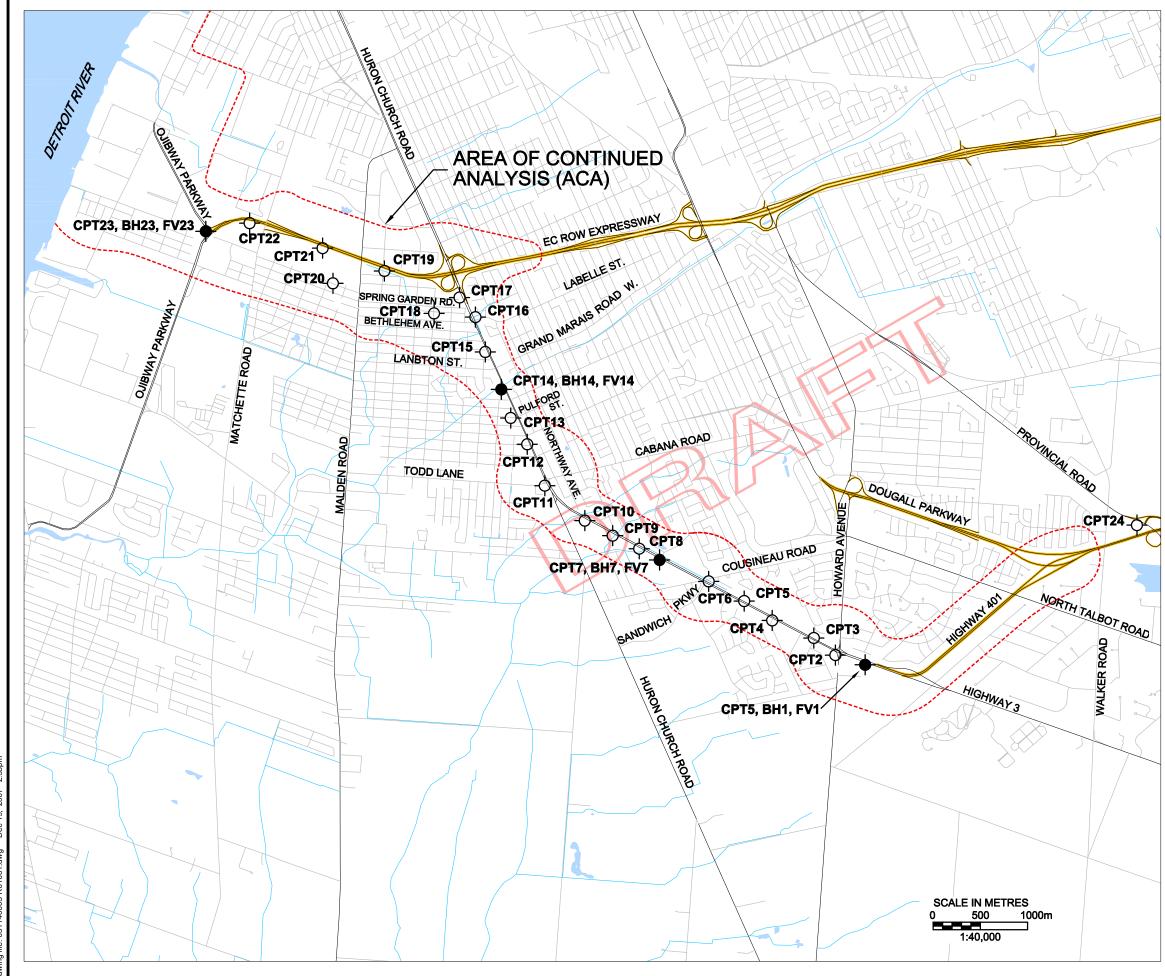
SUMMARY OF ESAL CALCULATIONS - RIGID PAVEMENTS - PARKWAY ALTERNATIVE

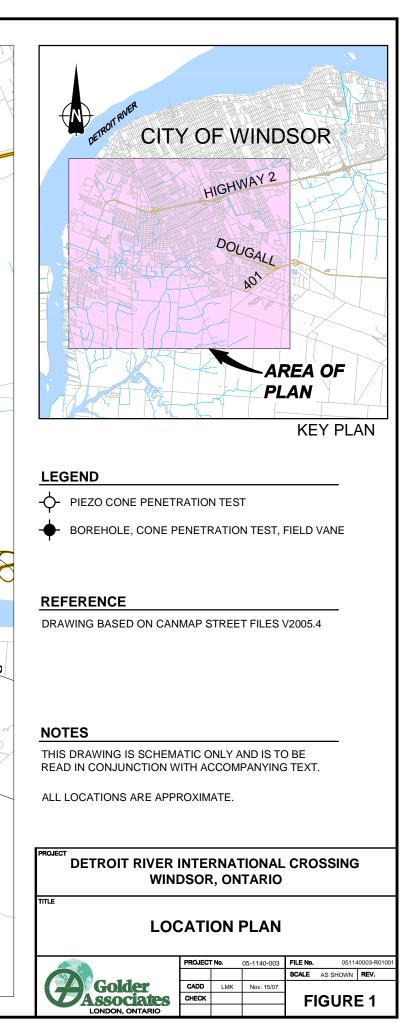
Detroit River International Crossing Windsor, Ontario

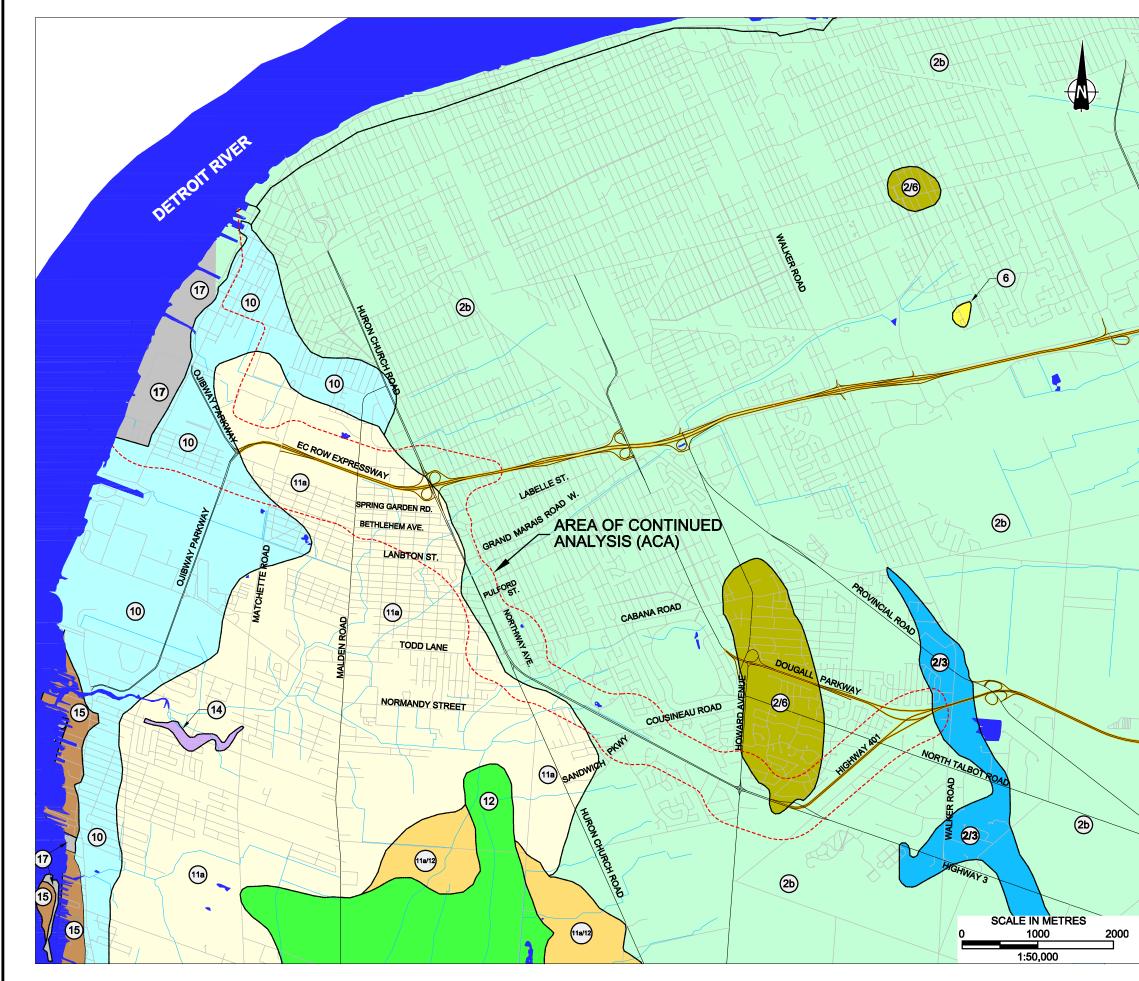
Pavement Section	LOCATION From	<u>To</u>	LDF	TE	Northbound/We Design Period (years)	ESALs	Class	LDF	TE	Southbound/E Design Period (years)		Class
Huron Church Road	Riverside Drive University Avenue	University Avenue Wyandotte Street	0.9	2 2	25 25	3,077,400 2,048,765	Local Local	0.9 0.9	2	25 25	2,230,914 2,757,478	Local Local
	Wyandotte Street AMB Off Ramp	AMB Off Ramp College Street	0.9	2	25 25	364,841 48,879,305	Local Major Collector	0.9	2	25 25	538,754 1,660,578	Local
	College Street	Girardot Street	0.8	2	25	12,121,728	Minor Collector	0.8	2	25	53,231,477	Minor Arterial
	Girardot Street Tecumseh Road	Tecumseh Road Dorchester Street	0.8 0.8	2 2	25 25	13,512,891 15,758,333	Minor Collector Minor Collector	0.8 0.8	2 2	25 25	51,973,153 49,725,238	Minor Arterial Major Collector
	Dorchester Street Prince Road/Totten Street	Prince Road/Totten Street Malden Road	0.8	2 2	25 25	13,910,123 15,647,014	Minor Collector Minor Collector	0.8 0.8	2 2	25 25	45,600,590 45,073,767	Major Collector Major Collector
	Malden Road Industrial Road	Industrial Road E.C. Row Expressway North Ramp Terminal	0.8	2 2	25 25	9,110,936 10,321,304	Local Minor Collector	0.8	2 2	25 25	42,326,986 42,761,724	Major Collector Major Collector
	E.C. Row Expressway North Ramp Terminal South of E.C. Row Expressway South Ramp Terminal	E.C. Row Expressway South Ramp Terminal	0.8	2 2	25 25	6,463,195 9,125,202	Local Local	0.8	2	25 25	37,941,684 28,384,887	Major Collector Major Collector
uth Service Road	North of Bethlehem Avenue		0.8	2	25	9,125,202	Local	0.8	2	25	26,828,601	Major Collector
orth Service Road	Bethlehem Avenue North of Labelle Street	Grand Marais Road	0.8	2	25	7,630,972	Local	0.9	2	25	2,366,010	Local
uron Church Road	Labelle Street Grand Marais Road	Grand Marais Road Ramp Pulford Street	0.8	2 2	25 25	4,226,745 150,056	Local Local	0.9	2	25	305,232	Local
	Pulford Street Todd Lane/Cabana Road	Todd Lane/Cabana Road Huron Church Line	0.9	2 2	25 25	216,967 2.882.568	Local	0.9	2	25 25	442,345 1,404,675	Local Local
albot Road	Huron Church Line	St Clair College	0.8	2	25	1,461,523	Local	0.8	2	25	992,698	Local
	St Clair College Cousineau Drive	Cousineau Drive Howard Avenue	0.8	2 2	25 25	1,214,215 1,868,413	Local Local	0.8 0.9	2 2	25 25	4,280,010 2,417,566	Local Local
	Howard Avenue South of Laurier Extension	Laurier Extension	0.8	2	25 25	3,759,688 3,908,804	Local	0.8	2 2	25 25	3,585,852 3,752,400	Local Local
jibway Parkway	E.C. Row Expressway GN Booth Drive	GN Booth Drive Sandwich Street	0.8	2 2	25 25	3,818,692 3,827,016	Local Local	0.8 0.8	2 2	25 25	10,057,279 10,102,168	Minor Collector Minor Collector
	Sandwich Street North of Prospect Avenue	Prospect Avenue	0.8 0.8	2 2	25 25	1,101,865 1,095,414	Local Local	0.8 0.8	2 2	25 25	1,098,205 1,075,855	Local Local
'yandotte Street	West of Huron Church Road East of Huron Church Road		0.9	1.5 1.5	25 25	624,808 620,837	Local	0.9	1.5	25 25	600,270 1,802,502	Local Local
niversity Avenue	West of Huron Church Road		0.9	1.5	25	173,565	Local	0.9	1.5	25	156,605	Local
iverside Drive	East of Huron Church Road West of Huron Church Road		0.9	1.5 1.5	25 25	2,078,982 438,597	Local	0.9 0.9	1.5 1.5	25 25	1,552,833 464,825	Local
IB Off Ramp	East of Huron Church Road East of Huron Church Road		0.9	1.5	25	868,268	Local	0.9 0.8	1.5 1.5	25 25	719,257 41,871,610	Local Major Collector
IB On Ramp ricia Street	East of Huron Church Road AMB	Wyandotte Street	0.9	1.5 1.5	25 25	2,925,173 2,796,716	Local Local	0.9	1.5	25	4.591.897	Local
lege Street	East of Huron Church Road West of Huron Church Road		0.9	1.5	25	2,060,983 261.091	Local	0.9	1.5	25	4,391,897 4,115,871 120,704	Local
ardot Street	East of Huron Church Road		0.9	1.5	25 25	142,064	Local	0.9	1.5	25 25	142,119	Local Local
rumseh Road	West of Huron Church Road East of Huron Church Road		0.9	1.5 1.5	25 25	510,609 1,716,678	Local Local	0.9 0.9	1.5 1.5	25 25	312,712 4,887,516	Local Local
chester Street	West of Huron Church Road East of Huron Church Road		0.9	1.5 1.5	25 25	812,683 212,989	Local Local	0.9 0.9	1.5 1.5	25 25	886,788 192,128	Local Local
ce Road/Totten Street	West of Huron Church Road East of Huron Church Road		0.9	1.5	25 25 25	324,043 274,674	Local	0.9	1.5	25 25 25	126,375 333,164	Local
	West of Huron Church Road		0.9	1.5	25	635,737	Local	0.9	1.5	25	683,173	Local
den Road	East of Huron Church Road West of Huron Church Road		0.9	1.5 1.5	25 25	207,234 6,694,866	Local Local	0.9	1.5 1.5	25 25	169,921 12,978,999	Local Minor Collector
istrial Road	East of Huron Church Road West of Huron Church Road		0.9	1.5 1.5	25 25	683,355 2,105,304	Local Local	0.9 0.9	1.5 1.5	25 25	974,059 5,278,726	Local Local
Row Expressway North Ramp Terminal	East of Huron Church Road West of Huron Church Road		0.8	1.5 1.5	25 25	3,384,852 2,019,444	Local Local	0.9	1.5	25	202,285	Local
Row Expressway South Ramp Terminal	East of Huron Church Road West of Huron Church Road		0.8	1.5	25	8.049.043	Local	0.8	1.5 1.5	25 25	1,141,295	Local Local
elle Street/Bethlehem Avenue	East of North Service Road Between North and South Service Road		0.9	1.5 1.5	25 25	390,654 174,853	Local Local	0.9 0.9	1.5 1.5	25 25	304,484 450,703	Local Local
nd Marais Road/Lambton Street	West of South Service Road East of Huron Church Road West of Huron Church Road		0.9 0.9 0.9	1.5 1.5 1.5	25 25 25	230,704 564,330 420,333	Local Local	0.9 0.9 0.9	1.5 1.5 1.5	25 25 25	450,212 453,362 259,284	Local Local Local
lford Street dd Lane/Cabana Road	East of Huron Church Road East of Huron Church Road		0.9	1.5 1.5	25 25	332,327 1,075,417	Local Local	0.9 0.8	1.5 1.5	25 25	243,325 865,161	Local Local
	Between Huron Church Road and Highway 401 Off Ramp West of Highway 401 Off Ramp		0.8 0.8	1.5 1.5	25 25	1,118,866 1,350,769	Local Local	0.8 0.8	1.5 1.5	25 25	1,723,579 1,346,465	Local Local
ron Church Line Clair College	West of Huron Church Road East of Talbot Road		0.8 0.9	1.5 1.5	25 25	1,174,921 403,887	Local Local	0.9 0.8	1.5 1.5	25 25	1,411,207 1,059,258	Local Local
usineau Drive	East of Talbot Road West of Talbot Road		0.9 0.8	1.5 1.5	25 25	778,882 884,855	Local Local	0.9	1.5 1.5	25 25	700,261 237,841	Local Local
ward Avenue	East of Talbot Road West of Talbot Road		0,8 0.8	1.5 1.5	25 25	1,609,143 1,784,364	Local Local	0.8	1.5 1.5	25 25	1,928,198 2,292,015	Local Local
rier Extension	West of Talbot Road/Highway 3	$\sim$	0.9	1.5	25	1,934,059	Local	0.9	1.5	25	2,100,322	Local
Row Expressway	West of Ojibway Parkway West of Broadway Street		0.8 0.8	1.5 1.5	25 25	7,032,005 4,376,646	Local	0.8	1.5	25 25	7,622,219 7,382,092	Local
	East of Huron Church Road At Malden Road		0.8 0.8	1.5 1.5	25 25	15,831,997 15,648,904	Minor Collector Minor Collector	0.8 0.8	1.5 1.5	25 25	28,851,437 22,176,669	Major Collector Major Collector
Booth Drive	West of Matchette Road West of Ojibway Parkway		0.8	1.5 1.5	25 25	7,246,916 84,428	Local Local	0.8 0.9	1.5 1.5	25 25	4,880,017 94,454	Local Local
ndwich Street ospect Avenue	West of Ojibway Parkway West of Ojibway Parkway		0.9 0.9	1.5 1.5	25 25	1,894,399 82,004	Local Local	0.9 0.9	1.5 1.5	25 25	1,211,248 57,260	Local Local
IGHWAY 401 Ramps	1	VAV										
ighway 3 merge/split ighway 401 Northbound Off Ramp			0.8	2	25	16,809,375	Minor Collector					
zhway 401 Northbound On Ramp zhway 401 Southbound Off Ramp			0.8	2	25	2,499,973	Local	0.8	2	25	2,525,443	Local
hway 401 Southbound On Ramp Howard Avenue								0.9	2	25	7,698,500	Local
hway 401 Northbound On Ramp hway 401 Southbound On Ramp			0.9	2	25	240,624	Local	0.9	2	25	6,023,709	Local
hway 401 Southbound Off Ramp St. Clair College thway 401 Northbound Off Ramp			0.9	2	25	544,551	Local	0.7	-	20	-,020,107	Loodii
hway 401 Southbound Off Ramp			0.9	2	25	244,551	Local	0.9	2	25	1,147,771	Local
hway 401 Southbound On Ramp Fodd Lane/Cabana Road								0.9	2	25	212,116	Local
away 401 Northbound On Ramp away 401 Southbound Off Ramp			0.8	2	25	2,144,618	Local	0.8	2	25	1,421,787	Local
hway 401 Southbound On Ramp Juron Church Road								0.9	2	25	641,106	Local
1way 401 Northbound Off Ramp 1way 401 Southbound On Ramp			0.8	2	25	4,795,039	Local	0.8	2	25	25,506,592	Major Collector
Malden Road								0.8	2	23	23,300,592	major collector
hway 401 Northbound On Ramp hway 401 Southbound Off Ramp												
hway 401 to E.C. Row Expressway hway 401 Southbound Off Ramp								0.8	2	25	20,776,275	Major Collector
bway Parkway Interchange hway 401 Northbound Off Ramp			0.9	2	25	5,195,387	Local					
hway 401 Northbound On Ramp hway 401 Southbound Off Ramp			0.9	2	25	11,560,147	Minor Collector	0.9	2	25	3,779,532	Local
hway 401 Southbound On Ramp								0.9	2	25	7,579,779	Local
. Row Expressway to Highway 401 hway 401 Northbound On Ramp			0.9	2	25	17,050,696	Minor Collector					
hway 401 Mainline	South of Highway 3 merge/split	Highway 3/Highway 401 Northbound Off Ramp	0.8	2.5	25	132,440,945	Major Arterial					
	Highway 3/Highway 401 Northbound Off Ramp Highway 3/Highway 401 Northbound On Ramp	Highway 3/Highway 401 Northbound On Ramp Howard Avenue Northbound On Ramp	0.8 0.8	2.5 2.5	25 25	80,696,299 106,125,521	Minor Arterial Major Arterial					
	Howard Avenue Northbound On Ramp St. Clair College/Highway 401 Northbound Off Ramp	St. Clair College/Highway 401 Northbound Off Ramp Pulford Street/Highway 401 Northbound On Ramp	0.8	2.5 2.5	25 25	109,195,695 80,268,051	Major Arterial Minor Arterial					
	Pulford Street/Highway 401 Northbound On Ramp Huron Church Road/Highway 401 Northbound Off Ramp	Huron Church Road/Highway 401 Northbound Off Ramp Ojibway Parkway/Highway 401 Northbound Off Ramp	0.8	2.5 2.5 2.5	25 25 25	112,467,203 96,249,254	Major Arterial Minor Arterial					
	Ojibway Parkway/Highway 401 Northbound Off Ramp Ojibway Parkway/Highway 401 Northbound On Ramp	Ojibway Parkway/Highway 401 Northbound On Ramp E.C. Row Expressway to Highway 401 Northbound On Ramp	0.8 0.9 0.8	2.5 2.5	25 25 25	96,249,254 111,187,902 113,121,901	Major Arterial Major Arterial					
	E.C. Row Expressway to Highway 401 Northbound On Ramp Canadian Plaza	Canadian Plaza Ojibway Parkway/Highway 401 Southbound Off Ramp	0.8	2.5	25	142,143,615	Major Arterial	0.8	2.5	25	225,276,134	Freeway
	Ojibway Parkway/Highway 401 Southbound Off Ramp Ojibway Parkway/Highway 401 Southbound On Ramp	Ojibway Parkway/Highway 401 Southbound On Ramp Ojibway Parkway/Highway 401 Southbound On Ramp Highway 401 to E.C. Row Expressway Southbound Off Ramp						0.8	2.5 2.5 2.5	25 25 25	225,276,134 198,199,485 215,589,233	Major Arterial Freeway
	Highway 401 to E.C. Row Expressway Southbound Off Ramp Huron Church Road/Highway 401 Southbound On Ramp	Huron Church Road/Highway 401 Southbound On Ramp Pulford Street/Highway 401 Southbound Off Ramp						0.8	2.5	25 25	199,445,995 212,768,119	Major Arterial Freeway
	Pulford Street/Highway 401 Southbound Off Ramp	Todd Lane/Highway 401 Southbound Off Ramp						0.8	2.5	25	155,074,837	Major Arterial
	Todd Lane/Highway 401 Southbound Off Ramp	St. Clair College/Highway 401 Southbound Off Ramp						0.8	2.5	25	155,589,284	Major Arterial

	Pulford Street/Highway 401 Southbound Off Ramp	Todd Lane/Highway 401 Southbound Off Ramp						0.8	2.5	25	155,074,837	Major Arterial	
	Todd Lane/Highway 401 Southbound Off Ramp	St. Clair College/Highway 401 Southbound Off Ramp						0.8	2.5	25	155,589,284	Major Arterial	
	St. Clair College/Highway 401 Southbound Off Ramp	St. Clair College/Highway 401 Southbound On Ramp						0.8	2.5	25	148,112,702	Major Arterial	
	St. Clair College/Highway 401 Southbound On Ramp	Howard Avenue Southbound On Ramp						0.8	2.5	25	198,640,605	Major Arterial	
	Howard Avenue Southbound On Ramp	Highway 3/Highway 401 Southbound Off Ramp						0.8	2.5	25	223,904,817	Freeway	
	Highway 3/Highway 401 Southbound Off Ramp	Highway 3/Highway 401 Southbound On Ramp						0.8	2.5	25	164,167,857	Major Arterial	
	Highway 3/Highway 401 Southbound On Ramp	South of Highway 3 merge/split						0.8	2.5	25	205,927,275	Freeway	
Malden Road	Chappus Street	Highway 401 South Ramp	0.8	1.5	25	3,841,441	Local	0.8	1.5	25	5,074,259	Local	
	Highway 401 South Ramp	Highway 401 North Ramp	0.8	1.5	25	4,301,764	Local	0.8	1.5	25	3,192,811	Local	
	North of Highway 401 North Ramp		0.9	1.5	25	3,308,144	Local	0.8	1.5	25	3,568,037	Local	
Matchette Road	Chappus Street	E.C. Row Expressway South Ramp	0.8	1.5	25	1,011,564	Local	0.8	1.5	25	1,045,777	Local	
	E.C. Row Expressway South Ramp	E.C. Row Expressway North Ramp	0.9	1.5	25	325,783	Local	0.8	1.5	25	1,150,737	Local	
	E.C. Row Expressway North Ramp	Carmichael Street	0.9	1.5	25	658,960	Local	0.9	1.5	25	401,945	Local	
Highway 3 merge/split Highway 401 Northbound Off Ramp (to Highway 3) Highway 401 Northbound Off Ramp ( to Laurier split)			0.8 0.9	1.5 1.5	25 25	7,717,110 5,501,166	Local Local						

Prepared By: MEB Reviewed By: PRB







## LEGEND

QUATERNARY GEOLOGY:

2b	Clayey silt till.
2/3	Area of till (2) and glaciofluvial gravel or gravelly sand (3).
6	Glaciolacustrine: medium sand.
2/6	Area of till (2) with a thin and dicontinuous cover of glaciolacustrine medium sand (6).
10	Lacustrine (Lake Rouge): gravel, gravelly sand.
(11a)	Lacustrine sand. a) Lake Rouge: medium sand.
(11a/12)	Lacustrine (Lake Rouge): area of medium sand on the knolls and silt in the depressions.
12	Lacustrine (Lake Rouge): silt, clay. May include some glaciolacustrine silt-clay (8).
(14)	Unsubdivided modern alluvium: silty loam, some organic matter.
(15)	Bogs, marshes and swamps: peat, muck, marl, loam.
17	Fill, concrete, other cultural features.

## REFERENCE

DRAWING BASED ON CANMAP STREET FILES V2005.4 QUATERNARY GEOLOGY: Ontario Division of Mines (1972) "Quaternary Geology of the Windsor-Essex Area, Western Part", Map 749, Geol. Ser., Scale 1:50,000.

## NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT. ALL LOCATIONS ARE APPROXIMATE.

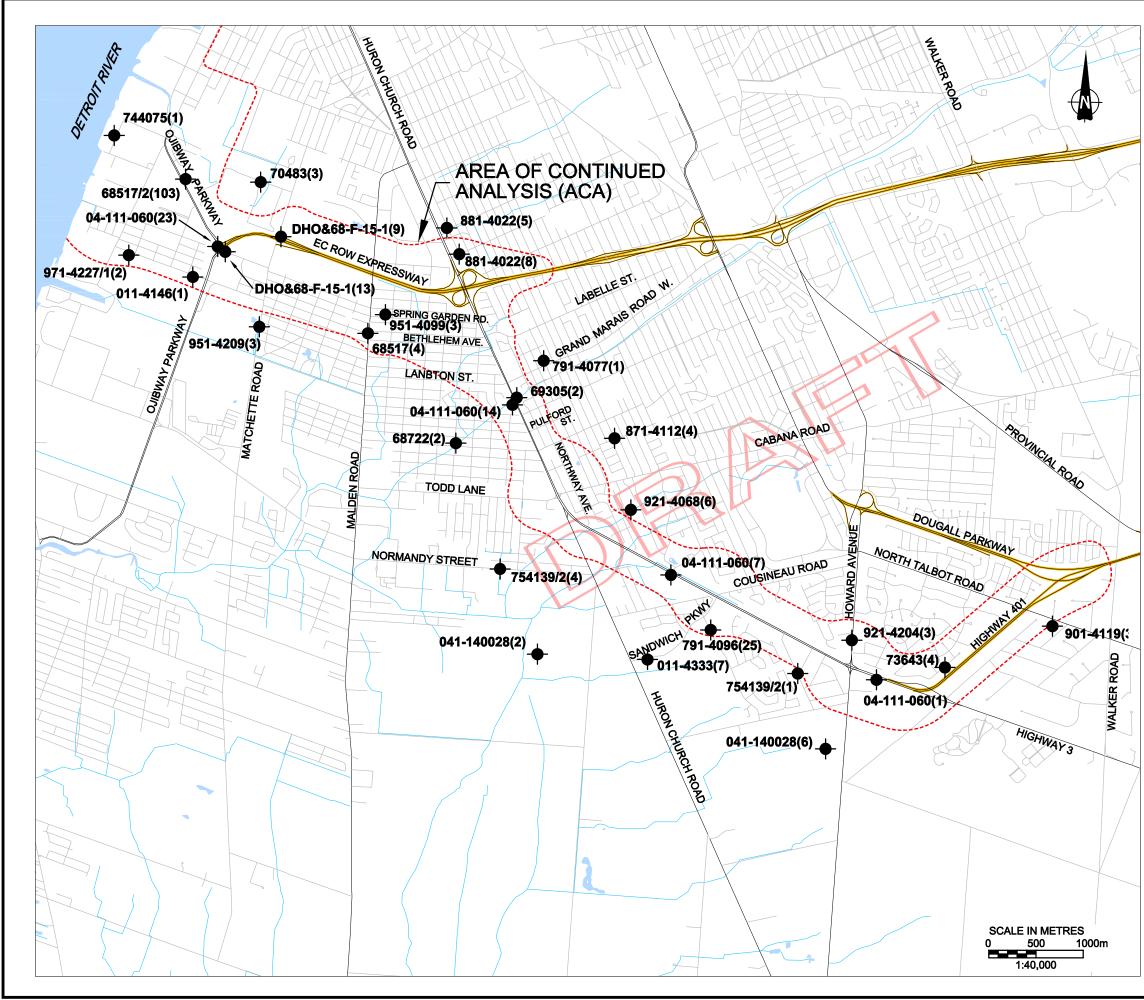
DETROIT RIVER INTERNATIONAL CROSSING WINDSOR, ONTARIO

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# QUATERNARY GEOLOGY



PROJECT	۲No.	05-1140-003	FILE No.	05114	0003-R01002
			SCALE	AS SHOWN	REV.
CADD	LMK	Nov. 15/07			
CHECK			FI	GURE	= 2
			•••	00111	



## LEGEND

- BOREHOLE

## REFERENCE

DRAWING BASED ON CANMAP STREET FILES V2005.4

## NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT. ALL LOCATIONS ARE APPROXIMATE.

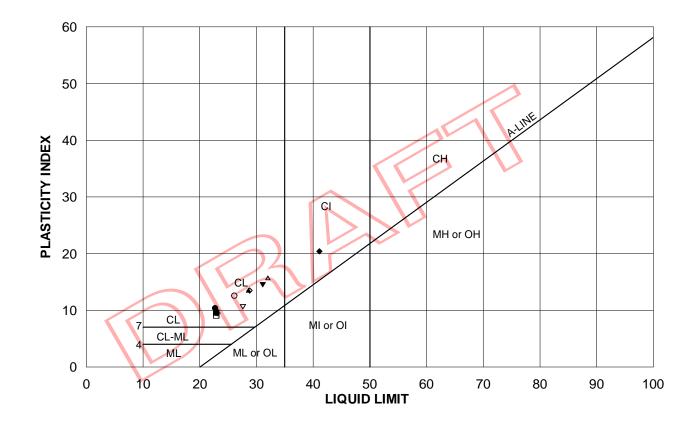
ROJECT DETROIT RIVER INTERNATIONAL CROSSING WINDSOR, ONTARIO

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# SUBSURFACE DATABASE

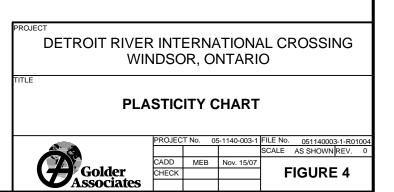


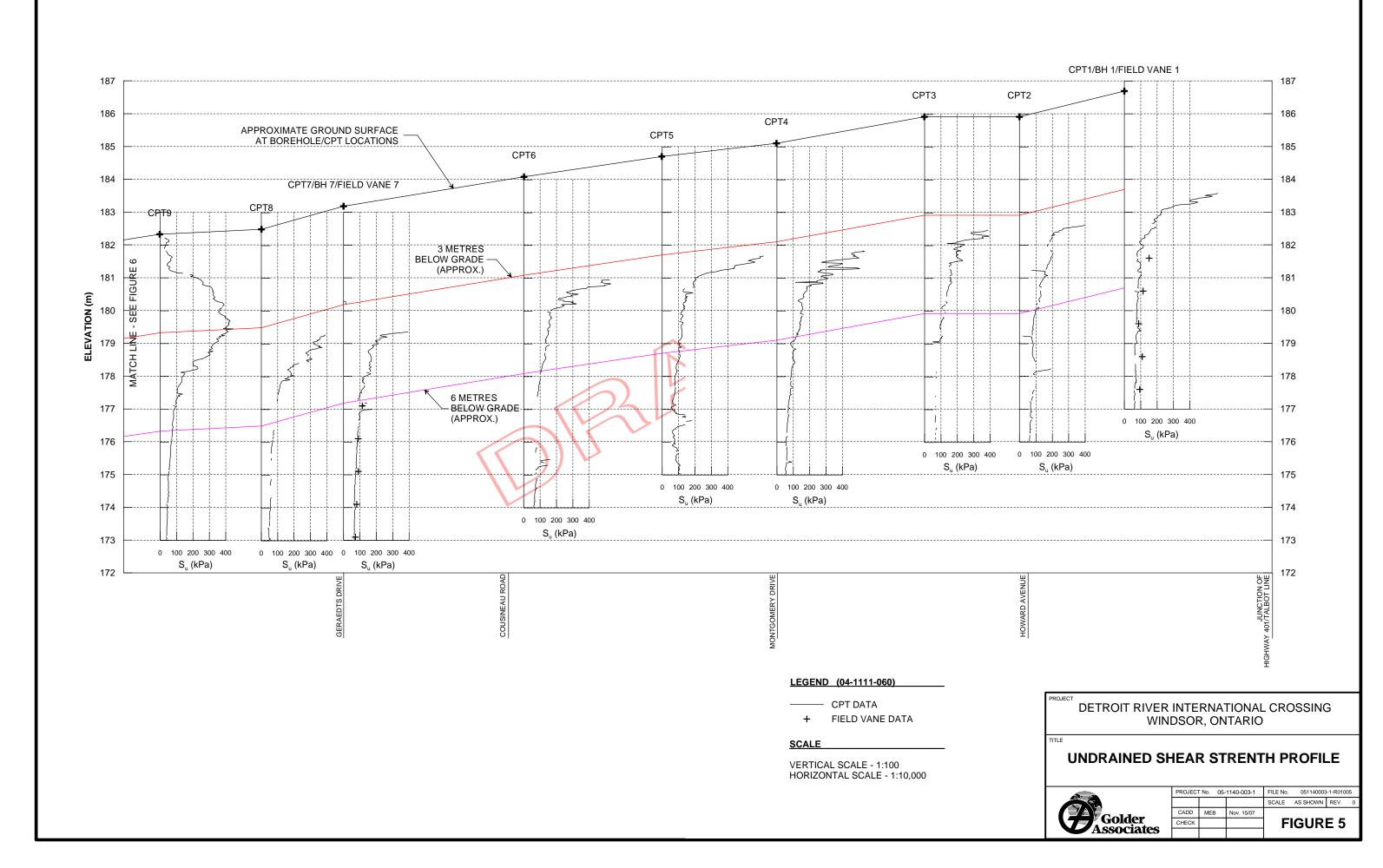
PROJECT	No.	05-1140-003	FILE No.	05114	0003-R01003
			SCALE	AS SHOWN	REV.
CADD	LMK	Nov. 15/07			
CHECK			FI	GURE	= 3

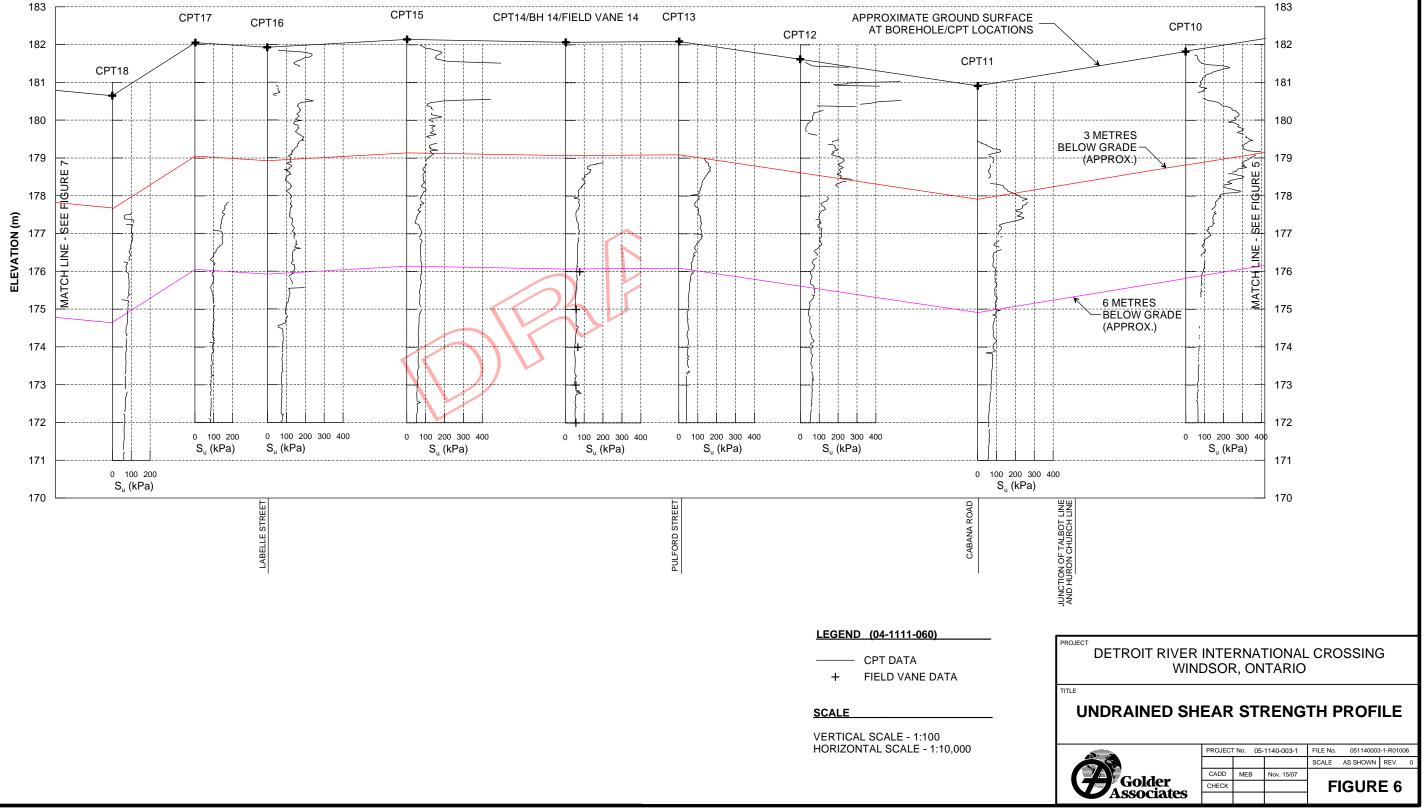


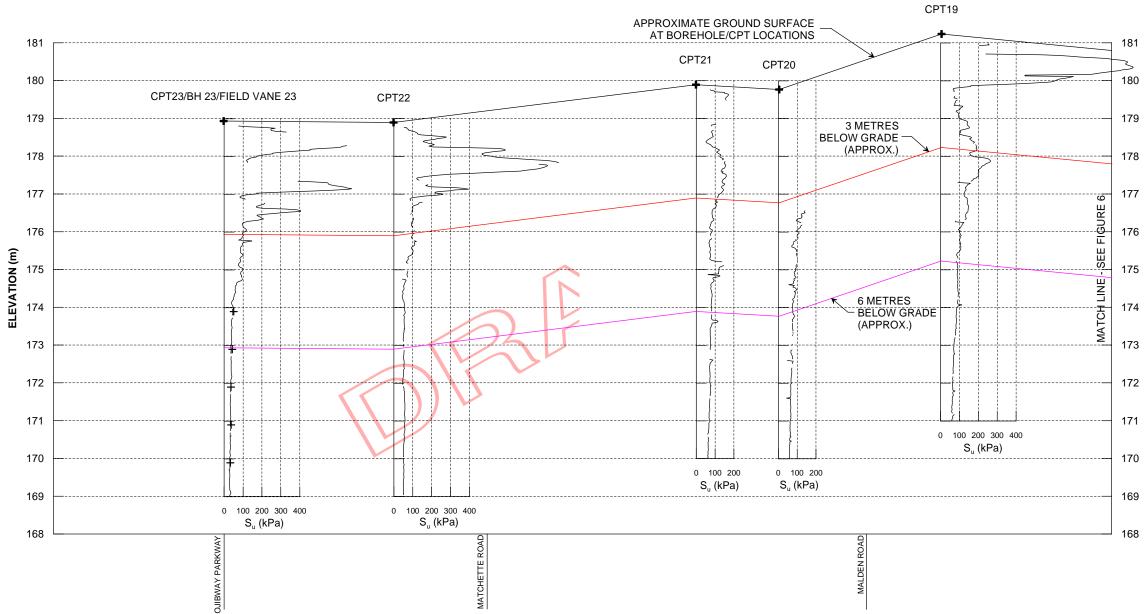
#### LEGEND (04-1111-060)

- O Borehole 1, Sample 5
- Borehole 1, Sample 7
- □ Borehole 7, Sample 5
- Borehole 7, Sample 7
- Borehole 7, Sample 9
- Borehole 14, Sample 4
- Borehole 14, Sample 6
- Borehole 14, Sample 9
- Borehole 23, Sample 4
- Borehole 23, Sample 7
- + Borehole 23, Sample 9









LEGEND (04-1111-060)

----- CPT DATA

+ FIELD VANE DATA

#### SCALE

VERTICAL SCALE - 1:100 HORIZONTAL SCALE - 1:10,000

**PROJECT** DETROIT RIVER INTERNATIONAL CROSSING WINDSOR, ONTARIO TITLE UNDRAINED SHEAR STRENGTH PROFILE PROJECT No. 05-1140-003-1 FILE No. 051140003-1-R01007 Golder SCALE AS SHOWN REV. 0 CADD MEB Nov. 15/07 CHECK **FIGURE 7** 

