



LAUZON PARKWAY IMPROVEMENTS

Class Environmental Assessment Study

ENVIRONMENTAL STUDY REPORT

FINAL



A member of  **MMM GROUP**

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	E-1
1.0 INTRODUCTION	1-1
1.1 INTRODUCTION AND BACKGROUND.....	1-1
1.1.1 Let’s Get Windsor-Essex Moving (LGWEM)	1-3
1.2 ONTARIO ENVIRONMENTAL ASSESSMENT ACT	1-3
1.2.1 Municipal Class Environmental Assessment.....	1-4
1.2.2 Part II Order	1-7
1.2.3 Class Environmental Assessment for Provincial Transportation Facilities...	1-7
1.2.4 Environmental Study Report	1-8
1.3 CANADIAN ENVIRONMENTAL ASSESSMENT ACT (CEAA 2012).....	1-9
1.4 STUDY AREA	1-10
1.5 STUDY APPROACH	1-10
1.6 STUDY ORGANIZATION	1-11
1.6.1 Project Team.....	1-12
1.6.2 Technical/Approval Agencies and Other Stakeholders.....	1-14
1.7 CONSULTATION	1-16
1.7.1 Public Consultation.....	1-16
1.7.2 Technical/Approval Agencies, Area Municipalities, and Utility Consultation.....	1-16
1.7.3 First Nations Consultation	1-22
2.0 PROBLEMS AND OPPORTUNITIES	2-1
2.1 OVERVIEW OF RELEVANT PROVINCIAL AND MUNICIPAL POLICIES.....	2-1
2.1.1 Policy Context	2-1
2.1.2 Provincial Policy Statement.....	2-2
2.1.3 Ontario Ministry of Transportation	2-4
2.1.4 City of Windsor Relevant Plans and Policies.....	2-5
2.1.5 County of Essex Relevant Plans and Policies	2-9
2.2 OVERVIEW OF RELEVANT MUNICIPAL STUDIES/PROJECTS.....	2-13
2.2.1 Essex-Windsor Regional Transportation Master Plan (EWRTMP, 2005)..	2-13
2.2.2 City of Windsor	2-14
2.2.3 County of Essex	2-18
2.3 EXISTING TRANSPORTATION NETWORK	2-22
2.3.1 Provincial Highway Network	2-23
2.3.2 Municipal Road Network	2-23

2.3.3	International Crossings	2-26
2.4	EXISTING TRAFFIC	2-27
2.4.1	Historical Traffic Flows.....	2-27
2.4.2	Existing Daily Traffic Flows	2-30
2.4.3	Non-Commercial Travel Characteristics	2-33
2.4.4	Commercial Traffic Characteristics.....	2-36
2.4.5	International Crossings	2-37
2.5	EXISTING TRAFFIC OPERATIONS.....	2-38
2.6	FUTURE TRENDS	2-39
2.6.1	Population and Employment Forecast	2-39
2.7	IDENTIFICATION OF TRANSPORTATION NEEDS.....	2-41
2.7.1	Future Trends.....	2-41
2.7.2	Future Transportation Network	2-42
2.7.3	Forecasted Travel Characteristics.....	2-46
2.7.4	Summary of Transportation Needs.....	2-49
2.8	SUMMARY OF PROBLEMS AND OPPORTUNITIES	2-51
3.0	ALTERNATIVE SOLUTIONS.....	3-1
3.1	GENERATION OF TRANSPORTATION PLANNING ALTERNATIVES	3-1
3.1.1	Do Nothing	3-2
3.1.2	Travel Demand Management (TDM).....	3-2
3.1.3	Transportation Systems Management (TSM).....	3-3
3.1.4	Active Transportation	3-4
3.1.5	Improve / New Transit.....	3-7
3.1.6	Improve Existing or New Roadways.....	3-7
3.2	ASSESSMENT OF THE TRANSPORTATION PLANNING ALTERNATIVES.....	3-10
3.2.1	Stage 1 Assessment of the Transportation Planning Alternatives	3-10
3.2.2	Stage 2 Assessment of the Group Alternatives	3-11
3.3	RECOMMENDED TRANSPORTATION PLANNING SOLUTION	3-15
3.3.1	Optimizing Existing Transportation Network and New/Planned Transit....	3-15
3.3.2	Road-Based Initiatives.....	3-16
PART A	LAUZON PARKWAY	A.4-1
A.4	EXISTING CONDITIONS.....	A.4-1
A.4.1	TRANSPORTATION AND INFRASTRUCTURE	A.4-2
A.4.1.1	Existing Road Network.....	A.4-2
A.4.1.2	Existing Geometry.....	A.4-7
A.4.1.3	Traffic Signals and Illumination	A.4-11

A.4.1.4	Active Transportation.....	A.4-11
A.4.1.5	Rail	A.4-12
A.4.1.6	Bridges	A.4-13
A.4.1.7	Drainage and Stormwater Management.....	A.4-15
A.4.1.8	Utilities.....	A.4-16
A.4.2	SOCIO-ECONOMIC ENVIRONMENT	A.4-18
A.4.2.1	Existing Land Use	A.4-18
A.4.2.2	Future Land Use	A.4-18
A.4.3	CULTURAL ENVIRONMENT.....	A.4-22
A.4.3.1	Built Heritage Resources and Cultural Heritage Landscapes	A.4-22
A.4.3.2	Archaeology	A.4-23
A.4.4	NATURAL ENVIRONMENT.....	A.4-24
A.4.4.1	Fish and Fish Habitat.....	A.4-24
A.4.4.2	Terrestrial Ecosystems	A.4-25
A.5	ALTERNATIVES AND EVALUATION	A.5-1
A.5.1	PROBLEMS AND OPPORTUNITIES BEING ADDRESSED	A.5-2
A.5.2	REVIEW DURING FIRST ROUND OF CONSULTATION	A.5-2
A.5.3	LAUZON PARKWAY EXTENSION.....	A.5-4
A.5.3.1	Existing North-South Corridors	A.5-4
A.5.3.2	New North-South Corridor Alternatives	A.5-7
A.5.3.3	Assessment and Evaluation.....	A.5-9
A.5.3.4	Preferred Corridor Alternative	A.5-9
A.5.4	LAUZON PARKWAY ALIGNMENT	A.5-10
A.5.4.1	Highway 401 to Highway 3 Alignment Alternatives.....	A.5-10
A.5.4.2	Assessment and Evaluation.....	A.5-12
A.5.4.3	Preferred Lauzon Parkway Alignment.....	A.5-14
A.5.5	CROSS-SECTIONS.....	A.5-14
A.5.5.1	City of Windsor – E.C. Row Expressway to Highway 401	A.5-14
A.5.5.2	County of Essex – Highway 401 to Highway 3	A.5-17
A.5.6	INTERCHANGES AND INTERSECTIONS ANALYSIS.....	A.5-19
A.5.6.1	E.C. Row Expressway Interchange.....	A.5-19
A.5.6.2	County Road 42 Intersection.....	A.5-23
A.5.6.3	E-W Arterial Intersection	A.5-24
A.5.6.4	Highway 401 Interchange	A.5-25
A.5.6.5	Highway 3 Intersection	A.5-30
A.5.6.6	Other Intersections	A.5-35
A.5.6.7	Summary of Intersections Along Lauzon Parkway.....	A.5-36
A.5.7	ACTIVE TRANSPORTATION.....	A.5-37

A.5.7.1	Active Transportation Bridge Alternatives	A.5-37
A.5.7.2	Assessment and Evaluation.....	A.5-40
A.5.7.3	Preferred Alternative.....	A.5-42
A.5.8	REVIEW DURING SECOND ROUND OF CONSULTATION	A.5-42
A.5.8.1	Consultation with Individual Stakeholders	A.5-43
A.5.8.2	Revisions to Technically Preferred Plan.....	A.5-45
A.6	DESCRIPTION OF RECOMMENDED PLAN	A.6-1
A.6.1	ROAD GEOMETRY.....	A.6-2
A.6.1.1	Design Criteria	A.6-2
A.6.1.2	Typical Cross-Sections.....	A.6-7
A.6.1.3	Interchanges and Intersections	A.6-11
A.6.2	ACTIVE TRANSPORTATION.....	A.6-19
A.6.3	ACCESS MANAGEMENT	A.6-21
A.6.4	STRUCTURES	A.6-21
A.6.5	DRAINAGE AND STORMWATER MANAGEMENT.....	A.6-25
A.6.6	ILLUMINATION.....	A.6-26
A.6.7	UTILITIES	A.6-26
A.6.8	PRELIMINARY COST ESTIMATE	A.6-30
A.6.9	PLAN/PROFILE PLATES OF RECOMMENDED PLAN.....	A.6-34
A.6.10	ENVIRONMENTAL EFFECTS AND MITIGATING MEASURES	A.6-35
A.6.10.1	Transportation and Infrastructure.....	A.6-35
A.6.10.2	Socio-Economic Environment	A.6-36
A.6.10.3	Cultural Environment.....	A.6-40
A.6.10.4	Natural Environment.....	A.6-43
PART B	COUNTY ROAD 42.....	B.4-1
B.4	EXISTING CONDITIONS	B.4-1
B.4.1	TRANSPORTATION AND INFRASTRUCTURE	B.4-2
B.4.1.1	Existing Road Network.....	B.4-2
B.4.1.2	Existing Geometry.....	B.4-9
B.4.1.3	Traffic Signals and Illumination	B.4-10
B.4.1.4	Active Transportation.....	B.4-11
B.4.1.5	Rail	B.4-12
B.4.1.6	Bridges	B.4-13
B.4.1.7	Drainage and Stormwater Management.....	B.4-14
B.4.1.8	Utilities.....	B.4-15
B.4.2	SOCIO-ECONOMIC ENVIRONMENT	B.4-18

B.4.2.1	Existing Land Use	B.4-18
B.4.2.2	Future Land Use	B.4-18
B.4.3	CULTURAL ENVIRONMENT.....	B.4-24
B.4.3.1	Built Heritage Resources and Cultural Heritage Landscapes	B.4-24
B.4.3.2	Archaeology	B.4-25
B.4.4	NATURAL ENVIRONMENT.....	B.4-26
B.4.4.1	Fish and Fish Habitat.....	B.4-26
B.4.4.2	Terrestrial Ecosystems	B.4-27
B.5	ALTERNATIVES AND EVALUATION	B.5-1
B.5.1	PROBLEMS AND OPPORTUNITIES BEING ADDRESSED	B.5-1
B.5.2	REVIEW DURING FIRST ROUND OF CONSULTATION	B.5-2
B.5.2.1	Consultation with Individual Stakeholders	B.5-3
B.5.3	CITY OF WINDSOR – WALKER ROAD TO CITY/COUNTY BOUNDARY.....	B.5-4
B.5.3.1	Cross-Section	B.5-5
B.5.3.2	Intersection Analysis.....	B.5-7
B.5.3.3	Summary of Intersections Along County Road 42	B.5-9
B.5.4	COUNTY OF ESSEX – CITY/COUNTY BOUNDARY TO COUNTY ROAD 25 (E. PUCE ROAD).....	B.5-11
B.5.4.1	City/County Boundary to County Road 19 (Manning Road)	B.5-11
B.5.4.2	County Road 19 (Manning Road) to County Road 25 (E. Puce Road)	B.5-16
B.5.4.3	Intersection Analysis.....	B.5-20
B.5.5	ACTIVE TRANSPORTATION.....	B.5-25
B.5.6	REVIEW DURING SECOND ROUND OF CONSULTATION	B.5-26
B.5.6.1	Consultation with Individual Stakeholders	B.5-27
B.5.6.2	Considerations to Amend Supportive Policies.....	B.5-28
B.5.6.3	Revisions to Technically Preferred Plan	B.5-29
B.6	DESCRIPTION OF RECOMMENDED PLAN	B.6-1
B.6.1	ROAD GEOMETRY.....	B.6-2
B.6.1.1	Design Criteria	B.6-2
B.6.1.2	Typical Cross-Sections.....	B.6-7
B.6.1.3	Intersections	B.6-24
B.6.2	ACTIVE TRANSPORTATION.....	B.6-29
B.6.3	ACCESS MANAGEMENT	B.6-30
B.6.4	STRUCTURES	B.6-30

B.6.5	DRAINAGE AND STORMWATER MANAGEMENT	B.6-31
B.6.6	ILLUMINATION	B.6-32
B.6.7	UTILITIES	B.6-33
B.6.8	PRELIMINARY COST ESTIMATE	B.6-38
B.6.9	PLAN/PROFILE PLATES OF RECOMMENDED PLAN	B.6-41
B.6.10	ENVIRONMENTAL EFFECTS AND MITIGATING MEASURES	B.6-42
	B.6.10.1 Transportation and Infrastructure	B.6-42
	B.6.10.2 Socio-Economic Environment	B.6-43
	B.6.10.3 Cultural Environment	B.6-47
	B.6.10.4 Natural Environment	B.6-50
PART C	E-W ARTERIAL	C.4-1
C.4	EXISTING CONDITIONS	C.4-1
C.4.1	TRANSPORTATION AND INFRASTRUCTURE	C.4-2
	C.4.1.1 Existing Road Network	C.4-2
	C.4.1.2 Existing Geometry	C.4-6
	C.4.1.3 Traffic Signals and Illumination	C.4-6
	C.4.1.4 Active Transportation	C.4-6
	C.4.1.5 Rail	C.4-6
	C.4.1.6 Bridges	C.4-7
	C.4.1.7 Drainage and Stormwater Management	C.4-7
	C.4.1.8 Utilities	C.4-8
C.4.2	SOCIO-ECONOMIC ENVIRONMENT	C.4-9
	C.4.2.1 Existing Land Use	C.4-9
	C.4.2.2 Future Land Use	C.4-9
C.4.3	CULTURAL ENVIRONMENT	C.4-14
	C.4.3.1 Built Heritage Resources and Cultural Heritage Landscapes	C.4-14
	C.4.3.2 Archaeology	C.4-15
C.4.4	NATURAL ENVIRONMENT	C.4-16
	C.4.4.1 Fish and Fish Habitat	C.4-16
	C.4.4.2 Terrestrial Ecosystems	C.4-16
C.5	ALTERNATIVES AND EVALUATION	C.5-1
C.5.1	PROBLEMS AND OPPORTUNITIES BEING ADDRESSED	C.5-1
C.5.2	REVIEW DURING FIRST ROUND OF CONSULTATION	C.5-2
C.5.3	ALIGNMENT ALTERNATIVES	C.5-3
	C.5.3.1 West-End Alignment Options	C.5-3

C.5.3.2	East-End Alignment Options	C.5-4
C.5.4	CROSS-SECTION.....	C.5-6
C.5.5	INTERSECTION ANALYSIS.....	C.5-7
C.5.5.1	West End Connection.....	C.5-7
C.5.5.2	Lauzon Parkway Intersection	C.5-13
C.5.5.3	Other Intersections	C.5-14
C.5.5.4	Summary of Intersections Along E-W Arterial.....	C.5-14
C.5.6	ACTIVE TRANSPORTATION.....	C.5-15
C.5.7	REVIEW DURING SECOND ROUND OF CONSULTATION	C.5-15
C.5.7.1	Consultation with Individual Stakeholders	C.5-16
C.5.7.2	Revisions to Technically Preferred Plan	C.5-20
C.6	DESCRIPTION OF RECOMMENDED PLAN	C.6-1
C.6.1	ROAD GEOMETRY.....	C.6-1
C.6.1.1	Design Criteria	C.6-2
C.6.1.2	Typical Cross-Sections.....	C.6-3
C.6.1.3	Intersections	C.6-4
C.6.2	ACTIVE TRANSPORTATION.....	C.6-6
C.6.3	ACCESS MANAGEMENT	C.6-6
C.6.4	STRUCTURES	C.6-6
C.6.5	DRAINAGE AND STORMWATER MANAGEMENT.....	C.6-7
C.6.6	ILLUMINATION.....	C.6-8
C.6.7	UTILITIES.....	C.6-8
C.6.8	PRELIMINARY COST ESTIMATE	C.6-10
C.6.9	PLAN/PROFILE PLATES OF RECOMMENDED PLAN.....	C.6-11
C.6.10	ENVIRONMENTAL EFFECTS AND MITIGATING MEASURES	C.6-12
C.6.10.1	Transportation and Infrastructure.....	C.6-12
C.6.10.2	Socio-Economic Environment	C.6-13
C.6.10.3	Cultural Environment.....	C.6-15
C.6.10.4	Natural Environment.....	C.6-18
7.0	FUTURE CONSIDERATIONS AND COMMITMENTS TO FUTURE WORKS	7-1
7.1	PERMITS AND APPROVALS	7-1
7.2	DESIGN AND CONSTRUCTION CONSIDERATIONS.....	7-2
7.2.1	Municipal Class EA.....	7-2
7.2.2	Implementation and Design Considerations.....	7-3

7.2.3	Official Plan Integration	7-4
7.2.4	Implementation Phasing and Staging	7-7
7.3	MONITORING AND MAINTENANCE.....	7-10
7.3.1	Monitoring During Construction	7-10
7.3.2	Detailed Design Commitments.....	7-10

TABLE OF EXHIBITS

Exhibit E-1:	Study Area	E-3
Exhibit E-2:	Building Block Approach.....	E-6
Exhibit E-3:	Typical Cross-Section Lauzon Parkway E.C. Row Expressway to Highway 401	E-9
Exhibit E-4:	Typical Cross-Section Lauzon Parkway Highway 401 to Highway 3	E-10
Exhibit E-5:	Typical Cross-Section County Road 42 Walker Road to the City/County Boundary	E-12
Exhibit E-6:	Typical Cross-Section County Road 42 City/County Boundary to County Road 19 (Manning Road).....	E-13
Exhibit E-7:	Typical Cross-Section County Road 42 County Road 19 (Manning Road) to County Road 25 (E. Puce Road).....	E-14
Exhibit E-8:	Typical Cross-Section E-W Arterial Walker Road to 10th Concession Road / County Road 17	E-17
Exhibit E-9:	Implementation Phases	E-23
Exhibit 1-1:	Study Area	1-2
Exhibit 1-2:	Municipal Class Environmental Assessment Process	1-6
Exhibit 1-3:	Study Organization.....	1-11
Exhibit 1-4:	External Agencies, Utilities, and Interest Groups Consulted	1-14
Exhibit 1-5:	Comments from Technical/Approval Agencies, Area Municipalities, and Utilities	1-16
Exhibit 1-6:	Comments From First Nations	1-23
Exhibit 2-1:	Windsor Annexed Area - Master Plan Study	2-7
Exhibit 2-2:	EWRTMP Recommended Regional Roadway Capacity Enhancement Projects	2-13
Exhibit 2-3:	EWRTMP (2005) Recommended Roadway Classification System	2-25
Exhibit 2-4:	Highway 401 Historical Traffic Growth Trends	2-28
Exhibit 2-5:	AADT Growth on Highway 401 Interchanges (1988-2006).....	2-29
Exhibit 2-6:	AADT Growth on Highway 3 Intersections (1988-2006).....	2-29
Exhibit 2-7:	Existing AADT on Major Roadways within the Study Area	2-31
Exhibit 2-8:	Share of Commercial Traffic Volumes	2-32
Exhibit 2-9:	Travel Characteristics for Windsor Originated Traffic	2-34
Exhibit 2-10:	Travel Characteristics for Windsor Destined Traffic	2-34
Exhibit 2-11:	Travel Characteristics for Windsor Transferred Lands Originated Traffic ...	2-35

Exhibit 2-12:	Travel Characteristics for Windsor Transferred Lands Destined Traffic.....	2-35
Exhibit 2-13:	Origin of Commercial Traffic at the Ambassador Bridge.....	2-36
Exhibit 2-14:	Destination of Commercial Traffic at the Ambassador Bridge.....	2-37
Exhibit 2-15:	Volume/Capacity Operating Conditions Guideline.....	2-38
Exhibit 2-16:	Regional Population Forecast.....	2-40
Exhibit 2-17:	City of Windsor Road Network Improvements.....	2-42
Exhibit 2-18:	County of Essex Road Network Improvements	2-43
Exhibit 2-19:	MTO Road Network Improvements.....	2-44
Exhibit 2-20:	Draft Sandwich South Secondary Plan Schedule F: Roads and Bikeways ...	2-45
Exhibit 2-21:	Existing Year AADT and Design Hour Volume.....	2-47
Exhibit 2-22:	2031 AADT Forecast and Design Hour Volume	2-48
Exhibit 3-1:	Transportation Demand Management	3-2
Exhibit 3-2:	Active Transportation Overall Study Area Context Plan – Existing and Proposed Facilities.....	3-6
Exhibit 3-3:	EWRTMP Recommended Regional Roadway Capacity Enhancement Projects	3-8
Exhibit 3-4:	Stage 1 – Assessment of Individual Alternatives to the Undertaking	3-10
Exhibit 3-5:	Building Block Approach.....	3-11
Exhibit 3-6:	Advantages and Disadvantages of Existing North-South Corridors	3-17
Exhibit A.4-1:	Lauzon Parkway Study Area	A.4-1
Exhibit A.4-2:	Existing Road Network Components	A.4-2
Exhibit A.4-3:	Existing Lauzon Parkway Road Network	A.4-6
Exhibit A.4-4:	Existing Intersections on Lauzon Parkway	A.4-7
Exhibit A.4-5:	Lauzon Parkway - 4-Lane Urban Cross-Section Looking North Towards E.C. Row Expressway Interchange	A.4-8
Exhibit A.4-6:	Lauzon Parkway - 2-Lane Rural Cross-Section Looking South	A.4-8
Exhibit A.4-7:	Existing Lauzon Parkway E.C. Row Expressway Interchange	A.4-10
Exhibit A.4-8:	Illumination at the Lauzon Parkway E.C. Row Interchange Looking South	A.4-11
Exhibit A.4-9:	Existing Rail Network Within the Study Area	A.4-13
Exhibit A.4-10:	Lauzon Parkway Bridge over E. C. Row Expressway – From Eastbound E.C. Row Expressway	A.4-14
Exhibit A.4-11:	Lauzon Parkway Bridge over CP Rail.....	A.4-14
Exhibit A.4-12:	Existing Utilities within Lauzon Parkway Corridor	A.4-16

Exhibit A.4-13:	City of Windsor Official Plan - Land Use Plan.....	A.4-19
Exhibit A.4-14:	County of Essex Official Plan – Land Use Plan.....	A.4-20
Exhibit A.4-15:	Draft Sandwich South Secondary Plan - Land Use Plan.....	A.4-21
Exhibit A.5-1:	Existing North-South Corridors	A.5-5
Exhibit A.5-2:	Advantages and Disadvantages of Existing North-South Corridors	A.5-6
Exhibit A.5-3:	Lauzon Parkway Extension Corridor Alternatives.....	A.5-8
Exhibit A.5-4:	Lauzon Parkway Alignment Alternatives.....	A.5-11
Exhibit A.5-5:	Assessment and Evaluation of Lauzon Parkway Extension Alternatives .	A.5-13
Exhibit A.5-6:	PIC 2 Typical Cross-Section Lauzon Parkway E.C. Row Expressway to Little River	A.5-15
Exhibit A.5-7:	PIC 2 Typical Cross-Section Lauzon Parkway Little River to County Road 42.....	A.5-16
Exhibit A.5-8:	PIC 2 Typical Cross-Section Lauzon Parkway County Road 42 to Highway 401	A.5-16
Exhibit A.5-9:	PIC 2 Typical Cross-Section Lauzon Parkway Highway 401 to County Road 46.....	A.5-18
Exhibit A.5-10:	PIC 2 Typical Cross-Section Lauzon Parkway County Road 46 to Highway 3	A.5-18
Exhibit A.5-11:	Proposed 2031 Lauzon Parkway E.C. Row Expressway Interchange Improvements.....	A.5-21
Exhibit A.5-12:	Proposed 2031 and Full Build-Out Lauzon Parkway E.C. Row Expressway Interchange Improvements Lane Configuration.....	A.5-22
Exhibit A.5-13:	Cost-Benefit Assessment of Signals and Roundabouts.....	A.5-24
Exhibit A.5-14:	Highway 401 Lauzon Parkway Interchange Option 1: Parclo A4	A.5-27
Exhibit A.5-15:	Highway 401 Lauzon Parkway Interchange Option 2: Teardrop Roundabout Interchange & Parclo A4 Interchange	A.5-28
Exhibit A.5-16:	Assessment and Evaluation of Lauzon Parkway Highway 401 Interchange Alternatives.....	A.5-29
Exhibit A.5-17:	Lauzon Parkway and Highway 3 Intersection Alternatives	A.5-32
Exhibit A.5-18:	Assessment and Evaluation of Highway 3 Intersection Alternatives.....	A.5-34
Exhibit A.5-19:	Summary of Lauzon Parkway Intersection Roundabout Analysis.....	A.5-36
Exhibit A.5-20:	Active Transportation Bridge Alternatives.....	A.5-39
Exhibit A.5-21:	Assessment and Evaluation of Active Transportation Bridge Alternatives.....	A.5-41
Exhibit A.5-22:	Property of 882885 Ontario Ltd. (0 County Road 17, Roll No. 9003001800).....	A.5-44

Exhibit A.5-23:	PIC 2 Technically Preferred Plan and Recommended Plan of Lauzon Parkway from County Road 42 to Baseline Road.....	A.5-46
Exhibit A.5-24:	PIC 2 Technically Preferred Plan and Recommended Plan of Lauzon Parkway at County Road 46	A.5-48
Exhibit A.6-1:	Design Criteria Lauzon Parkway – E.C. Row Expressway to County Road 42	A.6-3
Exhibit A.6-2:	Design Criteria Lauzon Parkway - County Road 42 to Highway 401	A.6-4
Exhibit A.6-3:	Design Criteria Lauzon Parkway - Highway 401 to Highway 3	A.6-5
Exhibit A.6-4:	Design Criteria Highway 401 Lauzon Parkway Interchange Exit Ramps - E-N/S and W-N/S ramps.....	A.6-6
Exhibit A.6-5:	Design Criteria Highway 401 Lauzon Parkway Interchange Entrance Ramps - N/S-W and N/S-E.....	A.6-6
Exhibit A.6-6:	Typical Cross-Section Lauzon Parkway E.C. Row Expressway to Little River	A.6-8
Exhibit A.6-7:	Typical Cross-Section Lauzon Parkway Little River to County Road 42...	A.6-9
Exhibit A.6-8:	Typical Cross-Section Lauzon Parkway County Road 42 to Highway 401	A.6-9
Exhibit A.6-9:	Typical Cross-Section Lauzon Parkway Highway 401 to Highway 3	A.6-10
Exhibit A.6-10:	Summary of Lauzon Parkway Intersections.....	A.6-11
Exhibit A.6-11:	Typical Cross-Section for 2-Lane Roundabout.....	A.6-11
Exhibit A.6-12:	Proposed 2031 E.C. Row Expressway Interchange Improvements	A.6-13
Exhibit A.6-13:	Proposed 2031 and Full Build-Out Lauzon Parkway E.C. Row Expressway Interchange Improvements Lane Configuration.....	A.6-14
Exhibit A.6-14:	Lauzon Parkway Highway 401: Initial Teardrop Roundabout Interchange & Long-Term Parclo A4 Interchange.....	A.6-16
Exhibit A.6-15:	Highway 401 Cross-Sections at 9 th Concession Road and 10th Concession Road / County Road 17 Overpass with Additional Interchange Lanes	A.6-17
Exhibit A.6-16:	Highway 401 Active Transportation Active Transportation Bridge	A.6-20
Exhibit A.6-17:	Highway 401 Bridge Preliminary GA	A.6-22
Exhibit A.6-18:	Highway 401 Active Transportation Bridge Preliminary GA.....	A.6-23
Exhibit A.6-19:	Existing and Proposed Utilities within Lauzon Parkway Corridor	A.6-26
Exhibit A.6-20:	Summary of Property Requirements	A.6-36
Exhibit A.6-21:	Property Access Impacts	A.6-38
Exhibit A.6-22:	Lauzon Parkway Natural Environment Potential Effects and Mitigating Measures.....	A.6-44
Exhibit B.4-1:	County Road 42 Study Area.....	B.4-1

Exhibit B.4-2:	Existing Road Network Components	B.4-2
Exhibit B.4-3:	Existing County Road 42 Road Network	B.4-6
Exhibit B.4-4:	Existing Intersections on County Road 42	B.4-7
Exhibit B.4-5:	County Road 42 - 2-Lane Rural Cross-Section - East of Lakeshore Road 101 Looking West	B.4-10
Exhibit B.4-6:	County Road 42 Urban Cross-Section - at Riberdy Road Looking West .	B.4-10
Exhibit B.4-7:	Existing Rail Network Within the Study Area	B.4-12
Exhibit B.4-8:	County Road 42 CN At-Grade Crossing Looking East.....	B.4-13
Exhibit B.4-9:	Existing Utilities within County Road 42 Corridor.....	B.4-15
Exhibit B.4-10:	City of Windsor Official Plan - Land Use Plan.....	B.4-20
Exhibit B.4-11:	County of Essex Official Plan – Land Use Plan.....	B.4-21
Exhibit B.4-12:	Tecumseh Hamlet – Land Use Plan	B.4-22
Exhibit B.4-13:	Draft Sandwich South Secondary Plan - Land Use Plan.....	B.4-23
Exhibit B.5-1:	PIC 2 Typical Cross-Section County Road 42 Walker Road to 7 th Concession Road	B.5-6
Exhibit B.5-2:	PIC 2 Typical Cross-Section County Road 42 7 th Concession Road to 8 th Concession Road	B.5-6
Exhibit B.5-3:	PIC 2 Typical Cross-Section County Road 42 8 th Concession Road to the City/County Boundary.....	B.5-7
Exhibit B.5-4:	Summary of County Road 42 Intersection Roundabout Analysis.....	B.5-10
Exhibit B.5-5:	PIC 2 Typical Cross-Section County Road 42 City/County Boundary to County Road 43 (Banwell Road)	B.5-13
Exhibit B.5-6:	PIC 2 Typical Cross-Section County Road 42 County Road 43 (Banwell Road) to Shiff Drive	B.5-13
Exhibit B.5-7:	PIC 2 Typical Cross-Section County Road 42 Shiff Drive to St. Alphonse Avenue	B.5-14
Exhibit B.5-8:	PIC 2 Typical Cross-Section County Road 42 St. Alphonse Avenue to County Road 19/Manning Road.....	B.5-15
Exhibit B.5-9:	Assessment and Evaluation of County Road 42 Widening Alternatives in the Town of Lakeshore.....	B.5-17
Exhibit B.5-10:	PIC 2 Typical Cross-Section County Road 42 County Road 19 (Manning Road) to W. Puce Road	B.5-18
Exhibit B.5-11:	PIC 2 Typical Cross-Section County Road 42 W. Puce Road to Puce River Bridge	B.5-19
Exhibit B.5-12:	PIC 2 Typical Cross-Section County Road 42 Puce River Bridge to County Road 25 (E. Puce Road).....	B.5-19

Exhibit B.5-13:	Summary of County Road 42 Intersection Roundabout Analysis.....	B.5-21
Exhibit B.5-14:	Property of 386823 Ontario Ltd. (0 County Road 42, Roll No. 9003001500).....	B.5-27
Exhibit B.6-1:	Design Criteria County Road 42 Walker Road to Lauzon Road.....	B.6-3
Exhibit B.6-2:	Design Criteria County Road 42 Lauzon Road to County Road 43 (Banwell Road).....	B.6-4
Exhibit B.6-3:	Design Criteria County Road 42 County Road 43 (Banwell Road) to County Road 19 (Manning Road)	B.6-5
Exhibit B.6-4:	Design Criteria County Road 42 County Road 19 (Manning Road) to County Road 25 (E. Puce Road).....	B.6-6
Exhibit B.6-5:	Typical Cross-Section County Road 42 Walker Road to 7 th Concession Road.....	B.6-8
Exhibit B.6-6:	Typical Cross-Section County Road 42 7 th Concession Road to 8 th Concession Road	B.6-9
Exhibit B.6-7:	Typical Cross-Section County Road 42 8 th Concession Road to Lauzon Road.....	B.6-10
Exhibit B.6-8:	Typical Cross-Section County Road 42 Lauzon Road to the City/County Boundary.....	B.6-11
Exhibit B.6-9:	Typical Cross-Section County Road 42 City/County Boundary to County Road 43 (Banwell Road)	B.6-13
Exhibit B.6-10:	Typical Cross-Section County Road 42 County Road 43 (Banwell Road) to Shiff Drive	B.6-14
Exhibit B.6-11:	Typical Cross-Section County Road 42 Shiff Drive to St. Alphonse Avenue.....	B.6-15
Exhibit B.6-12:	Typical Cross-Section County Road 42 St. Alphonse Avenue to County Road 19/Manning Road.....	B.6-16
Exhibit B.6-13:	Typical Cross-Section County Road 42 County Road 19 (Manning Road) to East of Pike Creek Bridge	B.6-17
Exhibit B.6-14:	Typical Cross-Section County Road 42 East of Pike Creek Bridge to Sta: 19+100.....	B.6-18
Exhibit B.6-15:	Typical Cross-Section County Road 42 Sta: 19+100 to Sta: 20+000 (just west of the 9 th Concession Drain culvert)	B.6-19
Exhibit B.6-16:	Typical Cross-Section County Road 42 Sta: 20+000 (just west of the 9 th Concession Drain culvert) to 20+500 (just east of County Road 21 (Elmstead Road)).....	B.6-20
Exhibit B.6-17:	Typical Cross-Section County Road 42 20+500 (just east of County Road 21 (Elmstead Road)) to W. Puce River Road	B.6-21

Exhibit B.6-18:	Typical Cross-Section County Road 42 W. Puce River Road to Puce River Bridge	B.6-22
Exhibit B.6-19:	Typical Cross-Section County Road 42 Puce River Bridge to County Road 25 (E. Puce Road).....	B.6-23
Exhibit B.6-20:	Summary of County Road 42 Intersections.....	B.6-24
Exhibit B.6-21:	Typical Cross-Section for 2-Lane Roundabout.....	B.6-25
Exhibit B.6-22:	Existing and Proposed Utilities along County Road 42 in the City	B.6-33
Exhibit B.6-23:	Summary of Property Requirements	B.6-43
Exhibit B.6-24:	Property Access Impacts	B.6-45
Exhibit B.6-25:	County Road 42 Natural Environment Potential Effects and Mitigating Measures.....	B.6-52
Exhibit C.4-1:	E-W Arterial Study Area	C.4-1
Exhibit C.4-2:	Existing Road Network Components	C.4-2
Exhibit C.4-3:	Existing E-W Arterial Road Network	C.4-5
Exhibit C.4-4:	Existing Rail Network Within the Study Area	C.4-7
Exhibit C.4-5:	Existing Utilities within E-W Arterial Corridor.....	C.4-8
Exhibit C.4-6:	City of Windsor Official Plan – Land Use Plan.....	C.4-11
Exhibit C.4-7:	East Pelton Secondary Plan (2009) – Land Use Plan.....	C.4-12
Exhibit C.4-8:	Draft Sandwich South Secondary Plan - Land Use Plan.....	C.4-13
Exhibit C.5-1:	West End Alignment Options.....	C.5-3
Exhibit C.5-2:	E-W Arterial Alignment Alternatives	C.5-4
Exhibit C.5-3:	PIC 2 Typical Cross-Section E-W Arterial Walker Road to 10th Concession Road / County Road 17	C.5-6
Exhibit C.5-4:	West-End Connection Alternatives	C.5-8
Exhibit C.5-5:	West-End Connection Alternatives Carried Forward.....	C.5-11
Exhibit C.5-6:	Assessment and Evaluation of West-End Connection Alternatives.....	C.5-12
Exhibit C.5-7:	Cost-Benefit Assessment of Signals and Roundabouts.....	C.5-14
Exhibit C.5-8:	Summary of E-W Arterial Intersection Roundabout Analysis.....	C.5-15
Exhibit C.5-9:	E-W Arterial Plan at 4490 7th Concession Road and 4500 Walker Road & 0 7th Concession Road (property roll #90010018000000).....	C.5-17
Exhibit C.6-1:	Design Criteria E-W Arterial – Walker Road to 10th Concession Road / County Road 17	C.6-2
Exhibit C.6-2:	Typical Cross-Section E-W Arterial Walker Road to 10th Concession Road / County Road 17	C.6-3
Exhibit C.6-3:	Summary of E-W Arterial Intersections.....	C.6-4

Exhibit C.6-4:	Typical Cross-Section for 1-Lane Roundabout.....	C.6-4
Exhibit C.6-5:	Existing and Future Utilities within E-W Arterial Corridor.....	C.6-8
Exhibit C.6-6:	Summary of Property Requirements	C.6-13
Exhibit C.6-7:	E-W Arterial Natural Environment Potential Effects and Mitigating Measures.....	C.6-19
Exhibit 7-1:	Active Transportation Overall Study Area Context Plan – Existing and Proposed Facilities.....	7-6
Exhibit 7-2:	Implementation Phases.....	7-9

APPENDICES

Appendix A	Consultation
Appendix B	TR1: Identification of Factors Driving ‘Area Transportation System’ Needs TR2: Determination of ‘Area Transportation System’ Needs
Appendix C	Drainage and Stormwater Management: Existing Conditions Drainage Report
Appendix D	Cultural Heritage Assessment Report: Cultural Heritage Landscapes & Built Heritage Resources
Appendix E	Stage I Archaeological Assessment
Appendix F	Natural Environment: Existing Conditions
Appendix G	Detailed Assessment and Evaluation Tables of Alternatives
Appendix H	Traffic Analysis Report: Existing Traffic Conditions
Appendix I	Traffic Analysis Report: Future Traffic Conditions
Appendix J	Lauzon Parkway E.C. Row Expressway Interchange Existing & Future Conditions
Appendix K	Preliminary Structural Design Report
Appendix L	Structural Culvert Inspection Report
Appendix M	Drainage and Storm Water Management Report - Final
Appendix N	Environmental Study Report – Electrical
Appendix O	Construction Cost Estimates
Appendix P	Property Requirements List
Appendix Q	Noise Report
Appendix R	County Road 42 – County Road 43 to County Road 19: Consideration of Context Sensitive Design

GLOSSARY

AADT -	Annual Average Daily Traffic
AANDC -	Aboriginal Affairs and Northern Development Canada (formerly Indian and Northern Affairs Canada, INAC)
BUMP -	Bicycle Use Master Plan
CEAA -	Canadian Environmental Assessment Act
CHER -	Cultural Heritage Evaluation Reports
EA -	Environmental Assessment
MCEA -	Municipal Class Environmental Assessment (October 2000, as amended in 2007 & 2011)
CNHS -	Canadian Natural Heritage Site
CWATS -	County Wide Active Transportation Study
dba -	Decibels (A-weighted)
DFO -	Department of Fisheries and Oceans, Canada
DRTP -	Detroit River Tunnel Partnership
ERCA -	Essex Region Conservation Authority
EWRTMP -	Essex-Windsor Regional Transportation Master Plan
HADD -	Harmful Alteration, Disruption or Destruction
LOS -	Level-of-Service
MEI -	Ontario Ministry of Energy and Infrastructure
MNR -	Ontario Ministry of Natural Resources
MOE -	Ontario Ministry of the Environment
MTO -	Ontario Ministry of Transportation
MTCS -	Ontario Ministry of Tourism, Culture and Sport
NHIC -	Natural Heritage Information Centre
NHS -	Natural Heritage System

NRVIS -	Natural Resources and Values Information System
NSA -	Noise Sensitive Area
NWPA -	Navigable Waters Protection Act
OEAA -	Ontario Environmental Assessment Act
OMAFRA -	Ontario Ministry of Agriculture, Food and Rural Affairs
OPP -	Ontario Provincial Police
OWRA -	Ontario Water Resources Act
PIC -	Public Information Centre
PPS -	Provincial Policy Statement
PSW -	Provincially Significant Wetland
ROW -	Right-of-Way
SAR -	Species at Risk
VPH -	Vehicles per Hour

EXECUTIVE SUMMARY

INTRODUCTION AND BACKGROUND

A Class Environmental Assessment Study has been completed to address the future requirements for Lauzon Parkway Improvements. The study has the following main components:

- Lauzon Parkway from E.C. Row Expressway to County Road 42 (2.5 km);
- Lauzon Parkway's extension to Highway 401 (3 km);
- Lauzon Parkway's further extension to Highway 3 (2.5 km);
- County Road 42 from Walker Road to the City/County Boundary (5.5 km);
- County Road 42 from the City/County Boundary to County Road 25 (10 km); and
- The future East-West Arterial from Walker Road to 10th Concession Road / County Road 17 (5 km)

The study area, as shown in Exhibit E-1, covers lands within the City of Windsor and the County of Essex, including the Town of Lakeshore and the Town of Tecumseh.

A parallel study is being carried out for the preparation and approval of a Secondary Plan for the remainder of the lands transferred to the City of Windsor in 2003. The area of the draft Sandwich South Secondary Plan is bounded, in general terms, by: Provincial Highway 401 to the south; the Windsor International Airport, CP Rail mainline, and E.C. Row Expressway to the north; 8th Concession Road to the west; and the Town of Tecumseh to the east.

The goals of Sandwich South Secondary Plan are to develop an attractive modern urban gateway to the City of Windsor and create a welcoming business climate by providing clear direction to those wishing to invest in Sandwich South area. At the February 11, 2013 meeting of the City's Planning and Economic Development Standing Committee, it was decided to defer the consideration of the Sandwich South Secondary Plan. The Plan will be considered again following the completion and approval of the Lauzon Parkway Environmental Assessment.

Concurrently, the Essex Region Conservation Authority (ERCA) in conjunction with the City of Windsor and the Town of Tecumseh is undertaking the *Upper Little River Watershed Master Drainage Plan and Stormwater Management Plan*. This study will determine the stormwater management infrastructure for the Upper Little River Watershed area to service existing and future development.

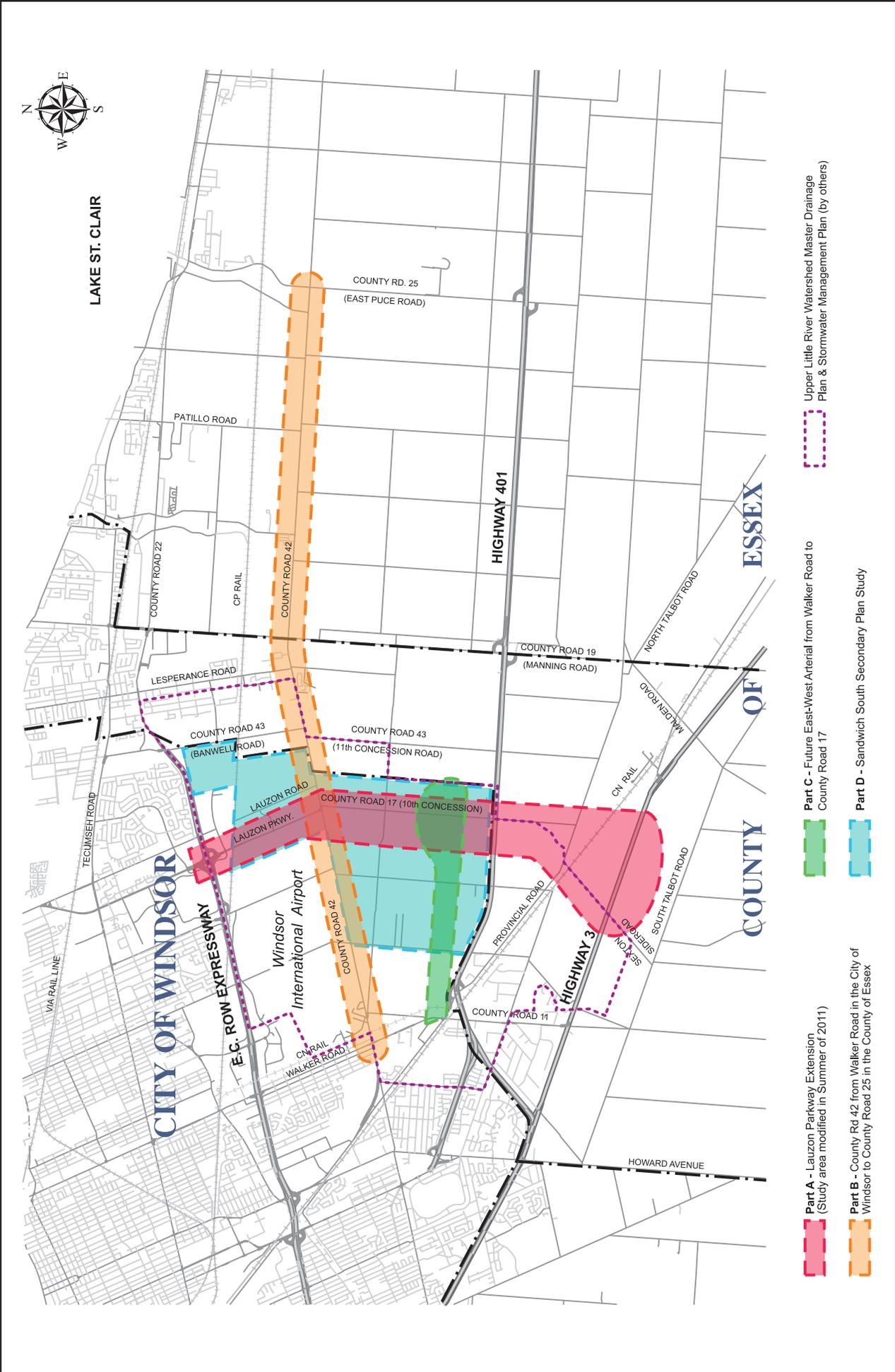
This study followed the *Ontario Environmental Assessment Act* through the application of the Municipal Class Environmental Assessment (October 2000 as amended in 2007 and 2011) and will refer to the Environmental Assessment for Provincial Transportation Facilities for potential highway improvements. With the coming into force of the *Canadian Environmental Assessment Act* (CEAA 2012), new regulations mean the improvements proposed as part of this study do not fall under any category where a Federal EA is required. The preparation and approval of the Secondary Plan will follow the requirements of the *Ontario Planning Act*.

The proposed nature of this undertaking identified it as Schedule 'C' under the Municipal Class EA. It was directed by a Project Team that included staff members from MTO, the City of Windsor, the County of Essex, and the consulting team of MRC, A Member of MMM Group.

External agencies and stakeholder groups with interests in the study area were notified of the project and two Public Information Centres were held on July 16, 2011 and October 22, 2012.

STUDY AREA

**Lauzon Parkway Improvements
Class Environmental Assessment Study
Environmental Study Report**



Upper Little River Watershed Master Drainage Plan & Stormwater Management Plan (by others)

Part C - Future East-West Arterial from Walker Road to County Road 17

Part D - Sandwich South Secondary Plan Study

Part A - Lauzon Parkway Extension (Study area modified in Summer of 2011)

Part B - County Rd 42 from Walker Road in the City of Windsor to County Road 25 in the County of Essex

CONSULTATION

The Notice of Study Commencement was advertised in April 2011. Two Public Information Centres (PICs) were held: PIC 1 was held in July 2011 to review the background information and the preferred transportation solution; PIC 2 was held in October 2012 to review the evaluation of alternatives and the Technically Preferred Plan. Approximately 80 members of the public attended PIC 1 and approximately 160 attended PIC 2. The PICs were held concurrently with the Sandwich South Secondary Plan's Workshops; PIC 2 was also held concurrently with the Upper Little River Watershed Master Drainage Plan and Stormwater Management Plan PIC 2.

The main questions/concerns from residents and business owners pertained to the timing and cost of the transportation improvements, and concerns regarding noise and property impacts. Further consultation with individual stakeholders was conducted as required, or requested.

PROBLEMS AND OPPORTUNITIES

The transportation needs assessment reviewed the project planning context including relevant provincial and municipal planning policies and growth strategies, studied the existing transportation network and related City, County, and MTO projects within the study area, projected future conditions onto the road network and identified future transportation improvement requirements with focus for a 20 year project horizon, with some components reviewed for the full build-out of the Sandwich South Secondary Plan.

The existing transportation network serves a growing demand within the study area. The major arterials around the study area are operating at or near capacity. The future growth and the improvements to infrastructure in the region are the prime driving factors for the study area transportation needs. They will have significant impacts on the capability of the transportation network to support the new economic development and improve the access for residents and businesses in east Windsor and the neighbouring municipalities.

The population and employment forecast from the City of Windsor suggests that the City of Windsor population is expected to increase by 30,500 residents and employment by 11,400 jobs, by the year 2031. The *Windsor Annexed Lands Master Planning Study* has estimated to accommodate about 14,000 residents and 10,000 employees in the Annexed Area. During the same period, the County of Essex suggests that the County of Essex population in 2031 is expected to increase approximately by 41,000 residents and employment by 17,500 jobs.

The existing traffic volumes on Lauzon Parkway are operating at or near its capacity north of County Road 42. Walker Road (via Provincial Road/County Road 46) and County Road 19 (Manning Road) are also operating at an 'Unstable-Flow' condition. Walker Road (via Provincial Road/County Road 46) and County Road 19 (Manning Road) are the only two north-south links with interchanges at Highway 401 and E.C. Row Expressway. This results in traffic from other road networks being attracted to these two corridors. These two links are already operating near capacity, supporting the need for a new interchange with Highway 401 to meet future traffic demand in the study area.

County Road 42 is a key east-west arterial in the study area. It provides continuous connection between the City of Windsor, Town of Tecumseh and Town of Lakeshore. In general, this

corridor is currently operating at an acceptable level-of-service. However, during peak hours, the roadway is approaching capacity in the vicinity of the Lauzon Parkway and 10th Concession Road / County Road 17 intersections. In addition, there are movements (i.e. through traffic, left-turns and right-turns) at key intersections (such as Walker Road, Lauzon Parkway, 10th Concession Road / County Road 17, County Road 43 (Banwell Road), Lesperance Road and County Road 19 (Manning Road) that are approaching capacity during peak hours.

The future East-West Arterial will be a key east-west corridor in the Sandwich South community and support the grid transportation system for the area.

The proposed bridge for the New International Trade Crossing (NITC), formerly the Detroit River International Crossing, and Rt. Hon. Herb Gray Parkway (formerly Windsor Essex Parkway) will provide an additional international border crossing route and facility and is projected to attract additional border crossing traffic.

Considering the future anticipated growth in the study area, there are limited spare capacities available on the existing road network. In addition, there is limited existing north-south and east-west linkage to provide a grid transportation system. Future projected growth in the City of Windsor and County of Essex results in further demand on the existing road network. It is expected that congestion on the road network will worsen as a result of the future development associated with the draft Sandwich South Secondary Plan area, which cannot be accommodated by the existing road network.

The Lauzon Parkway Extension would provide an opportunity to develop a gateway and community transportation corridor. The extension of Lauzon Parkway to Highway 3 and a new interchange with Highway 401 would provide a potential opportunity for access to new development in the draft Sandwich South Secondary Plan area. This corridor would also help in reducing congestion on the existing corridors (Walker Road, via Provincial Road/County Road 46 and County Road 19 (Manning Road)). The removal of the jog from the existing Lauzon Parkway south to 10th Concession Road / County Road 17, at County Road 42, would reduce the bottleneck and will enhance intersection operation. The proposed corridor provides opportunities to enhance the adjacent Little River corridor as a central community amenity as well as providing active transportation facilities and enhanced landscaping. Lauzon Parkway will provide a central spine through the proposed future Sandwich South Community. The Sandwich South Secondary Plan Study will develop design policies that incorporate a community focus including live/work opportunities including key consideration of provisions for active transportation facilities and transit expansion in the area.

ALTERNATIVE SOLUTIONS

An analysis of the planning alternatives was undertaken to determine the preferred solution to be carried forward to the design alternatives phase.

The transportation planning alternatives which were considered are:

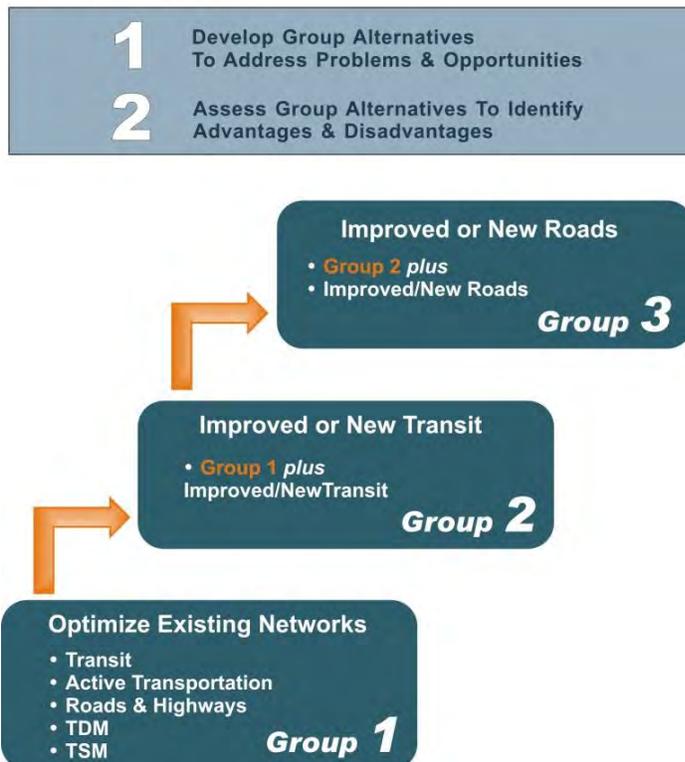
- Do Nothing;
- Travel Demand Management (TDM);
- Transportation Systems Management (TSM);
- Active Transportation
- Improve / New Transit; and
- Improve / New Roads and Highways

The assessment of the Transportation Planning Alternatives was a two stage process.

- Stage 1 examined each planning alternative on its potential to address the identified problems and opportunities.
- Stage 2 included a ‘building block’ approach (Exhibit E-2) used to assemble the group alternatives based on the principle of first optimizing the existing transportation network, and then if necessary, incorporating non-roadway infrastructure improvements and expansion before considering the widening of existing roadways or the provision of new roads and/or highways.

EXHIBIT E-2: BUILDING BLOCK APPROACH

Key Steps:



The findings of Stage 1 identified that except possibly with ‘Improve/New Roadways’, no other individual alternative can fully address the problems and opportunities identified by the study. As such, with the exception of “Do Nothing”, all individual planning alternatives were carried forward for further consideration to Stage 2 of the process – the assembly of group alternatives. The assessment of the group alternatives was as follows:

Group 1: Optimize Existing Transportation Networks	Group 2: Improved or New Transit + Group 1	Group 3: Improved or New Roads + Group 2
<p>Group 1 strategies on their own did not address all identified problems in the study area. They represented innovative and effective ways of improving and getting the most out of what already exists, and were an important foundation for improving the transportation system and helping to manage future congestion in a relatively cost effective and low impact manner.</p>	<p>Group 2 strategies could not fully provide the transportation network required to address all of the identified transportation problems and opportunities. However, in conjunction with the Group 1 strategies, improved/new transit advanced a balanced transportation system.</p>	<p>Group 3 strategies to improve existing roads or add new roads within the study area had the greatest potential to address all of the identified transportation problems and opportunities.</p>
<p>Group 1 was carried forward for further consideration as a complimentary component of recommended solution.</p>	<p>Group 2 was carried forward for further consideration as a complimentary component of recommended solution.</p>	<p>Group 3 was carried forward for further consideration as the primary component of recommended solution.</p>

The findings of Stage 2 identified that the preferred approach was road-based with support from optimizing the existing transportation network, and new/planned transit initiatives. The road-based initiatives included an additional north-south linkage between E.C. Row Expressway and Highway 3, including a new interchange connection with Highway 401, is needed, as well as improvements to County Road 42, and the provision of an additional east-west linkage to support future development.

SUMMARY OF TRANSPORTATION NEEDS

In summary, based on the future travel demand analysis, the improvements being recommended as part of this study are:

Improvement Requirements by 2021:

Lauzon Parkway (Part A):

- *From E.C. Row Expressway to County Road 42:* Widening from 2 lanes to 4 lanes of arterial (Class I) capacity will be required when the volume in the peak direction reaches approximately 800 vph;
- *From County Road 42 to Highway 401:* Southerly extension to Highway 401 with 4 lanes of arterial (Class I) capacity and a new full interchange at Highway 401;
- *From Highway 401 to Highway 3:* Further extension to Highway 3 with 4 lanes of arterial capacity.

County Road 42 (Part B):

- *From Walker Road to County Road 19 (Manning Road):* Widening from 2 lanes to 4 lanes of arterial (Class II) capacity will be required when the volume in the peak direction reaches approximately 700 vph (expected to be around 2018);
- *From County Road 19 (Manning Road) to County Road 25 (E. Puce Road):* 2-lanes of arterial capacity without lane widening.

Additional improvement requirements by 2031:

Lauzon Parkway (Part A):

- *From E.C. Row Expressway to Highway 401:* Widening from 4 lanes to 6 lanes of arterial (Class I) capacity will be required when the volume in the peak direction reaches approximately 1600 vph (expected to be around 2025).

County Road 42 (Part B):

- *From County Road 19 (Manning Road) to County Road 25 (E. Puce Road):* Widening from 2 lanes to 4 lanes of arterial (Class II) capacity. The need and timing for widening for this segment would be dependent upon the pace of development in the Town of Lakeshore and traffic congestion on County Road 22 between 2021 and 2031. Hence, the County of Essex is recommended to review periodically the traffic operations on County Road 42 after 2021 (widening will be required when volume in the peak direction reaches approximately 700 vph).

East-West Arterial (Part C):

- The timing of construction of the 2-lane East-West Arterial will be development driven;
- Beyond 2031, the E-W Arterial would require to be widened from 2 to 4 lanes when volume reaches approximately 700 vph in peak direction.

A summary of the recommended plan for Lauzon Parkway (Part A), County Road 42 (Part B), and E-W Arterial (Part C) is provided in the following sections.

RECOMMENDED PLAN

PART A: LAUZON PARKWAY

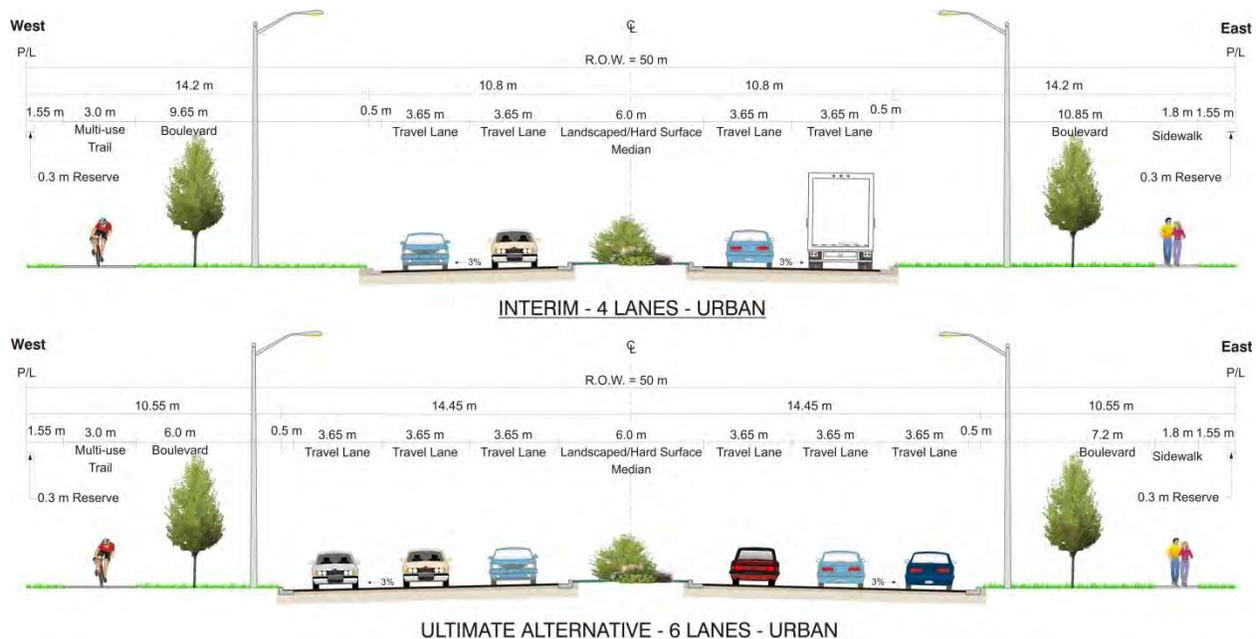
The Lauzon Parkway Extension provides an opportunity to develop a gateway and community transportation corridor. The extension of Lauzon Parkway to Highway 3 and a new interchange with Highway 401 provide a potential opportunity for access to new development in the Sandwich South Secondary Plan area.

The recommended alignment of Lauzon Parkway follows the existing alignment from E.C. Row Expressway to the Little River. From the Little River south to Highway 401, the alignment follows the Little River along the rear lots of properties facing 10th Concession Road / County Road 17, this minimizes re-alignment of the Little River; resulting in one combined roadway and stormwater management corridor. South of Highway 401 Lauzon Parkway follows the mid-lot lines to County Road 46 and then follows the existing Sexton Sideroad to Highway 3.

RECOMMENDED CROSS-SECTIONS

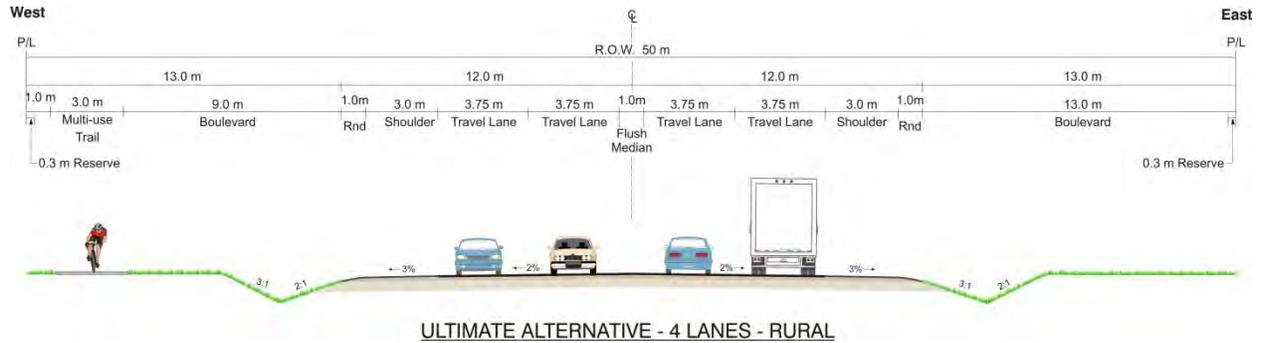
Within the City of Windsor, between E.C. Row Expressway and Highway 401, Lauzon Parkway is planned as a controlled access Class I Arterial urban roadway. The proposed cross-section is illustrated in Exhibit E-3 and includes a 50 m urban divided cross-section, with a multi-use trail and sidewalks, a 6 m raised median (landscaped/hard surface), and landscaped boulevards.

**EXHIBIT E-3: TYPICAL CROSS-SECTION LAUZON PARKWAY
 E.C. ROW EXPRESSWAY TO HIGHWAY 401**



Within the County of Essex, between Highway 401 and Highway 3, Lauzon Parkway is planned as a controlled access rural arterial roadway. The proposed cross-section is illustrated in Exhibit E-4, and includes a 50 m rural cross-section with a multi-use trail.

**EXHIBIT E-4: TYPICAL CROSS-SECTION LAUZON PARKWAY
HIGHWAY 401 TO HIGHWAY 3**



INTERCHANGES AND INTERSECTIONS

The Recommended Plan for Lauzon Parkway includes improvements to the existing E.C. Row Expressway Interchange and a new Highway 401 Interchange, as well as twelve (12) new at-grade intersections with the major east-west roadways; as listed (from north to south) below:

SUMMARY OF LAUZON PARKWAY INTERSECTIONS

Intersecting Road	Existing Intersection	Future Intersection
Interchanges		
EC Row Expressway Westbound On-Ramps	Unsignalized	Signalized ¹ for NB to WB; Free flow for SB to WB.
EC Row Expressway Eastbound On-Ramps	Unsignalized	Signalized ¹ for SB to EB; Free flow for NB to EB.
Highway 401 Westbound On-Ramps	N/A	Roundabout ²
Highway 401 Eastbound On-Ramps	N/A	Roundabout ²
Intersections		
Forest Glade Drive	Signalized	Signalized
Twin Oaks Drive	Signalized	Signalized
Service Road B/Airport Access	Unsignalized	Signalized
County Road 42	Signalized	Signalized
Baseline Road	N/A	Roundabout ³
E-W Arterial	N/A	Roundabout ³
County Road 46	N/A	Signalized
Highway 3	N/A	Signalized

1. Signalization of E.C. Row Expressway Ramp Terminals required by 2031.
2. The LOS for a roundabout is acceptable for 2031, but is unacceptable for ultimate built-out (beyond 2031). The roundabouts will be converted to signalized intersections when the interchange is converted to a Parclo A4.
3. The LOS for a roundabout is acceptable for 2021, but is unacceptable for 2031. Therefore a roundabout is recommended for the interim 4-lane Lauzon Parkway, and will be converted to a signalized intersection for the ultimate 6-lane Lauzon Parkway.

The proposed Highway 401 Interchange, a double teardrop roundabout configuration, will provide all moves access between Lauzon Parkway and Highway 401. The interchange is located approximately mid-way between the adjacent underpasses: 9th Concession Road and 10th Concession Road / County Road 17. The recommended plan meets the traffic demand of the EA planning horizon (2031), however, the Project Team recognized that the bridge will have a 75 year life span and also that the Full Build Out traffic volumes of the Sandwich South Secondary Plan area need to be accommodated in the long term plans. Therefore, the Teardrop Roundabout option (Option 2) includes the protection of converting to a Parclo A4 in the long-term future.

PART B: COUNTY ROAD 42

Based on the projected growth within the study area, there is a need for the widening of County Road 42. The transportation assessment concluded that County Road 42 from Walker Road to County Road 19 (Manning Road) will need to be widened to 4 lanes (expected to be around 2018). The transportation assessment also concluded that County Road 42 from County Road 19 (Manning Road) to County Road 25 (E. Puce Road) will need to be widened to 4 lanes (expected to be required by 2031).

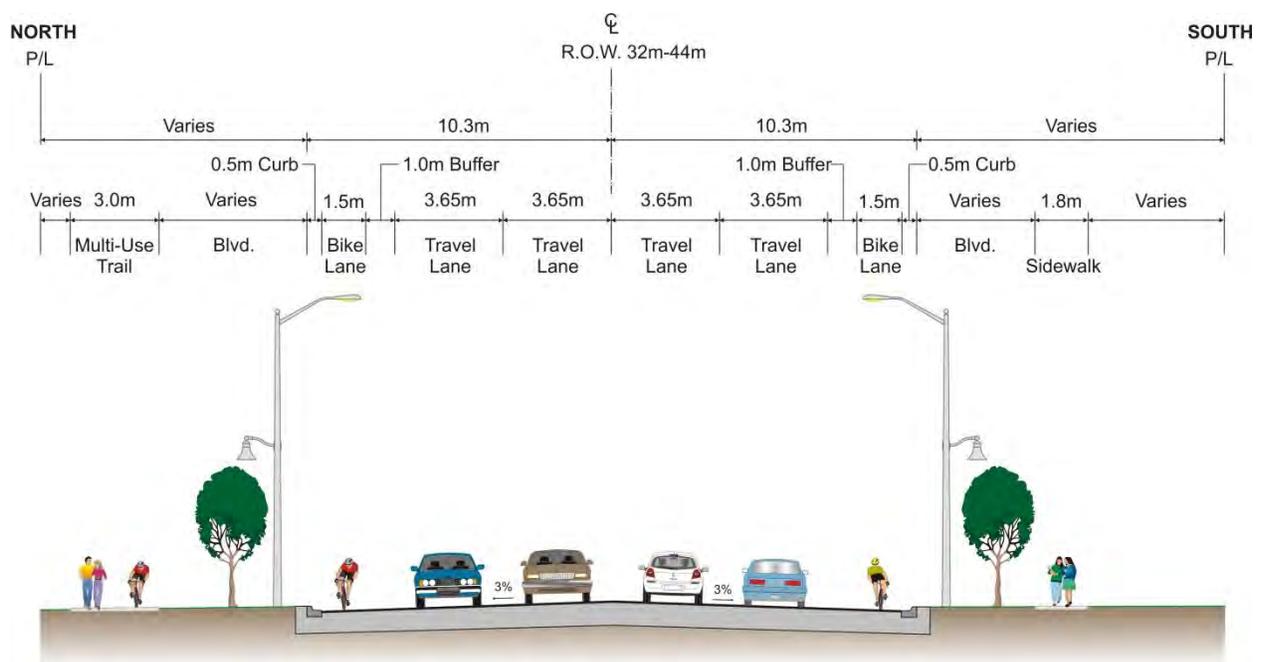
A ‘best-fit’ widening approach is recommended for County Road 42 due to the varying characteristics, limitations of adjacent lands, and minimizing adverse impacts to existing properties. The ‘best-fit’ approach entails varying how the roadway is widened (to the north, south, or symmetrically) along the corridor to best minimize impacts.

RECOMMENDED CROSS-SECTIONS

Within the City of Windsor, from Walker Road to the City/County Boundary, County Road 42 is planned as a controlled access Class 1 Arterial roadway. The proposed cross-section is illustrated in Exhibit E-5, and includes a ‘best-fit’ urban undivided 4-lane cross-section ranging from 32 m to 40 m, with a multi-use trail, buffer-separated bike lanes and sidewalks. A short section from Lauzon Road to the City/County Boundary includes a two-way-left-turn-lane with a 44 m ROW.

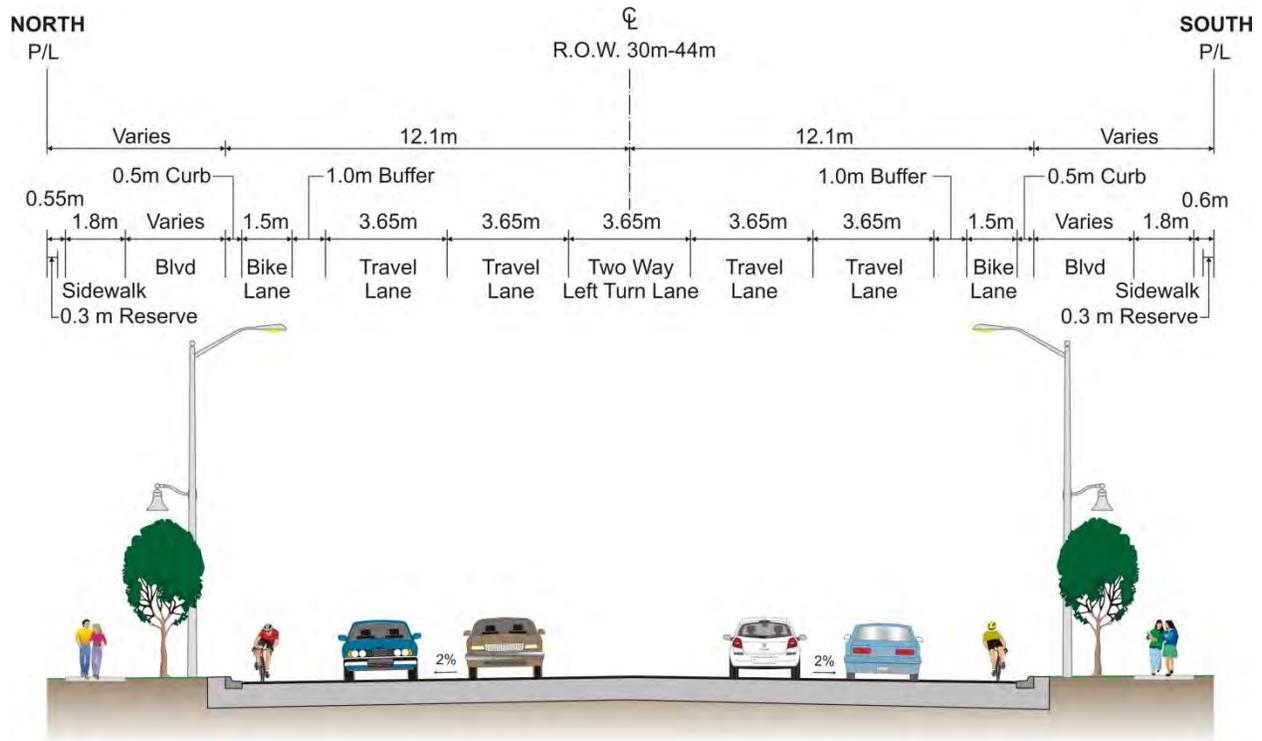
In order to keep the continuity of the cross-sectional characteristics of the roadway, the City’s cross-section design on County Road 42 was maintained leading into the County to County Road 43 (Banwell Road).

**EXHIBIT E-5: TYPICAL CROSS-SECTION COUNTY ROAD 42
 WALKER ROAD TO THE CITY/COUNTY BOUNDARY**



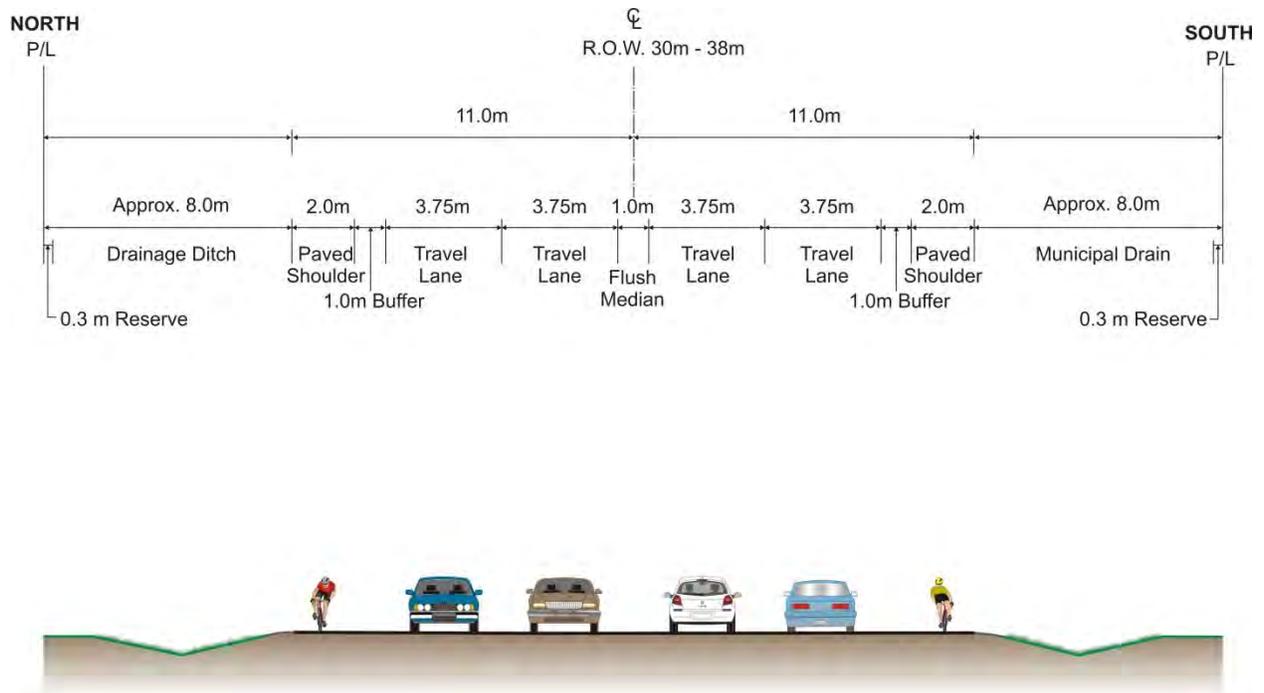
Within the County of Essex, from the City/County Boundary to County Road 19 (Manning Road), County Road 42 is being planned as a controlled access urban arterial roadway. The proposed cross-section is illustrated in Exhibit E-6, and includes a 'best-fit' urban undivided 4-lane cross-section ranging from 30 m to 35 m. A short section with Context Sensitive Design was implemented for this segment of County Road 42 with reduced lane widths, buffer-separated bike lanes and sidewalks on both sides of the roadway, illumination and landscaped boulevards.

**EXHIBIT E-6: TYPICAL CROSS-SECTION COUNTY ROAD 42
 CITY/COUNTY BOUNDARY TO COUNTY ROAD 19 (MANNING ROAD)**



Within the County of Essex, from County Road 19 (Manning Road) to County Road 25 (E. Puce Road), County Road 42 is being planned as a controlled access rural arterial roadway. The proposed typical cross-section is illustrated in Exhibit E-7, and includes a 38 m rural divided 4-lane cross-section with buffer-separated paved shoulders (designated cycling route). Curb and gutter were introduced in some short sections to reduce property impacts.

**EXHIBIT E-7: TYPICAL CROSS-SECTION COUNTY ROAD 42
 COUNTY ROAD 19 (MANNING ROAD) TO COUNTY ROAD 25 (E. PUCE ROAD)**



INTERSECTIONS

County Road 42 has twenty-nine intersections; as listed (from west to east) below, the existing and future recommended intersections are noted.

SUMMARY OF COUNTY ROAD 42 INTERSECTIONS

Intersecting Road	Existing Intersection	Future Intersection
City of Windsor		
Walker Road	Signalized	Signalized
Riberdy Road	Unsignalized	Unsignalized ¹
Baseline Road	Unsignalized	Roundabout ²
7 th Concession Road	Unsignalized	
8 th Concession Road	Unsignalized	Roundabout
9 th Concession Road	Unsignalized	Roundabout
Lauzon Parkway	Signalized	Signalized – Realigned
10th Concession Road / County Road 17	Signalized	Unsignalized – RIRO ³
Lauzon Road	Unsignalized	Signalized – re-aligned
County of Essex		
County Road 43 (Banwell Road)/ 11 th Concession Road	Signalized	Roundabout ⁴
Proposed Future Road (By Others)	N/A	Unsignalized
Odessa Drive	Unsignalized	Unsignalized
Shiff Drive	Unsignalized	Unsignalized
Le Boeuf Avenue	Unsignalized	Unsignalized
St. Alphonse Avenue	Unsignalized	Unsignalized
Lesperance Road	Signalized	Signalized
Strawberry Drive	Unsignalized	Unsignalized
County Road 19 (Manning Road)	Signalized	Roundabout
Lakeshore Road 101	Unsignalized	Unsignalized
Suncrest Court	Unsignalized	Unsignalized
Suncrest Drive	Unsignalized	Unsignalized
County Road 21/Elmstead Road	Unsignalized	Unsignalized
Lakeshore Road 103	Unsignalized	Unsignalized
Patillo Road	Signalized	Roundabout
Lakeshore Road 105	Unsignalized	Unsignalized
Wallace Line Road	Unsignalized	Unsignalized
Lakeshore Road 107	Unsignalized	Unsignalized
W. Puce Road	Unsignalized	Unsignalized
County Road 25 (E. Puce Road)	Signalized	Roundabout

1. Due to a centre median on County Road 42, this intersection will be a right-in-right-out.
2. 2 intersections closely spaced are proposed to be rationalized to 1 roundabout.
3. Right-In-Right-Out (RIRO); includes future median protection, extended from Lauzon Parkway intersection.
4. Based on re-alignment of County Road 43 (Banwell Road) and 11th Concession Road from County's *County Road 43 (Banwell Road) EA* (2009).

Intersections – County Road 43 (Banwell Road)

The County of Essex recently completed the *County Road 43 (Banwell Road) Class EA Study (2009)*, which recommended the existing 2-lane roadway be widened from 2 to 4 lanes from south of the CR Rail line to south of County Road 42, and an improved realigned signalized intersection with County Road 42, to eliminate the existing off-set 3-leg intersections on County Road 42.

However, as part of this EA and the proposed widening of County Road 42, the future needs of all major intersections were evaluated, including consideration for roundabouts. A 2-lane roundabout is preferred as it will provide a good level of service, has a safer design, and creates a gateway between the City of Windsor and the County of Essex / Town of Tecumseh.

The widening and realignment of County Road 43 (Banwell Road) is identified in the County's 2021 road network improvements. The widening of County Road 42 is also required by 2021, based on this EA Study. However, it is recognized that the construction of these two improvements are not likely to occur concurrently. Therefore, it is recommended that if the widening of County Road 42 proceeds, prior to the widening of County Road 43, that it includes the construction of the proposed intersection improvements (2-lane roundabout) and associated realignment of County Road 43 (Banwell Road).

Intersections – County Road 19 (Manning Road)

The County of Essex recently completed the *County Road 19 (Manning Road) Class EA Study (2009)*, which recommended the existing 2-lane roadway be widened from 2 to 4 lanes from Highway 3 to the VIA Rail Line, conversion of the section from south of County Road 42 to County Road 22 from rural to an urban cross-section, and an improved signalized intersection with County Road 42.

However, as part of this EA and the proposed widening of County Road 42, the future needs of all major intersections were evaluated, including consideration for roundabouts. A 2-lane roundabout is preferred as it will provide a good level of service, has a safer design, and creates a gateway between the Towns of Tecumseh and Lakeshore.

The widening and realignment of County Road 19 (Manning Road) is identified in the County's 2021 road network improvements. The widening of County Road 42 is also required by 2021, based on this EA Study. However, it is recognized that the construction of these two improvements are not likely to occur concurrently. Therefore, it is recommended that if the widening of County Road 42 proceeds, prior to the widening of County Road 19, that it includes the construction of the proposed intersection improvements (2-lane roundabout).

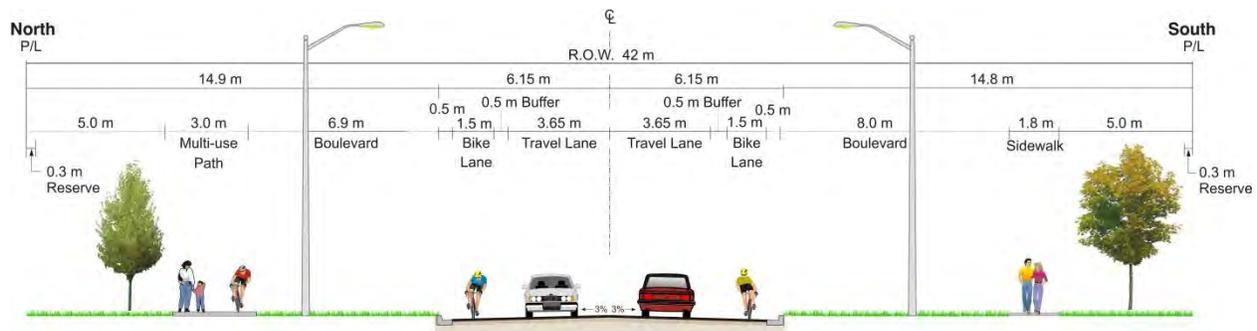
PART C: E-W ARTERIAL

A new east-west linkage is needed within the future Sandwich South community, which will provide a spine within the transportation network and support the future development capacity demands of the community. The future East-West Arterial link from Walker Road to 10th Concession Road / County Road 17 was identified in the *Windsor Annexed Area Master Plan Study* (2006). The E-W Arterial was further developed in the *East Pelton Secondary Plan* (2009) which included a future east-west arterial road connecting to Walker Road, and formed the basis for this roadway component in this EA.

RECOMMENDED CROSS-SECTION

Within the City of Windsor, from Walker Road to 10th Concession Road / County Road 17, a new E-W Arterial is planned as a controlled access Class II Arterial urban roadway. The proposed cross-section is illustrated in Exhibit E-8, and includes a 42 m right-of way, 2-lane urban undivided cross-section, multi-use trail, buffer-separated bike lanes and sidewalks, and landscaped boulevards. The cross-section will allow for sufficient width when the E-W Arterial requires widening to four lanes (beyond 2031).

**EXHIBIT E-8: TYPICAL CROSS-SECTION E-W ARTERIAL
 WALKER ROAD TO 10TH CONCESSION ROAD / COUNTY ROAD 17**



INTERSECTIONS

E-W Arterial has six proposed intersections; as listed (from west to east) below, the existing and future recommended intersections are noted.

SUMMARY OF E-W ARTERIAL INTERSECTIONS

Intersecting Road	Existing Intersection	Future Intersection
Walker Road/Legacy Park	Signalized	Signalized ¹
7 th Concession Road	N/A	Unsignalized/RIRO
Concession 7 Lot 14 Mid-block Property Access	N/A	Roundabout ²
Proposed Future Road	N/A	Roundabout
8 th Concession Road	N/A	Roundabout
9 th Concession Road	N/A	Roundabout
Lauzon Parkway	N/A	Roundabout ³
10th Concession Road / County Road 17	N/A	Roundabout

1. A median will be placed on E-W Arterial between the westbound left-turn and through lanes, to prevent unsafe operations from 7th Concession to southbound Walker Road.
2. A roundabout will be provided as an access to 4490 7th Concession Road concurrently with the proposed improvement at Walker Road; the roundabout will also maintain access to 7th Concession Road from Walker Road, through u-turn movements.
3. The LOS for a roundabout is acceptable for 2021, but is unacceptable for 2031. Therefore a roundabout is recommended for the interim 4-lane Lauzon Parkway, and will be converted to a signalized intersection for the ultimate 6-lane Lauzon Parkway.

ACTIVE TRANSPORTATION

The City's *Bicycle Use Master Plan* (BUMP, 2001) calls for a cycling network of bike lanes, multi-use trails and signed bike routes, and provides design guidelines along with specific strategies for improving cycling awareness, the cycling-transit link and end-of-trip facilities.

The County of Essex has adopted the County Wide Active Transportation Study (CWATS, 2012) to guide the County and local area municipalities in implementing a County-wide network of cycling and pedestrian facilities for the next 20 years.

Recognizing the changes to the existing road network proposed by this EA, and the future land use being developed by the Sandwich South Secondary Plan, enhancements to the proposed active transportation networks in BUMP and CWATS were considered.

An overall active transportation network was proposed, connecting facilities from BUMP and CWATS, as well as those proposed in this EA and the draft Sandwich South Secondary Plan. The specific active transportation facilities proposed in this EA, regarding Lauzon Parkway, County Road 42, and E-W Arterial are described below.

City of Windsor

Within the City of Windsor, the active transportation facilities along Lauzon Parkway include a multi-use trail on the west side and a sidewalk on the east side. A separate active transportation bridge over Highway 401 is proposed in order to link the multi-use trail (MUT) north and south of the highway. On County Road 42 facilities include: buffer-separated bike lanes, a sidewalk (south side), and a multi-use trail (north side); and on the E-W Arterial facilities include: buffer-separated bike lanes, a sidewalk (south side), and multi-use trail (north side).

The proposed active transportation network within the Sandwich South community is presented in Exhibit 7-1: Active Transportation Overall Study Area Context Plan – Existing and Proposed Facilities.

County of Essex

Within the County of Essex, the active transportation facilities along Lauzon Parkway include a multi-use trail on the west side. A separate active transportation bridge over Highway 401 is proposed in order to link the multi-use trail (MUT) north and south of the highway.

The City's active transportation facilities on County Road 42 extend into the County from the City/County Boundary to County Road 43 (Banwell Road). From County Road 43 (Banwell Road) to County Road 19 (Manning Road), the active transportation facilities include: bike lanes and sidewalks on both sides; from County Road 19 (Manning Road) to County Road 25 (E. Puce Road) the cross-section includes paved shoulders.

Highway 401 Active Transportation Bridge

A separate active transportation bridge over Highway 401 is proposed in order to link the multi-use trail (MUT) north and south of the highway, between the City of Windsor and the County of Essex. The location of the active transportation bridge, approximately 350 m west of the Lauzon

Parkway alignment, between the Lauzon Parkway Highway 401 Overpass and 9th Concession Road, provides continuous connection of the MUT north and south of Highway 401, additional potential connections to planned development north and south of Highway 401, avoids excessive out-of-way travel for pedestrians and cyclists, and has a relative low cost in comparison to the other alternatives evaluated, due to its shorter bridge span length.

IMPLEMENTATION PHASING AND PRELIMINARY COST ESTIMATE

The detailed construction staging will also be confirmed in the next phase of design. The timing and phasing of the subsequent phases of design for this Lauzon Parkway Class EA, will likely be split into different smaller projects, for each road segment and jurisdiction.

Although the phases listed below are interconnected based on future traffic conditions as well as at connecting intersections, the timing of continuation of the next phase of design and construction of each phase will be determined independently, by the appropriate proponents, based on future growth conditions, availability of funds, and other such concerns.

The study team recommends the improvements be constructed, generally consistent with the timing of the identified transportation needs, in the following phases, also illustrated in Exhibit E-9. Where applicable, required coordination with other planned improvements is noted:

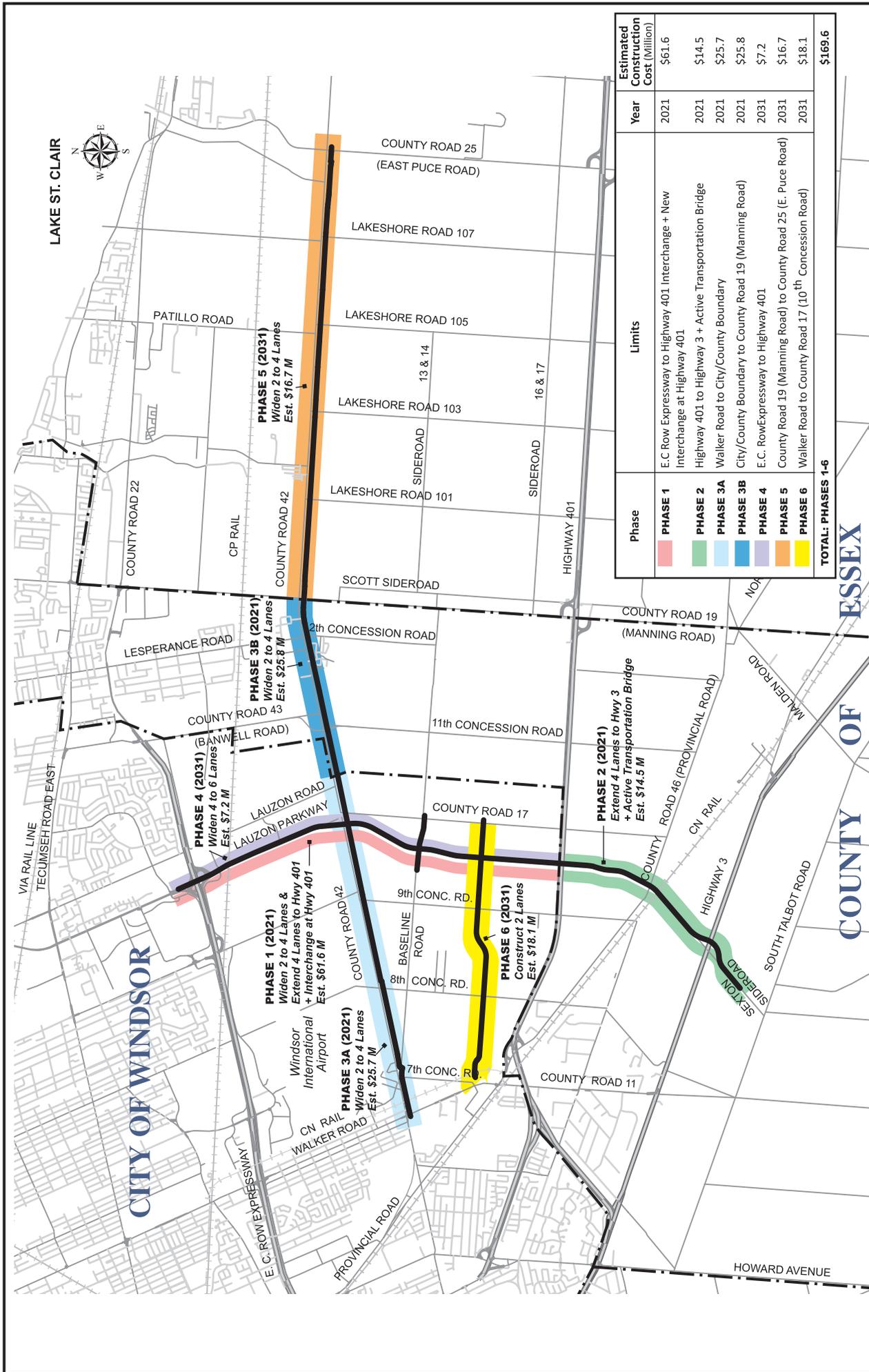
- **Phase 1** – Widening of Lauzon Parkway from 2 to 4 lanes from E. C. Row Expressway to County Road 42, and extension of the 4-lane Lauzon Parkway from County Road 42 to Highway 401, including new interchange at Highway 401.
- **Phase 2** – Further extension of the 4-lane Lauzon Parkway from Highway 401 to Highway 3, including the Active Transportation Bridge over Highway 401.
- **Phase 3A** – Widening County Road 42 from 2 to 4 lanes with intersection improvements between Walker Road and County Road 43 (Banwell Road) will be required when the volume in the peak direction reaches approximately 700 vph. It is recommended that if the widening of County Road 42 proceeds, prior to the widening of County Road 43, that it includes the construction of the proposed intersection improvements (2-lane roundabout) and associated realignment of County Road 43 (Banwell Road).
- **Phase 3B** – Widening County Road 42 from 2 to 4 lanes with intersection improvements between County Road 43 (Banwell Road) and County Road 19 (Manning Road) will be required when the volume in the peak direction reaches approximately 700 vph. It is recommended that if the widening of County Road 42 proceeds, prior to the widening of County Road 19, that it includes the construction of the proposed intersection improvements (2-lane roundabout).
- **Phase 4** – Widening of Lauzon Parkway between E. C. Row Expressway and Highway 401 from 4 to 6 lanes. Widening from 4 lanes to 6 lanes will be required when the volume in the peak direction reaches approximately 1600 vph.
- **Phase 5** – Widening County Road 42 from 2 to 4 lanes with intersection improvements between County Road 19 (Manning Road) and County Road 25 (E. Puce Road). Widening will be required when volume in the peak direction reaches approximately 700 vph.
- **Phase 6** – Construction of the new 2-lane E-W Arterial between Walker Road and County Road 17. Timing of construction of the E-W Arterial will be driven by development within the Sandwich South area, and can be initiated from Lauzon Parkway or Walker Road.

At this time, no commitment has been made to fund the next phases of design. As a result, construction timing cannot be confirmed. The timing for construction will be considered in the context of other regional projects.

A summary of the project construction costs estimates is presented in the following section in 2013 dollars and the detailed breakdown is included in Appendix O. The costs include roadway construction costs, traffic signals, street lighting and minor hydro distribution, storm sewers/stormwater management, landscaping and gateway features, and cut/fill, where applicable. The minor items included are: curb and gutter, subdrains, traffic staging, signing and line painting.

The construction costs do not include new municipal services (i.e., sanitary sewers, watermains); utility relocations (i.e., sanitary sewers, watermains, municipal drains, hydro, gas, etc); and property acquisition costs. Major hydro distribution along new roadways is also not included.

Location	Estimated Cost (2013 \$M)
Lauzon Parkway	
Forest Glade Drive to Highway 401 (City of Windsor) Interim Build 4 Lanes (2021)	\$36.3
Forest Glade Drive to Highway 401 (City of Windsor) Ultimate Widen from 4 to 6 Lanes (2031)	\$7.2
Highway 401 Teardrop Roundabout Interchange (2021)	\$25.3
Active Transportation Bridge Over Highway 401	\$5.5
Highway 401 to Highway 3 (County of Essex) Build 4 Lanes (2021)	\$9.0
Lauzon Parkway Sub-Total (M)	\$83.3
County Road 42	
Walker Road to City/County Boundary (City of Windsor) Widen from 2 to 4 Lanes (2021)	\$25.7
City/County Boundary to County Road 19 (County of Essex) Widen from 2 to 4 Lanes (2021)	\$25.8
County Road 19 to County Road 25 (County of Essex) Widen from 2 to 4 Lanes (2031)	\$16.7
County Road 42 Sub-Total (M)	\$68.2
E-W Arterial	
Walker Road to County Road 17 (City of Windsor) Build New 2-Lane Road (2031)	\$18.1
E-W Arterial Sub-Total (M)	\$18.1
Project Total (M)	\$169.6



IMPLEMENTATION PHASES



IMPACT ASSESSMENT AND MITIGATION (CHAPTER 6.9)

Mitigation of impacts is applied throughout the EA process, including development of alternatives to avoid constraints, and selection of the preferred alternative by identifying the alternative that has the least overall effects on the environment. Some adverse effects cannot be totally avoided; therefore additional mitigating measures are identified in the report, in order to avoid or minimize effects. The measures identified in this report will be further developed and finalized in the next phase of design, and will be included in the contract documents for implementation during construction.

FUTURE CONSIDERATIONS AND COMMITMENTS TO FUTURE WORKS (CHAPTER 7)

Following EA approval/ESR clearance, the project may proceed to the next phase of design. Design related approvals and permits may be required in order to proceed to construction.

Proceeding with the implementation of items brought into consideration during the Lauzon Parkway EA planning process, but which are outside of the scope of this EA process, will be incumbent upon the proponent, as deemed necessary, through separate processes outside of this EA.

Appropriate policies and recommendations from this EA Study should be integrated into the Official Plans of the involved municipalities. This EA Study also reviewed within the study area the existing cycling Master Plans: BUMP and CWATS, and where there were gaps, examined opportunities and recommended new pedestrian and cycling facilities as part of the roadway EA's (i.e., Lauzon Parkway, E-W Arterial, and County Road 42) and also within the broader study area. All municipalities, including the local municipalities within the County, should determine where and how to incorporate this information into their Official Plans, where required.

Standard construction and environmental protection practices will be applied to this project. The environmental protection and mitigating measures and provisions described in this report will be developed fully during the subsequent phases of design of this project. The detailed construction staging will also be confirmed in the next phase of design. The timing and phasing of the subsequent phases of design will likely be split into different project phases.

The study team recommends the improvements be constructed in phases generally consistent with the timing of the identified transportation needs; where applicable, coordination with other planned improvements is required.

A monitoring program will be established to ensure that the recommended mitigation measures specified in this ESR are undertaken.

1.0 INTRODUCTION

1.1 INTRODUCTION AND BACKGROUND

A Class Environmental Assessment Study has been completed to address the future requirements for Lauzon Parkway Improvements. The main study area components are as follows:

- Lauzon Parkway from E.C. Row Expressway to County Road 42 (2.5 km);
- Lauzon Parkway's extension to Highway 401 (3 km);
- Lauzon Parkway's further extension to Highway 3 (2.5 km);
- County Road 42 from Walker Road to the City/County Boundary (5.5 km);
- County Road 42 from the City/County Boundary to County Road 25 (10 km); and
- The future East-West Arterial from Walker Road to 10th Concession Road / County Road 17 (5 km)

A parallel study is being carried out for the preparation and approval of a Secondary Plan for the remainder of the lands transferred to the City of Windsor in 2003. The area of the draft Sandwich South Secondary Plan is bounded, in general terms, by: Provincial Highway 401 to the south; the Windsor International Airport, CP Rail mainline, and E.C. Row Expressway to the north; 8th Concession Road to the west; and the Town of Tecumseh to the east.

Concurrently, the Essex Region Conservation Authority (ERCA) in conjunction with the City of Windsor and the Town of Tecumseh is undertaking the *Upper Little River Watershed Master Drainage Plan and Stormwater Management Plan*. This study will determine the stormwater management infrastructure for the Upper Little River Watershed area to service existing and future development.

The study area, as shown in Exhibit 1-1, covers lands within the City of Windsor and the County of Essex, including the Town of Lakeshore and the Town of Tecumseh. The majority of existing lands are currently rural, with a few pockets of residential, industrial, and commercial lands. The built-up communities of Forest Glade and Fontainbleu are located immediately to the north of E.C. Row Expressway. Windsor International Airport is located just south of the E.C. Row Expressway adjacent to the study area.

There is a hydro corridor running east-west in the study area. The CP Rail Windsor Subdivision Line runs in an east-west direction crossing E.C. Row Expressway just north of the Airport. The CN CASO Subdivision Line also transverses the south portion of the study area north of Highway 3. In terms of natural environment, the Little River corridor that runs from north to south is the most prominent feature in the area. There are also isolated woodlots and designated Provincially Significant Wetlands (PSW's) located mainly within or near the Airport.

This study will follow the *Ontario Environmental Assessment Act* through the application of the Municipal Class Environmental Assessment (October 2000 as amended in 2007 and 2011) and will refer to the Environmental Assessment for Provincial Transportation Facilities for potential highway improvements. With the coming into force of the *Canadian Environmental Assessment Act* (2012), new regulations mean that the Act no longer applies. The preparation and approval of the Secondary Plan will follow the requirements of the *Ontario Planning Act*.

1.1.1 Let's Get Windsor-Essex Moving (LGWEM)

In March 2004, the Governments of Canada, Ontario and Windsor announced funding for the *Let's Get Windsor-Essex Moving* (LGWEM) strategy, a \$300-million joint investment by the federal and provincial governments for several short- and medium-term projects to improve traffic flow at the Windsor-Detroit Gateway, Canada's busiest border crossing. Federal funding for this strategy comes from the Border Infrastructure Fund (BIF).

As part of the LGWEM strategy, a commitment was made to conduct an environmental assessment and preliminary design study to examine upgrades and the extension of Lauzon Parkway between the E.C. Row Expressway and Highway 401, and its further extension to Highway 3. The environmental assessment and preliminary design of improvements to Lauzon Parkway is one of the initiatives to improve the Windsor-Detroit Gateway that was further announced by the Government of Ontario on April 9, 2010.

In addition, partners have agreed to undertake an EA for County Road 42 (Division Road) between Walker Road and City/County Boundary and for County Road 42 from City/County Boundary to County Road 25 (E. Puce Road), the future E-W Arterial between Walker Road and 10th Concession Road / County Road 17, as well as a Secondary Plan for the Sandwich South lands. These components are included because of their interconnection to the potential improvements to Lauzon Parkway.

1.2 ONTARIO ENVIRONMENTAL ASSESSMENT ACT

The Ontario Environmental Assessment Act (OEAA) is a planning and decision-making process used to promote environmentally responsible decision-making, which applies to all public sector proponents (i.e., provincial ministries, municipalities, designated public bodies) and private sector proponents who are proposing to carry out infrastructure projects.

The OEAA allows for the development of streamlined self-assessment planning processes for activities that are carried out routinely and the impacts are generally predictable or well understood. A Class EA is an approved planning document that defines groups of projects and activities and the environmental assessment (EA) processes which the proponent commits to following for each of these undertakings. Once approved, a Class EA provides an environmental assessment planning framework which can be used by a proponent for all projects that falls within the approved class of undertakings.

The proponents for this study are the Ministry of Transportation, the City of Windsor and the County of Essex. Accordingly, this study will follow the *Ontario Environmental Assessment Act* (OEAA) through the application of the Municipal Class Environmental Assessment (October 2000 as amended in 2007 and 2011). The preparation and approval of the Secondary Plan will follow the requirements of the *Ontario Planning Act*.

It is noted that although there was no 'formal' integration of the Municipal Class EA for the transportation improvements and the Ontario Planning Act processes for the Secondary Plan, there was integration through: combining Project Team meetings, scheduling the Public Information Centres and Workshops together at the same time and venue, combining public notices, and a mutual sharing of information.

1.2.1 Municipal Class Environmental Assessment

The Municipal Class EA is an approved Class EA process which applies to municipal infrastructure projects including roads, water and wastewater. The Municipal Class EA outlines a comprehensive planning process that provides a rational approach to consider the environmental and technical advantages and disadvantages of alternatives and their trade-offs in order to determine a preferred alternative for addressing the problem (or opportunity), as well as consultation with technical/approval agencies and the public throughout the process.

Provided the Class EA planning process is followed, a proponent does not have to apply for formal approval under the EA Act.

The Municipal Class EA process is shown on Exhibit 1-2 and includes:

- Phase 1 - identify the problem or opportunity
- Phase 2 - identify alternative solutions
- Phase 3 - examine alternative methods of implementing the preferred solution
- Phase 4 - prepare and file an Environmental Study Report
- Phase 5 - proceed to detail design, construction and operation

The classification of projects and activities under the Class EA for municipal infrastructure projects is as follows:

Schedule ‘A’:Projects which are limited in scale, have minimal adverse environmental effects and include the majority of municipal road maintenance, operational and emergency activities. These projects are pre-approved and therefore a municipality can proceed without further approval under the EA Act.

Schedule ‘A+’:Projects are also pre-approved, however, the public is to be advised prior to implementation of the project. These projects are approved subject to a screening process which includes contacting directly affected public and relevant review agencies.

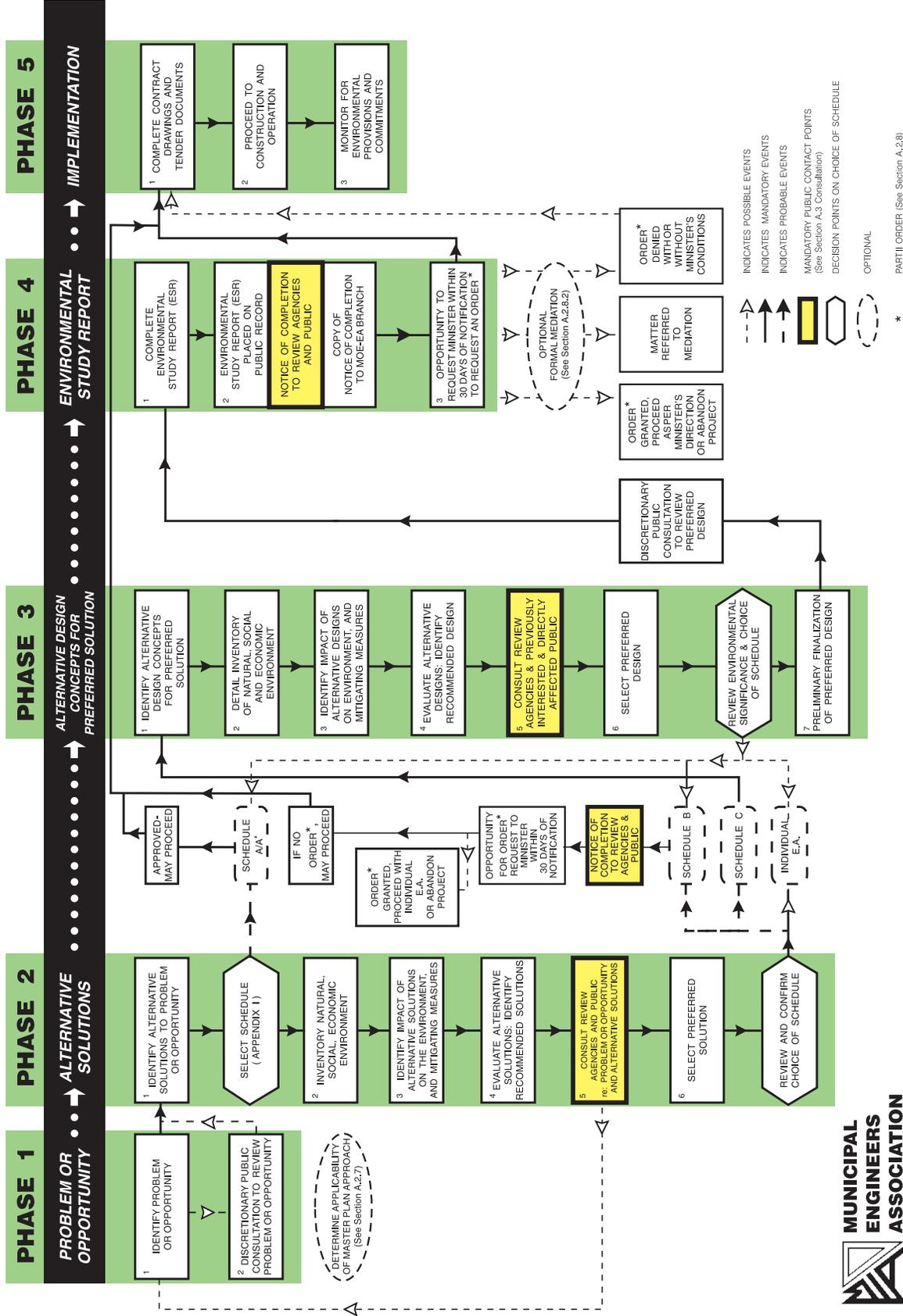
Schedule ‘B’:Projects which have the potential for some adverse environmental effects, and generally includes improvements and minor expansions to existing facilities. These projects are approved subject to a screening process which includes consulting with stakeholders who may be directly affected and relevant review agencies.

Schedule ‘C’:Includes the construction of new facilities and major expansions to existing facilities, these undertakings have the potential for significant environmental effects and which proceed under the planning and documentation procedures outlined in the Municipal Class EA document.

The proposed nature of this undertaking identified it as Schedule ‘C’ under the Municipal Class EA. An Environmental Study Report (ESR) is required for Schedule ‘C’ projects to document the environmental assessment process, which must be carried out prior to proceeding with construction of the proposed undertaking. The ESR must be filed for a minimum 30 day period of public review. If concerns are raised that cannot be resolved through discussions with

the proponent of the project, a “Part II Order” may be requested. This is explained in the next section.

NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA



Lauzon Parkway Improvements
Class Environmental Assessment Study
Environmental Study Report

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROCESS

1.2.2 Part II Order

The Municipal Class EA process includes an appeal provision to change the status of a project from being subject to the Municipal Class EA process to being subject to an individual environmental assessment per Part II of the Ontario EA Act, which requires the formal submission of an EA document to the Minister of the Environment for government review and approval.

It is recommended that all stakeholders work together to determine the preferred means of addressing a problem or opportunity. If concerns regarding a project cannot be resolved in discussions with the proponent (for this study, the proponent is the Ministry of Transportation of Ontario, the City of Windsor, and the County of Essex), then members of the public, interest groups, agencies, and other stakeholders may submit a written request to the Minister of the Environment, by order, to require the proponent to comply with Part II of the Environmental Assessment Act before proceeding with a proposed undertaking, which has been subject to the Class EA requirements. This is known as a request for a ‘Part II Order’.

A Part II Order request is an opportunity for anyone to ask that a higher level of assessment be carried out through preparation of an individual environmental assessment for projects planned following an approved

The Minister of the Environment then has the ability to:

- deny the Part II Order request,
- impose conditions when the request is denied; or
- grant a Part II Order request (i.e., require an individual EA be prepared).

The Minister may also refer Part II Order requests to mediation prior to making a decision about whether an individual EA is required.

1.2.3 Class Environmental Assessment for Provincial Transportation Facilities

Through the application of the Municipal Class EA process and preparation of this ESR, the requirements of the MTO Class EA process are also being met.

The Ontario Ministry of Transportation’s Class Environmental Assessment for Provincial Transportation Facilities (MTO Class EA) was approved under the *Ontario Environmental Assessment Act* (EA Act) in the Fall of 1999 and amended in 2000. This planning document defines groups of projects and activities, and the environmental assessment processes that MTO has committed to follow for these projects. Provided that this process is followed and its requirements are met for a project, projects and activities included under the MTO Class EA do not require formal review and approval under the EA Act.

The MTO Class EA process is principle based. The following principles underlie the Class EA process for all transportation projects:

- Transportation engineering
- Environmental protection
- External consultation
- Evaluation that is intended to achieve the best overall balance
- Documentation
- Part II Order
- Environmental clearance to proceed

Where appropriate, this Environmental Study Report ESR will reference the principles and how they were achieved during the environmental assessment process.

1.2.4 Environmental Study Report

This Environmental Study Report (ESR) documents the process followed to determine the recommended undertaking and the environmentally significant aspects of the planning, design, and construction of the improvements for Lauzon Parkway, County Road 42 and E-W Arterial. It describes: the determination of the problems and opportunities being addressed, alternatives solutions that were considered, a description of the preferred alternatives and its purpose, the existing social, natural and cultural environmental considerations, environmental effects and proposed mitigating measures, and commitments to further work, consultation, and monitoring, associated with the implementation of the project.

The ESR document is outlined as follows:

- Chapter 1 provides an overview of the purpose of the study, major features within the study area, applicability of Municipal, Provincial, and Federal Regulations, study organization and consultation.
- Chapter 2 provides the historic and existing transportation characteristics of the study area, and describes related studies within the region. This chapter also includes the Transportation Needs Assessment documenting the need of a future Lauzon Parkway Extension, a future E-W Arterial, and to improve the existing Lauzon Parkway and Country Road 42.
- Chapter 3 describes the alternative and preferred planning solutions.

In order to easily identify the study process for each of the three main EA components, Chapters 4, 5, and 6 have been broken out under sub-headings: Part A - Lauzon Parkway (A.4, A.5, and A.6); Part B - County Road 42 (B.4, B.5, and B.6); and Part C - E-W Arterial (C.4, C.5, and C.6).

- Chapters A.4, B.4, and C.4 describe the existing conditions.
- Chapters A.5, B.5, and C.5 identify and evaluate design alternatives.

- Chapters A.6, B.6, and C.6 describe the Recommended Plan including design plates, estimated costs, property requirements, and environmental effects and mitigation measures of the Recommended Plan.
- Chapter 7 describes the permits and approvals which may be required for the project, future design and construction considerations, and monitoring and maintenance considerations.

For further information on the Municipal Class EA process, readers are referred to the Municipal Class EA document (2000, amended 2007 and 2011). The Project Team for this Class EA Study is available to discuss this information and can be contacted as follows. Additional details on the project team organization are presented in Section 1.6.

Mr. Rakesh Shreewastav, P.Eng., AVS
Senior Project Engineer, MTO Windsor BIIG
Project Delivery Office
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Windsor, ON N9A 1L9
Phone: (519) 973-7367
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E-mail: rakesh.shreewastav@ontario.ca

Ms. Josette Eugeni, P.Eng.
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City of Windsor
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Windsor, ON N8X 3M7
Phone: (519) 255-6418
Fax: (519) 973-5476
E-mail: jeugeni@city.windsor.on.ca

Ms. Jane Mustac, P.Eng.
Manager of Transportation Planning
County of Essex
360 Fairview Avenue West
Essex, ON N8M 1Y6
Phone: (519) 776-6441 ext. 1397
Fax: (519) 776-4455
E-mail: jmustac@countyofessex.on.ca

Mr. Michael Chiu, P. Eng.
Consultant Project Manager
McCormick Rankin
2655 North Sheridan Way, Suite 300
Mississauga, ON L5K 2P8
Phone: 905-823-8500
Fax: 905-823-8503
E-mail: lauzonparkwayea@mrc.ca

It is likely that minor modifications to the recommended undertaking and its impacts on the environment will be identified during the next phase of design; however, minor modifications are not anticipated to change the intent of the undertaking. It is expected that any additional impacts to the environment would be addressed through standard mitigating measures. Any significant modifications to the undertaking or changes to the environment would be addressed through an Addendum to the ESR and would require public notification as described in Section A.4.3 of the Municipal Engineers Association *Municipal Class EA* document.

1.3 CANADIAN ENVIRONMENTAL ASSESSMENT ACT (CEAA 2012)

At the outset, this study was deemed likely to be subject to the requirements of the Canadian Environmental Assessment Act (1995 as amended 2003). However, the new Canadian Environmental Assessment Act, 2012 (CEAA 2012), and associated regulations came into effect on July 6, 2012.

Under CEAA 2012, an environmental assessment is required of “designated projects”. The Lauzon Parkway Improvements Study was reviewed by the Project Team against the “designated projects” list contained in the new regulation. The improvements proposed as part of this study

such as a new arterial road or a new highway interchange do not fall under any category where a Federal EA is required; meeting the requirements of the Ontario EA Act is deemed sufficient.

Non-designated projects may still require federal permits/approvals (e.g., the Navigable Waters Protection Act or Fisheries Act). However, the need for these approvals is no longer considered a “trigger” for a federal review process.

1.4 STUDY AREA

The study area is shown on Exhibit 1-1.

1.5 STUDY APPROACH

In order to fulfill the Municipal Class EA requirements and to ensure a thorough understanding of the problem being addressed, the alternatives considered and their associated potential environmental impacts and mitigating measures, and, to enable consultation with the public and technical/approval agencies, the study followed the Municipal Class EA process as shown in Exhibit 1-2.

Given that this is a Schedule C project, Phases 1 to 4 of the Municipal Class EA process have been carried out as follows:

- Phase 1: Identify Problems and Opportunities (i.e., Need and Justification)
(April 6, 2011 – Notice of Commencement)
- Phase 2: Identify Preferred Solutions and Develop Design Alternatives
(July 14, 2011 – Public Information Centre #1)
- Phase 3: Evaluation and Selection of Preferred Design Alternative
(October 22, 2012 – Public Information Centre #2)
- Phase 4: Prepare and File Environmental Study Report
(January 20, 2014 – File ESR for Review Period)

This ESR documents the study process and also outlines the commitments to be followed in the subsequent implementation of the recommended undertaking, i.e. Phase 5 which includes detail design and construction.

1.6 STUDY ORGANIZATION

The study organization reflects the general administrative and technical needs of the study as well as the study’s consultation program. The latter has been developed to ensure that all of those with a potential interest in the study have the opportunity to participate and provide input during the process.

The study organization is illustrated in Exhibit 1-3.

EXHIBIT 1-3: STUDY ORGANIZATION



1.6.1 Project Team

The study was carried out under the direction of a project team consisting of the MTO's Windsor Border Initiatives Implementation Group (BIIG), City of Windsor and County of Essex, as well as the consultant MRC. Staff from various departments of the MTO, City of Windsor, and County of Essex participated in an as-required basis throughout the study. The Project Team members included:

MTO Technical Team

Mr. Rakesh Shreewastav, P.Eng., AVS	Senior Project Engineer, MTO Windsor BIIG
Mr. Garfield Dales, P.Eng.	Manager, Project Delivery Office, MTO Windsor BIIG
Mr. Bob Felker	Environmental Planner, MTO Windsor BIIG
Mr. Dave Reis	Intermediate Designer, MTO Windsor BIIG
Mr. Brian Kope, P.Eng.	Area Construction Engineer, MTO Windsor BIIG
Mr. Joey Chirico, P.Eng.	Senior Structural Engineer, MTO Windsor BIIG
Mr. Robert Mount, P.Eng.	Project Soils Engineer, MTO Windsor BIIG
Mr. Ron Lewis	Traffic Analysis Supervisor, MTO Windsor BIIG
Mr. Jeff Oake, P.Eng.	Geomatics Project Coordinator, MTO Windsor BIIG
Mr. Tom Christensen, P.Eng.	Electrical Project Manager, MTO West Region
Mr. Michael Swim, P.Eng.	Area Engineer, MTO West Region, Planning & Design
Mr. David Staseff, P.Eng.	Foundations Engineer, MTO MERO
Ms. Amy Viragos	Property Supervisor, MTO Windsor BIIG
Ms. Lesley Racicot	Senior Issues Advisor, MTO Windsor BIIG
Mr. Nissar Am	Senior Construction Control Officer, MTO Windsor BIIG
Mr. John Morrissey	Corridor Management, MTO SW Region

City of Windsor Technical Team

Ms. Josette Eugeni, P.Eng.	Manager of Transportation Planning
Mr. Michael Cooke, MCIP, RPP	Manager, Planning Policy
Mr. Mario Sonogo, P.Eng.	City Engineer
Mr. Wes Hicks, P.Eng.	Senior Manager of Infrastructure and Transportation Planning/Deputy City Engineer
Ms. Anna Godo, P.Eng.	Engineer III/Drainage Superintendent
Ms. Heidi Baillargeon	Landscape Architect
Mr. Mike Clement	Manager of Parks Development
Ms. Jennifer Leitzinger, P.Eng.	Transportation Planning Engineer
Mr. Pete Matheson	Manager of Maintenance
Ms. Tiffany Pocock, P.Eng.	Project Administrator
Mr. Frank Scarfone	Property Coordinator
Ms. Simona Simion	Planner II – Research & Policy Support
Mr. Patrick Winters, EIT	Engineer I
Mr. Mark Winterton, P.Eng.	Manager of Contracts & Field Services

County of Essex Technical Team

Ms. Jane Mustac, P.Eng.	Manager, Transportation Planning
Mr. James Bryant	Environmental Assessment Co-ordinator
Mr. Tom Bateman, P.Eng.	County Engineer

The Project Team also consisted of the following representatives from the Town of Lakeshore and Town of Tecumseh:

Mr. Tony DiCiocco, C.E.T.	Manager, Engineering Services, Town of Lakeshore
Mr. Brian Hillman	Director, Planning and Building Services, Town of Tecumseh
Mr. Daniel Piescic, P. Eng.	Director, Public Works and Environmental Services, Town of Tecumseh

MRC, A Member of MMM Group

Mr. Michael Chiu, P.Eng.	Project Manager
Ms. Heather Templeton, P.Eng.	Assistant Project Manager
Mr. Jay Goldberg	Project Planner

Additional roles provided by the consultant included:

- Project Management / Consultation
- Class EA Process
- Transportation Analysis
- Roadway Design
- Bridge Engineering
- Drainage and Stormwater Management
- Noise Analysis
- Natural Environment Effects and Mitigation

The team of consultant specialists and their associated roles also included:

MHBC (formerly Meridian Planning Consultants Inc.)	- Secondary Plan Process
Unterman McPhail Associates	- Cultural Heritage Assessment
New Direction Archaeology Ltd.	- Stage 1 Archaeological Assessment
RC Spencer Associates Inc.	- Utilities and Roadway Drainage Design

1.6.2 Technical/Approval Agencies and Other Stakeholders

External agencies, as identified in Exhibit 1-4, were contacted during the study and requested to provide technical input and to comment on the study’s findings. The main points of contact are listed below and related correspondence is provided in Appendix A.

Date	Purpose
Letter of April 6, 2011	To introduce the study, ascertain whether or not the agency wishes to participate in the study, and, request any preliminary comments or pertinent information.
Letter of June 29, 2011	To notify and invite agencies to attend the first Public Consultation Centre to review and receive input regarding: the problem being addressed, the collection of background information and the alternatives being considered.
Letter of October 10, 2012	To notify and invite agencies to attend the second Public Consultation Centre to review and receive input regarding: the assessment and evaluation of alternatives and the Technically Preferred Alternatives.
Letter of January 10, 2014	To notify agencies of the Study Completion and availability of the ESR for public review for a 30-day period.

EXHIBIT 1-4: EXTERNAL AGENCIES, UTILITIES, AND INTEREST GROUPS CONSULTED

Federal
Canadian Environmental Assessment Agency Environment Canada Fisheries and Oceans Canada Public Works and Government Services Canada Transport Canada NAV Canada Aboriginal Affairs and Northern Development Canada (AANDC) Canadian Pacific Railway Canadian National Railway
Provincial
Ministry of Environment Ministry of Aboriginal Affairs Infrastructure Ontario Ministry of Agriculture, Food and Rural Affairs Ministry of Tourism, Culture and Sport Ministry of Municipal Affairs and Housing Ministry of Natural Resources Ontario Provincial Police

Conservation Authority
Essex Region Conservation Authority
Municipal
Central Ambulance Communications Centre Conseil Scolaire de District des Ecoles Catholiques du Sud-Ouest Conseil Scolaire Viamonde Essex County Warden Essex Windsor EMS Greater Essex County District School Board Lakeshore Fire/Rescue Tecumseh Fire/Rescue Student Transportation Services Transit Windsor Windsor Bicycling Committee Windsor Essex Catholic District School Board Windsor Essex County Environment Committee Windsor Essex County Health Unit Windsor Fire and Rescue Windsor Heritage Committee Windsor Police
Utilities
Essex Power Hydro One Networks Bell Canada Cogeco Cable Inc. ENWIN Utilities Windsor Utilities Commission (WUC) Union Gas Limited
Interest Groups
Citizens Environmental Alliance Essex County Field Naturalists' Club Essex County Stewardship Network Windsor International Airport

1.7 CONSULTATION

1.7.1 Public Consultation

A key component of the EA process is public consultation. For this study, the main points of public consultation are:

- to notify that the study is commencing and request involvement
(Notice of Study Commencement – April 6, 2011);
- to review and receive input about the background information and the preferred transportation planning solution
(Public Information Centre #1 – July 14, 2011);
- to review and receive public input regarding the preferred alternatives
(Public Information Centre #2 – October 22, 2012); and,
- to make the final ESR available for public review for a 45-day period
(Notice of Completion – January 10, 2014).

The comments received from the public are discussed in pertinent sections of the ESR, and comments from the public are summarized in Exhibit 1-5. The consultation process and inputs received are documented in the PIC Summary Reports included in Appendix A.

1.7.2 Technical/Approval Agencies, Area Municipalities, and Utility Consultation

Opportunities for involvement are described in Section 1.6.2 while copies of all related correspondence are included in Appendix A. All agencies were kept informed of the Study’s progress through the notices described in Section 1.6.2. Comments from the technical/approval agencies, area municipalities, and utilities are summarized in Exhibit 1-5.

EXHIBIT 1-5: COMMENTS FROM TECHNICAL/APPROVAL AGENCIES, AREA MUNICIPALITIES, AND UTILITIES

Agency	Comments	Response / Future Course of Action
Federal		
Canadian Environment Assessment Agency	No response	Keep informed
Environment Canada	No response	Keep informed
Fisheries and Oceans Canada	No response	Keep informed
NAV Canada	Received Apr. 11, 2011 Are unable to evaluate the proposal at this time, and request upon availability, a more	Keep informed

Agency	Comments	Response / Future Course of Action
	detailed plan be submitted.	
	<p>Received Oct. 24, 2012 Has no objection to the project as submitted. Once details of any future developments are available, insure that prior to any construction a Land Use Submission is filed due to the proximity of Windsor International Airport. Provided guidelines TP1247 – Aviation – Land Use in the Vicinity of Airports.</p>	Keep informed
Public Works and Government Services Canada	No response	Keep informed
Transport Canada	<p>Received April 2, 2013 Requested to complete an Aeronautical Assessment Form for all obstacles which will be erected within 6 km of the Airport. Provided the applicable regulations for obstacle to aviation safety.</p>	Keep informed
Aboriginal Affairs and Northern Development Canada (AANDC)	<p>Received Apr. 15, 2011 There are no known Métis Nation of Ontario (MNO) assertions in the vicinity of the Lauzon Parkway Improvements Environmental Assessment project in the City of Windsor, Ontario.</p>	Keep informed
	<p>Received May 3, 2011 Recommends consulting with the First Nations in vicinity of study area. Provided suggested INAC web-links for more information.</p>	Keep informed
	<p>Received July 21, 2011 Responding to PIC 1 notice Recommends consulting with the First Nations in vicinity of study area. Provided suggested AANDC web-links for more information.</p>	Keep informed
	<p>Received Oct. 17, 2012 AANDC officials do not participate in EAs that pertain to project off-reserve. Omit AANDC officials from notifications</p>	Updated mailing list

Agency	Comments	Response / Future Course of Action
	for projects that do not intersect with reserve lands or engage AANDC programs.	
Canadian Pacific Railway	Date Received July 6, 2011 Please include in distribution list.	Email Sent July 15, 2011 Directed to additional information on project website Updated mailing list Keep informed
Canadian National Railway	Verbally confirmed receiving emails informing of the proposed roadway improvements and request for comments.	Emails sent on February 25, 2013, April 18, 2013, and May 21, 2013 informing of proposed road improvements across a CN Rail line in two locations and requested comments on attached proposed design plans.
Provincial		
Ministry of Environment	No response	Keep informed
Ministry of Aboriginal Affairs	Received May 3, 2011 The project appears to be located in an area where First Nations may have existing or asserted rights or claims that could be impacted by your project. Provided First Nation contact information.	Keep informed

Agency	Comments	Response / Future Course of Action
Infrastructure Ontario	<p>Received Aug. 29, 2011 A preliminary review indicates that IO-managed property, and property managed on behalf of IO is directly in the study area. Attached map identifying IO properties</p>	<p>Reviewed IO properties within study area None of the properties will be impacted by the proposed improvements. Keep informed</p>
	<p>Received Dec. 25, 2012 If the undertaking directly affects any IO-managed properties, please send a copy of the draft EA report.</p>	<p>Keep informed</p>
Ministry of Agriculture, Food and Rural Affairs	No response	Keep informed
Ministry of Tourism, Culture, and Sport	<p>Received May 9, 2011 Received Notice of Commencement An archaeological assessment is recommended for this project The assessment report must conform to the Ministry of Tourism, Culture, and Sport's standards</p>	<p>Responded by phone call on May 25, 2011 (as well as email on July 13, 2011) Will provide the Stage 1 Archaeological Assessment Report and Cultural Heritage Assessment Report once available.</p>
	<p>Date Received Oct. 26, 2012 Noted receiving notice for PIC 2, and has reviewed the display boards. Requested update of any further work being carried out for cultural heritage or archaeology components.</p>	<p>Sent copy of Cultural Heritage Assessment Report at time of ESR Filing.</p>
Ministry of Municipal Affairs and Housing	No response	Keep informed
Ministry of Natural Resources	Meeting held on Sept. 27, 2011 (below)	Keep informed

Agency	Comments	Response / Future Course of Action
Conservation Authority		
Essex Region Conservation Authority (ERCA)	Meeting held on Sept. 27, 2011 MRC consulted with ERCA (and MNR) with respect to Species at Risk and potential implications to Environmentally Sensitive Areas, fisheries data and to obtain general feedback about the project and identify any particular concerns that MNR may have.	Keep informed
Municipal		
Town of Tecumseh	Council Resolution Nov. 13, 2012 Requested to amend the speed limit on CR42 from 60 to 50 km/h. Consider narrower lane widths on CR42 through Tecumseh.	County of Essex provided response on May 8, 2013. See Section B.5.6.1.
Utilities		
Bell Canada	Email Received May 9, 2012 Noted bell facility on northwest corner of existing Sexton Sideroad and Highway 3; provided plans of utilities leading to building and in surrounding area.	Keep informed
Cogeco Cable Inc.	No response	Keep informed
Essex Power	Received Jun. 15, 2011 No infrastructure within study area.	Keep informed
ENWIN Utilities	Email Received June 6, 2011 Provided utility plans for portions of study area.	Keep informed
Hydro One Networks	Email Received May 2, 2011 Confirmed Hydro One facilities located within immediate vicinity of study area.	Keep informed
United Gas Limited	No response	Keep informed
Windsor Utilities Commission	Email Received Apr. 29, 2011 Noted plans for future feedermain along CR42. Provided Executive Summary of Windsor Water System Master Plan. Provided Water Engineering drawings for CR42.	Keep informed

Agency	Comments	Response / Future Course of Action
	Letter Received May 26, 2011 Provided plan of existing infrastructure and future installations for study area.	Keep informed
	Email Received Oct. 18, 2012 Noted that the existing transmission main on CR42 will continue easterly to Lauzon Parkway or Lauzon Road. The alignment for the proposed section has not been determined yet. Requires corridor for future transmission main on CR42 and Lauzon Parkway/Lauzon Road.	Keep informed
Interest Groups		
Essex County Field Naturalists' Club	Email Received May 10, 2011.	Added to mailing list.
Windsor International Airport	Two meetings were held with the Windsor International Airport. See Section B.5.2.1.	

1.7.3 First Nations Consultation

Based on input received from Aboriginal Affairs and Northern Development Canada (AANDC), as well as the MTO Regional Archaeologist, the First Nations identified in Exhibit 1-6 were identified as potentially having an interest in this study and were contacted during the study. The main points of contact and responses received are listed below in Exhibit 1-6. Copies of all correspondence are included in Appendix A.

Date	Purpose
Letter of March 30, 2011	To introduce the study, ascertain whether or not the agency wishes to participate in the study, and, request any preliminary comments or pertinent information.
Letter of July 5, 2011	To notify and invite to attend the first Public Information Centre to review and receive input regarding the problem being addressed, the collection of background information and the alternatives being considered.
Letter of October 10, 2012	To notify and invite to attend the second Public Information Centre to review and receive input regarding: the assessment and evaluation of alternatives and the Technically Preferred Alternatives.
Letter of January 10, 2014	To notify agencies of the Study Completion and availability of the ESR for public review for a 30-day period.

EXHIBIT 1-6: COMMENTS FROM FIRST NATIONS

First Nation	Comments	Response / Future Course of Action
Chippewas of Kettle and Stony Point	No response	Keep informed
Munsee-Delaware Nation	No response	Keep informed
Chippewas of the Thames	Letter Received Aug. 9, 2012, received in response to the Notice of PIC 1. Chippewas consultation staff will review project and follow up with letter indicating interest.	Keep informed
Caldwell First Nation	Letter Received Oct. 18, 2012, in response to Notice of PIC 2. Chief Hillier provided updated contact information. It was also noted that Caldwell First Nation has had archeology monitors on site for similar projects, if needed.	Contact list updated Keep informed
Chippewas of Aamjiwnaang	No response	Keep informed
Oneida Nation of the Thames	No response	Keep informed
Moravian of the Thames	No response	Keep informed
Walpole Island First Nation	No response	Keep informed

2.0 PROBLEMS AND OPPORTUNITIES

Phase 1 of the Municipal Class EA process involves the identification of the problem and/or opportunity being addressed by the study. For this study, the transportation problems and opportunities are documented in the following sections. These sections provide a summary of the key findings of the study as follows:

- Reviewing the project planning context including relevant provincial and municipal planning policies and growth strategies – see Section 2.1
- Understanding the existing transportation network, and related City, County and MTO transportation projects within the study area – see Sections 2.2 to 2.5
- Project future transportation conditions and identifying future transportation improvement requirements – see Sections 2.6 and 2.7
- Developing a statement of the problems and opportunities being addressed by the study - see Section 2.8

For further details, the following supporting documents are included in Appendix B:

- *Technical Report TR1 Identification of Factors Driving ‘Area Transportation System’ Needs (June 2011); and*
- *Technical Report TR2 Determination of ‘Area Transportation System’ Needs (December 2012).*

2.1 OVERVIEW OF RELEVANT PROVINCIAL AND MUNICIPAL POLICIES

2.1.1 Policy Context

In reviewing and assessing the existing and future infrastructure requirements of the study area, it is essential to establish a policy context for infrastructure expansion, considering both growth, and sustainability objectives. The policy framework provides guidelines for the infrastructure and land use planning and strategic investment decisions to support community objectives and accommodate forecasted population and economic growth, particularly in the area of transportation planning. The guidelines are in place with the goal of sustaining and improving the quality of life of residents while considering the broader regional, provincial and national public interest. **The assessment and evaluation of the study area problems and opportunities are carried out with due consideration to the policy framework in order to ensure that the ultimate improvement plan is consistent with the policies and objectives of the various levels of government.**

A discussion of specific provincial and municipal policies is summarized in the following sections with a focus on the application to transportation infrastructure renewal and upgrade in the study area.

2.1.2 Provincial Policy Statement

The Provincial Policy Statement (PPS) provides policy direction on matters of provincial interest related to land use planning and development, and promotes the provincial policy-led planning system.

The PPS recognizes the complex inter-relationships among economic, environmental and social factors in planning and embodies good planning principles. It includes enhanced policies on key issues that affect our communities, such as:

- The efficient use and management of land and existing infrastructure;
- Protection of the environment and resources; and
- Ensuring appropriate opportunities for employment and residential development, including support for a mix of uses.

The PPS provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural environment. The Provincial Policy Statement supports improved land use planning and management, which contributes to a more effective and efficient land use planning system.

The PPS set clear, overall policy directions on matters of provincial interest related to land use planning and development such as the wise use and protection of natural resources. Although the Crown is not bound by the PPS, they provide a useful measure of the appropriate level of care to be exercised to avoid or mitigate impacts to the environment. The environmental factors identified in the PPS include:

- Surface Water Quality and Quantity
- Groundwater Quality and Quantity
- Wetlands
- Woodlands
- Environmentally Significant Features
- Ecologically Functional Areas
- Special Places
- Species at Risk
- Important Wildlife Areas
- Prime Agricultural Areas
- Community Features

The PPS provides the guidelines for the Infrastructure Planning, Transportation Systems, transportation and infrastructure corridor planning. The PPS recognizes a coordinated, integrated and comprehensive approach be used when dealing with planning matters within municipalities, or which cross lower, single and/or upper-tier municipal boundaries, including land use planning

and infrastructure facilities. In terms of infrastructure facilities, the PPS provides the following guidelines for Transportation System¹:

- Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs.
- Efficient use shall be made of existing and planned infrastructure.
- Connectivity within and among transportation systems and modes should be maintained and, where possible, improved including connections which cross jurisdictional boundaries.
- A land use pattern, density and mix of uses and land use intensification should be promoted that minimize the length and number of vehicle trips (ridesharing/HOV) and support the development of viable choices and plans for public transit and other alternative transportation modes, including commuter rail and bus.
- Transportation and land use considerations shall be integrated at all stages of the planning process.

2.1.3 Accessibility for Ontarians with Disabilities Act

In 2005, the Ontario Government passed the Accessibility for Ontarians with Disabilities Act to make Ontario accessible by 2025. Accessibility means giving people of all abilities opportunities to participate fully in everyday life.

Accessibility standards have been created as part of the Accessibility for Ontarians with Disabilities Act. These standards are rules that businesses and organizations in Ontario need to follow to identify, remove and prevent barriers so that people with disabilities have more opportunities to participate in everyday life. Barriers to accessibility are obstacles that make it difficult, or impossible, for people with disabilities to participate in everyday activities. Barriers include: attitudinal, information or communications, technology, organizational, and architectural and physical. The Integrated Accessibility Standards Regulation applies to all public, private and not-for-profit organizations, with at least one employee. Some of the requirements went into effect in 2011, and other requirements are being phased in until 2017.

Ontario now has accessibility standards in five areas:

- customer service
- employment
- information and communications
- transportation
- design of public spaces

¹ Provincial Policy Statement (2005): Section 1.6.5 Transportation Systems

The Accessibility Standards for the Built Environment focus on removing barriers in two areas: public spaces – including recreational trails, sidewalks, ramps, stairs etc.; and buildings – enhancements to accessibility in buildings will happen at a later date through Ontario’s Building Code, which governs new construction and renovations in buildings.

The Accessibility Standard for Transportation applies to: conventional and specialized transportation services, municipalities with specific requirements for those that license taxicabs or provide conventional transportation services, certain ferries, and other transportation services such as public school boards, hospitals, colleges, and universities that provide transportation services.

2.1.4 Ontario Ministry of Transportation

#CYCLEON: ONTARIO’S CYCLING STRATEGY

On August 30, 2013 Ontario’s 20-year vision for cycling; #CycleON: Ontario’s Cycling Strategy, was publicly released. The Cycling Strategy is intended to replace the MTO’s Bicycle Policy, which was adopted in 1992. This Cycling Strategy is designed to build on that momentum. It offers a 20-year Vision and a set of Aspirational Goals that provide a clear sense of direction. It also identifies a series of interconnected Strategic Directions that are broad enough to provide the flexibility needed to seize opportunities as they arise.

Vision 2033: Creating a more bike-friendly Ontario

Cycling in Ontario is recognized, respected and valued as a core mode of transportation that provides individuals and communities with health, economic, environmental, social and other benefits.

A set of basic principles are set out to enable achievement of the vision. They are grounded in shared values consistent with public policy and program development initiatives undertaken by all levels of government across the province.

Safety

The safety of all road users, including cyclists, is paramount.

Partnership

Partnerships and collaborations among all stakeholders – cyclists, governments at all levels, industry and researchers – are essential to increasing the cycling mode share in Ontario. To increase the number and safety of cyclists in Ontario, five strategic directions are identified:

Accessibility and Connectivity

Cycling in Ontario is accessible for people of all ages and abilities. Networks are interconnected and integrated with other modes of transportation.

Five Strategic Directions are given elaboration:

- 1. Design Healthy, Active and Prosperous Communities**
- 2. Improve Cycling Infrastructure**

3. Make Highways and Streets Safer

4. Promote Cycling Awareness and Behavioural Shifts

5. Increase Cycling Tourism Opportunities

The strategy will be implemented through ongoing, multi-year Action Plans. The Strategy provides a route to achieve the 20-year Vision, and the Action Plans will identify a step-by-step process to accomplish its Goals.

2.1.5 City of Windsor Relevant Plans and Policies

CITY OF WINDSOR OFFICIAL PLAN

The City of Windsor, Canada's southernmost city, is situated on the south shore of the Detroit River and Lake St. Clair. The city is strategically located at the center of the Great Lakes basin directly across from Detroit, Michigan. As the chief port of entry between Canada and the United States, Windsor is an international gateway for people and commerce. Windsor is the main employment, population and cultural center in the Windsor Essex Region and is home to 210,891 people.

The City of Windsor Official Plan (November 2002) is a policy document adopted by City Council under the province of Ontario Planning Act. The planning act provides guidance for the physical development of a municipality over a 20 year period while taking into consideration important social, economic and environmental matters. The Official Plan provides the policy framework that will guide:

- Location of new development;
- Strengthening of existing and future neighbourhoods;
- Enhancement of Windsor's environment;
- Provision of Municipal services, such as roads, watermains, sewers and parks, will be provided; and
- Growth Plan for Windsor.

The City of Windsor Official Plan recommends the following principles/goals for **Infrastructure Planning**:

- Infrastructure shall be provided in a sustainable, effective and efficient manner with the optimal use of existing infrastructure;
- The provision of new infrastructure shall be coordinated;
- The transportation system shall be accessible and affordable to the community;
- The infrastructure and public service facilities shall strategically provide an environment in which all modes of transportation can play a balanced role.
- Proper physical services shall be provided in all developed areas of Windsor.

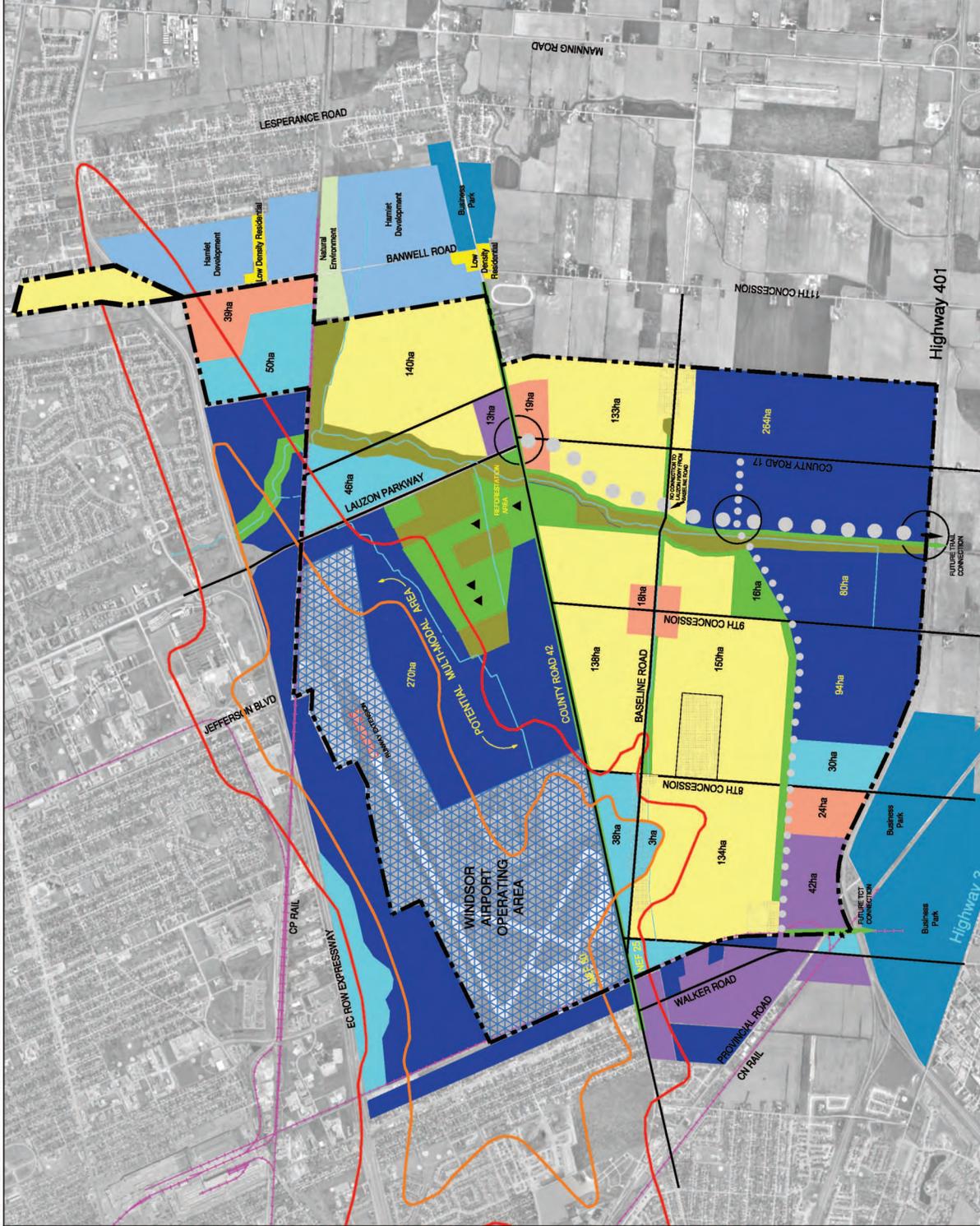
The City of Windsor Official Plan provides the following objectives for the **Transportation System**:

- To establish a safe, convenient and effective transportation system.
- To provide for the integration, coordination and extension of the transportation system within, to and from Windsor.
- To protect long-term transportation corridors and their ancillary facilities.
- To establish safe and efficient truck routes within and through Windsor.
- To provide for adequate off-street parking facilities and restrict on-street parking to appropriate areas.
- To enact transportation demand management actions suited to the needs of Windsor.
- To minimize conflicts within the transportation system.
- To establish and maintain a city-wide walking and cycling network.
- To establish and maintain a viable public transportation network.
- To establish and maintain a safe and efficient road network.
- To uphold and advance Windsor's role as Canada's foremost international gateway.
- To support the provision of freight and passenger rail service to Windsor.
- To ensure accessible and viable port facilities.
- To facilitate safe recreational boating from Windsor on the Detroit River and Lake St. Clair.
- To support an expanded role for the Windsor International Airport in the provision of facilities, services and operational capabilities.
- To support the inclusion of traffic calming devices according to a municipal Traffic Calming Policy.

WINDSOR ANNEXED LANDS MASTER PLANNING STUDY (2006)

In 2002, approximately 2500 ha. of land were transferred to the City of Windsor to accommodate projected growth in population and demand for additional employment lands. The transferred lands include the Windsor International Airport and lands to the south and east.

In April 2007, the City of Windsor adopted Official Plan Amendment (OPA) No. 60. The amendment applies to all of the transferred lands and provides general land use designations and development phasing. OPA 60 also states that the specific land use policy for future development needs to be established through the preparation of a detailed Secondary Plan. The limits and land use plan for the Annexed Lands are illustrated in Exhibit 2-1.



LEGEND:

- Residential
- Commercial
- Mixed Use
- Industrial
- Business Park
- Natural Heritage
- Open Space
- Airport Lands
- Future Roads (potential location*)
- Potential Interchange
- Natural Corridor
- Linkage Opportunities

* Final location to be determined through the Class EA process.



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A REALTOR GROUP

CITY OF WINDSOR

**WINDSOR ANNEXED AREA
MASTER PLAN STUDY**

Council Adopted Concept

October 2006 614-01073PrefCP-1.dwg

N.T.S.

EAST PELTON SECONDARY PLAN (2009)

The East Pelton Secondary Plan provides direction for the development of the southwestern portion of the Sandwich South Planning Area and applies to approximately 206 hectares of land within an area bounded generally by 7th Concession Road, 8th Concession Road, Provincial Highway 401 and lands south of Baseline Road.

The purpose of the East Pelton Secondary Plan was to establish development concepts, objectives and policies for the study area, define specific location for land uses, and define a road network. The goal of the Secondary Plan was to provide a policy framework to guide the future development of an attractive, diverse, balanced and livable, accommodating a full range of urban land uses.

The study area included a future east-west arterial road connecting to Walker Road; this formed the basis for the East-West Arterial roadway component of the Lauzon Parkway Improvements Study.

The Secondary Plan recommended defining and protecting natural heritage features, creating strategically located open space, neighbourhood, commercial, institutional, and mixed-use areas, and creating a comprehensive transportation system.

BICYCLE USE MASTER PLAN (BUMP, 2001)

The City has developed a Bicycle Use Master Plan (BUMP, 2001). BUMP is the City's commitment to develop a visible and connected cycling network that is easily accessible, safe and actively used by all types of cyclists. The Plan calls for a cycling network of bike lanes, multi-use trails and signed bike routes, and provides design guidelines along with specific strategies for improving cycling awareness, the cycling-transit link and end-of-trip facilities. BUMP was used as a basis for planning the active transportation facilities within the City of Windsor for this Study.

ONGOING CITY STUDIES

Upper Little River Watershed Master Drainage Plan & Stormwater Management Plan (2013)

The Essex Region Conservation Authority (ERCA) in conjunction with the City of Windsor and the Town of Tecumseh has initiated a Master Plan Study in accordance with Phases 1 and 2 of the Municipal Class Environmental Assessment (EA) process. This Study will determine the stormwater management infrastructure requirements for the Upper Little River Watershed area to service existing and future developments.

This study began in 2004 but has been delayed a number of times; it is currently being undertaken in a parallel process with the Lauzon Parkway Improvements Class EA Study due to the overlapping study areas and objectives.

The Watershed Master Plan is recommending a stormwater management corridor, including a system of drainage ponds, along the existing and partially re-aligned Upper Little River. The

corridor will also follow the roadway alignments proposed in this Lauzon Parkway Improvements Class EA Study.

Sandwich South Secondary Plan (Draft)

The City of Windsor is in the process of preparing a Secondary Plan for the remainder of the lands transferred to the City of Windsor in 2003. The area of the draft Sandwich South Secondary Plan is bounded, in general terms, by: Provincial Highway 401 to the south; the Windsor International Airport, CP Rail mainline, and E.C. Row Expressway to the north; 8th Concession Road to the west; and the Town of Tecumseh to the east. The Secondary Plan will establish detailed development guidelines, policies, and a future land use pattern for the area, and will be incorporated into the Official Plan for the City of Windsor. The Secondary Plan will provide land use policies for future development.

This study is being undertaken in a parallel process with the Lauzon Parkway Improvements Class EA Study. It is intended that the information contained in the Planning Overview Report will be used for both the development of the Secondary Plan and the Lauzon Parkway EA. Currently, the formal review of the draft Sandwich South Secondary Plan by the Planning and Economic Standing Committee has been deferred until the completion and final approval of the Lauzon Parkway Improvements EA.

2.1.6 County of Essex Relevant Plans and Policies

COUNTY OF ESSEX OFFICIAL PLAN

The County of Essex is comprised of approximately 170,500 hectares of land and a population of approximately 183,000 people. The seven local municipalities that comprise the County of Essex include the Town of Amherstburg, the Town of Essex, the Town of Kingsville, the Town of Lakeshore, the Town of LaSalle, the Municipality of Leamington and the Town of Tecumseh. The County of Essex Official Plan (April 17, 2002) establishes a broad policy framework for County's long term planning strategy and offers fundamental guidance and direction to the County and its municipalities on land use planning matters. The objectives for an Official Plan document are to:

- Implement Provincial Policy at the County level;
- Provide a policy framework that will provide direction to the seven local municipalities in their preparation and future interpretation of updated local Official Plans and Official Plan amendments;
- Establish a policy framework for coordination and cooperation between municipalities, both internal and external to the County, on planning, development, resources and inter-municipal servicing issues that cross municipal boundaries.

The County of Essex Official Plan recommends the following principles/goals for **Infrastructure Planning**:

- To connect urban areas with each other and other communities outside this area by providing space for efficient, cost effective and safe movement of people, goods, energy and information without disrupting community integration and function.
- To provide cost effective and environmentally sound municipal services which should have minimum adverse impacts on agricultural and natural heritage features and should be phased in accordance with the availability of appropriate types and levels of services.

The County of Essex Official Plan provides the following objectives for the **Transportation System**:

- Designated Provincial Highway, County Arterial and County Collector Road system.
- Consider need to improve regional traffic flow in the vicinity of the City;
- Minimize conflict between local and non-local traffic by protecting County arterial system;
- Consider availability of resources;
- Encourage integration of transportation facilities provided by local municipalities, adjacent municipalities and the Province;
- Review road corridors to determine necessary changes in classification.
- Encourage safe, convenient and visually appealing pedestrian facilities where appropriate along arterial and collector road systems;
- Minimize direct access and limit access to arterial roads where local road access is available;
- Ensure traffic impact studies for development proposals likely to generate significant traffic;
- Address the matter of cross boundary traffic with adjacent municipalities;
- Encourage use of public transit.

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS, 2012)

The County of Essex has developed the County Wide Active Transportation Study (CWATS). This study has developed a comprehensive Active Transportation (walking and cycling) Master Plan to guide the County and local area municipalities in implementing a County-wide network of cycling and pedestrian facilities for the next 25 years. CWATS was used as a basis for planning the active transportation facilities within the County for this Study.

TOWN OF TECUMSEH

The Town of Tecumseh is comprised of approximately 9,400 hectares of land and has a population of approximately 24,000 residents. Land use planning within the Town is currently governed by three separate Official Plans pertaining to the three former municipalities (the Town of Tecumseh, the Village of St. Clair Beach and the Township of Sandwich South) that

amalgamated in 1999 to form the new Town of Tecumseh. These Official Plans reflect the land use objectives and policies of each of their respective geographic areas.

The portion of the Lauzon Parkway Improvements Class EA Study that is situated in the Town of Tecumseh is more specifically within the former Township of Sandwich South. Accordingly, the Sandwich South Official Plan is of particular relevance in this instance.

The Sandwich South Official Plan (approved by Province in 1998) includes the following transportation policies:

- Establish and maintain a transportation network that is capable of providing safe and convenient vehicular and pedestrian traffic movements to/from areas situated within the township and to/from other parts of Essex County and the City of Windsor.
- The arterial road network consists of all provincial highways and county roads. These roads are intended to provide fast and efficient movement of large volumes of vehicular traffic from one area of the township to another and to destinations beyond the corporate limits of the municipality.
- To maintain a safe and efficient road system in the township, it shall be the policy of Council to pursue a program of improving road alignments, surfaces and pavement widths, and to establish adequate road allowances and standards for new development. Priority will generally be given to any repairs on arterial and collector roads so that the flow of traffic may be maintained. The roads need study of the township and the capital works budget will be used to establish priorities for the upgrading of the existing municipal road system that is under the control and jurisdiction of the township.
- Council will also require sidewalks, walkways, bikeways to be provided as part of all new residential developments, to facilitate cycling and pedestrian modes of transportation within and between recreational and community facilities.

TOWN OF LAKESHORE

The Town of Lakeshore is comprised of 53,000 hectares of land and a population of approximately 35,000 people. The Town of Lakeshore Official Plan (November 22, 2010) recommends the following Transportation Goal:

- To provide well connected and efficient multi-modal transportation choices to connect the Town's communities and services, and facilitate the movement of people and goods.

The Town of Lakeshore Official Plan (November 22, 2010) recommends the following Transportation Objectives:

- Promote efficient and reliable modes of transportation.
- Promote sustainable development that supports public transit and is oriented to pedestrians.

- Promote transit connection within Lakeshore and the County, including VIA rail station in Belle River, transit connections to the City of Windsor, and transit link between Primary Nodes and the various communities.
- Improve the movement of goods and people including improvements to County Roads 22 and 42, and improved connectivity between residential communities.
- Strongly encourage the County to develop a regional plan and policy directing heavy industrial uses, manufacturing and logistics to Highway 401 locations to avoid land use conflicts and take advantage of the inter-regional attributes and international border crossings accessed from Highway 401.
- Provide a framework for consistent road classifications and developments standards.
- Improve and promote trails and pathways system through appropriate land acquisition and securement strategies.

2.2 OVERVIEW OF RELEVANT MUNICIPAL STUDIES/PROJECTS

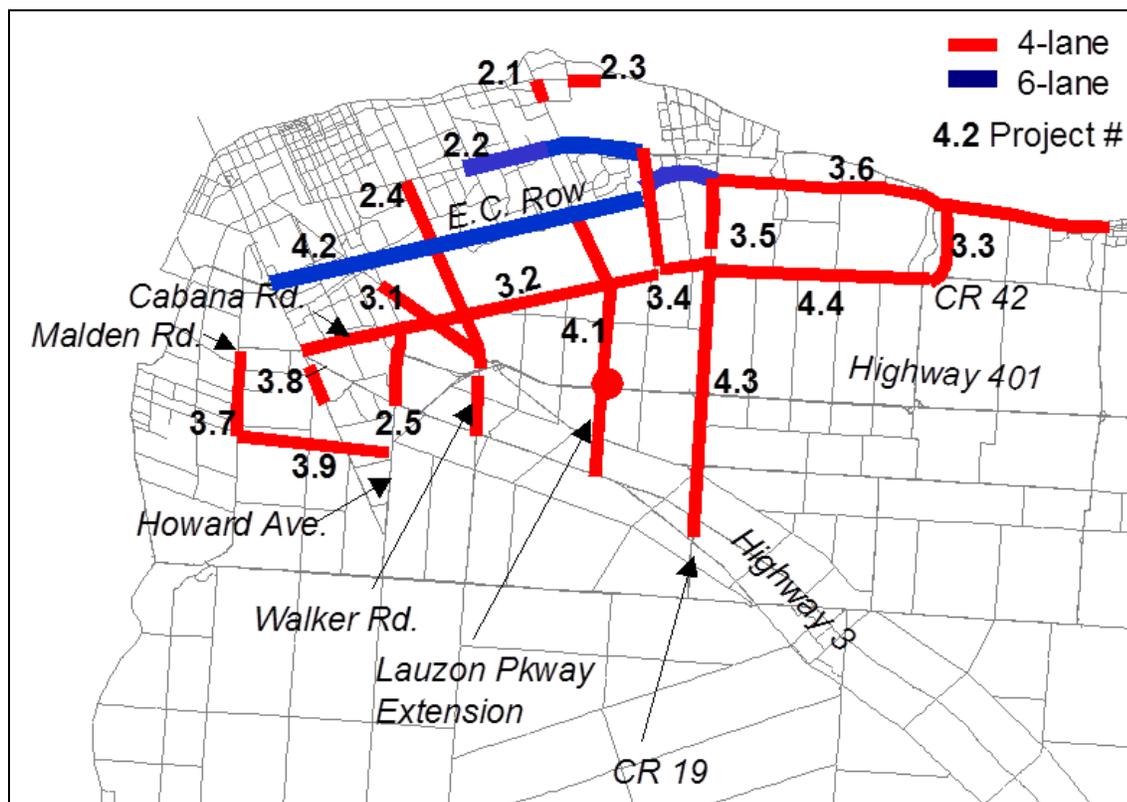
2.2.1 Essex-Windsor Regional Transportation Master Plan (EWRTMP, 2005)

The goal of the EWRTMP was to develop a new comprehensive Regional Transportation Master Plan for the Essex-Windsor region with recommended policies and an implementation strategy that would serve the needs of the region for a twenty year planning horizon.

The Master Plan was prepared under the direction of an administrative Steering Committee made up of representatives from Engineering/Public Works and Planning Departments of all involved municipalities, the Ministry of Transportation and Transit Windsor.

This study established future regional road classifications and related policies, and provided direction on addressing regional transportation needs for the planning horizon 2021. The purpose of the EWRTMP was to protect and enhance existing transportation corridors and identify new and/or expanded transportation corridors to also accommodate projected growth. The EWRTMP recommended regional roadway capacity enhancement projects, presented in Exhibit 2-2, including among others: Lauzon Parkway extension to Highway 3, widening E.C. Row Expressway to 6-lanes, widening County Road 42, and a new east-west route between County Road 42 and Highway 401.

EXHIBIT 2-2: EWRTMP RECOMMENDED REGIONAL ROADWAY CAPACITY ENHANCEMENT PROJECTS



2.2.2 City of Windsor

WINDSOR AREA LONG RANGE TRANSPORTATION STUDY (WALTS, 1999)

The Windsor Area Long Range Transportation Study (WALTS) was conducted in 1997 and 1998 to provide the involved municipalities with a master plan to guide future development of transportation services in the Windsor area. The study area, established in 1997, includes the City of Windsor, Towns of LaSalle and Tecumseh, Townships of Sandwich South and Maidstone, and the Village of St. Clair Beach. The study determined the impacts of population and employment growth on the need for roads, transit, cycling and walking facilities within the area by the year 2016, along with access to air, marine, rail and trucking services.

The WALTS study concluded with a Master Plan of recommendations for each component of the Windsor area transportation network: planning strategy, transportation demand management (TDM), pedestrian mobility, bikeway & recreationway development, transit system, roadway system, and other network recommendations. The Plan concluded with a final recommendation on monitoring and reviewing of the Plan. This includes an annual reporting on the “State of the Transportation System” by all involved City and County agencies, coordination of annual transportation system improvement budgets, a five year update of the Plan including a household travel survey update to assess local travel characteristics, and a comprehensive five year update of WALTS in association with Official Plan updates.

The Essex-Windsor Regional Transportation Master Plan (EWRTMP, 2005) builds and expands on the City’s Windsor Area Long Range Transportation Study (WALTS).

BANWELL ROAD CLASS EA STUDY (DRAFT) - ONGOING

The Banwell Road from Tecumseh Road East to the Windsor City Limits South of the CP Rail Tracks Environmental Study Report is on-going. It has found that growth at the eastern edge of the City of Windsor and adjacent Town of Tecumseh would result in a significant increase in traffic in the Banwell Road corridor.

One of the recommended improvements to Banwell Road included construction of a Parclo A4 grade separated interchange at E.C. Row Expressway. The recommended roadway improvements included: widening Banwell Road to 4 lanes from the City/County Boundary (CP Rail tracks) to Intersection Road, widening to 6 lanes from Intersection Road to the south leg of the recommended interchange bridge (with the additional two lanes having the potential to operate as rapid transit of High Occupancy Vehicle (HOV) lanes), and widening to 4 lanes from the south leg of the recommended interchange bridge to Tecumseh Road East. The EA further recommended restricting direct access to Banwell Road as a major arterial, including revising residential accesses, and eliminating existing intersections.

WALKER ROAD IMPROVEMENTS - RIVERSIDE DRIVE TO PROVINCIAL ROAD (CITY LIMITS) AND GRAND MARAIS ROAD EAST IMPROVEMENTS - WALKER ROAD TO CENTRAL AVENUE (2001)

The Walker Road Corridor and Grand Marais Road East Class Environmental Assessment undertook a comprehensive review of the improvements required on Walker Road extending

from Riverside Drive south to the City limit and on Grand Marais Road East from Walker Road to east of Central Avenue. The comprehensive review served to ensure that improvements recommended at any location within the subject area are compatible with those recommended (if any) of adjacent locations. In this way, the safe movement of vehicles, cyclists and pedestrians was ensured through the entire corridor of both Walker Road and Grand Marais Road East.

The roadway improvements, relevant to this Lauzon Parkway EA, which have been completed, include: the complete reconstruction of Walker Road from Division Road to the south City limit including the Provincial Road/Walker Road intersection. Improvements to Walker Road and Division Road/County Road 42 intersection included left turning lanes for all directions, 2.0 m wide easements on all sides for all directions, and property acquisitions on the northeast, southeast, southwest corners of the intersection. Improvements to Walker Road and Legacy Park/7th Concession Road intersection included left turn lanes for all directions and combined through/right-turn lanes on Legacy Park and 7th Concession Road (no property acquisition required). Cycling, pedestrian and streetscape were included in the design.

PROVINCIAL/DIVISION ROAD CLASS ENVIRONMENTAL ASSESSMENT STUDY (2007)

In 2007, the City of Windsor completed an EA Study for Provincial/Division Road with the following study limits: Provincial Road from the City Limits, just east of Walker Road, to the junction with Division Road near Marentette Avenue, continuing along Division Road to Howard Avenue. The study corridor also included the portion of Division Road from Cabana Road through to Marentette Avenue. The entire corridor is classified as a Class II Arterial Roadway in the City of Windsor's Official Plan (Schedule F: Roads and Bikeways).

Based on the review of the Provincial/Division Road corridor the problems being addressed by this study were: capacity deficiencies along sections of Division and Provincial Road, structural deficiencies and intersections along the entire corridor, intersection safety concerns, and drainage capacity deficiencies. The recommended design included: widening Division Road to four through lanes, and one continuous two-way left turn lane, from north of Sydney Ave. to Marentette Ave; the widening of Provincial Road to five lanes from the junction with Division Road near Marentette Ave. to Walker Road; the widening of Cabana Road East from two lanes to four from the Detroit River Tunnel Partnership (DRTP) rail to Barracuda Ave.; intersection improvements; and providing pedestrian and bicycle facilities throughout the corridor.

From 2012 to 2013 the Provincial Road and Cabana Road E intersection was reconstructed. This included reconstruction and mill and pave at the following locations:

- Provincial Road from north of Clarke Drive to north of 6th Concession Road
- Cabana Road E. from Sunrise Court to west of 6th Concession Road
- Division Road from Marentette Avenue to west of Devonwood Avenue (mill & pave).

Bikes lanes were also incorporated into the design at the locations specified.

CABANA/DIVISION ROAD CORRIDOR – HURON CHURCH ROAD TO WALKER ROAD ENVIRONMENTAL ASSESSMENT STUDY (2005)

The Cabana/Division Road Corridor EA was undertaken to identify the transportation improvements necessary for the Cabana-Division Road corridor in the City of Windsor. The Study Area is comprised of Cabana Road and Division Road from Huron Church to just east of Walker Road. The purpose of the EA was to provide short-term solutions to existing traffic issues, and long-term solutions to deal with projected traffic increases. The preferred design was identified as having four-lanes with bike lanes plus curbs and gutters.

The western limit of the Lauzon Parkway Improvements Study Area for County Road 42 is Walker Road, which overlaps approximately 200 m of the Cabana/Division Road Corridor EA Study Area.

WINDSOR INTERNATIONAL AIRPORT MASTER PLAN (2010)

In December 2010, the Windsor International Airport completed its Master Plan to guide the development of the Airport and assist the City and private sector in making land use decisions involving surrounding lands. The Master Plan provided an in-depth profile of the physical conditions and capacities of the Airport's facilities and infrastructure and determines requirements to meet future needs and development potential.

The objectives of the Master Plan were:

- To ensure safe operation of all aircraft that utilize the facility.
- To ensure that sufficient land area is reserved for both commercial and non-commercial users.
- To ensure that Airport development is, to the extent possible, in harmony with the surrounding physical environment.
- To provide guidance to Airport management in day-to-day decisions that protect the Airport's long-term development goals.
- To provide a strong communication tool to key stakeholders, such as airlines, the aviation industry, industries, and government officials.

The Development Plan included, but was not limited to, the following projects within the Airport lands:

- Expand air passenger terminal building for current and future needs
- Construct a new maintenance building on site
- Develop Phase I air cargo facility and cargo village
- Complete stormwater management (SWM) plan for Airport Lands
- Undertake a Parking Study to determine current and future demand characteristics and requirements at the Airport

TWIN OAKS DRIVE CLASS ENVIRONMENTAL ASSESSMENT (2012)

In 2012, the City of Windsor completed an EA to plan a rail spur track to extend northward from the CP Railway main track (between Lauzon Road and Banwell Road) to the south side of the CS Wind property limits. Due to planned expansion of shipping methods at the CS Wind property, a rail spur is required to ship and receive material entering and exiting the CS Wind property.

The recommended plan extended a rail spur track north from CP Railway main track and then west along the north side of the existing Twin Oaks Drive. Twin Oaks Drive was recommended to be re-aligned starting at Valtec Court.

TWIN OAKS BUSINESS PARK – CITY OF WINDSOR CLASS EA (1997)

The City of Windsor identified a requirement for additional serviced industrial property to meet existing and future growth demands. The City proposed developing the property known as Twin Oaks Business Park located at the southeast corner of E.C. Row Expressway and Lauzon Parkway. The main concern for the study was to provide adequate traffic access to the site based on the increase in traffic due to the development.

The EA indicated a future need for an E.C. Row Expressway/Banwell Road interchange. It was noted that this development was captured in the City of Windsor population and employment, and was considered in this Lauzon Parkway EA Study. Also the EWRTMP (2005) identified the need for widening County Road 43 (Banwell Road) from Tecumseh Road to the City Limits with E.C. Row Expressway intersection improvements.

SANITARY SEWER SERVICING STUDY FOR LANDS ANNEXED FROM THE TOWN OF TECUMSEH CLASS EA (2006)

After the transfer of approximately 2,600 hectares of land (Annexed Lands) from the Town of Tecumseh and Essex County to the City of Windsor, the City initiated a Master Planning Study to review potential land use and utility servicing (i.e. sanitary, storm and drainage, water, roads, other utilities, etc.) within the Annexed Lands. An agreement between the City of Windsor and the Town of Tecumseh required the City to provide a trunk sanitary sewer on County Road 43 (Banwell Road) to service adjacent Town of Tecumseh lands.

The Recommended Plan was to expand the Little River Pollution Control Plant (LRPCP) Sanitary Service Area. The sanitary sewage from the Annexed Lands, as well as the areas from the Town of Tecumseh and the Oldcastle Hamlet would be conveyed to the LRPCP for treatment. Expansion at the plant would have to take place, as well as construction of new trunk sanitary sewers, approximately 25.2 kilometers.

To date, the existing section of the sanitary sewer within the Lauzon Parkway Study Area includes:

- a 975 mm dia. sewer on 8th Concession Road from Highway 401 to County Road 42;
- a 1200 mm dia. sewer on County Road 42 from 8th Concession Road to 9th Concession Road,

- a 1350 mm dia. sewer on County Road 42 from 9th Concession Road to the Little River; and
- a 1650 mm dia. sewer on Lauzon Parkway from the Little River to Service Road B.

Future phases include extensions on County Road 42 to 7th Concession Road, and on 9th Concession Road and 10th Concession Road / County Road 17.

COMMUNITY BASED STRATEGIC RAIL STUDY (2008)

The City of Windsor and Transport Canada undertook the Community Based Strategic Rail Study to assess the opportunities for rail rationalization and modal integration in the City of Windsor.

The rail operations in the City of Windsor present issues and opportunities that stem from the capacity problems at the Windsor-Detroit border and the changing rail traffic patterns which leave the City with redundant rail lines and yards; as well as, many at-grade intersections that impede local road traffic and expose pedestrians and road users to unsafe conditions. The opportunities from addressing the issues associated with current rail operations were: increased passenger rail services, reduced freight rail maintenance costs, improved rail operations and reduced traffic delays, redevelopment, intermodal facility, and new rail tunnel.

The key partners and stakeholders included Canadian Pacific Rail Company (CP Rail), Canadian National Railway Company (CN Rail), VIA Rail Canada Inc. (VIA) and Essex Terminal Railway Company (ETR). The recommended project initiatives were broken down into three phases:

- Phase 1 – Abandonment of the Chatham Subdivision and relocation of VIA operations to the Windsor Subdivision
- Phase 2 – Removal of the CASO Subdivision and the combined operations of CN and CP Rail on the Windsor Subdivision
- Phase 3 – Construction of an Intermodal Facility at Airport lands with CN and CP Rail yards.

2.2.3 County of Essex

COUNTY ROAD 42 – CORRIDOR PROTECTION STRATEGY (2006)

In 2006, due to the growth north of Highway 401 and along east-west arterial roadways, the County of Essex produced a Corridor Protection Strategy for County Road 42. The objectives of the strategy were to provide safe operations for all road users; allow for fewer delays and less fuel consumption; coordinate land use and transportation decisions over time while providing reasonable accesses at interim and ultimate conditions; and maintain the integrity and efficiency of the roadway.

The principles of the strategy were to limit direct access points to the roadway, in order to:

- preserve through traffic,
- promote intersection hierarchy to limit the number of allowable intersections,
- preserve functional area of major intersections,
- locate signals to favour through movements,
- and limit the number of conflict points.

These principles are incorporated into this EA Study of County Road 42.

COUNTY ROAD 43 (BANWELL ROAD) CLASS EA STUDY (2009)

The purpose of this study was to address the County Road 43 (Banwell Road) capacity and operating deficiencies that were identified in the EWRTMP resulting from anticipated growth within the Town of Tecumseh and the eastern section of the City of Windsor. The EWRTMP identified the need for 4 basic lanes on County Road 43 (Banwell Road).

The study area included County Road 43 (Banwell Road) immediately south of the CP Rail tracks to south of County Road 42. The recommended design included road widening from 2 to 4 lanes north of County Road 42, and re-aligning County Road 43 (Banwell Road) and 11th Concession Road to form an intersection at County Road 42.

The County Road 42/County Road 43 (Banwell Road) intersection is a focal node in the Lauzon Parkway Improvements Study as it is the main gateway from the Town of Tecumseh (County of Essex) to the City of Windsor. The proposed re-aligned County Road 43 (Banwell Road) is incorporated into this EA Study of County Road 42.

COUNTY ROAD 19 (MANNING ROAD) & COUNTY ROAD 22 IMPROVEMENTS ENVIRONMENTAL STUDY AND PRELIMINARY DESIGN REPORT (2008)

The Environmental Assessment and Preliminary Design for improvements include County Road 19 (Manning Road) and County Road 22. The area of study for County Road 19 (Manning Road) was from Highway 3 to the VIA Rail line, and for County Road 22 from the City/County Boundary to 350 m east Lakeshore Boulevard. The recommended improvements included:

- Widening of County Road 19 from two to four lanes – section south of County Road 42 to County Road 22 will be changed from a rural to an urban roadway;
- Widening County Road 22 from 4 to 6 lanes – this section will be changed from a limited access to a controlled access roadway;
- Improving intersection at County Road 19 (Manning Road) and County Road 34 with provision of double lane roundabout;
- Highway 401 interchange improvements including construction of a new underpass structure and reconstruction of the interchange ramps;
- Highway 401 interchange improvements;

- Grade separation of the C.P. Rail crossing;
- Intersection improvements on County Road 19 and side streets;
- A single point urban interchange at County Road 19 and County Road 22.
- A partial interchange (half diamond/button hook) at Lesperance Road.

The County Road 42 and County Road 19 (Manning Road) intersection is a focal node in the Lauzon Parkway Improvements Study as it is the main gateway between the rural and urban landscapes of the Towns of Lakeshore and Tecumseh. The proposed intersection improvements at County Road 19 (Manning Road) and County Road 42 are incorporated into this EA Study of County Road 42.

COUNTY ROAD 22 ENVIRONMENTAL ASSESSMENT (2006)

In 2006, the County of Essex completed the Municipal Class Environmental Assessment (EA) Study for County Road 22 from just east of County Road 19 (Manning Road) to County Road 42. County Road 42 was exhibiting poor operating conditions with many intersection and road sections performing at or above their theoretical capacities. The recommended improvements included:

- Widening to four lanes (with a 1 m flush median) between County Road 19 (Manning Road) to I.C. Roy Drive;
- A two lane roadway (with continuous two-way-left-turn-lane) between I.C. Roy Drive and Belle River bridge;
- Operational modifications east of Belle River bridge;

The study noted the importance of County Road 42 in the area's transportation network. By 2021 it was anticipated that County Road 22 would be operating at its theoretical capacity and that improvements to County Road 42 would be required.

PATILLO ROAD CLASS ENVIRONMENTAL ASSESSMENT (2008)

The Town of Lakeshore initiated the Patillo Road Class EA to resolve roadway operational deficiencies based on the road conditions and anticipated levels of traffic growth on Patillo Road between County Road 22 and County Road 42. A capacity analysis conducted at the time of the study indicated that the intersections at County Road 22 and County Road 42 both experienced poor level of service.

The recommended plan included an upgrade to a 5-lane urban cross-section from County Road 22 to the CP Rail Line, and a 4-lane rural cross-section south to County Road 42. Major intersection improvements at County Road 22 and County Road 42 were also recommended, including to be upgraded to signalized intersections.

MANNING ROAD/AMY CROFT COMMERCIAL AREA TRANSPORTATION STUDY (2006)

The Town of Lakeshore initiated a comprehensive review of the transportation system in the lands in the vicinity of County Road 22, County Road 19 (Manning Road), and Amy Croft

Drive, to assist in guiding development and ensure that the associated future traffic demands can be accommodated. The boundaries of the primary study area were selected as the areas bounded by CN Rail mainline to the north, West Pike Creek to the east, County Road 22 to the south and the lands adjacent to and west of Manning Road.

The purpose of the transportation study was to address: a review of the function and classification of the existing road network, determine existing conditions, review access needs of the commercial development, determine the needs of the internal road network, develop and confirm internal road network to address traffic inflation.

The recommendation of the transportation study included: carry the proposed road network access plan into a Secondary Plan study, examine the ultimate intersection layout of County Road 22 and County Road 19 (Manning Road), phase development in conjunction with road improvements, permit development only with improvements to arterial roadway capacity, and monitor impacts of each new development.

TOWN OF LAKESHORE TRANSPORTATION MASTER PLAN (2008)

The purpose of the Town of Lakeshore Transportation Master Plan (TMP) is to provide a comprehensive long range plan that integrates the transportation infrastructure requirements of existing and future land use, with the community planning principles of the municipality for growth management, public safety, affordability, economic vitality and quality of life developed through the Town's new Official Plan. The TMP acknowledges the recommendations of the Essex-Windsor Regional TMP (2005). The key objectives of the Lakeshore TMP are to:

- Identify short and long term needs of the Town's transportation system;
- Consider alternative planning strategies for transportation system improvements;
- Provide a broad framework on which to plan and implement specific transportation improvement projects;

The TMP is based on a collection of strategies and policies to manage transportation demand and supply. Recommendations were made considering: roadway network, land use and subdivision design, parking management, pedestrian facilities, and bicycle facilities. The 2025 road capacity analysis, with no roadway capacity enhancements, indicated a poor level-of-service on several roadways including, as related to this Lauzon Parkway Improvements Study, County Road 22 from County Road 19 (Manning Road) to East Pike Creek Road, and County Road 42 eastbound from County Road 19 (Manning Road) to Rochester Townline Road. The final recommendations of the TMP did not include capacity improvements to these roadways.

2.3 EXISTING TRANSPORTATION NETWORK

The existing transportation system is comprised of transportation facilities which have the primary function of providing transportation linkages for the safe, reliable, and sustainable movement of people and goods, by all modes and all jurisdictions, between multiple regions of the province and/or between cities and other major centres of population or which function to complete such primary transportation linkages, with an emphasis on connections to:

- Cities and other major centres of population that contain designated urban growth centres;
- Cities and other major centres of population that contain designated major transit service/station areas; and
- Major regional facilities for primary goods movement, such as inter-modal facilities and international gateways.

The regional transportation system around the study area comprises automobile, truck, transit, pedestrian and cycling modes. Major freight transportation modes include truck and rail. Automobile traffic is by far the predominant mode of travel, accounting for approximately 95% of travel. The remaining transportation modes (bus, rail, air, cycling, and walking) account for only 5%.

Growth in the transportation corridor is dependent on a number of socio-economic factors, such as: population and employment, demographic characteristics, and regional, provincial and national trends. Each of these factors acts upon the characteristics of travel demand with different and varying effects. In order to assess the needs of the Area Transportation System, the first step is to establish the factors that define the environments in the study area. These factors become the framework for the quantification of role and function of the transportation system.

The following subsections provide a profile of the existing transportation services in the study area. The profile of each mode describes current service levels and the role and function within the context of the provincial, regional and municipal transportation system.

Provincial, Regional and Municipal roads in the study area serve a growing demand for transportation services on an international network of links used for the transport of goods and people. In addition, Ontario is now allowing Long Combination Vehicles (LCV's) on designated provincial highways, as they are good for the economy, good for the environment and improve highway safety. They can move goods at a lower cost and with fewer greenhouse gas emissions (GHG) than single-trailer trucks and, under carefully controlled conditions, more safely. The automobile continues to be the preferred mode of passenger travel and trucks are the principal means of transporting goods as the existing provincial highway system links to all major manufacturing centres and international border crossings. The demand for truck transport remains a competitive mode of goods distribution for the majority of shippers. Trucking provides inter-modal goods transport connectivity between rail and marine transport facilities using provincial highways and arterial road networks.

2.3.1 Provincial Highway Network

The transportation network includes the following sections of provincial highways:

- Highway 401; and
- Highway 3

Highway 401 is a major provincial freeway and is the most critical of all highways in Eastern Canada, extending from the U.S. border in Windsor (from Highway 3/Talbot Road west of the study area) to the Quebec border and provides significant goods movement, tourism and connections across the Province. As part of the recent widening program by the MTO, Highway 401 was widened from 4 to 6 lanes within Essex County with an additional lane in each direction. Highway 401 has a very high proportion of truck traffic reflecting both the key provincial trade corridor and the commercial activities between Canada and the US. The MTO traffic data for Highway 401 at County Road 19 (Manning Road) indicates an AADT volume of 29,000 vehicles (for year 2006 before construction) with approximately a 40% share of commercial traffic.

Highway 3 is a provincial highway with a posted speed of 80 km/h. The section of Highway 3 within the study area, from Highway 401 to County Road 8, was recently widened from 2 lanes to 4 lanes. The ministry data for Highway 3 at County Road 19 indicates that Highway 3 experiences traffic of 18,600 AADT with an 8.5% share of commercial traffic (for year 2006-before construction).

2.3.2 Municipal Road Network

There is a well-established municipal road network within the study area, with a number of parallel east-west and north-south routes.

As part of the Essex-Windsor Regional Transportation Master Plan (EWRTMP, 2005) a new roadway classification system was recommended for the region differentiating between the urban and rural roadways, and categorizing the municipal roads into Arterial, Collector and Local Roads. Presently, the City of Windsor and the County of Essex are undergoing an official plan review process which includes reviewing and incorporating, as appropriate, the recommendations of the EWRTMP roadway classification system. It is also noted that the current City of Windsor Official Plan Schedule F: Roads and Bikeways does not yet include any road or bikeway designations identified in the draft Sandwich South Secondary Plan.

At the outset of this study, roadway planning capacities adopted for use in the transportation demand modelling came directly from the EWRTMP (2005) recommendations. The EWRTMP roadway classifications are illustrated in Exhibit 2-3 and listed below:

Highway:

- E.C. Row Expressway is a City of Windsor four-lane rural freeway with a posted speed of 100 km/h. this is the busiest route in the study area, where AADT volume reaches over 50,000 in some sections. This expressway operates at or over capacity along specific sections.

Arterial Road:

- Division Road/County Road 42
- County Road 46/Provincial Road
- Walker Road
- 8th Concession Road
- Baseline Road (Collector Road east of County Road 17)
- Lauzon Parkway
- 10th Concession Road / County Road 17
- County Road 43 (Banwell Road)
- County Road 19 (Manning Road)
- Lesperance Road
- Patillo Road
- County Road 25 (E. Puce Road)

Collector Roads:

- 9th Concession Road
- 11th Concession Road

Local Roads:

- Lauzon Road
- 7th Concession Road

As noted in Section 2.1.4, the City of Windsor is in the process of preparing the Sandwich South Secondary Plan. The Secondary Plan's Schedule F: Roads and Bikeways, will establish the future road network and road classifications. These will be incorporated into the Official Plan for the City of Windsor. The Future Transportation Network, including the City's Draft Schedule F: Roads and Bikeways, is included in Section 2.7.2 and Exhibit 2-20.

2.3.3 International Crossings

The Windsor-Detroit Gateway consists of two high-volume international border crossings – The Ambassador Bridge and The Windsor-Detroit Tunnel. These two existing international border crossings between the United States (Detroit, Michigan) and Canada (Windsor, Ontario) represent a major component of the Area Transportation System.

AMBASSADOR BRIDGE

The Ambassador Bridge is a 4-lane bridge crossing the Detroit River connecting Huron Church Road in the City of Windsor to I-75 in Detroit, Michigan. The four lane bridge is approximately 2.8 km in length. In 2009, there were 3.59 million vehicle crossings, including 2.25 million trucks. Due in part to the restriction on commercial vehicles at the tunnel, the Ambassador Bridge services over 95% of the commercial traffic crossing the border in the Windsor-Detroit area and was also ranked as the busiest Canada-U.S. border crossings for commercial traffic in 2009.

WINDSOR-DETROIT TUNNEL

The Windsor-Detroit Tunnel, which opened in 1930, is a single tunnel tube under the Detroit River and carries one lane of traffic in each direction and is 1.6 km long. The Tunnel serves passenger vehicles, commercial vehicles and buses. In 2009, the crossing was ranked as the fourth busiest Canada–U.S. border crossing for car traffic with 3.37 million vehicle crossings.

The Windsor-Detroit Tunnel Plaza Master Plan and Environmental Assessment Study (2010) has identified improvements to the existing plaza in order to accommodate future travel demand and reduce delay. The recommended improvements includes new auto access routes, new plaza buildings, reconfiguring additional auto primary inspection lanes (PIL) and landscaping. Construction of the Windsor Tunnel Plaza Improvements began in Fall 2012.

NEW INTERNATIONAL TRADE CROSSING (NITC) STUDY

This Canada-U.S. Ontario-Michigan Study is a bi-national planning study. A broad range of alternatives were identified and evaluated. Through this process, the locations for a new bridge crossing and associated border inspection facilities were identified, as well as freeway connections in both countries. The DRIC Study was conducted in accordance with the requirements of the Ontario Environmental Assessment Act and the Canadian Environmental Assessment Act in Canada and the U.S. National Environmental Policy Act in the U.S.

The DRIC Study recommended an end-to-end transportation system to link Highway 401 to the U.S. interstate system with inspection plazas and a new river crossing in between. The proposed bridge will be located southwest of the existing Ambassador Bridge, and its highway approaches have received the respective environmental approvals from both countries. The proposed bridge will be approximately 2.9 km long and cross section of six-lanes. The bridge will connect to the Rt. Hon. Herb Gray Parkway (formerly the Windsor-Essex Parkway), now under construction. The proposed international border crossing facility is projected to attract additional border crossing traffic.

2.4 EXISTING TRAFFIC

Earlier sections of this report have described the transportation network that serves the study area. Physically there are several existing and proposed infrastructure components that provide accessibility within and through the study area.

The historical use of the transportation network was determined through review and analysis of readily available data, most of which is based on surveys and traffic counts. Both MTO and the municipal agencies have detailed traffic count databases reflecting both vehicular and person travel. From a goods movement perspective, the MTO has historical databases at select locations (bridge crossings and truck inspection stations) providing information regarding volume and origin-destination characteristics.

2.4.1 Historical Traffic Flows

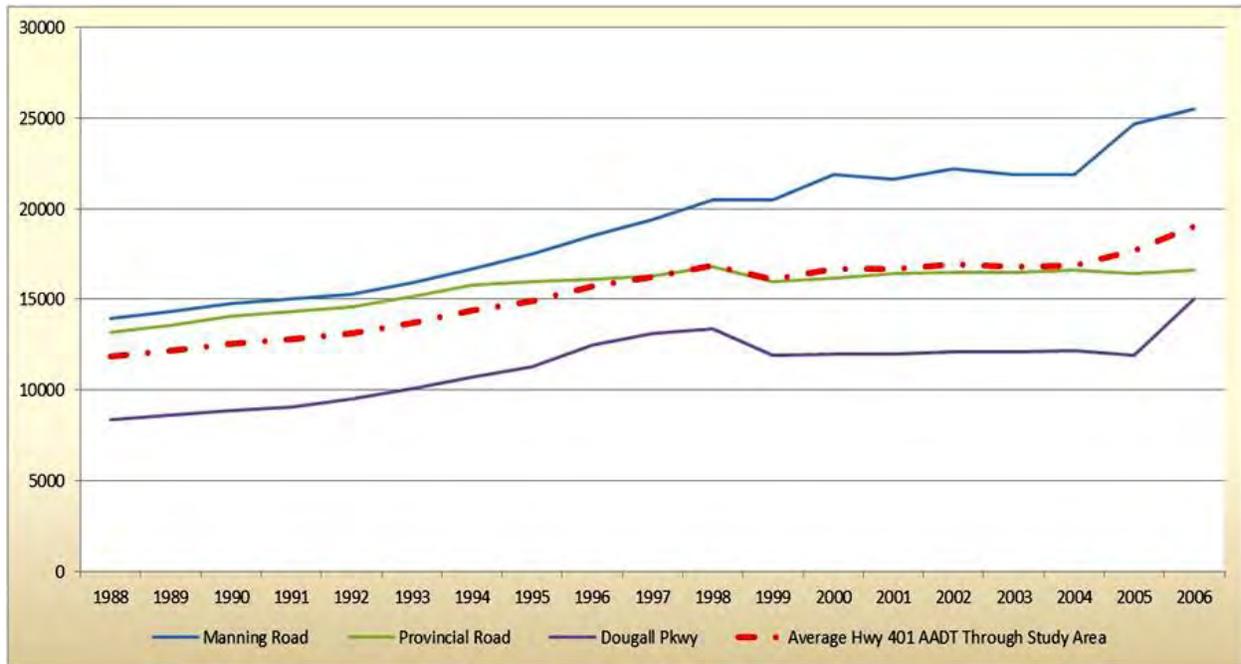
Historical Annual Average Daily Traffic (AADT) volumes for Highway 401 and Highway 3 within and adjacent to the study area were assembled from MTO traffic count data. AADT volumes for Highway 401 were assembled from counts at the County Road 19 (Manning Road), Provincial Road and Dougall Parkway interchanges. AADT volumes for Highway 3 were assembled from counts at the County Road 19 (Manning Road), County Road 34 and Walker Road intersections.

The AADT on Highway 401 and Highway 3 from 1988 to 2006 show a steady average increase of 2.3% per annum. The AADT Trend on Highway 401 from 1998 to 2006 at the County Road 19 (Manning Road) Interchange, Dougall Parkway Interchange, and County Road 46/Provincial Road Interchange is detailed in Exhibit 2-4 and illustrated in Exhibit 2-5.

EXHIBIT 2-4: HIGHWAY 401 HISTORICAL TRAFFIC GROWTH TRENDS

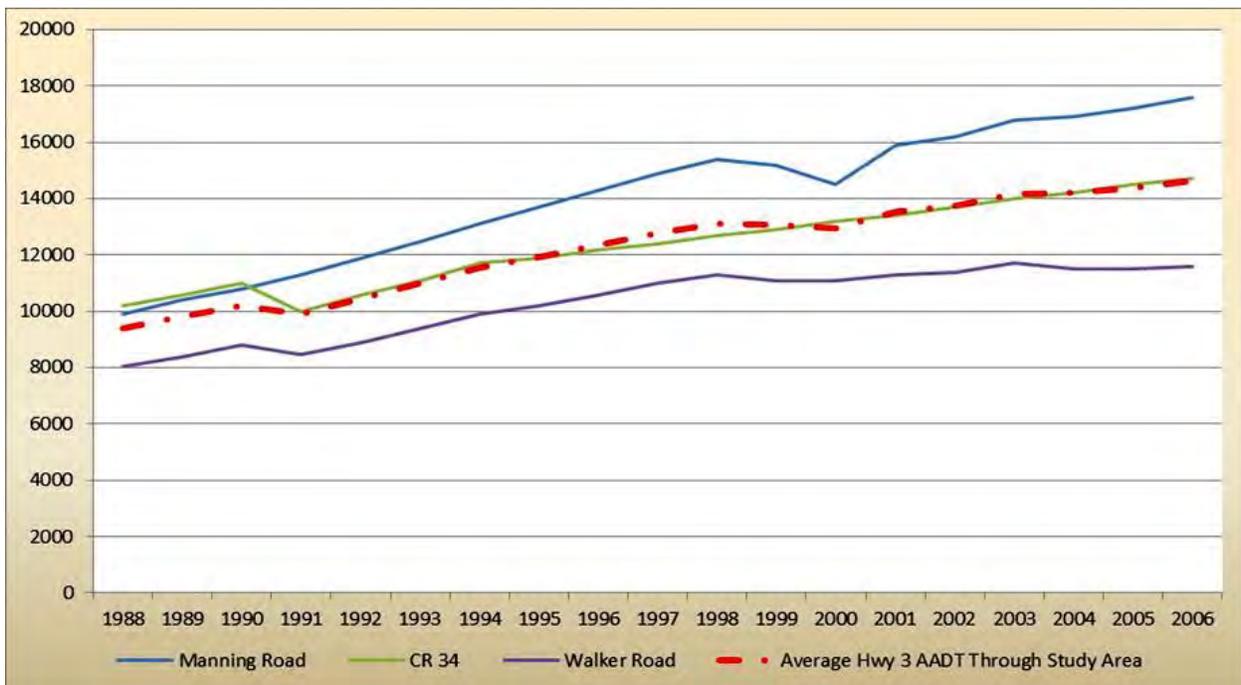
Highway 401						
Year	Manning Road		Provincial Road		Dougall Parkway	
	AADT	SADT	AADT	SADT	AADT	SADT
1988	13,950	16,600	13,200	15,700	8,400	9,900
1989	14,350	18,200	13,600	15,000	8,600	9,500
1990	14,750	18,400	14,050	15,500	8,850	9,800
1991	15,050	18,900	14,350	15,700	9,050	9,900
1992	15,300	18,800	14,600	15,700	9,500	10,200
1993	15,900	20,000	15,150	16,300	10,100	10,900
1994	16,700	17,400	15,800	17,200	10,700	13,700
1995	17,500	18,400	16,000	17,300	11,300	14,500
1996	18,500	19,700	16,100	18,100	12,500	16,000
1997	19,400	21,600	16,300	18,300	13,100	14,600
1998	20,500	22,900	16,800	18,900	13,400	14,900
1999	20,500	22,900	16,000	18,100	11,900	13,300
2000	21,900	23,300	16,200	18,200	12,000	13,400
2001	21,600	23,100	16,400	18,500	12,000	13,400
2002	22,200	23,600	16,500	18,500	12,100	13,500
2003	21,900	24,500	16,500	18,500	12,100	13,400
2004	21,900	24,500	16,600	18,500	12,200	13,600
2005	24,700	27,500	16,400	18,300	11,900	13,200
2006	25,500	28,300	16,600	18,400	15,000	16,700
Annual Average Growth Rate	3.41%	3.01%	1.28%	0.89%	3.27%	2.95%

EXHIBIT 2-5: AADT GROWTH ON HIGHWAY 401 INTERCHANGES (1988-2006)



The AADT Trend on Highway 3 from 1998 to 2006 at County Road 19 (Manning Road), County Road 34 and Walker Road intersections is illustrated in Exhibit 2-6.

EXHIBIT 2-6: AADT GROWTH ON HIGHWAY 3 INTERSECTIONS (1988-2006)



The following sections provide an overview of traffic and travel characteristics on existing conditions.

2.4.2 Existing Daily Traffic Flows

Extensive traffic counts were conducted in the study area, which includes peak period turning movement counts and 7-day ATR (Automatic Traffic Recorder) counts on major corridors. The counts were conducted during March 2011.

The counts for Highway 401, Highway 3, and other border crossings were collected from MTO, the counts were provided for year 2006 - 2011. The City of Windsor provided turning movement counts for Lauzon Parkway/E.C. Row Expressway Interchange; Lauzon Parkway, County Road 42, and Walker Road intersections; and ATR counts at various locations on Baseline Road, County Road 42, and County Road 46, for year 2005 to 2009; the 2008 and 2009 counts were used for this analysis. The AADT volumes for the missing corridors were collected from previous studies. The daily traffic flows on major roadways within and adjacent to the study area were assembled.

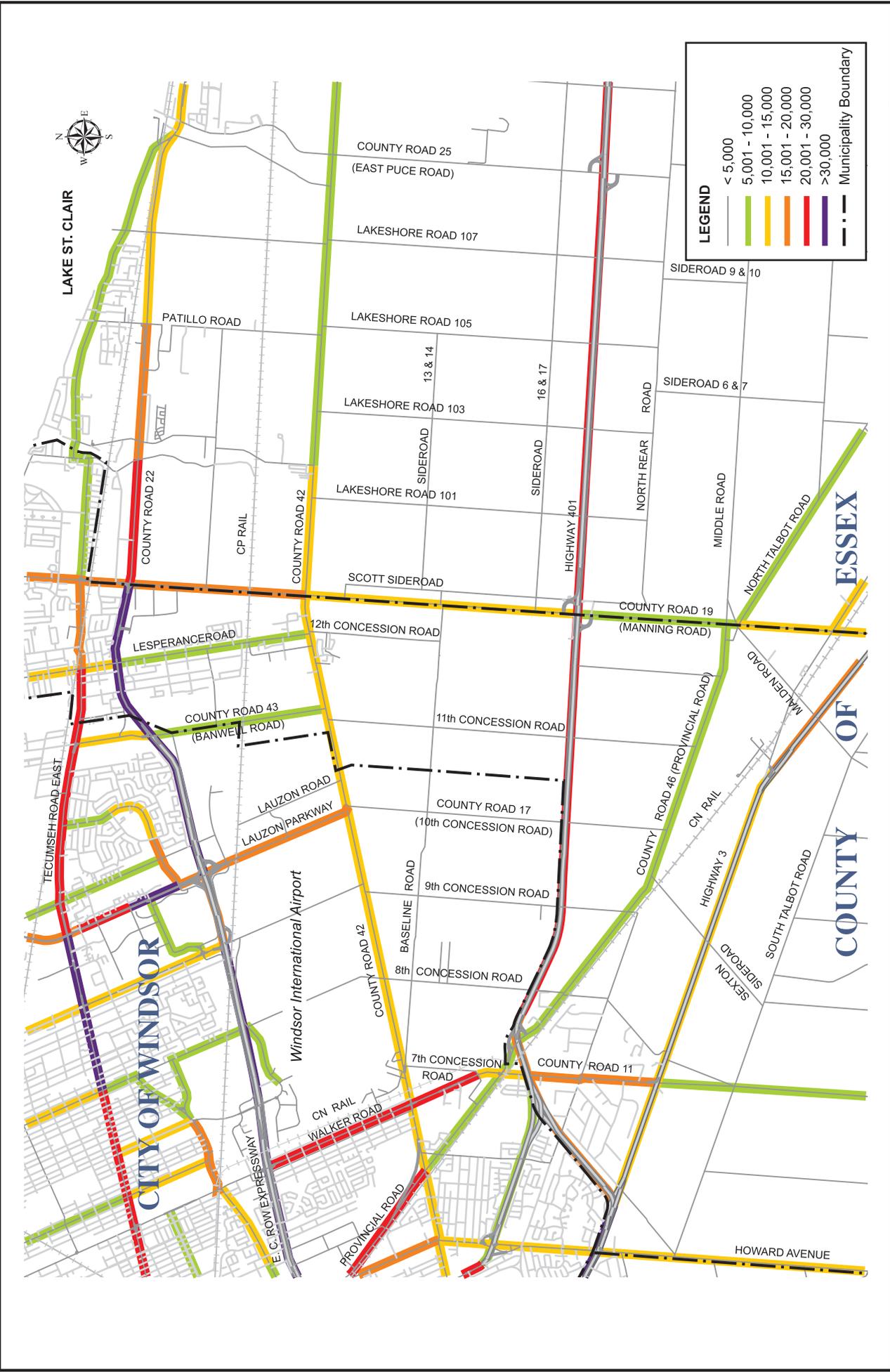
The summary of Annual Average Daily Traffic (AADT) flows, presented in Exhibit 2-7, indicates that E.C. Row Expressway carries the most significant daily traffic volumes (some section carries about 50,000 vehicles), followed by Highway 401 (with very high percentage of commercial traffic). Highway 3 is a four-lane highway with a two-way-left-turn-lane, with at-grade intersections; and County Road 42 is a basic two-lane highway, with at-grade intersections. The daily traffic on Highway 3 is ranging from 15,000 to 18,000 vehicles in the study area. County Road 42 carries daily traffic ranging from 10,000 to 15,000 vehicles. A section of Lauzon Parkway from E.C. Row Expressway to County Road 42 is a two-lane corridor and has daily traffic demands ranging from 15,000 to 20,000 vehicles.

The percentage of commercial traffic on the road system is based on the total daily traffic as presented in Exhibit 2-8.

The City of Windsor has established the truck route system, to minimize the intrusion of trucks into sensitive areas while providing acceptable access to businesses and industries. For the transportation modelling analysis for commercial trips, the truck route network in City of Windsor was taken into considerations and the commercial trucks were anticipated to travel on the designated truck routes for the transportation modelling analysis. A figure of the City of Windsor Truck Route Map is in Appendix A of Appendix B – *TRI: Identification of Factors Driving 'Area Transportation System' Needs*. For the County of Essex, the trucks were anticipated to be travelling on Highway 401, Highway 3 and the major arterial roads designated as County Roads.

EXISTING AADT ON
MAJOR ROADWAYS WITHIN THE STUDY AREA

Lauzon Parkway Improvements
Class Environmental Assessment Study
Environmental Study Report



2.4.3 Non-Commercial Travel Characteristics

The origin and destination travel patterns were generated from the traffic model. Using trip production and attraction rates between traffic analysis zones (TAZ's), origin and destination trips were produced and were aggregated into super analysis zones (zones consisting of multiple TAZ's representing a wider area) to determine origin-destination trip patterns. This is essential for determining the trip characteristics of individuals originating from and travelling to the study area.

The aggregated origin and destination trip patterns show that the majority of travel destined for and attracted to the City of Windsor is internal. The patterns also show connectivity of the City and study area with the surrounding 'suburban' areas of LaSalle, Tecumseh and Lakeshore.

The origin and destination patterns for vehicles travelling to and from the City of Windsor (including internal trips) are illustrated in Exhibit 2-9 and Exhibit 2-10. For both origins and destinations, the majority of the trips are internal (within City of Windsor). These internal trips account for approximately 80% of all trips.

The origin and destination patterns for vehicles travelling to and from the Windsor Transferred Lands (inside which the study area is located) are illustrated in Exhibit 2-11 and Exhibit 2-12. Again, the City of Windsor itself accounts for the largest number of trip productions and attractions (approximately 60% of existing trips). The next two highest areas for trip generation are Tecumseh and Lakeshore (approximately 7-9% origin and destination traffic each). Since Windsor has the highest population and employment in the region, it is logical that the majority of this population live and work in the City of Windsor.

EXHIBIT 2-9: TRAVEL CHARACTERISTICS FOR WINDSOR ORIGINATED TRAFFIC

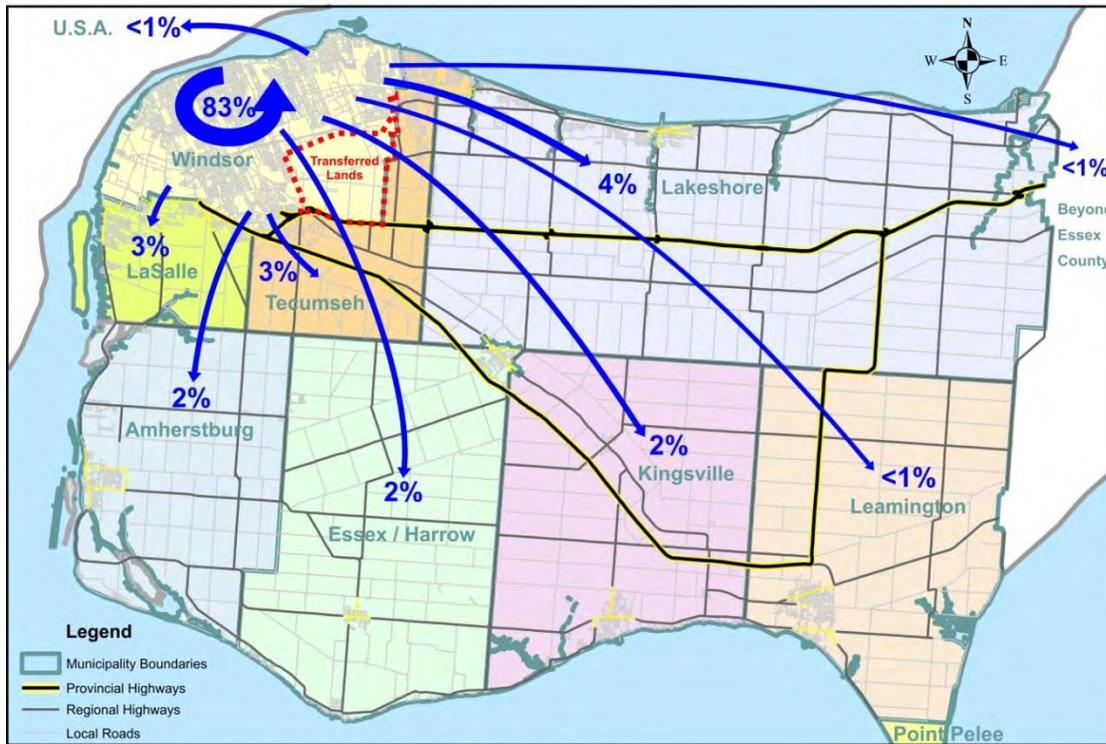


EXHIBIT 2-10: TRAVEL CHARACTERISTICS FOR WINDSOR DESTINED TRAFFIC

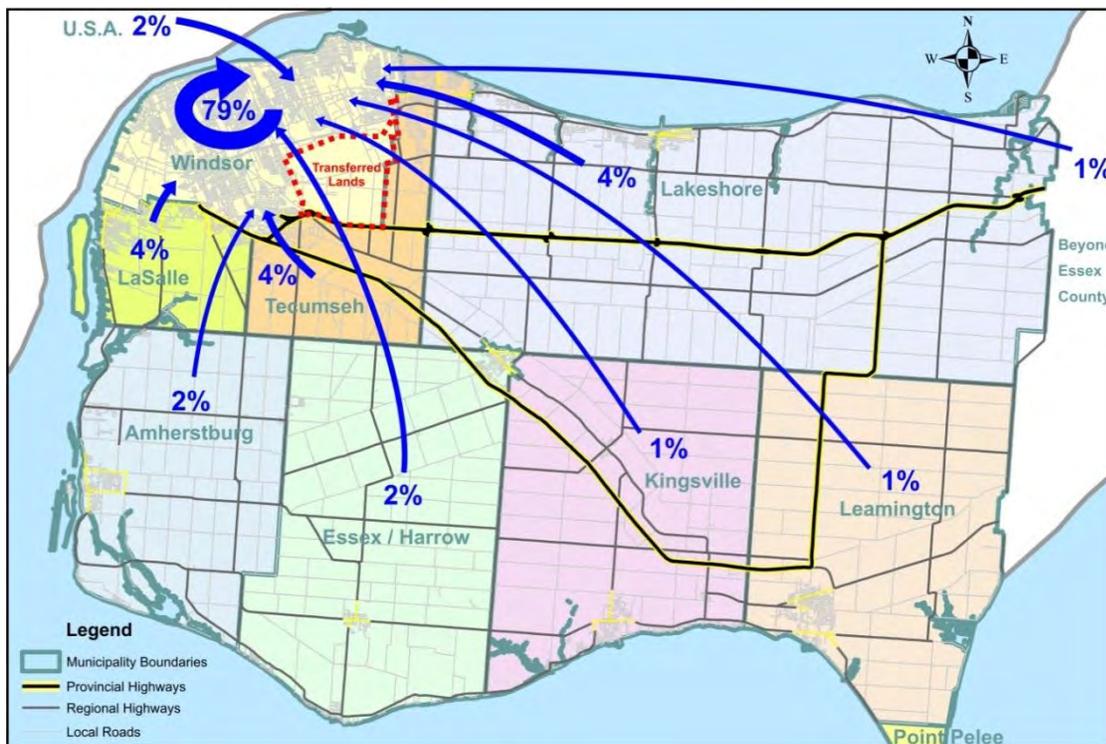


EXHIBIT 2-11: TRAVEL CHARACTERISTICS FOR WINDSOR TRANSFERRED LANDS ORIGINATED TRAFFIC

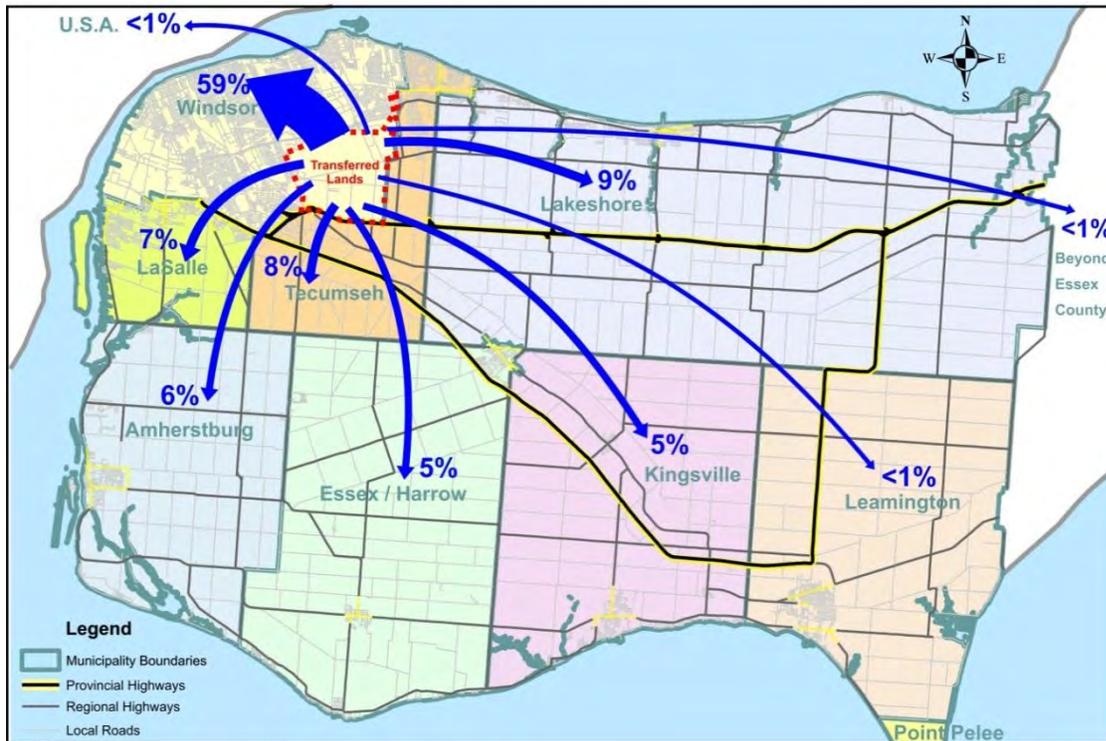
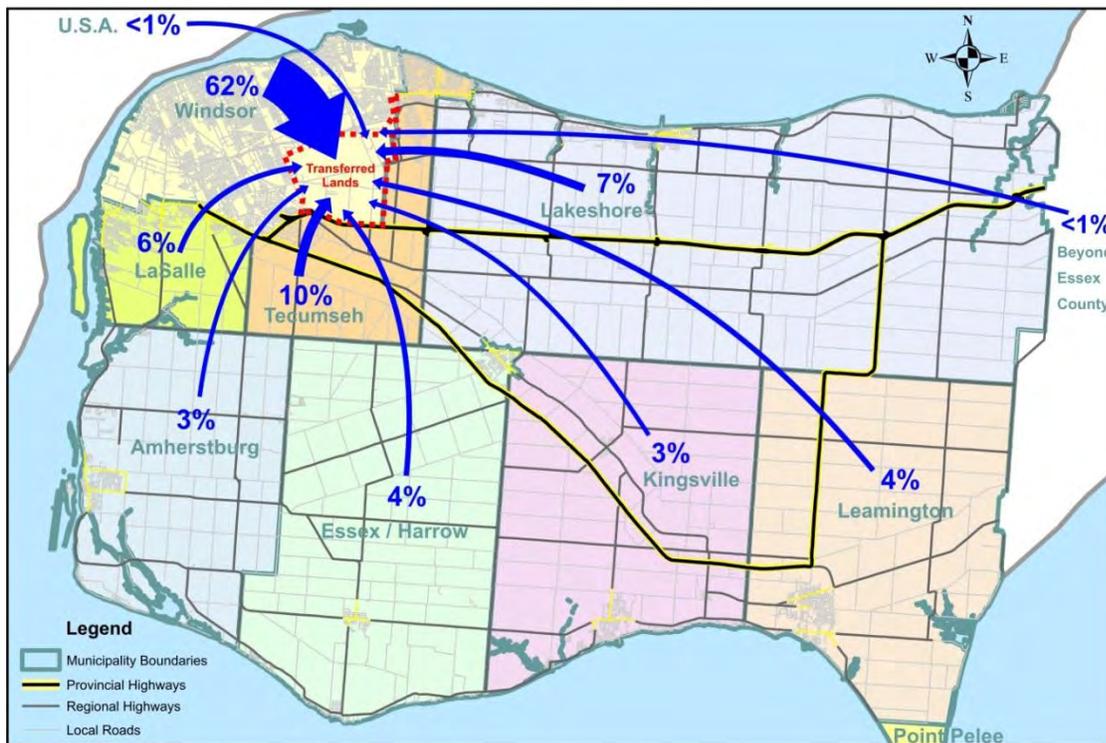


EXHIBIT 2-12: TRAVEL CHARACTERISTICS FOR WINDSOR TRANSFERRED LANDS DESTINED TRAFFIC



2.4.4 Commercial Traffic Characteristics

To assess the current travel characteristics of commercial vehicle travel characteristics, the commercial vehicle survey data was collected from the MTO. The MTO conducted a comprehensive commercial vehicle survey (CVS) in 2006 at the Ambassador Bridge (includes both directions) capturing border crossing traffic and at Highway 401 near County Road 19 (Manning Road) Interchange (only for the EB direction). This data quantifies truck volumes and trip origin and destination. Exhibit 2-13 presents the origin and Exhibit 2-14 presents the destination locations for commercial traffic at the Ambassador Bridge.

EXHIBIT 2-13: ORIGIN OF COMMERCIAL TRAFFIC AT THE AMBASSADOR BRIDGE

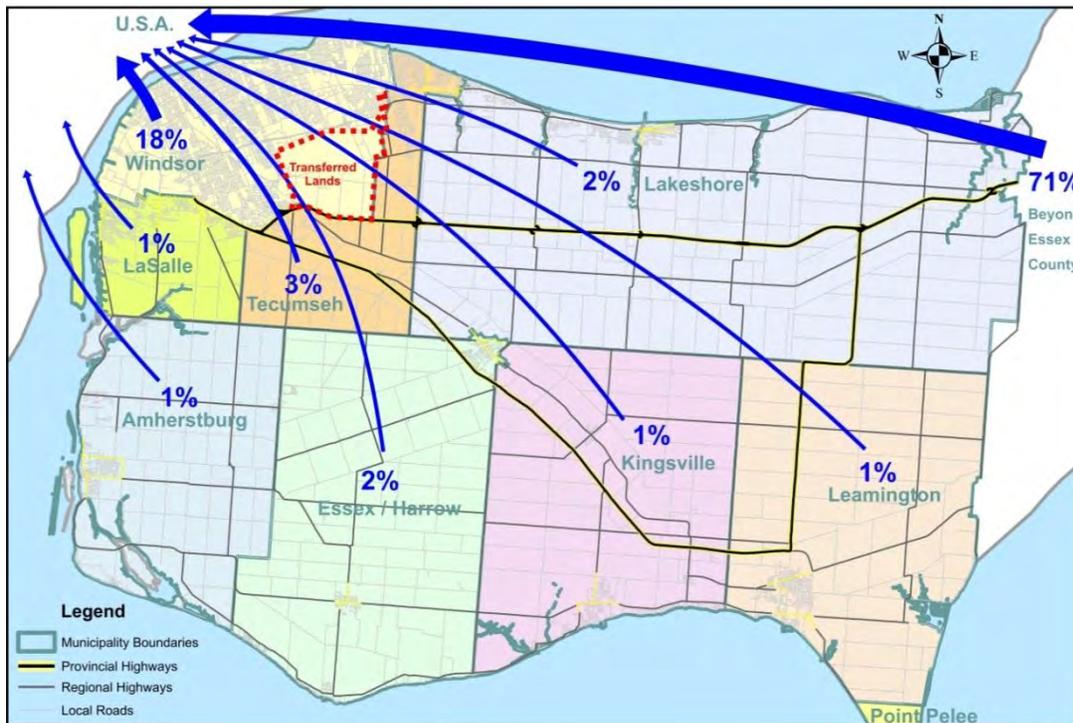
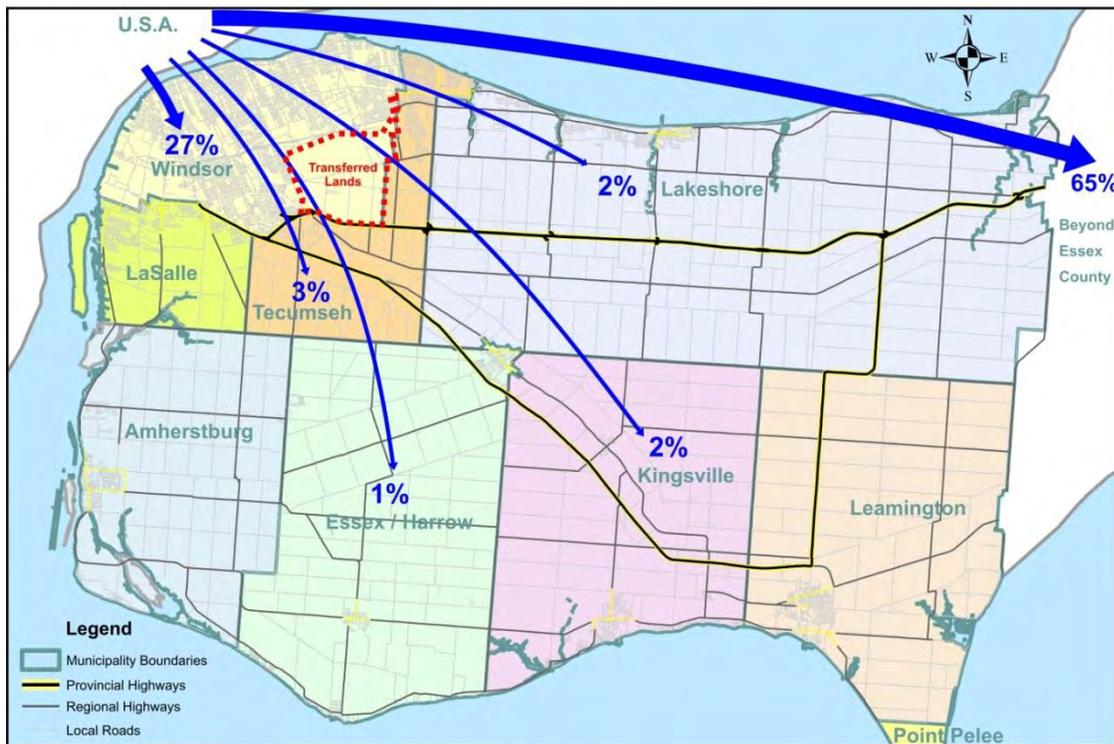


EXHIBIT 2-14: DESTINATION OF COMMERCIAL TRAFFIC AT THE AMBASSADOR BRIDGE



2.4.5 International Crossings

Canada and the United States have developed the largest bilateral trade relationship in the world. In 2009, it was estimated that trade between the two countries was over \$410 billion (\$1.1 billion per day) and the ‘Windsor Gateway’ is the most significant link for this trade route.

THE AMBASSADOR BRIDGE

In 2006, the average weekday traffic volume on The Ambassador Bridge was approximately 28,000 vehicles. The Ambassador Bridge serves both local and long distance traffic. The 2008 origin-destination survey at the Ambassador Bridge indicates that the Canada to US bound traffic includes 50% of traffic originated from the City of Windsor, 36% originated from the rest of the County of Essex and 14% from other parts of Ontario and Canada. In the opposite direction, from U.S. to Canada includes 46% destined to Windsor, 32% destined to the rest of the County of Essex and 22% destined to other parts of Ontario and Canada. The Ambassador Bridge is also the busiest international crossing for the commercial traffic in Canada.

WINDSOR-DETROIT TUNNEL

In 2008, the average daily traffic volume was approximately 13,000 vehicles. The Windsor-Detroit Tunnel is used more by local traffic rather than long-distance traffic. Based on 2004 data, some 88% of trips (15,000) are entirely local, while less than 1% are entirely long distance. Discretionary trips (recreation, entertainment, shopping and casino) traditionally made up just over half of all weekday Tunnel passenger car trips. The Tunnel also serves a high volume of cross-border work trips (8,300) since it provides direct access to/from the city centres of Windsor

and Detroit. Recently, discretionary trips have been reduced throughout the day while commuter trips remain relatively steady during commuter peak periods.

Due to limited dimensions of the tunnel, the tunnel has restrictions on both the size and the contents of commercial vehicles that are allowed to traverse this facility, which results in low commercial vehicle traffic.

2.5 EXISTING TRAFFIC OPERATIONS

The historic and existing traffic flows discussed in the previous sections of this report provide an overview of the current total and commercial vehicle travel demand in the study area as well as an indication of the traffic growth trends in specific corridors. In order to assess how well the transportation system is operating during peak travel periods, analysis screenlines were established at four locations within the study area.

A screenline analysis is a linear feature such as a road, a river, a rail line or a municipal boundary that is used for the purpose of evaluating the cumulative travel demand on the roadways crossing that feature. The cumulative travel demand is compared to the available screenline capacity in order to establish volume to capacity ratios, which provide an indication of how well a specific corridor/screenline is operating. A Level-of-Service (LOS) condition guideline is defined by six levels or grades of generalized traffic conditions, characteristics and commonly used measurement of overall transportation system operations for links and intersections. The volume-to-capacity ratios (V/C) and respective LOS and operating conditions is presented in Exhibit 2-15.

EXHIBIT 2-15: VOLUME/CAPACITY OPERATING CONDITIONS GUIDELINE

Volume-to-Capacity Ratio	Level of Service (LOS)	Facility Operating Condition	Screenline Operating Condition
< .70	A + B	Free Flow	Good
.71 to .80	C	Stable Flow	Good
.81 to .90	D	Unstable Flow	Unstable
.91 to 1.0	E	Congested	Congested
> 1.0	F	Very Congested	Very Congested

A Screenline Analysis was conducted to assess the existing traffic operations. The north-south screenline analysis for the N/S1 (West of Lauzon Parkway) for eastbound direction indicates that the volume to capacity (v/c) ratio for the E.C. Row Expressway was ‘Unstable’ (0.82) and for the County Road 42 was ‘Unstable’ (0.85) during afternoon peak hour traffic volume. In the existing condition, the section of County Road 42 from Walker Road to County Road 19 (Manning Road) is operating at a saturated level and additional future traffic generating from the study area could result in congestion on this facility. This indicates the need for additional capacity for County Road 42.

The east-west screenline analysis results for the E/W 1 (North of County Road 42) implies that Lauzon Parkway is operating at an ‘Unstable’ v/c ratio of 0.83 for northbound direction and ‘Good’ 0.80 for southbound direction. The E/W 2 (North of Highway 401) screenline analysis results for southbound direction identifies that Walker Road (via Provincial Road/County Road

46) and County Road 19 (Manning Road) (County Road 42) are operating at ‘Unstable’ condition with v/c ratio of 0.87 and 0.81. Walker Road (via Provincial Road/County Road 46) and County Road 19 (Manning Road) are the only two north-south links which provide connection between Highway 401 and E.C. Row Expressway; this results in attracting traffic from other roads within the network to these two links. These two links are already operating near capacity, indicating the need for a new Highway 401 interchange for future traffic demand in the study area.

2.6 FUTURE TRENDS

2.6.1 Population and Employment Forecast

The County of Essex Official Plan was developed in 2002; and at the time of preparation of this report, the County of Essex Official Plan is in the process of being updated. The County of Essex provided the provisional population and employment forecasts for the Essex County. These projections will be revisited once the County of Essex’s Official Plan is published and approved by the County.

The population and employment forecasts for the City of Windsor were obtained from the City of Windsor and are based on the low projections that have been outlined as part of the City’s Official Plan Review process. As part of the Official Plan Review process the City of Windsor has also undertaken employment projections.

The population forecasts for the City of Windsor and County of Essex are presented in Exhibit 2-16.

EXHIBIT 2-16: REGIONAL POPULATION FORECAST

Municipality	2011	2016	2021	2031	Growth 2011-31	Annual Growth Rate
City of Windsor	219,698 ²	226,631	235,521	250,206	30,508	0.65%
County of Essex	182,890	191,890	203,490	223,760	40,870	1.01%
LaSalle	28,900	30,920	33,620	38,160	9,260	1.40%
Tecumseh	24,440	25,400	27,460	31,920	7,480	1.34%
Lakeshore	34,980	37,230	39,580	43,040	8,060	1.04%
Amherstburg	22,670	23,820	25,120	27,310	4,640	0.94%
Essex	20,570	21,240	21,940	23,230	2,660	0.61%
Kingsville	21,720	22,800	24,030	26,020	4,300	0.91%
Leamington	29,310	30,180	31,440	33,780	4,470	0.71%
Pelee Township	300	300	300	300	0	0.00%
Windsor-Essex Region	402,588	418,521	439,011	473,966	71,378	0.82%

The Windsor-Essex Region population is expected to increase by approximately 71,400 and the City of Windsor population by 30,500 persons by 2031. As presented in Exhibit 2-16, the population for the Windsor-Essex Region is expected to grow by 0.82% per annum and City of Windsor is expected to grow by 0.65% per annum. Employment in the Windsor- Essex Region is expected to grow by 0.75% per annum; where the employment in City of Windsor is expected to grow by 0.47% per annum from 2011 to 2031.

The Provincial Policy Statement (PPS) and Official Plans encourage intensification in the existing built-up areas; therefore not all of the projected growth in the City of Windsor should be directed to the study area.

The *Windsor Annexed Lands Master Planning Study* (2006) identified the need for the additional land requirements and proposed population and employment allocation in the Windsor Annexed Area. The population increase in the Windsor Annexed Area is expected to increase approximately to 14,000 persons and employment to approximately 10,000 between 2011 and 2031.

² Population based on projections available at the onset of this study, in March 2011, and used for the preparation of the Traffic Demand Model to identify future transportation needs. The actual 2011 population was 210,891. The difference between the projected and actual population may impact the timing of when the recommended changes should be implemented but not the overall need for the project.

2.7 IDENTIFICATION OF TRANSPORTATION NEEDS

2.7.1 Future Trends

The future year transportation condition was assessed using the Travel Demand Model. This model was developed for the EWRTMP Study during 2002-2005 using TransCAD software for afternoon peak hour traffic demand to assess the auto travel demand pattern in the Windsor-Essex Region. This model is a standard four-stage demand model, and covers the geographical area of the County of Essex and its municipalities, the City of Windsor and two existing border crossings based on 2001 Census data. The model assigns the trip rates, vehicle occupancy factors and mode split derived from the survey conducted for the *Windsor Area Long-Range Transportation Study* (WALTS) and EWRTMP.

As part of this study, this model was required to be updated for the existing condition (2011 afternoon peak hour volumes) by:

- Updating transportation network as per existing road network (incorporating improvements conducted in the City of Windsor and County of Essex);
- Rationalizing previous trip rates based on the recent studies in the region and traffic counts;
- Developing revised origin-destination trip tables for the existing and future years with the use of revised trip rates and latest population and employment projections.
- The resulting model covers the entire Windsor-Essex Region, and includes all City arterials and major collector roads and all County Roads in the study area, which provides better understanding of travel pattern than the ‘Sub-Area Model’. This model was upgraded to include a proposed road network and super-zone system for the proposed land use in the study area.

After validating the existing year travel demand model, the future year travel demand models were developed for the planning horizons of the next 5, 10 and 20 year time periods (2016, 2021 and 2031). The future road network incorporates all planned/committed road network improvements for the respective planning horizons. The model also takes into account the network speeds and capacity, the future land use (population and employment) and travel patterns.

2.7.2 Future Transportation Network

The planned improvements from the City, County and MTO for the three planning horizon years are listed in Exhibit 2-17, Exhibit 2-18, and Exhibit 2-19 respectively. These improvements were developed through review of previously accepted planning reports and in consultation with City, County and MTO staff. The planning improvements for County Road 42, Lauzon Parkway, and E-W Arterial are not included in the network improvements noted below, as they are being analyzed by this EA. It is noted that some of the projects planned to be completed by the identified horizon year may not be completed by that time.

EXHIBIT 2-17: CITY OF WINDSOR ROAD NETWORK IMPROVEMENTS

Road	From	To	Type of Improvement	2016	2021	2031
Walker Road	E.C. Row Expressway	Division Road	Additional left turning lane	✓		
Tecumseh Road East	Lauzon Road	Banwell Road	4 → 6 Lanes		✓	
Howard Avenue	Highway 3	Dougall Parkway	2 → 4 Lanes		✓	
Provincial Road	Howard Avenue	Highway 401 (City Limit)	2 → 4 Lanes		✓	
E.C. Row Expressway	Huron Church Road	Banwell Road	4 → 6 Lanes		✓	
Howard Avenue	Dougall Parkway	Cabana Road East	Additional left turning lane			✓
Howard Avenue	Cabana Road East	Provincial Road	2 → 4 Lanes			✓
Cabana Road	Huron Church Road	Walker Road	2 → 4 Lanes			✓
County Road 43/ Banwell Road	Tecumseh Road East	CP Rail Tracks	2 → 4 Lanes			✓
County Road 43/ Banwell Road	At EC Row Expressway		Upgrade to full interchange			✓

EXHIBIT 2-18: COUNTY OF ESSEX ROAD NETWORK IMPROVEMENTS

Road	From	To	Type of Improvement	2016	2021	2031
County Road 19/ Manning Road	CP Rail Tracks	County Road 22	2 → 4 Lanes	✓		
County Road 22 (E.C. Row Extension)	County Road 43 (Banwell Road)	County Road 19/ Manning Road	4 → 6 Lanes	✓		
County Road 22	County Road 2	County Road 25/ Puce Road	2 → 4 Lanes	✓		
County Road 22	County Road 25/ Puce Road	IC Roy Dr.	2 → 4 Lanes	✓		
County Road 3 (Malden Road)	Cahill Drain	Laurier Drive	2 → 4 Lanes	✓		
County Road 7 (Huron Church Rd)	Cousineau Road	Sandwich West Parkway	Additional left turning lane	✓		
County Road 9 (Howard Ave)	County Road 8/ Townline Road	Laurier Parkway	2 → 4 Lanes		✓	
County Road 43/ Banwell Road	CP Rail Tracks	County Road 42	2 → 4 Lanes		✓	
County Road 43/ 11 th Concession Rd	500m North of County Road 42	500m South of County Road 42	Road + Intersection Realignment		✓	
County Road 22	IC Roy Dr.	Renaud Line Rd	2 → 4 Lanes		✓	
County Road 19/ Manning Road	CP Rail Tracks	Highway 401	2 → 4 Lanes		✓	
County Road 46 (Provincial Road)	Hwy 401	8 th Concession	2 → 4 Lanes		✓	
Gouin Street Extension	Lesperance Road	County Road 19/ Manning Road	0 → 2 Lanes		✓	
Arterial Bypass (Leamington)	County Road 34	County Road 20	2 → 4 Lanes			✓
County Road 22	Renaud Line Rd	Belle River Road	2 → 4 Lanes			✓
Laurier Road	Malden Road	Howard Avenue	2 → 4 Lanes			✓
County Road 19/ Manning Road	Highway 401	Highway 3	2 → 4 Lanes			✓

EXHIBIT 2-19: MTO ROAD NETWORK IMPROVEMENTS

Road	From	To	Type of Improvement	2016	2021	2031
Highway 3/ Huron Church Road	Highway 401	EC Row Expressway	Reconstruction and Realignment	✓		
Rt. Hon. Herb Gray Parkway (Windsor-Essex Parkway)	Highway 401	Windsor Border Crossing Plaza	0 → 6 Lanes	✓		
DRIC – New Bridge Crossing	Windsor Border Crossing Plaza	Detroit Border Crossing Plaza	0 → 6 Lanes	✓		

These improvements were incorporated in the future road network used for travel demand modelling.

DRAFT SANDWICH SOUTH SECONDARY PLAN ROAD NETWORK

The Sandwich South Secondary Plan, as described in Section 2.1.4, will establish a new road, and active transportation network within the Sandwich South lands. Existing roadways within the Secondary Plan’s study area may be re-aligned or reclassified.

The draft Secondary Plan Schedule F: Road and Bikeways indicates the proposed road network and road classifications, and is illustrated in Exhibit 2-20.

**SANDWICH SOUTH
SECONDARY PLAN
Existing and Proposed
Roads, Bikeways &
Storm Water Management**

Legend

- Road Class**
- Class I Arterial
 - Class II Arterial
 - Class I Collector
 - Class II Collector

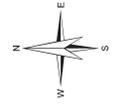
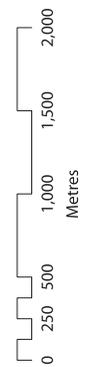
Notes:
1. All future roads are shown using a dashed line.
2. The exact location of the trails will be determined on a site-specific basis.

Trails

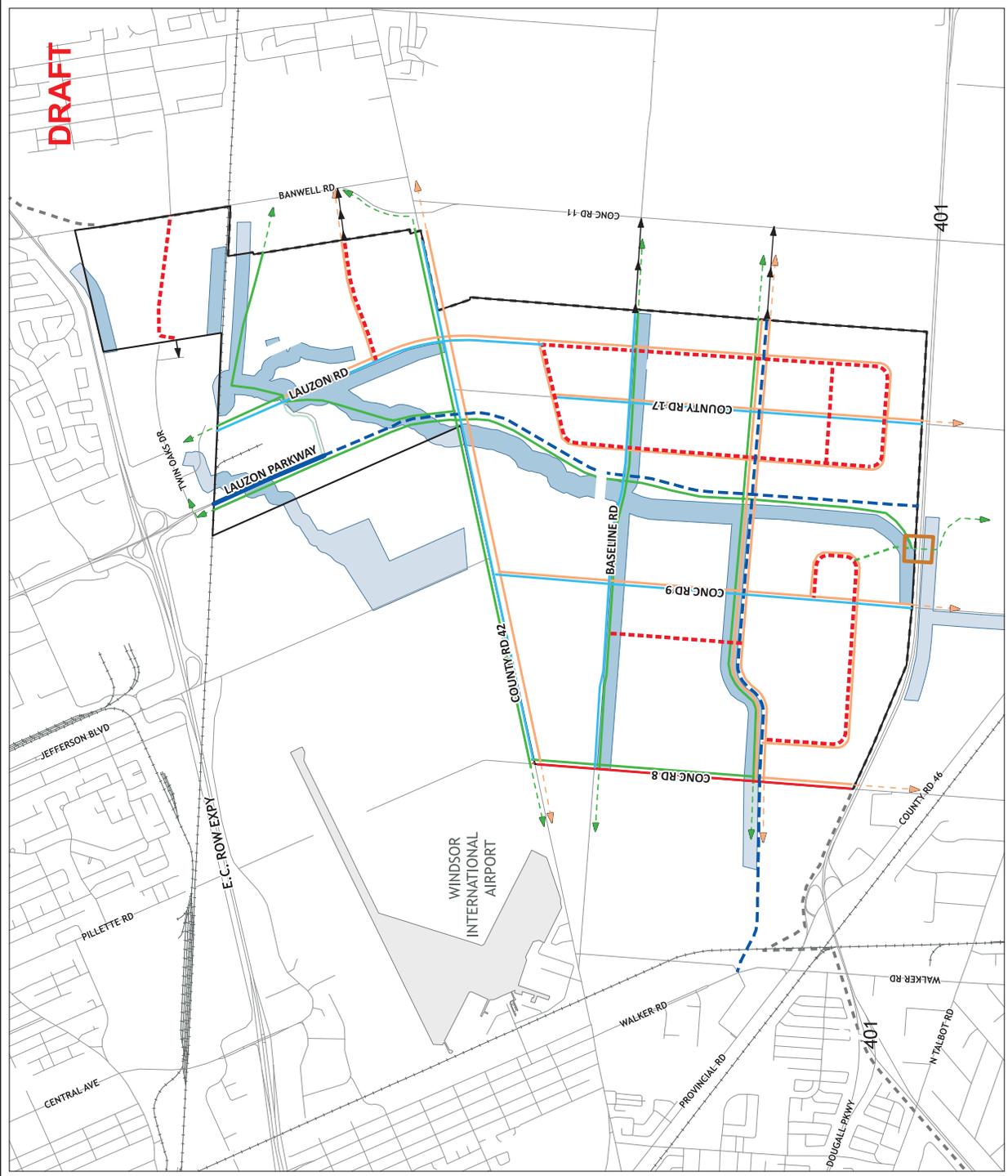
- Bike Lane
- Multi-Use Trail
- Proposed Trail Link
- Signed Route
- Grade Separated Crossing for Trail

- SWM
- SWM Outside of Secondary Plan

- Railway
- Secondary Plan Boundary
- City of Windsor Boundary



December 5, 2012



DRAFT

2.7.3 Forecasted Travel Characteristics

The existing traffic conditions on Lauzon Parkway and County Road 42 are summarized in Exhibit 2-21, in terms of Annual Average Daily Traffic (AADT) and the Design Hour Volume (DHV). The existing traffic volumes were derived from traffic data provided by City and County and additional traffic survey conducted during this study. The existing AADT volume on Lauzon Parkway is approximately 16,500 vehicles and for County Road 42 ranges from 8,500 to 14,000 vehicles.

The afternoon peak hour traffic volume projected by the model was used to estimate the future AADT and DHV. The AADT and DHV forecast and resulting lane requirements (based on DHV) for future (2031) traffic volume is presented in Exhibit 2-22. The AADT represents the average traffic volume on a given highway in both directions over a 24-hour period, for a particular year.

The DHV for a transportation facility represents the 30th highest hourly volume of the year, and typically represents an appropriate volume threshold to be used in the planning and design of new transportation facilities in rural areas. The future estimate of DHV also confirms the proposed lane arrangements for the Lauzon Parkway and County Road 42.

EXHIBIT 2-21: EXISTING YEAR AADT AND DESIGN HOUR VOLUME

	# lanes	PM Peak Hour Peak Direction	PM Peak Volume	Capacity Peak Direction (veh/hr/lane)	Volume / Capacity Ratio	Weekday AADT	PHF	DHV ³ (10%)	DHV ⁴ Peak Hour Peak Direction
Lauzon Parkway (North of County Road 42)	2-lanes	750	1500	900	0.83	16,500	9.1%	1,650	910
County Road 42 (West of Lauzon Pkwy)	2-lanes	770	1250	800	0.96	14,000	8.9%	1,400	770
County Road 42 (Lauzon Pkwy to Manning Road)	2-lanes	600	1050	800	0.75	12,600	8.3%	1,260	700
County Road 42 (East of County Road 19/ Manning Road)	2-lanes	450	750	800	0.56	8,500	8.8%	850	470

³ The DHV estimated based on 10% of AADT volume, which is conservative than existing observed peak hour volume (around 9%).

⁴ Assuming peak direction volume: 55%

EXHIBIT 2-22: 2031 AADT FORECAST AND DESIGN HOUR VOLUME

	2031 p.m. peak hour peak direction volume ⁵	2031 p.m. peak hour volume both direction	PHF ⁶ (%)	2031 Projected AADT	DHV (10%)	DHV Peak Hour Peak Direction ⁷	# of Lanes required (both directions)
Lauzon Parkway (Class I Arterial Capacity: 1000 vehicles/lane/direction)							
North of County Road 42	1,860	3,700	9.1%	40,700	4,070	2,240	6
County Road 42 to East-West Arterial	2,050	3,750	9.1%	41,300	4,130	2,280	6
East-West Arterial to Highway 401	1,900	3,440	9.1%	37,900	3,790	2,100	6
Highway 401 to Highway 3	1,500	2,535	9.1%	27,900	2,790	1,540	4
County Road 42 (Class II Arterial Capacity: 900 vehicles/lane/direction)							
West of Lauzon Parkway	1,100	1,700	8.9%	19,100	1,910	1,060	4
Lauzon Parkway to County Road 43 (Banwell Road)	930	1,700	8.9%	19,100	1,910	1,060	4
County Road 43 (Banwell Road) to County Road 19 (Manning Road) ⁸	1,100	1,690	8.3%	20,400	2,040	1,120	4
East of County Road 19 (Manning Road) ⁸	910	1,700	8.8%	19,300	1,930	1,060	4
East-West Arterial (Class II Arterial Capacity: 900 vehicles/lane/direction)	550	1,070	8.9% ⁹	12,000	1,200	660	2

⁵ Based on 2031 Travel Demand Model Results

⁶ Based on existing observed peak hour volume to daily volume

⁷ Assuming peak direction volume: 55%

⁸ Assuming traffic diverted to County Road 42 from County Road 22, due to congestion on County Road 22.

⁹ Assuming similar PHF as County Road 42 (section between Walker Road to Lauzon Parkway)

2.7.4 Summary of Transportation Needs

Various alternative scenarios with different network configurations were assessed to identify the road improvement requirements for the proposed development in the study area. The details of the alternative scenarios are included in Appendix B: TR2 Section 4 – Identification of Needs within the Study Area.

Based on the future travel demand analysis, the following road network improvements for the study area corridors are identified:

Improvement Requirements by 2021:

Lauzon Parkway:

- *From E.C. Row Expressway to County Road 42:* Widening from 2 lanes to 4 lanes of arterial (Class I) capacity will be required when the volume in the peak direction reaches approximately 800 vph;
- *From County Road 42 to Highway 401:* Southerly extension to Highway 401 with 4 lanes of arterial (Class I) capacity and a new full interchange at Highway 401;
- *From Highway 401 to Highway 3:* Further extension to Highway 3 with 4 lanes of arterial (Class I) capacity.

County Road 42:

- *From Walker Road to County Road 19 (Manning Road):* Widening from 2 lanes to 4 lanes of arterial (Class II) capacity will be required when the volume in the peak direction reaches approximately 700 vph (expected to be around 2018);
- *From County Road 19 (Manning Road) to County Road 25 (E. Puce Road):* 2-lanes of arterial (Class II) capacity without lane widening.

Additional improvement requirements by 2031:

Lauzon Parkway:

- *From E.C. Row Expressway to Highway 401:* Widening from 4 lanes to 6 lanes of arterial (Class I) capacity will be required when the volume in the peak direction reaches approximately 1600 vph (expected to be around 2025).

County Road 42:

- *From County Road 19 (Manning Road) to County Road 25 (E. Puce Road):* Widening from 2 lanes to 4 lanes of arterial (Class II) capacity. The need and timing for widening for this segment would be dependent upon the pace of development in the Town of Lakeshore and traffic congestion on County Road 22 between 2021 and 2031. Hence, the County of Essex is recommended to review periodically the traffic

operations on County Road 42 after 2021 (widening will be required when volume in the peak direction reaches approximately 700 vph).

East-West Arterial:

- The timing of construction of the 2-lane East-West Arterial will be development driven;
- Beyond 2031, the E-W Arterial would require to be widened from 2 to 4 lanes when volume reaches approximately 700 vph in peak direction.

2.8 SUMMARY OF PROBLEMS AND OPPORTUNITIES

In summary, an assessment of the area transportation system identified the following problems and opportunities:

Problems:

- The existing transportation network serves a growing demand within the study area. The major arterials around the study area are operating at or near capacity. The future growth and the improvements to infrastructure in the region are the prime driving factors for the study area transportation needs. They will have significant impacts on the capability of the transportation network to support the new economic development and improve the access for residents and businesses in east Windsor and the neighbouring municipalities.
- The traffic volumes in the study area have grown significantly in the past years. The traffic volume on Highway 401 has grown at an average growth rate of 3.4% per annum. The traffic volume on Highway 3 has grown at an average growth rate of 2.4% per annum.
- The existing traffic volumes on Lauzon Parkway are operating at or near its capacity north of County Road 42. Walker Road and County Road 19 (Manning Road) are also operating at an ‘Unstable-Flow’ condition. Walker Road (via Provincial Road/County Road 46) and County Road 19 (Manning Road) are the only two north-south links with interchanges at Highway 401 and E.C. Row Expressway. This results in traffic from other road networks being attracted to these two corridors. These two links are already operating near capacity, supporting the need for a new interchange with Highway 401 to meet future traffic demand in the study area.
- The proposed bridge for the New International Trade Crossing (NITC) and Rt. Hon. Herb Gray Parkway (formerly Windsor Essex Parkway) will provide an additional international border crossing route and facility and is projected to attract additional border crossing traffic.
- County Road 42 is a key east-west arterial in the study area. It provides continuous connection between the City of Windsor, Town of Tecumseh and Town of Lakeshore. In general, this corridor is currently operating at an acceptable level-of-service. However, during peak hours, the roadway is approaching capacity in the vicinity of the Lauzon Parkway and 10th Concession Road / County Road 17 intersections. In addition, there are movements (i.e. through traffic, left-turns and right-turns) at key intersections (such as Walker Road, Lauzon Parkway, County Road 43 (Banwell Road), County Road 17, Lesperance Road and County Road 19 (Manning Road) that are approaching capacity during peak hours.
- The population and employment forecast from the City of Windsor suggests that the City of Windsor population is expected to increase by 30,500 residents and employment by 11,400 jobs. The *Windsor Annexed Lands Master Planning Study* has estimated to accommodate about 14,000 residents and 10,000 employees in the Annexed Area. During the same period, the County of Essex suggests that the County

of Essex population in 2031 is expected to increase approximately by 41,000 residents and employment by 17,500 jobs.

- Considering the future anticipated growth in the study area, there are limited spare capacities available on the existing road network. In addition, there is limited existing north-south and east-west linkage to provide a grid transportation system. Future projected growth in the City of Windsor and County of Essex results in further demand on the existing road network. It is expected that congestion on the road network will worsen as a result of the future development associated with the draft Sandwich South Secondary Plan area, which cannot be accommodated by the existing road network.

Opportunities:

- The Lauzon Parkway Extension would provide an opportunity to develop a gateway and community transportation corridor. The extension of Lauzon Parkway to Highway 3 and a new interchange with Highway 401 would provide an opportunity for access to new development in the draft Sandwich South Secondary Plan area. This corridor would also help in reducing congestion on the existing corridors (Walker Road via Provincial Road/County Road 46 and County Road 19 (Manning Road)). The removal of the jog from the existing Lauzon Parkway south to 10th Concession Road / County Road 17, at County Road 42, would reduce the bottleneck and will enhance intersection operation. The proposed corridor provides opportunities to enhance the adjacent Little River corridor as a central community amenity as well as providing active transportation facilities and enhanced landscaping. Lauzon Parkway will provide a central spine through the proposed future Sandwich South Community. The Sandwich South Secondary Plan Study will develop design policies that incorporate a community focus including live/work opportunities including key consideration of provisions for active transportation facilities and transit expansion in the area.
- Improvements to County Road 42, which provides the continuous connection between the Town of Tecumseh, Town of Lakeshore and the future growth areas in the City of Windsor, will also include provisions for active transportation facilities.
- The future East-West Arterial, which will be a key east-west corridor in the Sandwich South community and support the grid transportation system for the area, will include provisions for active transportation along the corridor and will provide connectivity to facilities along Lauzon Parkway.

3.0 ALTERNATIVE SOLUTIONS

Completing Phase 2 of the Municipal Class EA process involves the identification of the problems and opportunities being addressed by the study, and identifying the Recommended Planning solutions. For this study, this included:

- Confirming the statement of problems and opportunities being addressed by the study – see Section 2.8;
- Reviewing planning alternatives to address the problems and opportunities – see Sections 3.1 and 3.2;
- Identifying the Recommended Planning solution – see Section 3.3;
- Reviewing the forgoing with the stakeholders and the public – see Sections A.5.2, B.5.2 and C.5.2.

3.1 GENERATION OF TRANSPORTATION PLANNING ALTERNATIVES

Following the identification of opportunities to improve the transportation infrastructure within the study area, alternative solutions to address these opportunities were identified and developed. In generating these alternatives, the following objectives are served:

- Address existing congestion;
- Attract and support economic development; and
- Improve access for residents and businesses in East Windsor and neighbouring municipalities

Transportation planning alternatives represent reasonable means of addressing the stated transportation problems and opportunities, as well as achieving the project objectives. In addition to ‘doing nothing’, alternatives to address deficiencies in the transportation network capacity typically include those that increase network capacity, reduce transportation demand or combinations thereof.

Transportation planning alternatives provide an opportunity to examine, in a broad and general way, fundamentally different ways of addressing transportation problems. In recognition of these fundamental differences among the planning alternatives, it is appropriate to examine the effectiveness of each type of alternative to address the problems and take advantage of opportunities at a functional level.

An analysis of the planning alternatives was undertaken to determine the preferred solution to be carried forward to the design alternatives phase. The alternatives were assessed based on their ability to address the project objectives. The assessment of the alternatives was a two-stage process. Stage 1 examined each planning alternative on its potential to address the identified problems and opportunities. The alternatives that contribute to addressing the identified transportation needs were then grouped in Stage 2 for further assessment and consideration. This analysis is included in Section 3.2.

The transportation planning alternatives which were considered are:

- Do Nothing;
- Travel Demand Management (TDM);
- Transportation Systems Management (TSM);
- Active Transportation
- Improve / New Transit; and
- Improve / New Roads and Highways

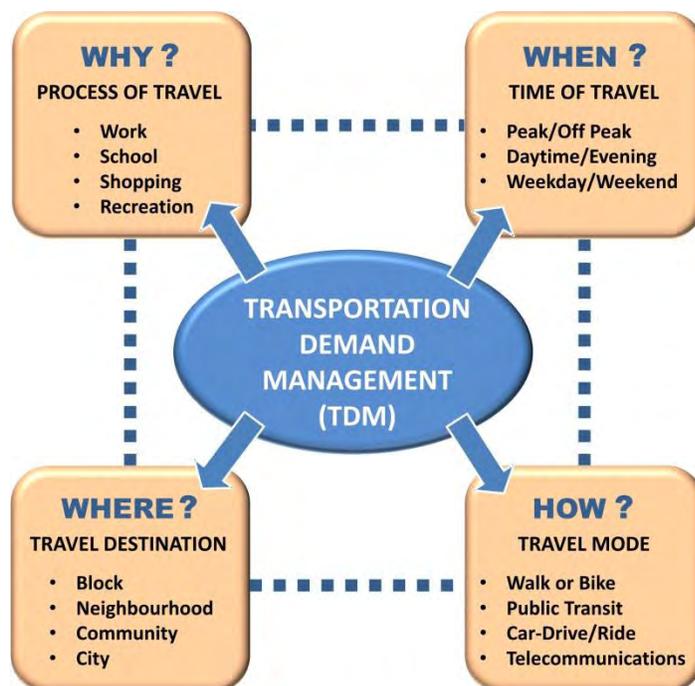
3.1.1 Do Nothing

“Do Nothing” is considered the status quo, where changes to the transportation system would be limited to the implementation of programmed or approved provincial and municipal initiatives.

3.1.2 Travel Demand Management (TDM)

TDM encompasses a wide range of policies, programs, services and products that influence how, why, when and where people travel to make travel behaviours more sustainable (Exhibit 3-1). Strategies include measures implemented to improve the operation of the current transportation system by managing travel demand independent of actually expanding or constructing new infrastructure. The emphasis of TDM strategies is to reduce overall demands on the network, shift demands to time periods outside of the critical congestion periods, and shift demands to alternative modes of transportation, principally transit, cycling and walking.

EXHIBIT 3-1: TRANSPORTATION DEMAND MANAGEMENT



The City of Windsor and County of Essex have incorporated TDM measures within their respective Official Plans. Building on the previous planning studies, *Windsor Area Long-Range Transportation Study* (WALTS, 1999) and the *Essex-Windsor Regional Transportation Master Plan* (EWRTMP, 2005), the City and County have adopted Active Transportation Master Plans. These include the City of Windsor *Bicycle Use Master Plan* (BUMP), which was adopted in 2001, and the *County Wide Active Transportation Study* (CWATS), which was adopted in 2012.

Also, the City and County are adopting TDM policies in their Official Plans, such as: promoting the use of ride sharing and car-pooling programs, promoting the use of bulk transit pass purchases by employers for employees that offer discounts, and encouraging companies to alternate hours of work to reduce peak hour traffic and parking demand.

As part of the *Windsor Area Long-Range Transportation Study* (WALTS, 1999), which was to provide a plan to guide future development of transportation services in the Windsor area, a number of TDM measures were identified including guidelines for urban design and subdivision design that promote the use of transit, cycling and walking, increased long term parking costs and employer initiatives for flex hours and ride sharing. WALTS formed the basis of the *Essex-Windsor Regional Transportation Master Plan* (EWRTMP, 2005).

As part of the EWRTMP, a TDM Strategy was developed. Research completed as part of the study showed that for many TDM initiatives to succeed in the goal to reduce the number of kilometers travelled per household by automobile, they require a combination of dedicated government support, private sector business support, and broader public support.

The EWRTMP also recognized barriers against TDM in place in the region, including relative ease of travel, transit service limitations outside the City limits, inexpensive and ample parking, and relocation of employment away from core areas. The Plan addresses the County's objective to reduce kilometres of travel per household by the automobile through a number of recommendations in the Essex-Windsor Region. First, a more integrated planning approach is needed that combines the effects of built form and land use on travel patterns. Reducing trip-making, shortening trip lengths and reducing auto use all require changes to how the region has been growing, using hard urban edges to control urban sprawl, more direct and efficient roadway patterns, more mixed use nodes and corridors, more telecommuting, road design standards that encourage non-motorized transportation and more ride-sharing through organized carpooling and ride-sharing programs.

3.1.3 Transportation Systems Management (TSM)

The objective of TSM is to improve the efficiency and safety of the transportation system and optimize the use of existing and planned infrastructure through a wide range of strategies and technology policies and initiatives. Measures include initiatives such as transit priority facilities, ITS (Intelligent Transportation System) strategies, high occupancy vehicle (HOV) lanes and reserved bus lanes (RBLs), and intersection improvements. Land use policies and urban design strategies can also serve to optimize the use of existing and planned infrastructure.

The City of Windsor has developed some ITS initiatives, such as, improved signalized intersections within the study area, and developed a truck route system to minimize the intrusion of trucks into sensitive areas.

MTO has recently completed the following ITS initiatives in Windsor-Essex:

- installation of two CCTV video vehicle detection system cameras at the end of Highway 401 at Highway 3 in Windsor; and
- Seven cameras, four located on Huron Church Road and three located on E.C. Row Expressway, were installed to help manage congestion and truck queuing between Highway 401 and the Detroit River Crossings.

As part of the EWRTMP, a Capacity Optimization Strategy (COS) was developed. The COS includes recommended policies and standards to improve arterial road operations, dealing for example with new traffic signals, signal coordination (City of Windsor signals are coordinated), pedestrian crossings, exclusive turn lanes and use of unsignalized intersection stop controls (stop signs). It also includes access management recommendations dealing with mutual driveways in rural areas, design of subdivision road networks and limiting access to provincial highways only at intersecting regional roads. The City and County are adopting these strategies as part of their respective Official Plans, including roadway classifications, access management, etc.

The *Sandwich South Secondary Plan* will develop community design policies that will ensure the future development complies with the general objectives in the City's Official Plan as well as current planning themes including sustainability and sense of place. The plan will identify specific neighbourhoods for residential uses and develop specific policies to ensure that the neighbourhoods become attractive and diverse communities with ranges of housing and commercial uses and services to meet the needs of the neighbourhood. Key considerations in planning for residential areas will include provisions for open space and linkages, active transportation including cycling and pedestrian routes and interconnected greenway system land use and energy efficiency and appropriate development staging.

3.1.4 Active Transportation

Active transportation refers to any form of human-powered transportation such as:

- Walking, jogging, running;
- Cycling;
- In-line skating;
- Skateboarding;
- Non-mechanized wheelchairs; and
- Snowshoeing/skiing.

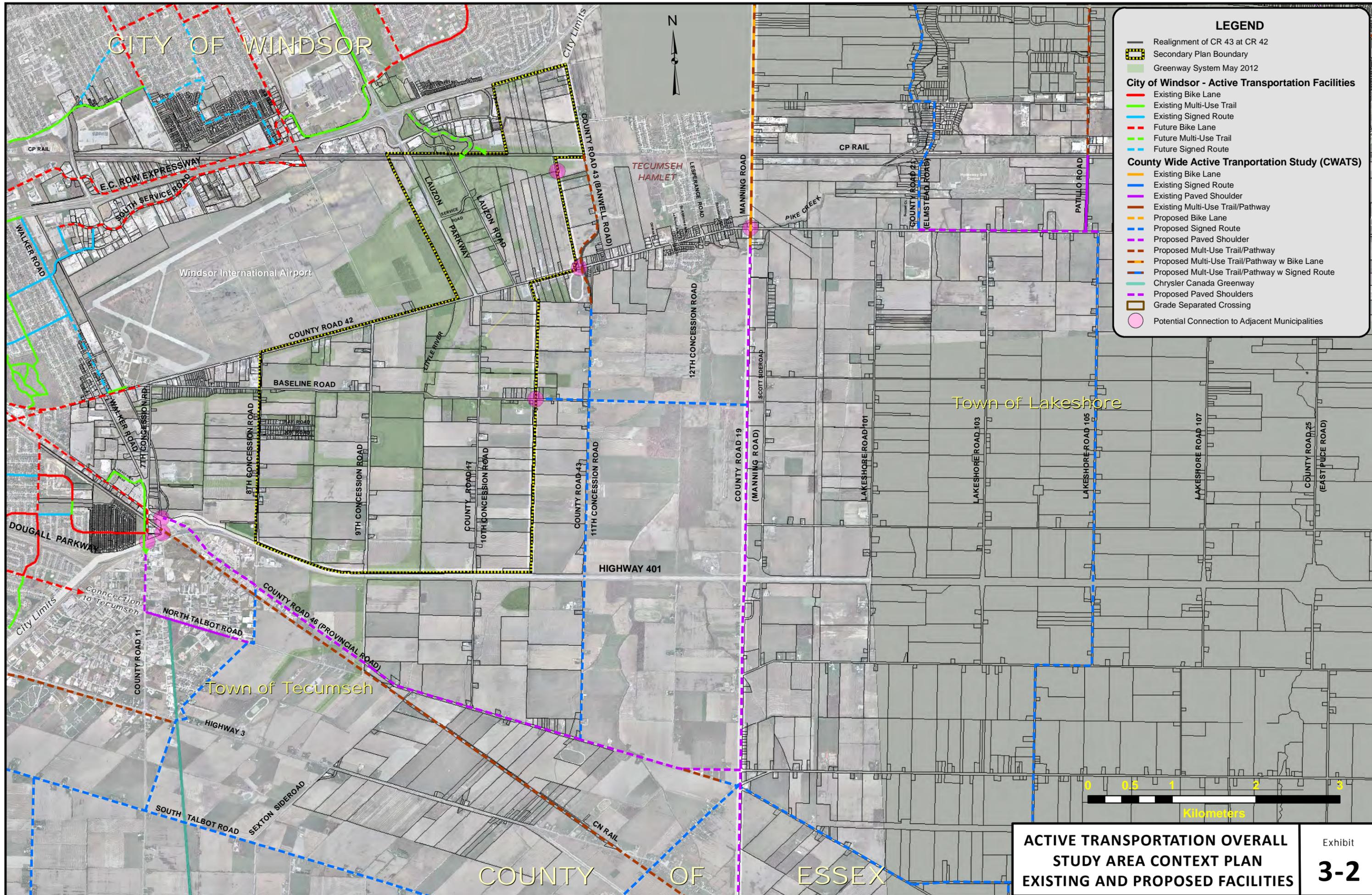
There are many ways to engage in active transportation that influence transportation demand and modal shifts, whether it is walking to the bus stop, or cycling to school/work.

The City developed the *Bicycle Use Master Plan* (BUMP, 2001) prior to the Annexed Lands transfer. BUMP is the City's commitment to develop a visible and connected cycling network that is easily accessible, safe and actively used by all types of cyclists. The Plan calls for a cycling network of bike lanes, multi-use trails and signed bike routes, and provides design

guidelines along with specific strategies for improving cycling awareness, the cycling-transit link and end-of-trip facilities (e.g. bike lockers, change rooms). These facilities are being implemented when possible. The cycling network for the study area will be developed as part of this EA and the Sandwich South Secondary Plan.

The County of Essex has developed the *County Wide Active Transportation Study* (CWATS, 2012). This study supports active transportation plans of the local municipalities. It outlines a comprehensive network of on-road corridors and off-road trails to connect County and selected local roads to improve connections between regional and local systems and to promote active transportation for over the next 25 years. The Study also explored land use planning initiatives and policy development, and provides a framework for future infrastructure projects.

Exhibit 3-2 illustrates the two approved active transportation plans in the context of the study area. The City's BUMP and County's CWATS networks were overlaid on the Lauzon Parkway EA study area in order to illustrate potential connector road and points, and to develop the active transportation needs within the study area.



LEGEND

- Realignment of CR 43 at CR 42
- ▭ Secondary Plan Boundary
- ▭ Greenway System May 2012

City of Windsor - Active Transportation Facilities

- Existing Bike Lane
- Existing Multi-Use Trail
- Existing Signed Route
- Future Bike Lane
- Future Multi-Use Trail
- Future Signed Route

County Wide Active Transportation Study (CWATS)

- Existing Bike Lane
- Existing Signed Route
- Existing Paved Shoulder
- Existing Multi-Use Trail/Pathway
- Proposed Bike Lane
- Proposed Signed Route
- Proposed Paved Shoulder
- Proposed Multi-Use Trail/Pathway
- Proposed Multi-Use Trail/Pathway w Bike Lane
- Proposed Multi-Use Trail/Pathway w Signed Route
- Chrysler Canada Greenway
- Proposed Paved Shoulders
- ▭ Grade Separated Crossing
- Potential Connection to Adjacent Municipalities

3.1.5 Improve / New Transit

Expanding the capacity of the transit system through increased services within the existing transportation network and/or accommodating new transit services on new infrastructure may relieve congestion and increase the performance of the transportation network.

Transit Windsor is the primary transit service provider in the Windsor-Essex area and is owned by the City of Windsor. The services consist of conventional fixed route schedule bus services that provide seven-day service to most of the developed area in the City. Transit Windsor provides the only current transit service in the study area. As part of Route #8 (Walkerville) intermittent service is provided within the study area on County Road 42 between Walker Road and the Windsor International Airport.

As part of Transit Windsor's current *Strategic Service Plan* (2009), service extension is planned for areas east and south of the Windsor International Airport within the study area. Service will be extended to County Road 42 between Walker Road and Lauzon Parkway, Lauzon Parkway between County Road 42 and Essex Way, and 8th Concession Road between Walker Road and North Talbot Road. The projected timing of the service extensions are not known at this time. Newly implemented routes which connect to existing routes at a central hub for this area would be the best scenario in servicing the area.

There is currently very limited public transit service in the County of Essex. In December 2009, the Town of Tecumseh introduced transit service to the northern portion of the municipality, which is outside of the study area. The service operates in a circuitous loop connecting major residential areas, commercial corridors and plazas, recreation facilities, the Town Hall and other activity centres within the Town. Additionally, the Town of Tecumseh receives some transit service in the Oldcastle employment area as part of an extension of Transit Windsor Route #8 (Walkerville).

The *County of Essex Transit Assessment Report* (2012) was received by County Council for information and no further action is anticipated at this time. The key objectives of this study were to define transportation needs and provide guidelines and tools for identifying and implementing specific, cost-effective, and innovative public transportation services for residents in the County of Essex. As part of the study, the County identified a service concept to provide local service, rural service, service within the County (County connectors) and service to Windsor (Urban connectors).

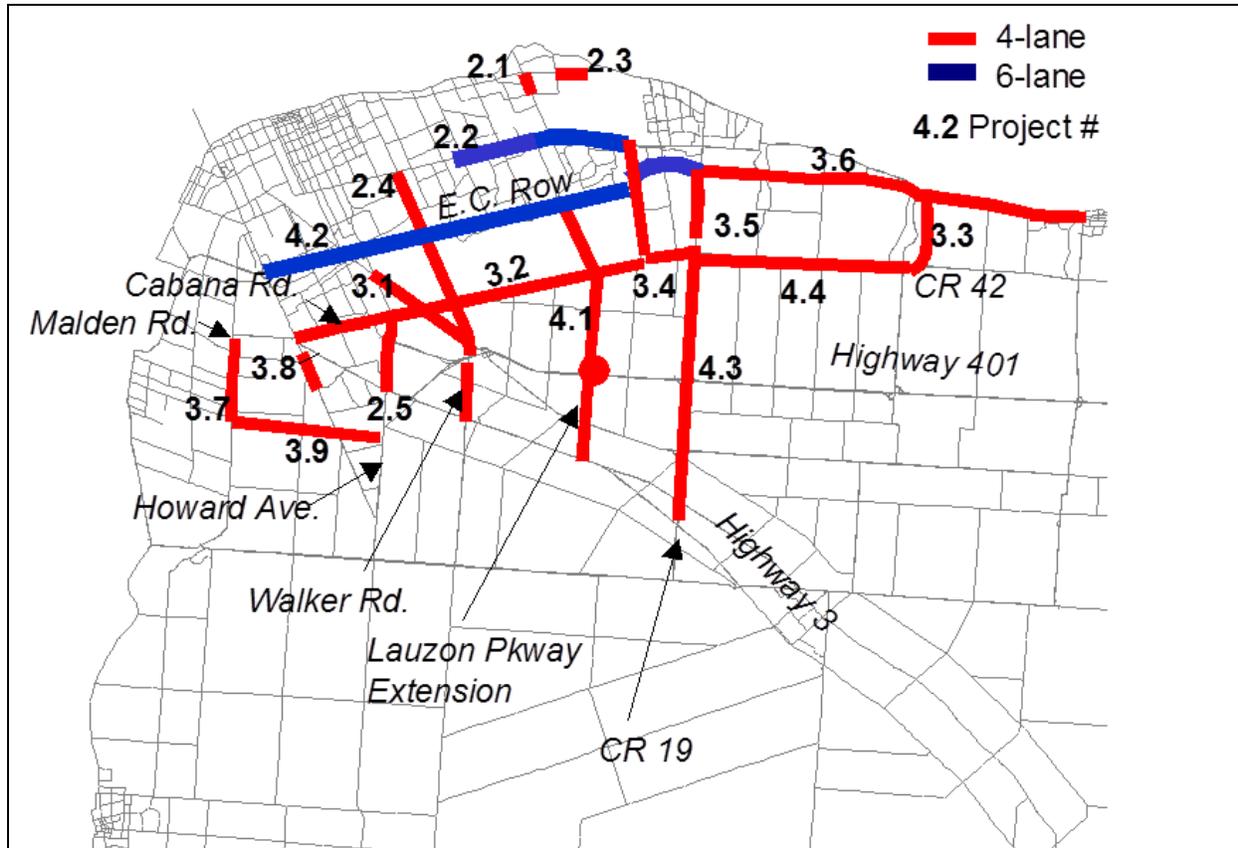
3.1.6 Improve Existing or New Roadways

The existing transportation system within the study area serves a transportation demand at a local/inter-regional/province/national level. The provision of improved capacity and operations on existing facilities and/or providing new roadways may increase the performance of the transportation network. Congestion may be relieved through widening of existing roadways, extending roadways and/or building new road segments within the existing network.

Recommended regional roadway capacity enhancement projects identified in the EWRTMP are shown in Exhibit 3-3. However, as summarized previously in Problems and Opportunities,

additional network capacity is required beyond the already planned/programmed/approved provincial and municipal initiatives.

EXHIBIT 3-3: EWRTMP RECOMMENDED REGIONAL ROADWAY CAPACITY ENHANCEMENT PROJECTS



Within the study area, existing roads include:

North-South Roads

- Walker Road/County Road 11
- 7th Concession Road
- 8th Concession Road
- 9th Concession Road
- Lauzon Parkway
- Lauzon Road
- 10th Concession Road / County Road 17
- 11th Concession Road/County Road 43/
Banwell Road
- County Road 19 (Manning Road)
- Patillo Road
- County Road 25 (E. Puce Road)
- Sexton Sideroad

East-West Roads

- E.C. Row Expressway/County Road 22
- Twin Oaks Drive/South Service Road E
- Service Road B
- County Road 42
- Baseline Road
- County Road 46/Provincial Road
- Highway 401
- Highway 3

Walker Road (via Provincial Road/County Road 46) and County Road 19 (Manning Road) are the only two north-south links with interchanges at Highway 401 and E.C. Row Expressway. This results in traffic from other roads within the network being attracted to these two corridors. These two links are already operating near capacity, supporting the need for a new interchange with Highway 401 to meet future traffic demand in the study area. Lauzon Parkway has an interchange at E.C. Row Expressway but does not exist south of County Road 42.

Also, Walker Road (via Provincial Road/County Road 46) and County Road 19 (Manning Road) will not be able to provide the required north-south links to support the new Sandwich South development within the study area, nor address the forecasted congestion.

A new east-west roadway was identified in the *Windsor Annexed Area Master Plan Study* (2006), and in the East Pelton Secondary Plan, creating a link between Walker Road and 10th Concession Road / County Road 17.

3.2 ASSESSMENT OF THE TRANSPORTATION PLANNING ALTERNATIVES

The assessment of the Transportation Planning Alternatives is a two stage process. Stage 1 examines each planning alternative on its potential to address the identified problems and opportunities. The alternatives that contribute to addressing the identified transportation needs were then grouped for collective consideration.

3.2.1 Stage 1 Assessment of the Transportation Planning Alternatives

The Stage 1 assessment considers the degree to which each alternative could meaningfully contribute to addressing the problems and opportunities identified by the study. The assessment of the individual alternatives is included in Exhibit 3-4.

EXHIBIT 3-4: STAGE 1 – ASSESSMENT OF INDIVIDUAL ALTERNATIVES TO THE UNDERTAKING

Alternative	Carried Forward	Rationale
Do Nothing	X	“Do Nothing” is considered the status quo. It does not address the problem.
Travel Demand Management (TDM)	✓	TDM is recognized as an important component of the transportation network. However, on its own it does not address the problems identified in the study area.
Transportation Systems Management (TSM)	✓	TSM is recognized as an important component of the transportation network. However, on its own it does not address the problems identified in the study area.
Active Transportation	✓	Active Transportation is recognized as an important component to the transportation network for the movement of people. However, on its own it does not address the problems identified in the study area.
Improve / New Transit	✓	Improved / new transit is recognized as an important component to the transportation network for the movement of people. However, on its own it does not address the problems identified in the study area.
Improve / New Roadways	✓	Improved / new roadway facilities have the potential to reduce congestion on the road network and address the problems and opportunities in the study area.

The findings of this assessment identified that no individual alternative can fully address the problems and opportunities identified by the study. However, the ‘Improve/New Roadways’

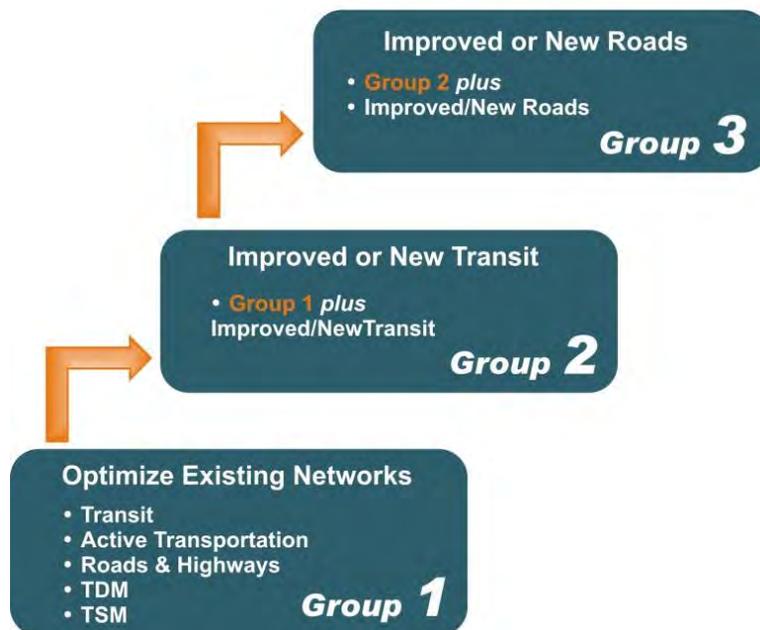
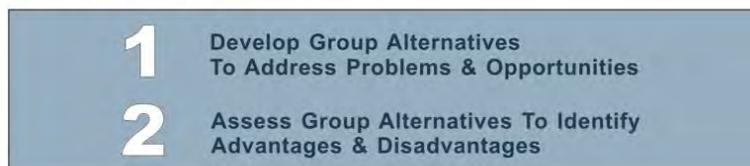
alternative, in conjunction with the other alternatives being carried forward, does serve to offer improvements to the transportation system within the study to meet project objectives. As such, with the exception of “Do Nothing”, all individual planning alternatives were carried forward for further consideration to the second stage of the process – the assembly of group alternatives. Each of the group alternatives are described in the following section.

3.2.2 Stage 2 Assessment of the Group Alternatives

A ‘building block’ approach (Exhibit 3-5) was used to assemble the group alternatives based on the principle of first optimizing the existing transportation network, and then if necessary, incorporating non-roadway infrastructure improvements and expansion before considering the widening of existing roadways or the provision of new roads and/or highways. This approach is consistent with current provincial policy which talks to optimizing existing infrastructure before new infrastructure is built. Moreover the development of group alternatives at this stage of the process is inherently additive. Where a group alternative does not adequately satisfy the identified transportation objectives, it will not be removed from further consideration, but rather used as a building block that the next group will build upon.

EXHIBIT 3-5: BUILDING BLOCK APPROACH

Key Steps:



The group alternatives are as follows:

- **Group 1: Optimize Existing Transportation Networks (TDM/TSM/Active Transportation)** - Transportation initiatives that focus on improving the performance of the existing transportation system for all modes of travel and transport through strategies designed to reduce auto and truck trip demand, increase active transportation capacity, and improve system operating efficiency.
- **Group 2: Improved or New Transit** - This alternative builds upon the transportation system performance enhancements provided by Group 1 through provision of additional “non-road-based” capacity such as transit infrastructure to address potential shortfalls in addressing the problems and opportunities inherent in Group 1.
- **Group 3: Improved or New Roads** - This alternative builds upon the transportation system enhancements and non-road capacity improvements provided by Group 1 and Group 2 and adds new capacity by widening existing roads beyond that which is currently planned by the Province and municipalities and/or a new road corridor to address identified problems and opportunities.

A high level assessment of environmental, economic, transportation and community factors was undertaken to support the consideration of group alternatives. The level of assessment of these factors was reflective of the detail available in the group alternatives.

ASSESSMENT OF GROUP 1 – OPTIMIZE EXISTING TRANSPORTATION NETWORKS

The high level assessment of the Group 1 alternative is summarized below:

- **Community**
 - Promotes Active Living lifestyle choices and Live, Work, Play opportunities and to be physically active on a regular basis
 - Minimizes footprint impacts to existing residences and community features
 - Provides greater choice for commuters and tourists
 - Will not fully accommodate future planned population and employment growth
 - Does not provide improved connections for residents and businesses in east Windsor and neighbouring municipalities
 - Does not provide an opportunity to develop a gateway and community transportation corridor
- **Economy**
 - Minimizes footprint impacts to existing businesses
 - Minimizes footprint impacts to agricultural areas
 - Minimal ability to support future economic, trade and tourism growth
 - Does not provide a potential opportunity for access to new development in Sandwich South area

- **Environment**
 - Minimizes footprint impacts to natural and cultural features
 - Can contribute to reductions in energy use and greenhouse gas emissions
 - Does not solve congestion problems and therefore increased energy use and greenhouse gas emissions
- **Transportation and Cost**
 - Provides greater choice and a more balanced transportation system
 - Potential to extend the life of existing infrastructure and delay future expenditures for rehabilitation and new construction
 - Relative costs are low in comparison to other alternatives
 - Helps to manage future travel demands, but cannot address future travel demands for people and goods movement

The Group 1 strategies on their own do not address all of the identified transportation problems and opportunities. They do represent innovative and effective ways of improving and getting the most out of what already exists, and an important foundation for improving the transportation system and helping to manage future congestion in a relatively cost effective and low impact manner. They will be carried forward for further consideration as a complimentary component of the recommended solution.

ASSESSMENT OF GROUP 2 – IMPROVED OR NEW TRANSIT

Group 2, which also includes the Group 1 alternative, includes recommendations to new and improved transit. As mentioned previously, the County of Essex recently completed the *County of Essex Transit Assessment Report* (2012) which included the recommendations to develop a transit network of local service, rural service, service within the County and service to Windsor. The City of Windsor *Transit Master Plan – “The Way Forward”* (2006) also recommends to provide new transit services in and to the County of Essex.

The high level assessment of the Group 2 alternative is summarized below:

- **Community**
 - Provides greater choice for commuters and tourists
 - May provide some limited improved connections for residents and businesses in east Windsor and neighbouring municipalities
 - Potential for minor impacts to existing residences and community features
 - Does not fully accommodate future planned population and employment growth
- **Economy**
 - Minimizes footprint impacts to existing businesses
 - Minimizes footprint impacts to agricultural areas
 - Limited ability to support future economic, trade and tourism growth

- **Environment**
 - Potential for impacts to natural and cultural features
 - Does not solve congestion problems and therefore increased energy use and greenhouse gas emissions
- **Transportation and Cost**
 - Provides greater choice and a more balanced transportation system
 - Relative costs are low in comparison to other alternatives
 - Can only partially address future travel demands for people movement
 - Cannot address future travel demands for goods movement

The Group 2 strategies, to provide new and improved transit services, cannot fully provide the transportation network required to address all of the identified transportation problems and opportunities. However, in conjunction with the Group 1 strategies transit advances a balanced transportation system. The Group 2 strategies will be carried forward for further consideration as a complimentary component of the recommended solution.

ASSESSMENT OF GROUP 3 – IMPROVED OR NEW ROADS

The Group 3 alternative reflects what is needed in addition to transit plans, active transportation and TDM/TSM strategies including widening existing roads and new roadway corridors.

The high level assessment of the Group 3 alternative is summarized below:

- **Community**
 - Will alleviate future congestion levels and may provide alternate routes for commuters and tourists
 - Provides improved connections for residents and businesses in east Windsor and neighbouring municipalities
 - Facilitates municipal development
 - Potential for significant impacts to residences and community features in close proximity to existing corridors
 - Can accommodate future planned population and employment growth
 - Provides an opportunity to develop a gateway and community transportation corridor
 - Provides an opportunity to offer expanded active transportation options
- **Economy**
 - Will significantly alleviate future congestion levels for people and goods movement
 - New roadway will provide alternative corridor and improved connections
 - Provides a potential opportunity for access to new development in Sandwich South area
 - Potential for impacts to businesses along existing and new corridors
 - Potential for impacts to agricultural areas along existing and new corridors
 - Ability to support future economic trade and tourism growth

- **Environment**
 - Potential for impacts to natural and cultural features
 - Increased impacts to energy use and greenhouse gas emissions
 - Increased opportunities to expand active transportation options
 - Provides opportunities to enhance the Little River corridor as a central community amenity

- **Transportation and Cost**
 - High construction costs
 - New corridor provides reserve capacity and planning flexibility to address transportation demands beyond 2031
 - Can address future travel demands for people and goods movement including accommodations of Long Combination Vehicles as appropriate

The Group 3 alternatives to improve existing roads or add new roads within the study area have the greatest potential to address all of the identified transportation problems and opportunities. The Group 3 strategies will be carried forward for further consideration as the primary component of recommended solution.

3.3 RECOMMENDED TRANSPORTATION PLANNING SOLUTION

The findings of Stage 2 identified that Group 3 has the greatest potential to address the identified transportation problems and opportunities. Therefore, the recommended Transportation Planning Solution is Group 3. Group 3 is road-based with support from optimizing the existing transportation network, and new/planned transit initiatives.

3.3.1 Optimizing Existing Transportation Network and New/Planned Transit

As part of optimizing the existing transportation network, consideration will be given to active transportation facilities (e.g. sidewalk, bike lanes and multi-use paths), as outlined in the City of Windsor *Bicycle Use Master Plan* (BUMP) and County of Essex *County Wide Active Transportation Study* (CWATS). Also, opportunities for implementation of active transportation facilities beyond what is currently being planned by the City and County will be considered.

The transit expansion outlined in the 2009 Transit Windsor *Strategic Service Plan* and the strategies identified in the *County of Essex Transit Assessment Report* will provide a framework for future transit in the area.

As indicated in the EWRTMP, one of the ways to reduce the overall demands on the transportation network is through planned urban design. The Sandwich South Secondary Plan will develop design policies that incorporate a community focus including live/work opportunities. In addition, key considerations in the development of the Sandwich South Secondary Plan will include provisions for active transportation facilities and transit expansion in the area.

3.3.2 Road-Based Initiatives

The transportation system within the study area serves a transportation demand for inter-region/provincial/national level. To provide the transportation network needed to address the existing congestion and anticipated future growth, additional north-south linkage between E.C. Row Expressway and Highway 3, including a new interchange connection with Highway 401, is needed, as well as improvements to County Road 42, and the provision of an additional east-west linkage to support future development.

LAUZON PARKWAY EXTENSION

Walker Road (via Provincial Road/County Road 46) and County Road 19 (Manning Road) are the only two north-south links with interchanges at Highway 401 and E.C. Row Expressway. This results in traffic from other road networks being attracted to these two corridors. These two links are already operating near capacity, indicating the need for a new north-south link with an interchange with Highway 401 in order to accommodate the future traffic demand in the study area.

A review of potential existing north-south roadways in the study area that could be widened and provide a link between Highway 401 and E.C. Row Expressway included:

- 9th Concession Road,
- 10th Concession Road / County Road 17, and
- 11th Concession Road.

A brief summary analysis for each of these alternatives is noted in Exhibit 3-6.

EXHIBIT 3-6: ADVANTAGES AND DISADVANTAGES OF EXISTING NORTH-SOUTH CORRIDORS

9th Concession Road	County Road 17/ 10th Concession Road	11th Concession Road
× would not provide good interchange spacing from the existing adjacent interchanges	✓ would provide good interchange spacing on Highway 401	× would not provide good interchange spacing from the existing adjacent interchanges
× interchange would cause significant impact on multiple existing property owners and accesses	× interchange would cause significant impact on multiple existing property owners and accesses	× interchange would cause significant impact on multiple existing property owners and accesses
× would only serve the west side of the new Sandwich South development	✓ would somewhat provide × central spine through new Sandwich South Development	× too far removed to serve the new Sandwich South Development
× connection with the existing Lauzon Parkway would potentially impact the Windsor International Airport lands and require a crossing of the Little River corridor	✓ would provide good connection to existing Lauzon Parkway	× improvements to 11 th Concession Road are already included as part of the Banwell Class EA Study, including realignment of County Road 43 (Banwell Road) and 11 th Concession Road at County Road 42.

Based on the above, none of the identified existing north-south roadways is a reasonable solution for the new north-south link. Therefore, a new north-south corridor provided to the transportation network is required to support the future growth planned. A new corridor, instead of using an existing roadway, would provide the new linkage that is needed and the best balance of advantages and disadvantages from a community, economic, environmental and transportation perspective. Although a new north-south corridor may results in some environment impacts, it is anticipated that significant effects can be avoided during route generation or through design mitigation. Further details are presented in Section A.5.3.1.

COUNTY ROAD 42

Potential east-west roadways in the study area that can be widened to improve the access for the new growth areas in east Windsor and neighbouring municipalities include County Road 42, Baseline Road and Provincial Road/County Road 46.

County Road 42 is an east-west arterial roadway connecting Walker Road in the west (in Windsor) and Highway 401 in the east (in Tilbury). This continuous roadway is located throughout the study area and links the City of Windsor, Town of Tecumseh and Town of Lakeshore. County Road 42 is owned and operated by the City of Windsor and the County of Essex in their respective jurisdictions. Improvements to this arterial roadway would provide the required access for the growth areas and the neighbouring municipalities.

Baseline Road extends between 7th Concession Road and County Road 19 (Manning Road) only; it would not provide access beyond County Road 19 (Manning Road).

Highway 401 bisects the Lauzon Parkway study area creating the boundary between the City of Windsor and County of Essex. The remaining east-west connectors are south of Highway 401. Provincial Road/County Road 46, which is located at the south end of the study area, is far removed to serve the new growth areas. In addition, Highway 3, the parallel adjacent roadway south of Provincial Road/County Road 46, is currently being widened from 2 to 4 lanes and will support the traffic demand in that area.

Based on the above, improvements to County Road 42 are recommended. County Road 42 provides the continuous connection between the Town of Tecumseh, Town of Lakeshore and the future growth areas in the City of Windsor. These improvements would provide the grid transportation system to support the new economic development and improve access for residents and businesses in Windsor and neighbouring municipalities.

EAST-WEST ARTERIAL

In addition to improvements to County Road 42, a new east-west linkage is needed within the future Sandwich South community, which will provide a spine within the transportation network and support the future development capacity demands of the community. The Future East-West Arterial has been identified in the *Windsor Annexed Area Master Plan Study* (2006) from Walker Road to County Road 17. The section between Walker Road and 8th Concession Road has also been conceptually identified in the *East Pelton Secondary Plan* (2009). As part of the Sandwich South Secondary Plan Study, corridor protection will be included for a potential extension of the roadway from 10th Concession Road / County Road 17 to the City boundary, which would provide a potential future opportunity for connection to the Town of Tecumseh.

PART A LAUZON PARKWAY

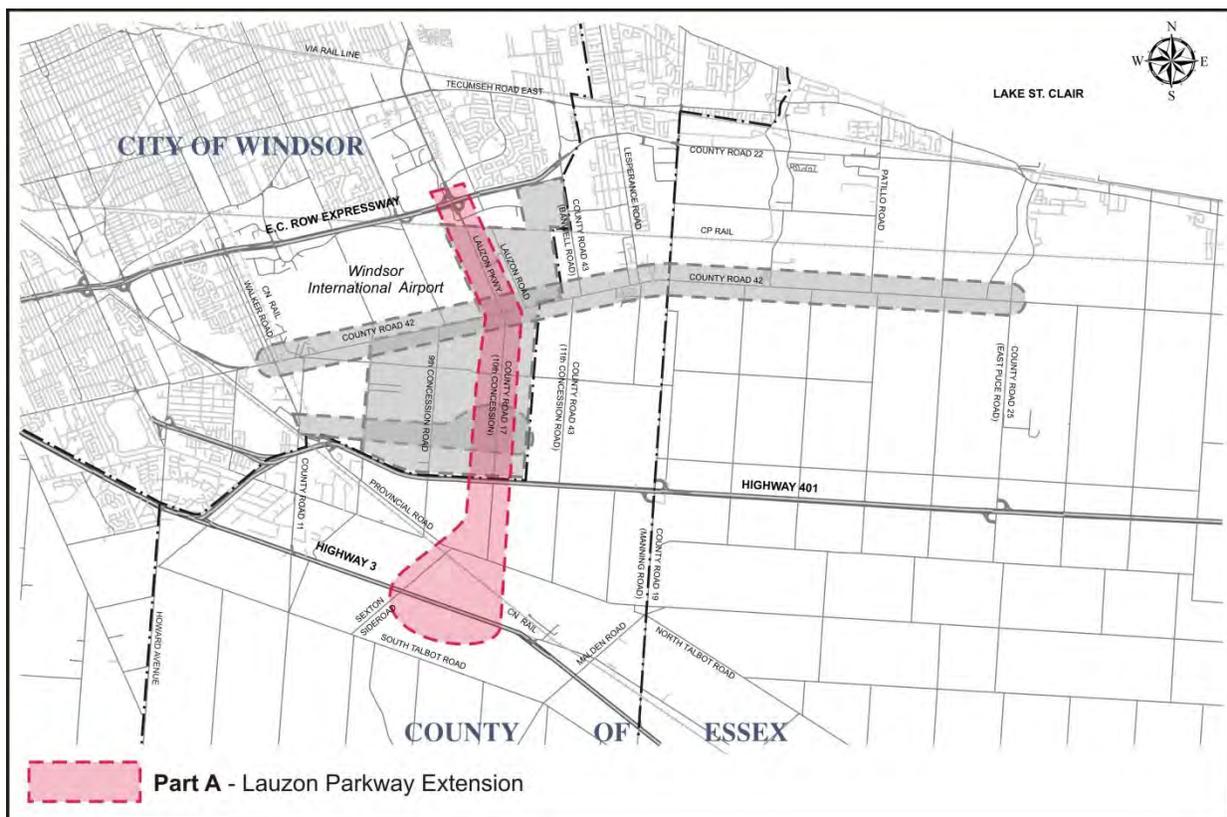
A.4 EXISTING CONDITIONS

The existing environmental conditions within the Lauzon Parkway study area are presented in the following Section A.4. This information was used to assist in the generation and evaluation of design alternatives. The existing conditions related to the natural environment, socio-economic environment, cultural environment, transportation and utilities were established through collection of background information from numerous sources, including:

- The review of pertinent background studies and reports;
- Investigations undertaken by the project team;
- Correspondence or meetings with the Project Team and participating technical/approval agencies; and
- Public consultation.

The four main components of the study, with Part A: Lauzon Parkway highlighted, are illustrated in Exhibit A.4-1.

EXHIBIT A.4-1: LAUZON PARKWAY STUDY AREA



A.4.1 TRANSPORTATION AND INFRASTRUCTURE

A.4.1.1 Existing Road Network

The existing Lauzon Parkway is a Class I Arterial Road¹⁰. It has 2 lanes from County Road 42 northerly to E.C. Row Expressway and 6 lanes northerly to Tranby Avenue at which point it changes to Lauzon Road which is a Class I Collector Road.

An overview of the existing study area road network is presented in Section 2.3. The key components of the existing road network within the study area are described in Exhibit A.4-2, and illustrated in Exhibit A.4-3:

EXHIBIT A.4-2: EXISTING ROAD NETWORK COMPONENTS

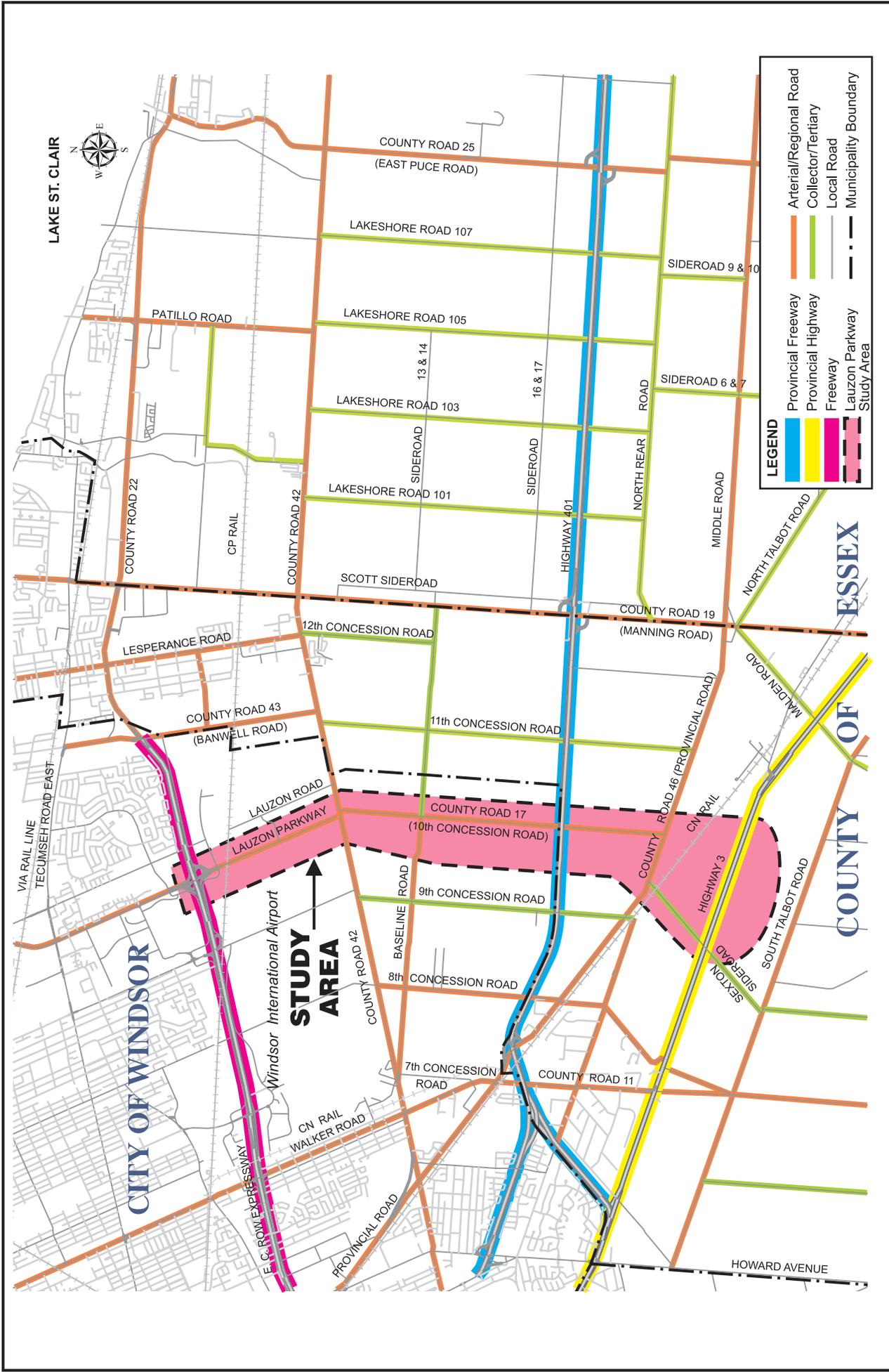
North-South Roadways	Key Characteristics
Walker Road	<ul style="list-style-type: none"> - Currently, a 4-lane Class II Arterial Road, with a posted speed of 60 km/h, under the jurisdiction of the City of Windsor and County of Essex, north and south of Highway 401, respectively. - Existing interchange with E.C. Row Expressway and an indirect interchange with Highway 401 via County Road 46/Provincial Road. - Existing signalized intersection with County Road 42. - The City completed a Class EA Study for roadway widening and alignment improvements in March 2001.
7 th Concession Road	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Collector Road under the jurisdiction of the City of Windsor, with a posted speed of 50 km/h. - Existing signalized intersection with Walker Road and a stop controlled intersection with County Road 42. - Planned to be classified as an Arterial Road in the Sandwich South Secondary Plan.
8 th Concession Road	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Collector Road, with a posted speed of 60 km/h (40 km/h from Baseline Road to approximately 400 m south of Joy Road), under the jurisdiction of the City of Windsor and Town of Tecumseh, north and south of Highway 401, respectively. - Existing overpass at Highway 401. - Existing stop controlled intersection with County Road 42. - Planned to be classified as a Collector Road in the Sandwich South Secondary Plan.

¹⁰ City of Windsor Official Plan (2007) – Schedule F: Roads and Bikeways

9 th Concession Road	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Arterial Road, with a posted speed of 60 km/h, under the jurisdiction of the City of Windsor and Town of Tecumseh, north and south of Highway 401, respectively. - Existing overpass at Highway 401. - Existing stop controlled intersection with County Road 42. - Planned to be classified as an Arterial Road in the Sandwich South Secondary Plan.
Lauzon Parkway	<ul style="list-style-type: none"> - Currently, a 2-lane Class I Arterial Road, with a posted speed of 70 km/h and 80 km/h, under the jurisdiction of the City of Windsor. - Existing interchange with E.C. Row Expressway. - Existing signalized intersection with County Road 42.
County Road 17 (10 th Concession Road)	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 60 km/h, under the jurisdiction of the City of Windsor and the County of Essex, north and south of Highway 401, respectively. - Existing overpass at Highway 401. - Existing signalized intersection with County Road 42.
County Road 43 (Banwell Road)	<ul style="list-style-type: none"> - Currently, Banwell Road a 2-lane Class II Arterial Road, with a posted speed of 50 km/h and 60 km/h, in the City of Windsor. - Currently, County Road 43 is a 2-lane Arterial Road with a posted speed of 60 km/h in the County of Essex (Town of Tecumseh). - Existing signalized intersections with County Road 22/E.C. Row Expressway and County Road 42. - In 2009, the County completed a Class EA Study for roadway and alignment improvements. A similar study for the City is nearing finalization for the Banwell Road EA. - The jurisdictional boundary for County Road 43 (Banwell Road) is the CP Railway north of County Road 42.
County Road 19 (Manning Road)	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 80 km/h, under the jurisdiction of the County of Essex. - In 2006, the County completed a Class EA Study for roadway improvements. - Existing signalized intersections with County Road 22 and County Road 42, and an interchange with Highway 401. - The municipal boundary between the Towns of Tecumseh and Lakeshore is located in the middle of County Road 19 (Manning Road).
County Road 21 (Elmstead Road)	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 50 km/h, under the jurisdiction of the County of Essex.

Patillo Road	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 60 km/h, under the jurisdiction of the Town of Lakeshore. - At County Road 42 the roadway has been widened to 4 lanes, to approximately 300 m north of County Road 42. - There is a paved shoulder cycling route on the west side of the roadway. - Patillo Road will be a 4-lane road from County Road 42 to the CP Rail tracks, and a 5-lane road from the CP Rail tracks to County Road 22 in the future (Patillo Road EA).
County Road 25 (E. Puce Road)	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 80 km/h, under the jurisdiction of the County of Essex.
East-West Roadways	Key Characteristics
Forest Glade Drive	<ul style="list-style-type: none"> - Currently, a 5-lane Class I Collector Road, with a posted speed of 50 km/h, under the jurisdiction of the City of Windsor.
E.C. Row Expressway/ County Road 22	<ul style="list-style-type: none"> - Currently, a 4-lane east-west Expressway with a posted speed of 100 km/h from 250 m west of Banwell Road, westerly, in the jurisdiction of the City of Windsor, and a 4-lane Class I Arterial to the east of this point, in the jurisdiction of the County of Essex, with a posted speed 80 km/h. - This is the busiest route in the study area, where AADT volumes reach over 50,000 in some sections.
Twin Oaks Drive/South Service Road E.	<ul style="list-style-type: none"> - Currently, a 2-lane Class I Collector Road with a posted speed of 50 km/h, under the jurisdiction of the City of Windsor. - The City has completed a Class EA Study which recommended roadway re-alignment to accommodate the proposed rail spur extension.
Cabana Road/ Division Road/ County Road 42	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Arterial Road, with a posted speed of 50 km/h, 60 km/h and 80 km/h, under the jurisdiction of the City of Windsor and the County of Essex. Cabana Road is 50 km/h at Division Road. - Existing signalized intersection with Lauzon Parkway.
Baseline Road	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Arterial Road west of 10th Concession Road / County Road 17, and a Collector Road east of 10th Concession Road / County Road 17, in the jurisdiction of the City of Windsor. It continues as a Collector Road in the jurisdiction of the County of Essex. - It has a posted speed of 40 km/h, 50 km/h and 60 km/h. - Intersects with 7th Concession Road and continues west of 7th Concession Road for eastbound traffic only from County Road 42. - The section between 9th Concession Road and 10th Concession Road / County Road 17 contains an S-bend as it crosses the Little River.
Highway 401	<ul style="list-style-type: none"> - Currently, a 6-lane divided provincial freeway, with a posted speed of 100 km/h, with a high proportion of truck traffic. - Existing interchanges at County Road 46, County Road 19 (Manning Road), and County Road 25 (E. Puce Road).

County Road 46/ Provincial Road	<ul style="list-style-type: none">- Currently, a 2-lane Arterial Road, with a posted speed of 80 km/h, under the jurisdiction of the County of Essex.- Existing interchange with Highway 401.
Highway 3	<ul style="list-style-type: none">- Currently, a 4-lane undivided provincial highway, with a posted speed of 80 km/h.



**EWRTPM (2005)
ROADWAY CLASSIFICATION SYSTEM WITH
LAUZON PARKWAY STUDY AREA**

Lauzon Parkway Improvements
Class Environmental Assessment Study
Environmental Study Report



The following table, Exhibit A.4-4, lists the existing intersections/interchanges with Lauzon Parkway within the study area as Signalized, Interchange, and 2-way Stop¹¹.

EXHIBIT A.4-4: EXISTING INTERSECTIONS ON LAUZON PARKWAY

Name	Control	Jurisdiction
Forest Glade Drive	Signalized	City of Windsor
E.C. Row Expressway	Interchange	City of Windsor
South Service Road E / Twin Oaks Drive	Signalized	City of Windsor
Service Road B	2-way Stop	City of Windsor
County Road 42	Signalized	City of Windsor

A.4.1.2 Existing Geometry

HORIZONTAL AND VERTICAL ALIGNMENT

The horizontal alignment of Lauzon Parkway, within the study area, from County Road 42 northerly to E.C. Row Expressway Interchange, is relatively straight, with a slight horizontal curve from just south of E.C. Row Expressway through the South Service Road E/Twin Oaks Drive intersection to just south of the CP Rail Bridge.

Vertically, Lauzon Parkway increases in elevation over E. C. Row Expressway and again over the CP Rail line south of the intersection at Twin Oaks Drive and South Service Road E.

CROSS-SECTION

North of the E.C. Row Expressway Interchange, the existing section of Lauzon Parkway consists of a 6-lane cross-section.

The existing Lauzon Parkway from E.C. Row Expressway to 350 m south of the CP Rail Bridge has a 4-lane cross-section (Exhibit A.4-5). Continuing south, the roadway tapers to a 2-lane cross-section with open ditch and gravel/stone shoulders (Exhibit A.4-6). The posted speed of Lauzon Parkway is 70 km/h from E.C. Row Expressway to the CP Rail Bridge and 80 km/h from the CP Rail Bridge to County Road 42.

The City’s current Official Plan identifies Lauzon Parkway, as a Class I Arterial roadway, having a right-of-way (ROW) of 46 m. From the E.C. Row Expressway south ramp terminal to South Service Road E/Twin Oaks Drive the existing ROW is 46 m. From South Service Road E/Twin Oaks Drive to Service Road B the existing ROW is 70 m. From Service Road B to County Road 42 the existing ROW is approximately 46 m.

¹¹ A ‘2-way Stop’ controlled intersection has stop control on the minor street approaches only, including both 4-leg and T-intersections.

**EXHIBIT A.4-5: LAUZON PARKWAY - 4-LANE URBAN CROSS-SECTION LOOKING NORTH TOWARDS
E.C. ROW EXPRESSWAY INTERCHANGE**



EXHIBIT A.4-6: LAUZON PARKWAY - 2-LANE RURAL CROSS-SECTION LOOKING SOUTH



LAUZON PARKWAY AND E.C. ROW EXPRESSWAY INTERCHANGE

The Lauzon Parkway/E.C. Row Expressway Interchange is a Parclo B4 configuration consisting of six ramps (Exhibit A.4-7). The structure over E.C. Row Expressway currently carries 2 southbound lanes and 2 northbound lanes plus 2 auxiliary lanes developed from the W-N ramp. A major rehabilitation of the interchange was undertaken and completed in 2010.

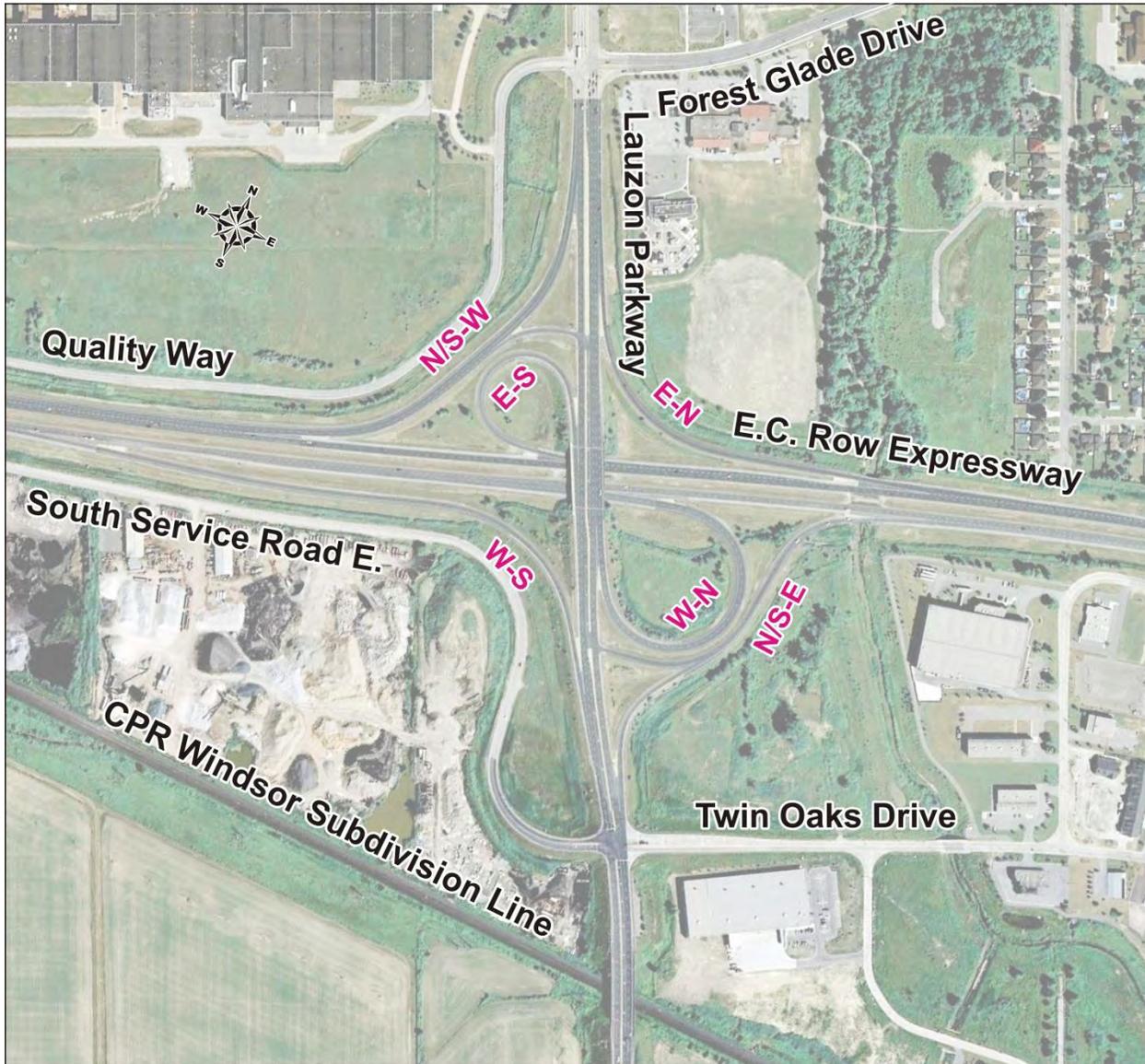
Through the Lauzon Parkway Interchange, the E.C. Row Expressway is currently operating as a 4-lane divided fully-controlled highway providing east-west service across the City of Windsor. At the east City limits, E.C. Row Expressway becomes County Road 22. The *Essex-Windsor Regional Transportation Master Plan* (EWRTMP, 2005) identified a need to widen E.C. Row Expressway from 4 to 6 lanes from Huron Church Road to Banwell Road by 2021.

The facility was originally based on a design speed of 110 km/h; however, the current posted speed is 100 km/h from 250 m west of Banwell Road westerly, and the posted speed is 80 km/h east of this point. A posted speed of 100 km/h typically corresponds to a design speed of 120 km/h. The City's draft Banwell Road EA is proposing a full interchange with E.C. Row Expressway

Through the Lauzon Parkway Interchange, the E.C. Row Expressway eastbound and westbound lanes are separated by a grassed median with ditch. Lane widths are 3.75 m and all shoulders are paved. Guiderail barrier is provided along the eastbound W-S off-ramp, and the 2-inner loop off-ramps (W-N and E-S). Guiderail and concrete barriers are provided along the N/S-E on-ramp and E-N off-ramp.

1.1 km to the west of the Lauzon Parkway Interchange is a partial interchange with Jefferson Boulevard, and 2.4 km to the east is an at-grade intersection with Banwell Road. A future interchange has been identified as the preferred alternative for Banwell Road and E.C. Row Expressway in the City's draft *Banwell Road Environmental Study Report*.

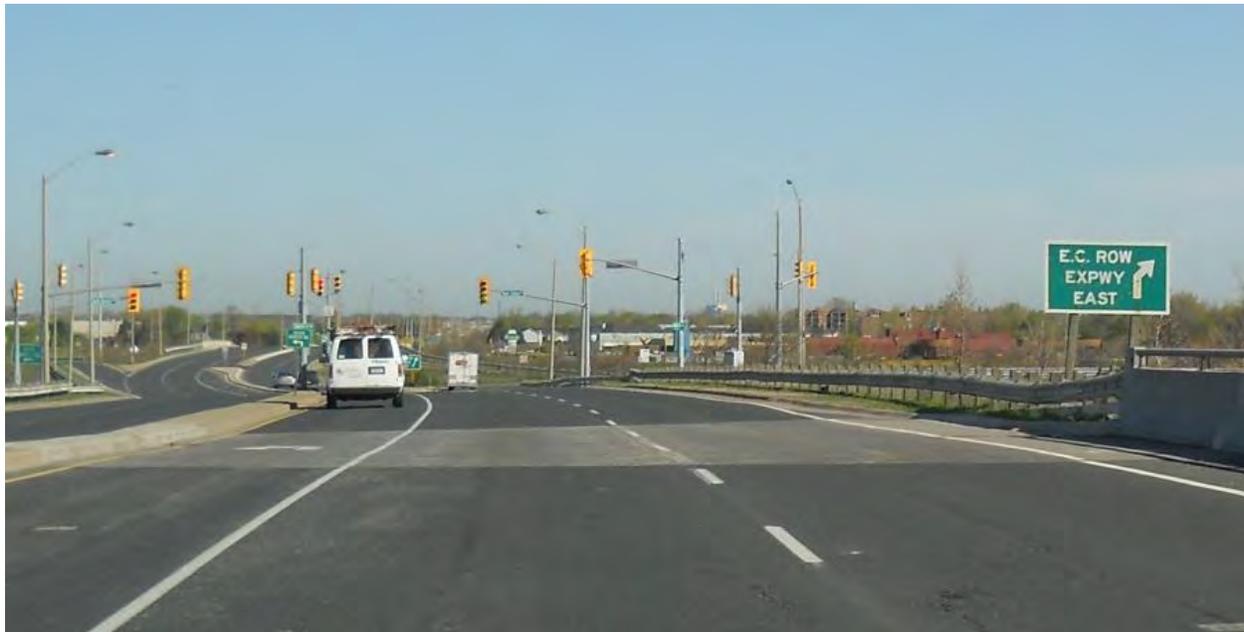
EXHIBIT A.4-7: EXISTING LAUZON PARKWAY E.C. ROW EXPRESSWAY INTERCHANGE



A.4.1.3 Traffic Signals and Illumination

The Lauzon Parkway and E.C. Row Expressway Interchange is fully illuminated including the intersections at Forest Glade Drive/Quality Way, and South Service Road E./Twin Oaks Drive (Exhibit A.4-8). The roadway illumination does not continue south of the interchange, except for a single street light at the Service Road B. The Lauzon Parkway/County Road 42 intersection has partial illumination consisting of two combination traffic signal/illumination poles.

EXHIBIT A.4-8: ILLUMINATION AT THE LAUZON PARKWAY E.C. ROW INTERCHANGE LOOKING SOUTH



A.4.1.4 Active Transportation

Existing active transportation facilities (i.e., sidewalks, bike lanes, and trails) located within the Lauzon Parkway study area, include a sidewalk on the west side and a multi-use trail on the east side of Lauzon Parkway, north of Forest Glade Drive; however, the sidewalk and multi-use trail do not extend south through the E.C. Row Expressway Interchange. There is an existing multi-use trail on the south side of Quality Way to Jefferson Boulevard.

South of the interchange, there are no existing sidewalks or active transportation facilities along Lauzon Parkway as illustrated in the photo in Exhibit A.4-6.

The City of Windsor's Official Plan requires sidewalks on both sides of Arterial Roadways. The City's *Bicycle Use Master Plan* (BUMP, 2001) calls for a cycling network of bike lanes, multi-use trails and signed bike routes, and provides design guidelines along with specific strategies for improving cycling awareness, the cycling-transit link and end-of-trip facilities. BUMP proposes a multi-use trail on Lauzon Parkway north of Forest Glade Drive. At the time when BUMP was prepared, the lands south of E.C. Row Expressway along Lauzon Parkway were still part of the Town of Tecumseh and not part of the City. Active transportation facilities were not proposed

for this section of Lauzon Parkway. The proposed connection south was along the Little River Corridor passing under the EC ROW Expressway to Twin Oaks.

The County of Essex has adopted the County Wide Active Transportation Study (CWATS, 2012) to guide the County and local area municipalities in implementing a County-wide network of cycling and pedestrian facilities for the next 20 years. CWATS identified an opportunity for a multi-use trail on the abandoned CN Rail CASO Subdivision line if/when the land becomes available. A multi-use trail was also identified on North Talbot Road from 8th Concession Road west to Walker Road, and north on Walker Road to Highway 401. Paved shoulders were proposed on County Road 46, and on County Road 42 from County Road 21 (Elmstead Road) to Patillo Road. There were no facilities proposed for 8th and 9th Concession Road, or 10th Concession Road / County Road 17.

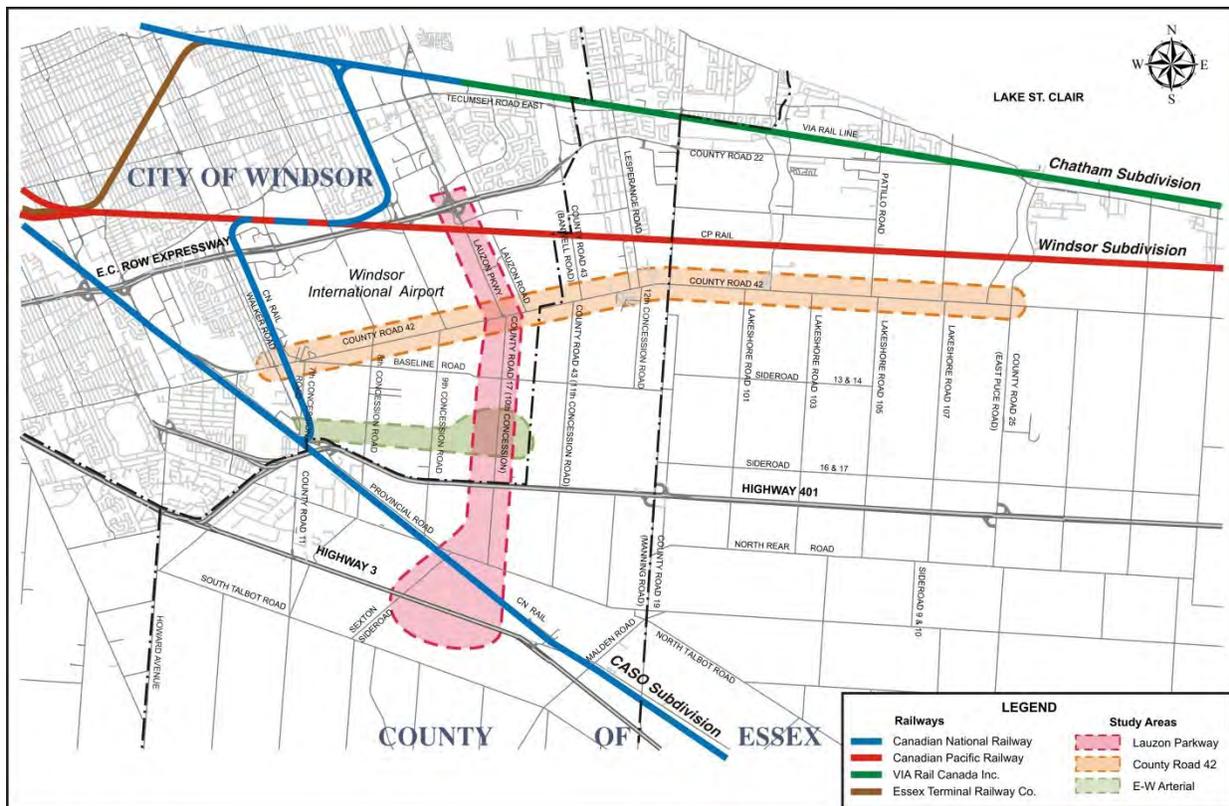
Therefore, opportunities to incorporate new active transportation facilities within the Lauzon Parkway study area were reviewed as part of this EA Study and are discussed further in Section A.5.7.

A.4.1.5 Rail

The existing rail network within the study area is illustrated in Exhibit A.4-9.

The CP Rail Windsor Subdivision Line runs in an east-west direction crossing under Lauzon Parkway south of E.C. Row Expressway. The crossing is a grade separation (girder structure) built in 1980. This single track line travels north of the Windsor International Airport and under the E.C. Row Expressway west of Jefferson Boulevard. The line also serves CP Rail's Walkerville Yard east of Central Avenue. Near McDougall Street, the line splits into two tracks. The northern track heads north to CP Rail's Windsor Yard and the southern track also heads north on a different alignment to the Detroit-Windsor Rail Tunnel.

EXHIBIT A.4-9: EXISTING RAIL NETWORK WITHIN THE STUDY AREA



A.4.1.6 Bridges

The Lauzon Parkway Bridge over E.C Row Expressway (Exhibit A.4-10) was constructed in 1980 and is a concrete structure with a post-tensioned concrete deck. The bridge has a total length and deck width of 65 m and 36 m, respectively and is a 2-span structure. Minor bridge rehabilitation was completed in 2005 to complete spot repairs on severe spalling/delaminated areas of concrete barrier walls. A major rehabilitation to the structure was also undertaken and completed in 2010. The bridge carries a total of 5 northbound lanes (2 through lanes, 1 left turn lane and 2 auxiliary lanes from the W-N loop ramp) and 3 southbound lanes (2 through lanes and 1 auxiliary lane from the E-S loop ramp).

**EXHIBIT A.4-10: LAUZON PARKWAY BRIDGE OVER E. C. ROW EXPRESSWAY – FROM EASTBOUND
E.C. ROW EXPRESSWAY**



The Lauzon Parkway Bridge over the CP Rail is a 3-span pre-stressed concrete girder bridge built in 1980. It has a total span length and width of approximately 61.9 m and 24.6 m respectively. The structure was rehabilitated in 2008. Work on the structure included converting the existing abutments to semi-integral abutments and constructing new approach slabs. The structure is illustrated in Exhibit A.4-11.

EXHIBIT A.4-11: LAUZON PARKWAY BRIDGE OVER CP RAIL



The Lauzon Parkway bridge over the Little River is located approximately 330 m north of County Road 42 built in 1981. It has a total span length and width of approximately 10.8 m and 13.1 m respectively.

Lauzon Parkway also has two culvert structures: 1) Sullivan Creek Drain located immediately south of E.C. Row Expressway; 2) McGill Drain located approximately 280 m south of the CP Rail overpass.

A.4.1.7 Drainage and Stormwater Management

The existing drainage conditions within the study area are documented in the *Drainage and Stormwater Management: Existing Conditions Report* (Appendix C) prepared as part of this study. The purpose of this report was to detail the existing drainage patterns, complete hydrologic assessments for existing conditions, and hydraulic assessments of existing roadway culverts and crossings within the project study area.

A site reconnaissance was carried out in May 2011 to confirm existing culvert locations and sizes, to assess the physical condition of each culvert, and to record characteristics of significant drainage features within the project study area.

All centreline and side-road culverts, as well as major entrance culverts within the study area were inspected. There are a total of 42 transverse and 14 entrance culverts, as well as three bridges (Little River, Pike Creek, and Puce River) within the entire project study area. Of the 42 transverse culverts, nineteen (19) are located within the Lauzon Parkway Study Area (including 10th Concession Road / County Road 17). The existing drainage conditions and plans of the culverts are illustrated in Exhibits 2 to 4 of Appendix C. Additional documentation on the findings of the site reconnaissance is described in the *Culvert Inspection Report*, included in Appendix A of the *Drainage and Stormwater Management: Existing Conditions Report* (Appendix C). Of the 19 culverts assessed within the Lauzon Parkway Study Area during the site reconnaissance, 5 were found to be in poor condition, and 2 in poor to fair condition.

Hydraulic modelling was carried out by MRC as part of this study for the relevant crossings of the Little River within the proposed study limits. In addition, hydraulic modelling of the Little River and 8th Concession Drain was provided by the Essex Region Conservation Authority. As presented in the *Existing Conditions Report*, there were no cases of road overtopping under existing conditions for the 100-year storm.

Limited information was available to assess the existing hydraulic conditions of the culverts within the Study Area. The available data was deemed insufficient to perform a hydraulic assessment for the culverts within the Study Area. During the next phase of design, a detailed survey will be required to obtain the required culvert information to perform a comprehensive hydraulic assessment.

In addition to the above, Stantec, on behalf of the City of Windsor and ERCA, is currently in the process of preparing the *Upper Little River Watershed Master Drainage Plan and Stormwater Management Plan*. The Master Plan is being prepared concurrently with this Class EA. Information provided within the Master Plan will be incorporated into this Class EA, including but not limited to drainage and stormwater management methods and locations.

A.4.1.8 Utilities

The following utility authorities were contacted as part of the consultation process to confirm the presence or not of utilities within the study area. A summary of the responses received is summarized below. Some utility information has been extracted from other sources such as engineering drawings and City GIS mapping, to supplement information provided by utility authorities.

The existing utilities located along the Lauzon Parkway corridor are described in Exhibit A.4-12.

EXHIBIT A.4-12: EXISTING UTILITIES WITHIN LAUZON PARKWAY CORRIDOR

Utility	Description
City of Windsor – E.C. Row Expressway to Highway 401	
Cable (Bell)	There is existing underground Bell plant located along the west side of Lauzon Parkway extending from Service Road B to County Road 42.
Fibre Optics (City of Windsor)	A traffic conduit is located at the intersection of Lauzon Parkway and Twin Oaks Drive/South Service Road E, and extends north, along the east side of Lauzon Parkway. The conduit is redirected east to cross the E.C. Row Expressway eastbound off-ramp. It is then redirected north, crossing the Expressway, and then re-aligns with Lauzon Parkway.
Gas (Union Gas)	Within the existing Lauzon Parkway there are no gas facilities.
Hydro (ENWIN)	<p>There is existing street lighting on Lauzon Parkway within the E.C. Row Expressway Interchange.</p> <p>There are hydro poles on the west side of Lauzon Parkway from the CP Rail line south, approximately 350 m, at which point they cross Lauzon Parkway and enter Hydro One’s Transformer Station.</p>
Hydro (Essex Power)	Essex Power confirmed they do not have any infrastructure within the Study Area.
Hydro (Hydro One)	<p>There is a Hydro One transmission corridor running east-west crossing Lauzon Parkway south of the CP Rail Windsor Subdivision Line.</p> <p>There are overhead power lines along the east side of Lauzon Parkway from Service Road B to County Road 42.</p> <p>There is also a Transformer Station located between Lauzon Parkway and Lauzon Road, just south of the CP Rail line. The access to the Transformer Station is on Lauzon Road.</p>

Utility	Description
Sanitary Sewer (City of Windsor)	There is a 1650 mm dia. CP sanitary sewer along the west side of Lauzon Parkway from Service Road B to the Little River, and follows the Little River south to County Road 42. There is a 900 mm dia. CP sanitary sewer along Lauzon Parkway from the Little River to County Road 42.
Storm Sewer (City of Windsor)	Proposed storm sewer information is provided in Section A.6.5.
Water (WUC)	The WUC is proposing to loop the existing feeder mains on County Road 42 and County Road 43 (Banwell Road). This may include a future water feeder main on Lauzon Parkway or Lauzon Road.
County of Essex – Highway 401 to Highway 3	
Cable (Bell)	There is a Bell building confirmed at the northeast corner of Sexton Sideroad and Highway 3. There is an underground Bell plant on the west side of Sexton Sideroad.
Fibre Optics (County of Essex)	There is a fibre optic cable crossing Sexton Sideroad at County Road 46.
Gas	There is a 500 mm dia. gas main crossing Sexton Sideroad just south of the CN Railway.
Hydro (ENWIN)	There is no existing Hydro (ENWIN) infrastructure in the Lauzon Parkway corridor in the County of Essex.
Hydro (Essex Power)	Essex Power confirmed they do not have any infrastructure within the Study Area.
Hydro (Hydro One)	There are hydro poles on Sexton Sideroad from County Road 46 to Highway 3. Southerly from County Road 46, the hydro poles are located on the west side of Sexton Sideroad for approximately 250 m, and then on the east side to Highway 3.
Sanitary Sewer (Town of Tecumseh)	Within the existing Lauzon Parkway corridor in the County of Essex, no sanitary sewer facilities were noted.
Storm Sewer (Town of Tecumseh)	There are no existing storm sewer facilities in the Lauzon Parkway corridor in the County of Essex.

Utility	Description
Water (Town of Tecumseh)	There is an existing 250 mm dia. watermain on the west side of Sexton Sideroad.

A.4.2 SOCIO-ECONOMIC ENVIRONMENT

A.4.2.1 Existing Land Use

The Official Plan of the former Township of Sandwich South designated most of the lands south of County Road 42 as agricultural. Residences are aligned along the north-south roadways of 7th, 8th, and 9th Concession Roads, and 10th Concession Road / County Road 17. Small pockets of residential communities have sprung up adjacent to 8th Concession Road and Baseline Road. The Windsor International Airport is located along the north side of CR42, west of Lauzon Parkway, and south of E.C. Row Expressway.

The City of Windsor Official Plan – Land Use Plan has designated the lands along the Lauzon Parkway study area north of Highway 401 as Industrial, Future Employment Area, Natural Heritage, Residential, and Open Space. The City of Windsor and County of Essex Land Use Plans are shown in Exhibit A.4-13 and Exhibit A.4-14.

South of Highway 401, the County Official Plan – Land Use Plan has designated the lands between the eastern limit of the City/County Boundary to west of 9th Concession Road as Agricultural.

A.4.2.2 Future Land Use

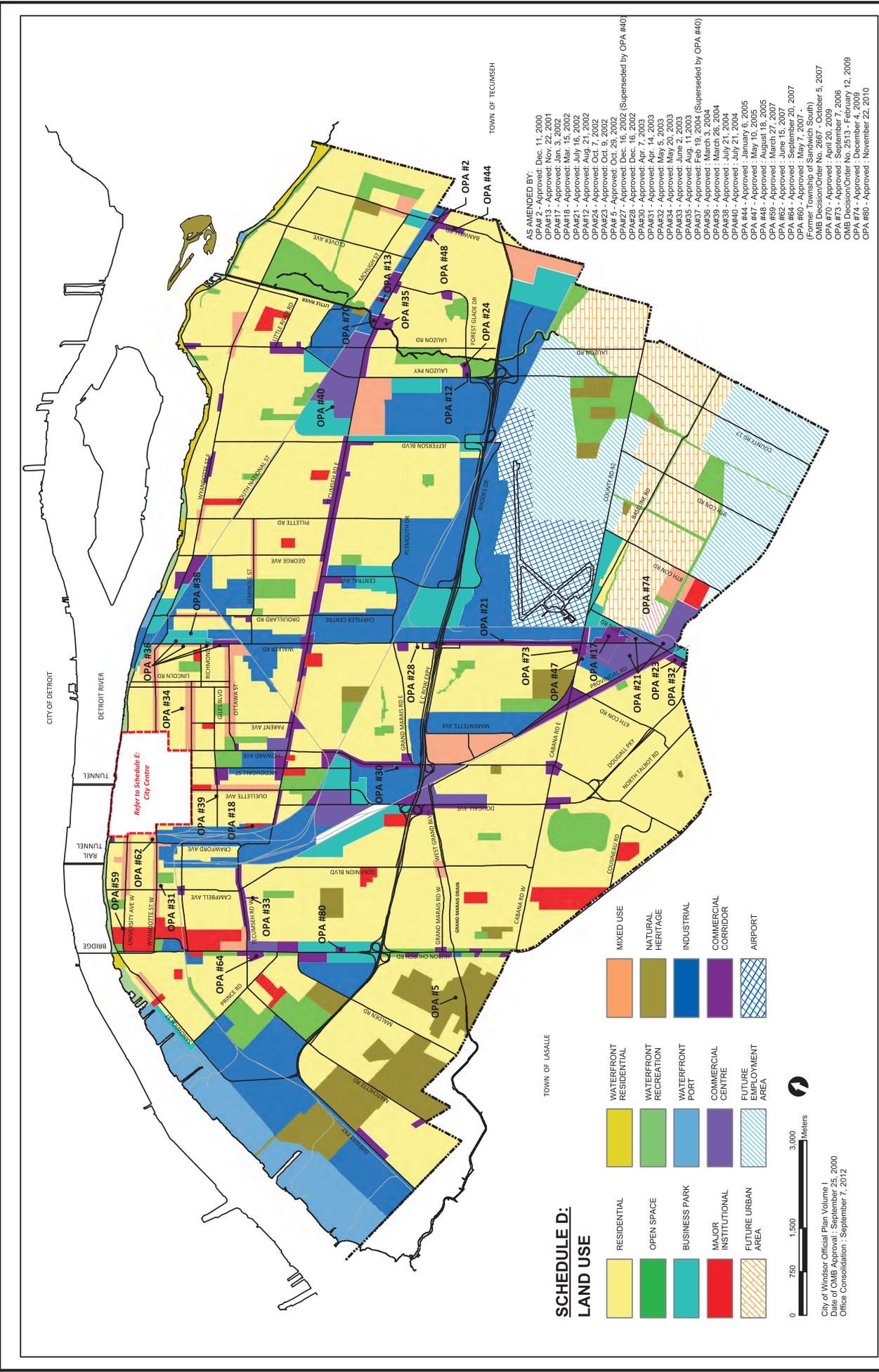
The Sandwich South Secondary Plan (Draft) will establish detailed development guidelines and a future land use pattern for the remainder of the lands transferred to the City of Windsor in 2003, and will be incorporated into the City of Windsor’s Official Plan. Currently, the formal review of the draft Sandwich South Secondary Plan by the Planning and Economic Standing Committee has been deferred until the completion and final approval of the Lauzon Parkway Improvements EA. A preliminary draft of the Secondary Plan Land Use Plan designates the lands in the Lauzon Parkway study area as: Community Core, Neighbourhood, Employment, Prestige Employment, Open Space, and Natural Heritage. The draft Sandwich South Secondary Plan – Land Use Plan is provided in Exhibit A.4-15, and was used as the basis for Land Use for this portion of the Study Area.

CITY OF WINDSOR OFFICIAL PLAN
LAND USE PLAN

Lauzon Parkway Improvements
Class Environmental Assessment Study
Environmental Study Report



City of Windsor Official Plan Volume I
Date of OMB Approval: September 25, 2000
Office Consolidation: September 7, 2012



**SCHEDULE D:
LAND USE**

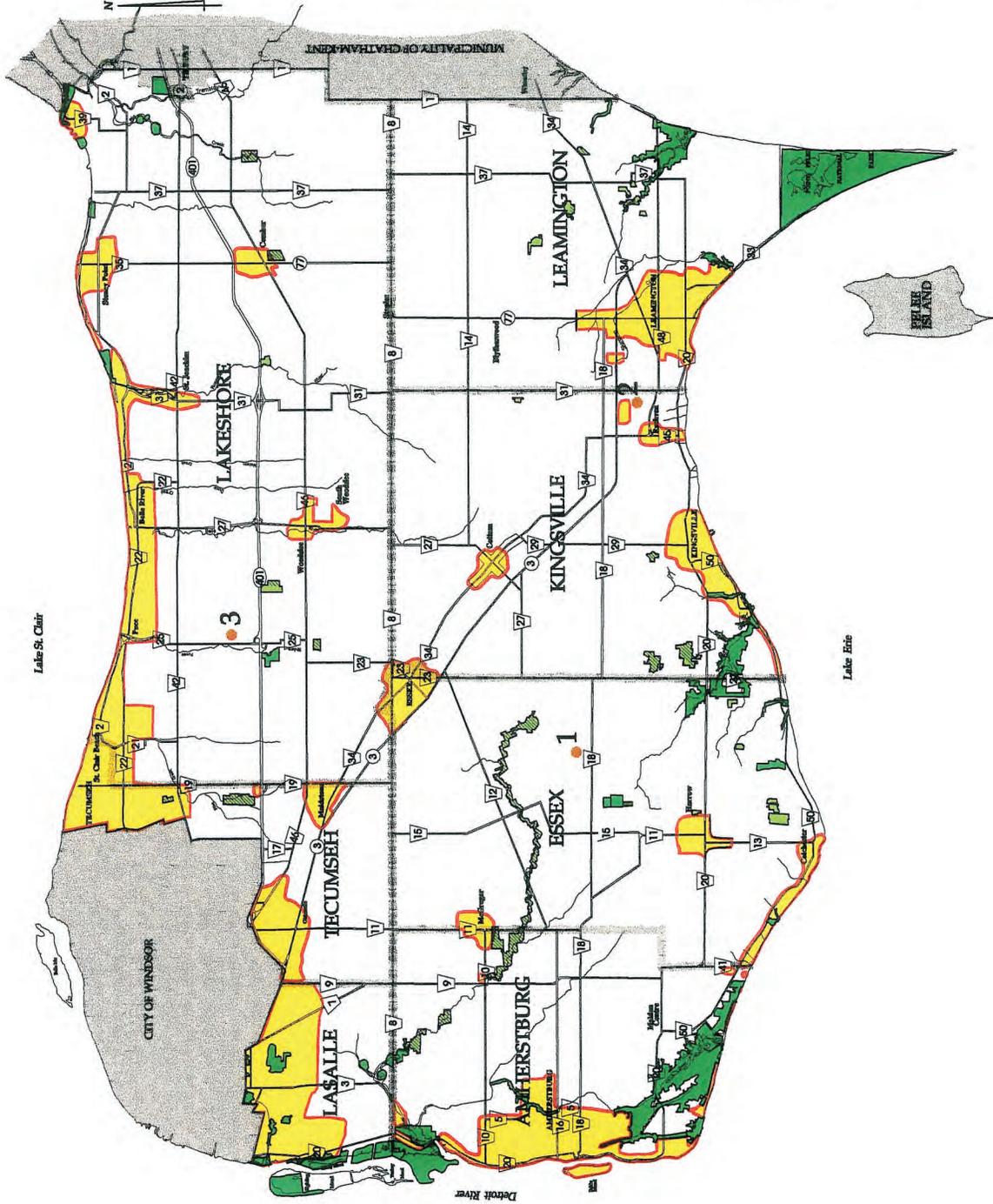
	RESIDENTIAL		MIXED USE
	OPEN SPACE		NATURAL HERITAGE
	BUSINESS PARK		INDUSTRIAL
	MAJOR INSTITUTIONAL		COMMERCIAL CORRIDOR
	FUTURE URBAN AREA		FUTURE DEVELOPMENT AREA



TOWN OF LASALLE

- AS AMENDED BY:
- OPAF#2 - Approved: Dec. 11, 2000
 - OPAF#13 - Approved: Nov. 22, 2001
 - OPAF#17 - Approved: Jan. 3, 2002
 - OPAF#18 - Approved: Mar. 15, 2002
 - OPAF#1 - Approved: July 19, 2002
 - OPAF#24 - Approved: Oct. 7, 2002
 - OPAF#23 - Approved: Oct. 9, 2002
 - OPAF#5 - Approved: Oct. 29, 2002
 - OPAF#27 - Approved: Dec. 16, 2002 (Superseded by OPA #40)
 - OPAF#28 - Approved: Dec. 16, 2002
 - OPAF#31 - Approved: Apr. 14, 2003
 - OPAF#32 - Approved: May 5, 2003
 - OPAF#34 - Approved: May 20, 2003
 - OPAF#33 - Approved: June 2, 2003
 - OPAF#35 - Approved: Aug. 1, 2003
 - OPAF#36 - Approved: March 3, 2004 (Superseded by OPA #40)
 - OPAF#39 - Approved: March 26, 2004
 - OPAF#38 - Approved: July 21, 2004
 - OPAF#40 - Approved: January 6, 2005
 - OPAF#44 - Approved: August 18, 2005
 - OPAF#48 - Approved: August 18, 2005
 - OPAF#59 - Approved: March 27, 2007
 - OPAF#62 - Approved: June 15, 2007
 - OPAF#64 - Approved: September 20, 2007
 - OPAF#60 - Approved: May 7, 2007 (Null)
 - OPAF#61 - Approved: May 7, 2007 (Null)
 - OMB Decision/Order No. 2567 - October 5, 2007
 - OPAF#70 - Approved: April 20, 2009
 - OPAF#73 - Approved: September 7, 2006
 - OMB Decision/Order No. 2513 - February 12, 2009
 - OPAF#74 - Approved: December 4, 2009
 - OPAF#80 - Approved: November 22, 2010

**SCHEDULE 'A'
COUNTY OF ESSEX
OFFICIAL PLAN
LAND USE PLAN**



- Agricultural Areas
- Settlement Areas
- Natural Environment Areas

- 1. Essex-Windsor Regional Landfill Site
- 2. Former Essex County Landfill Currently Waste Transfer Station
- 3. Former Essex County Landfill
- Overlay depicting Regionally Significant Woodlands, ANSI's and Locally Significant Sites designated in Local Official Plans

Notes:

1. Notwithstanding the agricultural areas or settlement areas designation the goals and policies contained within Subsection 3.4 may also apply if the site contains natural features.
2. The scale of this map is such that gaps in the natural environment areas designation are not always accurately depicted. Refer to local Official Plans for detailed depiction of various natural environment classifications.



Lauzon Parkway Improvements
Class Environmental Assessment Study
Environmental Study Report

**COUNTY OF ESSEX OFFICIAL PLAN
LAND USE PLAN (2005)**

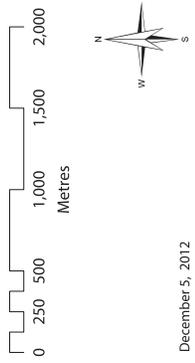
Exhibit
A.4-14

DRAFT Sandwich South Secondary Plan

SCHEDULE D Land Use

Legend

- Land Use**
-  Employment
 -  Prestige Employment
 -  Community Core
 -  Neighbourhood - Low Density
 -  Neighbourhood - Medium Density
 -  Recreation & Open Space
 -  Natural Heritage System
- Infrastructure**
-  Railway
 -  Interchange
 -  Secondary Plan Boundary
 -  City of Windsor Boundary



December 5, 2012



A.4.3 CULTURAL ENVIRONMENT

A.4.3.1 Built Heritage Resources and Cultural Heritage Landscapes

A cultural heritage resource assessment was undertaken for built heritage and cultural landscapes in the study area. A windshield survey was completed in May 2011 to identify cultural heritage landscapes and built heritage resources within the study area. For the most part, the analysis of cultural heritage resources in the study area addresses those above-ground, person-made heritage resources 40 years of age and older. The application of this rolling 40-year principle is an accepted federal and provincial practice for the preliminary identification of cultural heritage resources that may be of heritage interest or value. However, its application does not imply that all built heritage resources or cultural heritage landscapes that are over 40 years old are worthy of the same levels of protection or preservation.

Resources were identified by category:

- Cultural Heritage Landscape (CHL); or
- Built Heritage Resource (BHR); and
- by type;
 - roadscape,
 - residential subdivision,
 - cemetery,
 - bridge,
 - residence,
 - church, etc.

Within the Lauzon Parkway study area, there is one property listed on the City of Windsor Municipal Heritage Register (2012):

- 4601 County Road 17: BHR, Residential, Dolphice St. Louis House dates to 1932

At this time, there are no other listed or designated properties on the other municipal registers (i.e., County of Essex, Town of Tecumseh, Town of Lakeshore).

The field survey identified 28 potential resources within the Lauzon Parkway study area, categorized as Cultural Heritage Landscape (CHL) or Built Heritage Resources (BHR). The majority of resources were found to be residential or farm complexes dating back to the mid-20th century. One property, at 5412 Highway 3, is a former schoolhouse; however, it was decommissioned in 1955 and has since been converted into a residence.

Descriptions of the identified built heritage and cultural landscape features and further details of the built heritage and cultural landscape assessment can be found in Figure 2, Figure 3, and Table 1 of the *Cultural Heritage Assessment Report (CHAR)* in Appendix D.

A.4.3.2 Archaeology

A Stage 1 Archaeological Assessment was completed for the study area. A search of the Ministry of Tourism, Culture, and Sport's registered archaeological site database revealed that there are no registered archaeological sites within the subject corridors, nor are any sites located within a one kilometer of the subject corridors. This is likely not a reflection of lack of sites within the area, but a lack of archaeological investigation.

A historical investigation of the study area revealed that the first European settlement in the Detroit-Windsor area took place in 1701. The settlement remained on the Detroit side of the river until 1748 when the Jesuit mission to the Huron was established on the south shore (Windsor area). Between 1748 and 1760, French agriculturalists settled along the south shore of the river, paralleling a similar settlement on the north side (Detroit). The street pattern on both sides of the river still reflects the French method of agricultural land division of long narrow farms fronting the river.

An 1881 map of the East and West Sandwich Township and Maidstone Township in Essex County (Appendix E – Figure 3) indicates that the study area corridors pass through rural farmlands. The corridors indicated on the map are transportation corridors. As well, a number of building markers are located within the study corridor, indicating that the possibility of locating historic cultural materials is quite high given the proximity to the historic roadway.

The major concerns for identifying archaeological potential and the recovery of archaeological material include all land within 100 metres of historic transportation routes, all property within 300 metres of water courses and within 300 metres of registered archaeological sites. Also, all areas of Euro-Canadian settlement require archaeological assessment.

According to the *Ministry of Tourism, Culture, and Sport Standards and Guidelines for Consultant Archaeologists (2011)*, areas that are previously disturbed by construction activities are identified as having no further archaeological concerns. Most of the existing roadway corridors within this study area are identified as disturbed.

E.C. ROW EXPRESSWAY TO COUNTY ROAD 42

Most of the existing Lauzon Parkway right-of-way between E.C. Row Expressway and County Road 42 is disturbed by roadside ditching and service installation, therefore it is recommended that it is cleared of further archaeological concern. However, lands outside of the existing roadway right-of-way, to the east side of this section of roadway do not appear to be disturbed; therefore, any property required beyond the existing Lauzon Parkway right-of-way will require a Stage 2 assessment before construction commences.

COUNTY ROAD 42 TO HIGHWAY 3

The proposed extension of Lauzon Parkway from County Road 42 to Highway 3 crosses farmland. There are no watercourses in this area; however, both County Road 46 and Highway 3 are identified as historic transportation routes; therefore, it is recommended that a Stage 2 Archaeological Assessment be completed for the lands along the proposed Lauzon Parkway before construction commences.

A.4.4 NATURAL ENVIRONMENT

The study corridor lies within the Little River watershed. The dominant land use in the corridor is agriculture. The Windsor International Airport, institutional uses (Hydro One), light industrial, and small commercial business are present north of County Road 42; rural residential uses are present south of County Road 42.

Field surveys of the corridor were conducted in the Lauzon Parkway corridor by Ecoplans in 2011-2012 to characterize existing conditions and to identify species and habitats of conservation concern. The wildlife surveys focused on natural features, watercourses, drains, and anthropogenic lands with potential to provide habitat for SAR species and species of conservation concern. The vegetation survey focused on the ditches, drains, cultural meadows the riparian corridor of the Little River. The surveys were conducted on optimal dates to document resident plants, butterflies, dragonflies, damselflies, reptiles, amphibians, birds and mammals. Fish communities in the study corridor were characterized with reference to DFO, OMNR and ERCA records. A description of field protocols and a field chronology, locations of the botanical survey units and wildlife survey units within the study corridor are presented in Appendix F.

A.4.4.1 Fish and Fish Habitat

The main watercourse within the study corridor is the Little River, a tributary to the Lake St. Clair. The Little River flows northerly along the western limit of the study corridor from the vicinity of Highway 401 to County 42 where it turns northeasterly and crosses the study corridor and Lauzon Parkway at an oblique angle. The river then flows generally north to its confluence with Lake St. Clair approximately 4 km north of the study area.

Twelve Municipal Drains are present within the study corridor. These are presented in mapping provided in Appendix F. According to DFO's Draft Drain Classification mapping there is/are:

- 1 Class E Drain (permanent flow, with sensitive species and/or communities present): Little River;
- 1 Class C Drain (permanent flow): Watson Drain
- 8 Class F Drains (intermittent or ephemeral flow); and
- 2 unclassified Drains.

All drains have Low Sensitivity of fish and fish habitat. Relative to the other drains within the study area, the Little River supports a greater diversity of warmwater fish species and has more natural habitat characteristic in some reaches, particularly north of Baseline Road.

All drains have been affected by dredging, channelization, realignment and tile drainage. The drains also appear to experience extreme fluctuations in water levels associated with precipitation events. This fluctuation in flow volumes has resulted in localized bank erosion along with deposits of silt, sand, organic debris (woody and herbaceous) and refuse within the drains. The habitats documented within the drains are described in Appendix F.

Species at Risk (SAR) mapping provided by Department of Fisheries and Oceans (DFO) indicates potential for aquatic species at risk; however, fish community sampling undertaken by the Essex Region Conservation Authority (ERCA) over several years has yielded no records of aquatic Species at Risk (SAR) in the Little River. Based on Ontario Ministry of Natural Resources (OMNR) consultation (Amanda McCloskey, pers. comm., March 23, 2012), there are no provincial or federal aquatic SAR concerns within the study corridor.

A.4.4.2 Terrestrial Ecosystems

Background environmental information for the corridor was compiled from available sources including: topography; soils; aerial photographs; MNR's NRVIS and district office databases; the ERCA watershed monitoring databases; and published and unpublished reports, including the Windsor Annexed Lands Master Plan Study (Stantec 2006), the City of Windsor Update to the CNHS Inventory (ERCA 2008) (hereafter referred to as "CNHS") and the Town of Tecumseh Natural Heritage Inventory (ERCA 2011). Mr. Phil Roberts, Director of Operations, Windsor International Airport, also provided information regarding the status of Butler's Gartersnake (Endangered), Eastern Foxsnake, (Endangered) and Snapping Turtle (Special Concern) at the Windsor International Airport, based on observations documented during surveys conducted in 2004 and 2010.

The diversity of plant and faunal species, and the abundance of sensitive species, were somewhat unexpected given the relatively small areas of natural habitat and high levels of anthropogenic disturbance. Key botanical and wildlife features of significance and sensitivity are summarized below. Many features described below are depicted on mapping provided in Appendix F.

VEGETATION – KEY FEATURES AND SENSITIVITY

- The Lowland forest/deciduous swamps in low lying and poorly drained areas on and adjacent to the Windsor International Airport comprise the Windsor Candidate Natural Heritage Site (CNHS) #39 "Airport Woodlands" (ERCA 2008). Individually, these features are known as:
 - Jefferson Woods (~8.5 ha);
 - Shooting Range Woods (~9 ha);
 - East Perimeter Woods (~12ha); and
 - St. Louis Woods (~8 ha).
- East Perimeter Woods and St. Louis Woods are mostly contiguous, with only the fence line delineating the airport property separating them. Together they form one of the largest contiguous woodland habitats on the local landscape. Approximately 3 ha of forest interior habitat (100 m) is present in the St. Louis Woods/East Perimeter Woods complex.
- The "Airport Woodlands" were identified as Natural Heritage features for the Windsor Annexed Lands in 2006 and the designation was approved by Council in Official Plan Amendment (OPA) #60. OPA # 60 identifies both the Natural Heritage features and Open Space within the study corridor. Lands recommended as Open Space serve to connect these Natural Heritage features and provide an opportunity to enhance the Natural Heritage System in the future with natural corridors or linkages.

- The portion of the “Airport Woodlands” that lies within the Windsor International Airport lands (Jefferson Woods, Shooting Range Woods and East Perimeter Woods) was recently classified by MNR as the Windsor International Airport Swamps Provincially Significant Wetland (PSW) (MNR 2009).
- The portion of the “Airport Woodlands” that borders the Lauzon Parkway (St. Louis Woods) was not included in the PSW designation because MNR did not have permission to enter these lands. However, the vegetation in St. Louis Woods was classified as Green Ash Mineral Deciduous Swamp by ERCA in 2008 (ERCA 2008) and may warrant inclusion in the Windsor International Airport Swamps PSW.
- Portions of CNHS #39 and the Windsor International Airport Swamps PSW are in close proximity to the Little River. Natural corridor linkage opportunities are identified in the area west of Lauzon Parkway and north of County Road 42 were identified intended to connect several deciduous swamp/woodlands with the Little River corridor.
- Other woodlands reviewed by ERCA within the study corridor are:
 - The evaluated woodland classified by ERCA (2011) as “significant”: NHS#16 (McCarthy Woods);
 - The evaluated woodlands classified by ERCA (2008) as “not significant”:
 - CHNS #40 (Sun Drop Bend Woods);
 - CHNS #43 (Ireland Farm Woods);
 - CNHS # 44 (Wagon Wheel Woods); and
 - CHNS #45 (Baseline Woods).
- No endangered or threatened plant species were recorded
- Three Special Concern species were recorded: Shumard Oak, Climbing Prairie Rose and Riddell’s Goldenrod.
- The greatest richness and abundance of plant species of conservation concern was recorded north of County Road 42, in the area of multiple drains and several large woodland blocks. A particularly notable concentration of rare plants was recorded in roadside / ditch habitat near the north end of Lauzon Parkway (within the study area). The majority of the species of conservation concern recorded are species that have a known affinity for wet prairie and savannah habitats.
- ERCA has confirmed that they do not consider remnant prairies communities to be present within the study area. However, some sections of roadside cultural meadows and ditches which provide “refuge” habitat for SAR and S1-S3 plant species with prairie habitat affinities. Habitat for plant species of prairie affinity were more extensive and of higher quality north of County Road 42 and along the Little River riparian corridor.
- No Areas of Natural or Scientific Interest (ANSI) occur in the study corridor.

WILDLIFE AND HABITAT – KEY FEATURES AND SENSITIVITY

- Faunal diversity and presence of certain species was somewhat unexpected given the relatively small areas of natural habitat and high levels of anthropogenic disturbance.
- Wildlife habitat was relatively better north of County Road 42 and along the Little River riparian corridor generally. Observations of some SAR were generally restricted to active agricultural lands (e.g. Bobolink, Barn Swallow, Chimney Swift), presenting challenges for identifying regulated / protected habitat).
- The habitats of the twelve faunal Species at Risk were documented within the study corridor: one SAR insect, four SAR reptiles, seven SAR birds.
- Habitat for Eastern Foxsnake extends along the Lauzon Parkway from the north limit of the study corridor south to Baseline Road. This habitat lies within 1500 m of recent Foxsnake sightings and may thus be subject to Endangered Species Act 2007 (ESA) habitat regulation.
- The riparian woodland and regenerating open lands bordering the Little River, between County Road 42 and the Lauzon Parkway provide excellent habitat for Butler's Gartersnake and Eastern Foxsnake. This habitat lies within 1500 m of recent Foxsnake sightings and may thus be subject to ESA habitat regulation.
- The riparian margins of the Little River from Baseline Road to Highway 401 provides potential habitat for Eastern Foxsnake. This habitat lies >1500 m of recent Foxsnake sightings and may be subject to the protection provision of the Endangered Species Act 2007 (S.9).
- A Little River Rehabilitation Project has been implemented on the Little River at the former site of the Twin Oaks Golf Course in the City of Windsor. The Twin Oaks site is bordered by the E.C. Row Expressway to the north, the Lauzon Parkway to the west and CP Rail railway to the south (just outside of the Secondary Plan Area). Restoration initiatives included the creation of a low flow channel as part of a 1 km natural stream channel design; improving substrates and creating riffles and pools. **Reaches of the Little River within the study area are good candidates for similar future restoration.**

A.5 ALTERNATIVES AND EVALUATION

The Lauzon Parkway alternative concept plans, evaluation of alternatives, and selection of the preferred, is presented in this section.

Phase 3 of the Municipal Class EA process involves the development and review of alternative concept plans. Having established the need for a new north-south Lauzon Parkway corridor, this phase involved the following activities:

- review of the problems and opportunities being addressed (Section ¶A.5.1);
- inviting the public and participating agencies to attend PIC 1 to review and provide input on the study scope, existing conditions, need and justification, analysis of planning alternatives and preliminary generation of alternatives (Section ¶A.5.2);
- developing alternative roadway corridors and determining the preferred corridor (Section ¶A.5.3);
- developing and assessing roadway alignment alternatives to determine the preliminary preferred alignment (Section ¶A.5.4);
- developing and assessing cross-section elements (Section ¶A.5.5);
- developing and assessing interchange/intersection design concepts to determine the preferred design for:
 - E.C. Row Expressway Interchange (Section ¶A.5.6.1)
 - County Road 42 Intersection (Section ¶A.5.6.2)
 - E-W Arterial Intersection (Section ¶A.5.6.3)
 - Highway 401 Interchange (Section ¶A.5.6.4)
 - Highway 3 Intersection (Section ¶A.5.6.5)
 - Other Intersections (Section ¶A.5.6.6)
 - Service Road B
 - Baseline Road
 - County Road 46
 - Summary of Intersections along Lauzon Parkway (Section A.5.6.7)
- developing and assessing active transportation alternatives to determine the preferred concept plan (Section ¶A.5.7);
- inviting the public and participating agencies to attend PIC 2 to review and provide comments on the assessment and evaluation of the refined alternatives, and the preliminary preferred design (Section ¶A.5.8).

A.5.1 PROBLEMS AND OPPORTUNITIES BEING ADDRESSED

A new north-south corridor is required to support the future growth planned within the study area. The Lauzon Parkway Extension would provide an opportunity to develop a gateway and community transportation corridor. The development and identification of the transportation needs, and the assessment of transportation planning alternatives is described in Chapters 2 and 3, respectively.

The existing traffic volumes on Lauzon Parkway are operating at or near its capacity north of County Road 42. Walker Road (via Provincial Road/County Road 46) and County Road 19 (Manning Road), which are 8 km apart, are the only two north-south arterial roadways with interchanges at Highway 401 and E.C. Row Expressway. This results in traffic from other road networks being attracted to these two corridors. As a result, these two roadways are already operating near capacity, indicating the need for a new roadway with an interchange with Highway 401 in order to accommodate the future traffic demand in the study area.

Considering the future anticipated growth in the study area, there are limited spare capacities available on the existing road network. In addition, there is limited existing north-south and east-west linkage to provide a grid transportation system. Future projected growth in the City of Windsor and County of Essex results in further demand on the existing road network. It is expected that congestion on the road network will worsen as a result of the future development associated with the draft Sandwich South Secondary Plan area, which cannot be accommodated by the existing road network.

A Lauzon Parkway Extension would provide an opportunity to develop a gateway and community transportation corridor within the proposed Sandwich South Secondary Plan Study Area. The extension of Lauzon Parkway from County Road 42 to Highway 3 and a new interchange with Highway 401 would provide a potential opportunity for access to new development in the draft Sandwich South Secondary Plan area. This corridor would also help in reducing congestion on the existing corridors (Walker Road via Provincial Road/County Road 46 and County Road 19 (Manning Road)). The removal of the jog from the existing Lauzon Parkway south to 10th Concession Road / County Road 17, at County Road 42, would reduce the bottleneck and will enhance intersection operation. The proposed corridor provides opportunities to enhance the adjacent Little River corridor as a central community amenity as well as providing active transportation facilities and enhanced landscaping. Lauzon Parkway will provide a central spine through the proposed future Sandwich South Community. The Sandwich South Secondary Plan Study will develop design policies that incorporate a community focus including live/work opportunities including key consideration of provisions for active transportation facilities and transit expansion in the area.

A.5.2 REVIEW DURING FIRST ROUND OF CONSULTATION

The first Public Information Centre (PIC 1) was held on July 14, 2011. The second Public Workshop for the Sandwich South Secondary Plan was held concurrently with PIC 1.

The purpose of PIC 1 was to provide the public and stakeholders with an opportunity review the study scope, existing conditions, transportation needs and justifications, transportation planning alternatives, preliminary generation of corridor alternatives for the Lauzon Parkway Extension,

preliminary generation of County Road 42 cross-sections, E-W Arterial corridor routes and connections, a description of the EA evaluation criteria, and next steps in the study.

The notice for PIC 1 and Workshop 2 was placed in The Windsor Star (June 28 and July 2), Tecumseh Tribune (July 7), Lakeshore News (July 7), Shoreline Weekly (July 8), and Le Rempart (July 6). Notices were distributed by direct mail to local residents, government agencies, local emergency services, utility companies and interest groups. A separate notice for Workshop 2 for the Sandwich South Secondary Plan was prepared for the direct mailing; both notices were included in one envelope.

The PIC was a “drop-in centre” format. Approximately 80 members of the public attended. They were informed of the availability of comment sheets, which they were encouraged to complete. They were then directed to follow the displays around the room. Staff members were available to answer questions and provide information on the study. In addition, the Workshop 2 was held concurrently with offset participation times, which allowed attendees the opportunity to attend both the PIC presentation and Workshop session.

Attendees were encouraged to provide their comments on the comment sheets at the PIC. If individuals wished to take comment sheets home, they were requested to provide their responses via mail, email or fax by August 5, 2011.

The following is a summary of the key written and verbal comments related to Lauzon Parkway that were received at or after PIC 1:

- Timing of the transportation improvements
- Timing of the development of the Sandwich South lands
- Inquired about construction costs
- Inquired about the completion date of study
- Inquired about property impacts
- Inquired about the classification and number of lanes of Lauzon Parkway;
- General support for Lauzon Parkway Extension to Highway 3;
- Inquired about the preferred route for Lauzon Parkway; and
- Preferred that Lauzon Parkway be kept as far as possible to the east to preserve Sexton Sideroad and the alignment would be behind the existing houses on the roadway.

There were 10 comment sheets submitted at PIC 1, and 2 received following the PIC. In addition, 9 comments were received prior to the PIC. The Project Team reviewed all public input received and responded to each comment accordingly.

Copies of the display boards at the PIC and Workshop, as well as comments sheets and responses, are included in the *Summary Report on Public Information Centre 1* in Appendix A.

A.5.3 LAUZON PARKWAY EXTENSION

The development and assessment of the Lauzon Parkway corridor alternatives was undertaken in coordination with the development of the Sandwich South Secondary Plan. All corridor alternatives assumed that the existing portion of Lauzon Parkway would be maintained approximately on its existing alignment between E.C. Row Expressway and County Road 42. For the extension of Lauzon Parkway, south of County Road 42, the feasibility of using the existing north-south roadway corridors was initially assessed and was not preferred due to land constraints, as well as the inability to provide an effective transportation network that supports future development and traffic flows. Therefore, new roadway corridor alternatives were considered. The assessment of using existing corridors and new corridors is described in the following sections.

A.5.3.1 Existing North-South Corridors

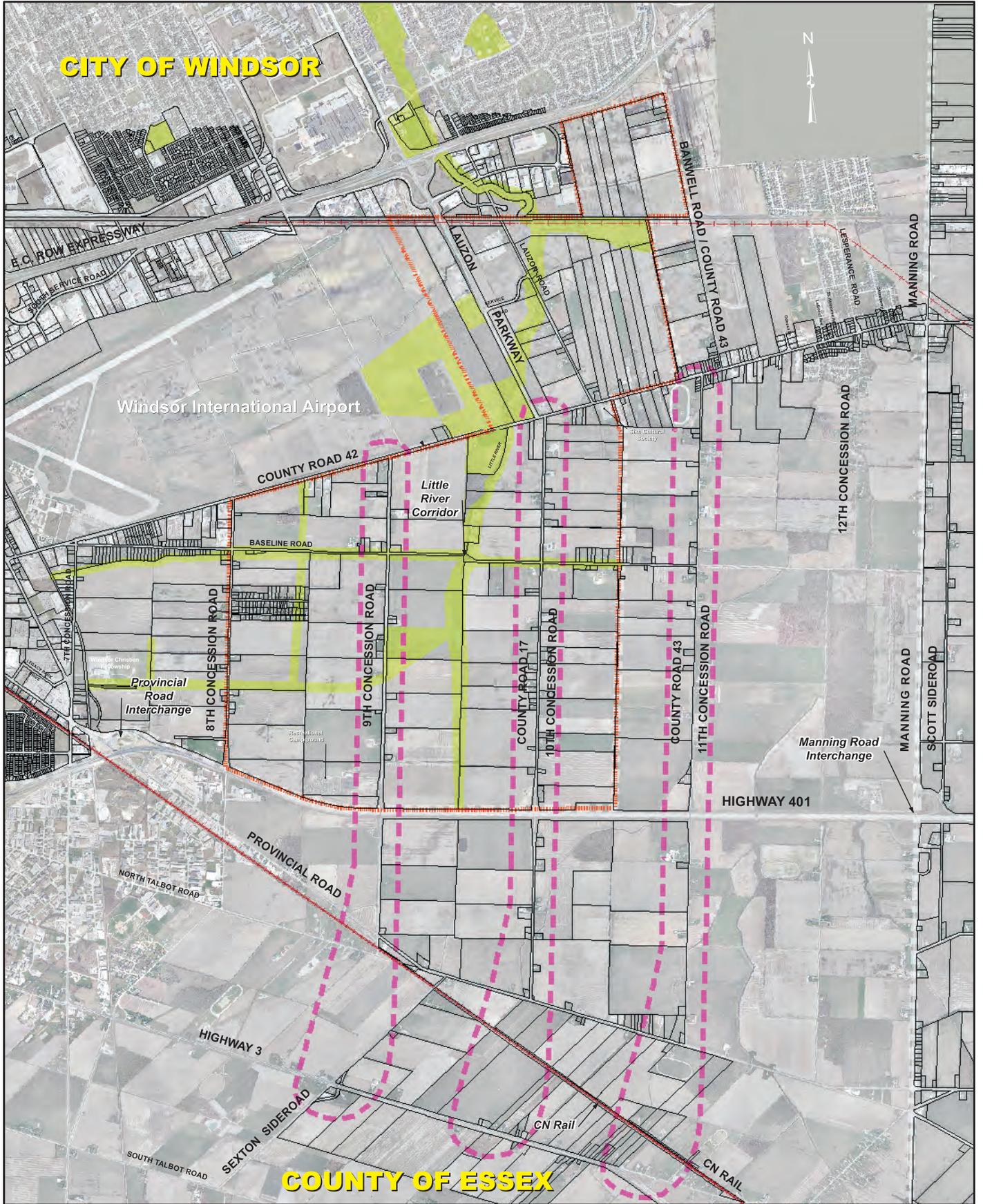
An assessment of existing north-south corridors was carried out for the Lauzon Parkway extension alignment south of County Road 42, including: 9th Concession Road, 10th Concession Road / County Road 17, and County Road 43/11th Concession Road. The 9th Concession Road, County Road 17, and County Road 43/11th Concession Road corridors are illustrated in Exhibit A.5-1 and described below.

9th Concession Road extends from County Road 42 to North Talbot Road, and crosses Highway 401. The Airport lands are located north of County Road 42 at 9th Concession Road. It has multiple existing residential properties and accesses extending along the roadway, and is located on the west side of the Sandwich South lands.

10th Concession Road / County Road 17 extends from County Road 42 to County Road 46, and crosses Highway 401. At County Road 42, 10th Concession Road / County Road 17 forms an offset intersection with the existing Lauzon Parkway. It has multiple existing residential properties and accesses extending along the roadway. 10th Concession Road / County Road 17 is located on the east side of the Sandwich South lands.

County Road 43/11th Concession Road extends from County Road 42 to County Road 46. Located north of County Road 42 are residential and agricultural lands. County Road 43 is located outside of the Sandwich South study area and its crossing of Highway 401 is relatively close to the County Road 19 (Manning Road)/Highway 401 Interchange.

CITY OF WINDSOR



COUNTY OF ESSEX



Lauzon Parkway Improvements
Class Environmental Assessment Study
Environmental Study Report

EXISTING
NORTH -SOUTH CORRIDORS

Exhibit
A.5-1

The advantages and disadvantages of each of these alternatives are noted in Exhibit A.5-2.

EXHIBIT A.5-2: ADVANTAGES AND DISADVANTAGES OF EXISTING NORTH-SOUTH CORRIDORS

9th Concession Road	County Road 17/ 10th Concession Road	11th Concession Road
× would not provide good interchange spacing from the existing adjacent interchanges	✓ would provide good interchange spacing on Highway 401	× would not provide good interchange spacing from the existing adjacent interchanges
× interchange would cause significant impact on multiple existing property owners and accesses	× interchange would cause significant impact on multiple existing property owners and accesses	× interchange would cause significant impact on multiple existing property owners and accesses
× would only serve the west side of the new Sandwich South development	✓ would somewhat provide × central spine through new Sandwich South Development	× too far removed to serve the new Sandwich South Development
× connection with the existing Lauzon Parkway would potentially impact the Windsor International Airport lands and require a crossing of the Little River corridor	✓ would provide good connection to existing Lauzon Parkway	× improvements to 11 th Concession Road are already included as part of the Banwell Class EA Study, including realignment of County Road 43 (Banwell Road) and 11 th Concession Road at County Road 42.

It was determined that for the north-south corridor, utilizing existing north-south roadways is not preferred due to land constraints such as the Windsor International Airport, Little River, and existing residential/agricultural property. There were significant concerns in eliminating the accesses to the existing residential/agricultural properties. Therefore a new north-south corridor is recommended.

Although a new corridor would require new property, it could support the new economic development of the proposed draft Sandwich South Secondary Plan study area and improve the access for residents and businesses in east Windsor and the neighbouring municipalities. In addition, existing property accesses along the existing roadways would not be affected and an existing arterial road would not be displaced.

A.5.3.2 New North-South Corridor Alternatives

Having identified that utilizing existing roadway corridors was not preferred, two alternative corridors, east and west of County Road 17, were developed for the Lauzon Parkway Extension. The East (yellow) and West (blue) alternatives are described below and are illustrated on Exhibit A.5-3.

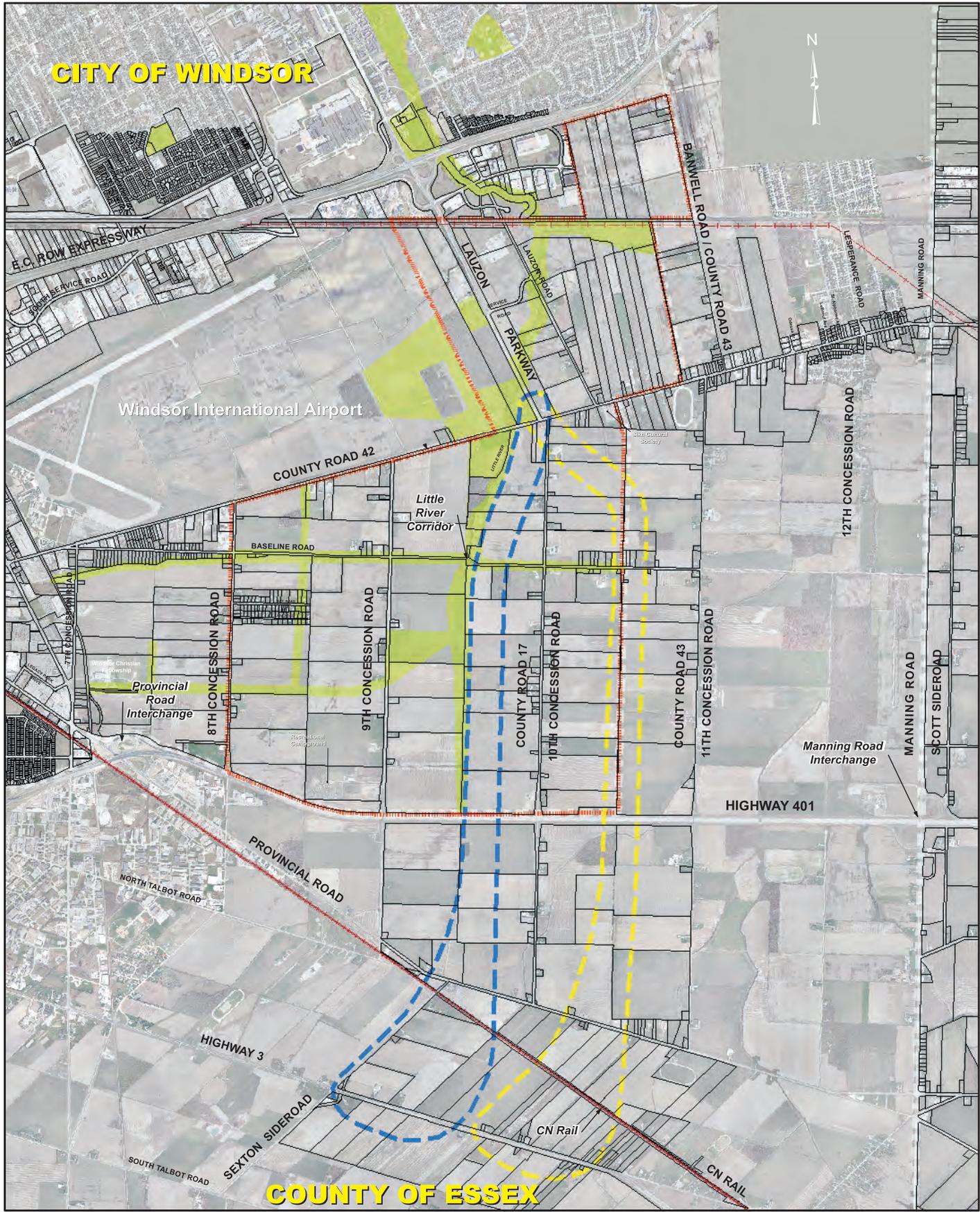
EAST OPTION (YELLOW)

The East Option is at the easterly limit of the City of Windsor, near the Town of Tecumseh boundary. South of County Road 42 it extends southeast to the City Limit, which it then follows southerly, crossing Highway 401 and intersecting with Highway 3. The interchange with Highway 401 would be located at the southeast corner of the Sandwich South lands, between the City of Windsor and the Town of Tecumseh. The corridor follows the eastern limit of the Sandwich South lands, which is the municipal boundary and generally the mid-lot line between 10th Concession Road / County Road 17 and County Road 43/11th Concession Road.

WEST OPTION (BLUE)

The westerly corridor extends southwest from CR42 along the Little River Corridor crossing Highway 401 and intersecting with Highway 3. It generally follows just east of the mid-lot line between 9th and 10th Concession Roads. The interchange with Highway 401 is located in the middle of the Sandwich South lands on the southerly boundary of the City of Windsor/County of Essex. South of Highway 401 the corridor generally continues along the lot line between 9th Concession Road and 10th Concession Road / County Road 17 to Highway 3.

CITY OF WINDSOR



Windsor International Airport

Little River Corridor

Provincial Road Interchange

Manning Road Interchange

COUNTY OF ESSEX



Lauzon Parkway Improvements
Class Environmental Assessment Study
Environmental Study Report

**LAUZON PARKWAY EXTENSION
CORRIDOR ALTERNATIVES**

Exhibit
A.5-3

A.5.3.3 Assessment and Evaluation

A comparative assessment and evaluation of the alternatives was carried out considering the socio-economic, cultural, natural environments, as well as technical considerations. The following key characteristics of the corridor alternatives were noted in the assessment and evaluation of each alternative.

EAST OPTION (YELLOW)

- Located on the boundary between a rural (Town of Tecumseh) and urban (City of Windsor, Sandwich South) development and would be located on the eastern limit of the Sandwich South community.
- Improved access to Highway 401 and E.C. Row Expressway would be limited only to development on the east side of the Sandwich South area.
- Does not create the opportunity to integrate with an enhanced Little River to create a community and transportation corridor.
- Sufficient spacing to the two existing interchanges on Highway 401 at County Road 19 (Manning Road) and County Road 46/Provincial Road.

WEST OPTION (BLUE)

- Provides a central spine through the proposed future Sandwich South community.
- Sandwich South development would have better access to Highway 401 to the south and E.C. Row Expressway to the north.
- Opportunity to integrate with an enhanced Little River and to create a community and transportation corridor.
- Sufficient spacing to the two existing interchanges on Highway 401 at County Road 19 (Manning Road) and County Road 46/Provincial Road.

Overall, the West Option is preferred as it addresses the long term transportation needs, better serves future land use development and provides the opportunity to integrate with an enhanced Little River as a central community amenity.

A.5.3.4 Preferred Corridor Alternative

The preferred north-south linkage is to extend Lauzon Parkway south of County Road 42 and to utilize a new corridor just east of the Little River, which is a natural barrier between 9th Concession Road and 10th Concession Road, to connect to Highway 401 and Highway 3.

A.5.4 LAUZON PARKWAY ALIGNMENT

Having identified the preferred corridor for the Lauzon Parkway Extension, specific roadway alignments were then considered. All alignment alternatives assumed that Lauzon Parkway would be maintained approximately on its existing alignment between E.C. Row Expressway and County Road 42. South of County Road 42, the preferred alignment follows along the existing Little River requiring the intersection at County Road 42 to shift westerly. South of County Road 42, the alignment is along the rear lots along 10th Concession Road / County Road 17, to Highway 401, minimizing re-alignment of the Little River; resulting in one combined roadway and river corridor. In addition, this would provide good interchange spacing from the adjacent Highway 401 interchanges at County Road 19 (Manning Road) and County Road 46/Provincial Road.

For the corridor segment from Highway 401 to Highway 3, alignment alternatives were developed and are discussed in the following section.

A.5.4.1 Highway 401 to Highway 3 Alignment Alternatives

Having identified the preferred corridor, alternative alignments within the corridor were developed and assessed. In developing the alignment concept alternatives, the following key factors were taken into consideration:

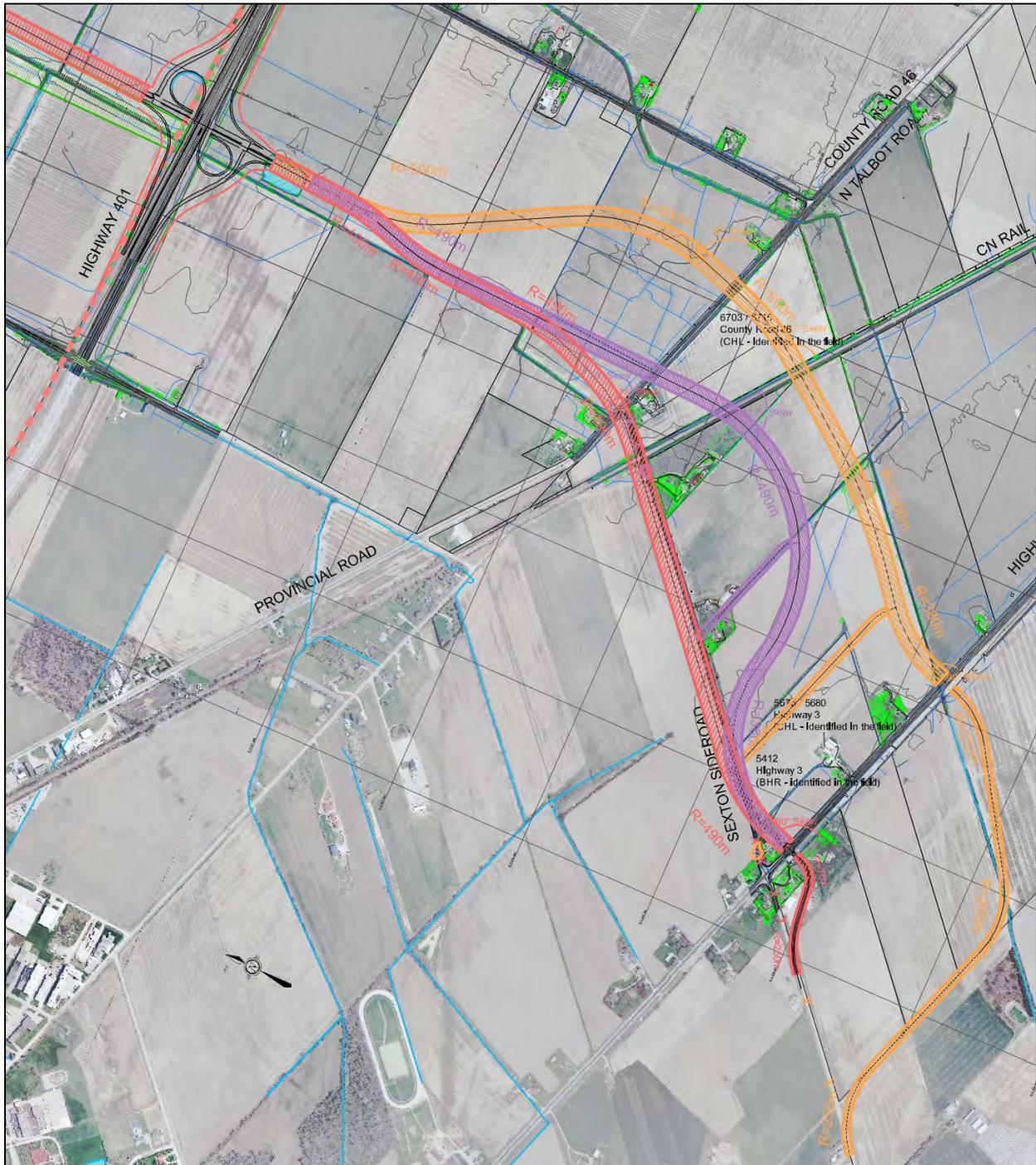
- Minimizing residential property impacts
- Minimizing agricultural property impacts (edge and severance)
- Minimizing potential construction and property costs
- Optimizing connectivity with local road network
- Optimizing geometrics of roadway and intersections
- Optimizing spacing to adjacent interchanges and intersections

The impact of each of the alternatives was assessed based on the existing environmental conditions compiled through field visits and secondary source information, and is summarized in Section A.4. A comparative evaluation of the alternatives was undertaken considering the assessment of impacts associated with the Socio-Economic, Cultural, Natural Environment, and Technical Considerations.

It is noted that Highway 3 was re-classified as a Staged Freeway. For such highways, the MTO Highway Access Management (HAM) Guidelines require a minimum of 2 km spacing between intersections. The existing intersection spacing along Highway 3 from Sexton Sideroad easterly to Talbot Road is 3 km, and westerly to Oldcastle Road is 2 km. Therefore, there is insufficient spacing to accommodate a new intersection with Highway 3 and maintain the existing Sexton Sideroad intersection.

Three concept alignment alternatives were initially developed. These alternatives were refined through technical assessment by the Project Team. The three alternatives: Option 1 (Red), Option 2 (Purple), and Option 3 (Orange), are illustrated in Exhibit A.5-4.

EXHIBIT A.5-4: LAUZON PARKWAY ALIGNMENT ALTERNATIVES



A.5.4.2 Assessment and Evaluation

A comparative assessment and evaluation of alternatives was carried out for the Lauzon Parkway alignment, south of Highway 401, based on a comprehensive list of factors considering impacts to the socio-economic, cultural, natural environments, as well as technical considerations, including traffic operations, geometrics, and intersection spacing. The impact of each of the alternatives was based on the existing environmental conditions compiled through field visits and secondary source information, and is summarized in Section A.4. Then a comparative evaluation of the alternatives was undertaken within four major groupings: Socio-Economic, Cultural, Natural Environment, and Technical Considerations.

The summary of the assessment and evaluation of the three alignment alternatives is illustrated in Exhibit A.5-5, and the detailed table of the assessment of the environmental effects associated with each of the alternatives and the corresponding comparative evaluation was documented and is included in Appendix G.

EXHIBIT A.5-5: ASSESSMENT AND EVALUATION OF LAUZON PARKWAY EXTENSION ALTERNATIVES

Factor/Criteria	Option 1 (Red)	Option 2 (Purple)	Option 3 (Orange)
SOCIO-ECONOMIC ENVIRONMENT <ul style="list-style-type: none"> Impacts to property and access Community effects Agricultural Properties 			
CULTURAL ENVIRONMENT <ul style="list-style-type: none"> Archaeology and Heritage Features 			
NATURAL ENVIRONMENT <ul style="list-style-type: none"> Impacts to stormwater management Impact on vegetation, wildlife, landscape, and aquatic resources 			
TECHNICAL CONSIDERATIONS <ul style="list-style-type: none"> Traffic operations (level of service) Geometric and Safety Flexibility to meet future needs Connectivity with local road network Highway 3 intersection spacing 			
OVERALL SUMMARY			
<p>Option 3 is the least preferred in Socio-Economic Environment as it results in the greatest number of property and agricultural impacts; and is also the least preferred in Technical Considerations, as it results in significant impacts to the existing local road network.</p> <p>Option 2 results in less potential nuisance effects with only 1 residence at Sexton Sideroad & County Road 42 exposed to increased traffic volumes, while Option 1 results in 5 residences on Sexton Sideroad exposed to increased volumes. However, Option 2 results in greater overall property and agricultural impacts.</p> <p>Although Option 1 results in incrementally greater nuisance effects to residences adjacent to the corridor, it results in minimal impact to agricultural operations and properties and results in the least property impact with 1 displacement of residence. Option 1 also makes use of MTO properties protected in the Highway 3 EA, and it utilizes an existing transportation corridor with a relatively straight alignment and adequate intersection spacing.</p> <p>Therefore, Option 1 is preferred overall.</p>			



A.5.4.3 Preferred Lauzon Parkway Alignment

The alignment of Lauzon Parkway from E.C. Row Expressway to County Road 42 will follow the existing Lauzon Parkway roadway. The alignment will then follow the Little River Corridor requiring the intersection at County Road 42 to shift westerly and continue to follow the Little River Corridor to Highway 401.

South of Highway 401, Option 1 (Red), utilizing the existing Sexton Sideroad, is preferred. Although, Option 1 results in incrementally greater nuisance effects to residences adjacent to the corridor, it results in the least overall property impacts. Option 1 utilizes an existing transportation corridor with a relatively straight alignment and results in adequate intersection spacing on Highway 3 while maintaining the local access to 4 adjacent properties; it also results in relatively less potential for direct impact to plant species of conservation concern and results in no new watercourse crossings.

A.5.5 CROSS-SECTIONS

Having identified the preferred alignment for Lauzon Parkway, specific cross-section elements were then considered, including: right-of-way, lane widths, active transportation facilities, median, illumination, and landscaping.

The cross-section for Lauzon Parkway was considered in two major sections based on jurisdiction:

- City of Windsor – E.C. Row Expressway to Highway 401; and
- County of Essex – Highway 401 to Highway 3.

The following sections describe and illustrate the Lauzon Parkway cross-sections as presented at PIC 2.

A.5.5.1 City of Windsor – E.C. Row Expressway to Highway 401

The cross-section of Lauzon Parkway from E.C. Row Expressway to Highway 401 was designed with a 50 m right-of-way (ROW); the cross-section was planned for an interim (4-lane) and an ultimate (6-lane) condition.

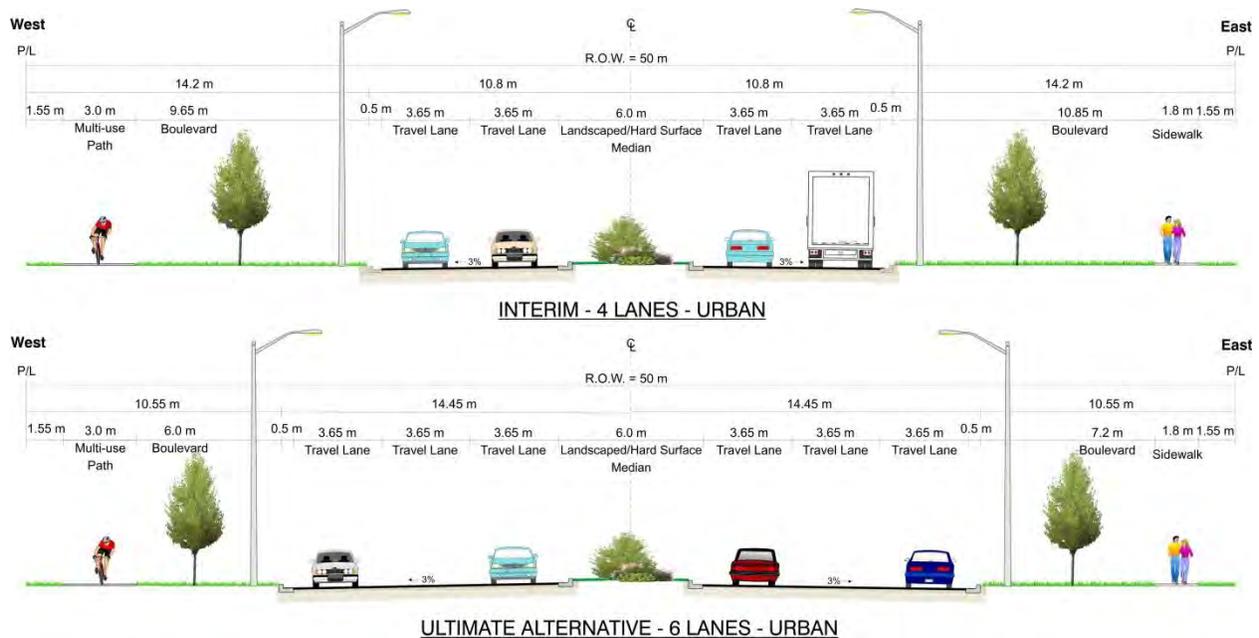
Within the City of Windsor, the standard lane width is 3.65 m. A 6 m mixed landscaped and hard surface centre median is proposed. Based on the City of Windsor's Official Plan, active transportation facilities (sidewalk and multi-use trail) are located on both sides of the roadway. The cross-section will also consist of curb and gutter for both the median and outside shoulders to be consistent with the gateway and land development vision for the Sandwich South.

The typical proposed cross-sections for Lauzon Parkway between E.C. Row Expressway and Highway 401 as presented at PIC 2, are illustrated in Exhibit A.5-6 to Exhibit A.5-8. The following summarizes the basic features of the cross-sections within the study area:

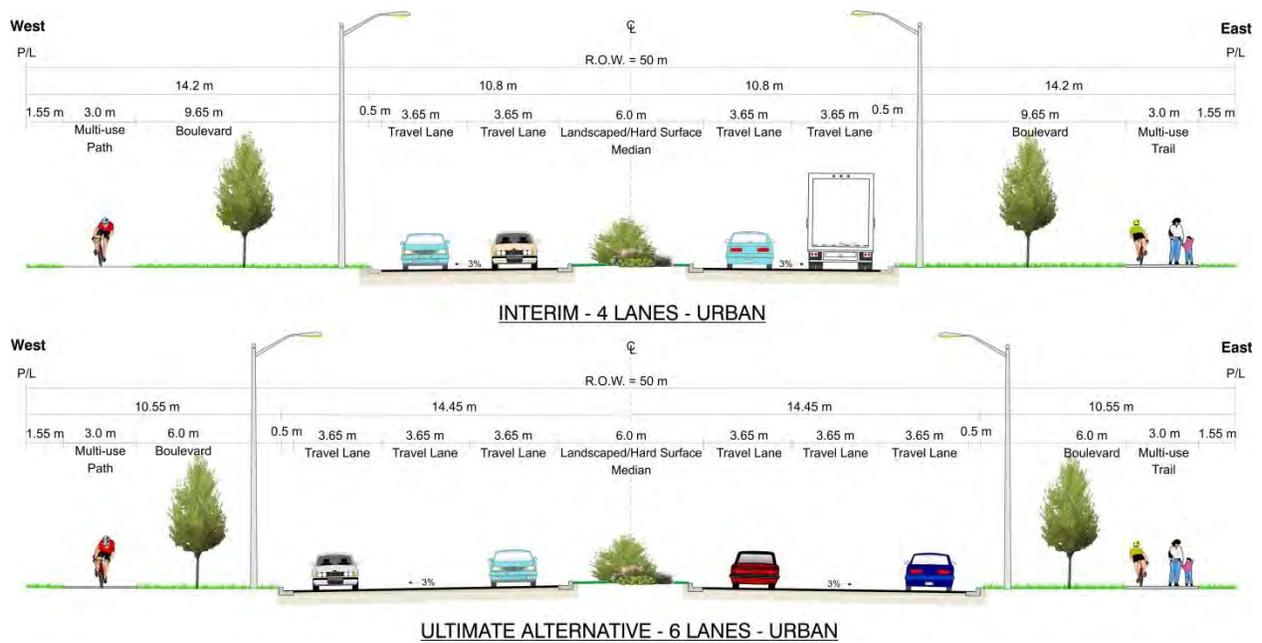
- 50 m right-of-way (ROW) urban cross-section
- Ultimate 6 lanes (interim 4 lanes) at 3.65 m each
- 6 m raised mixed landscaped/hard-surface median
- 3.0 m multi-use trail (MUT) on west side and 1.8 m sidewalk on east side (a 3.0 m MUT is located on both sides of Lauzon Parkway from the intersection with County Road 42 northerly to the Little River Bridge)

The preferred cross-sections, including refinements following PIC 2, with available existing utility information are illustrated in Section A.6.1.2.

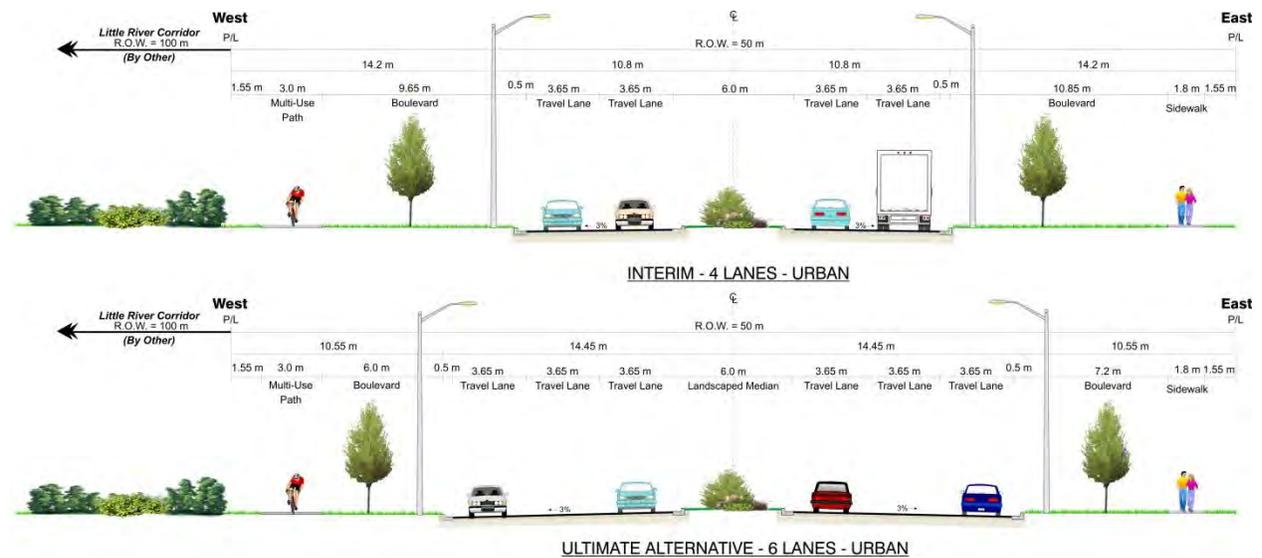
**EXHIBIT A.5-6: PIC 2 TYPICAL CROSS-SECTION LAUZON PARKWAY
 E.C. ROW EXPRESSWAY TO LITTLE RIVER**



**EXHIBIT A.5-7: PIC 2 TYPICAL CROSS-SECTION LAUZON PARKWAY
 LITTLE RIVER TO COUNTY ROAD 42**



**EXHIBIT A.5-8: PIC 2 TYPICAL CROSS-SECTION LAUZON PARKWAY
 COUNTY ROAD 42 TO HIGHWAY 401**



A.5.5.2 County of Essex – Highway 401 to Highway 3

The cross-section of Lauzon Parkway from Highway 401 to Highway 3 was designed with a 50 m right-of-way (ROW); the cross-section was planned as a 4-lane rural ultimate section.

In the County of Essex, the standard lane width is 3.75 m. A 1.0 m flush median is provided from Highway 401 to Highway 3 to maintain the facility as controlled access and to maintain access to the existing residences located on Sexton Sideroad. The multi-use trail (MUT) located on the west side of Lauzon Parkway north of Highway 401 crosses over Highway 401 on a structure and continues along the west side of Lauzon Parkway to the intersection with Highway 3. Given the surrounding agricultural land use within the County, a rural cross-section is proposed with drainage ditches from Highway 401 to Highway 3.

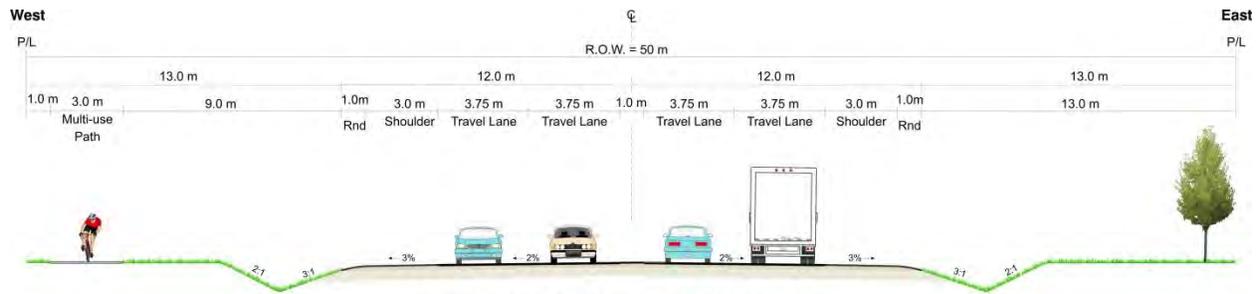
It was noted that, should the area adjacent to Lauzon Parkway between Highway 401 and County Road 46 be developed in the future into an urban centre, there is sufficient right-of-way to change the cross-section to include a wider raised median with landscaping, and other aesthetic amenities.

The proposed typical cross-section for Lauzon Parkway, from Highway 401 to Highway 3, as shown at PIC 2, is illustrated in Exhibit A.5-9. The following summarizes the basic features of the cross-sections within the study area:

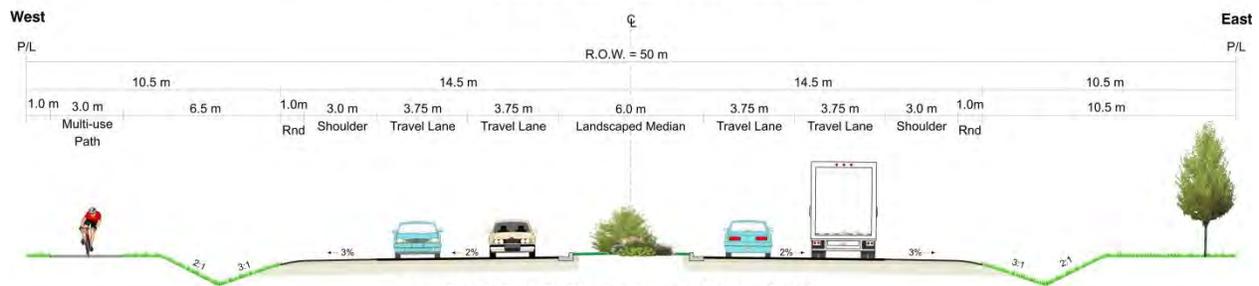
- 50 m right-of-way (ROW) rural cross-section
- 4 lanes at 3.75 m each
- 1.0 m flush median
- 3.0 m MUT along west side of the roadway

The preferred cross-section, including refinements following PIC 2, is illustrated in Section A.6.1.2.

**EXHIBIT A.5-9: PIC 2 TYPICAL CROSS-SECTION LAUZON PARKWAY
 HIGHWAY 401 TO COUNTY ROAD 46**

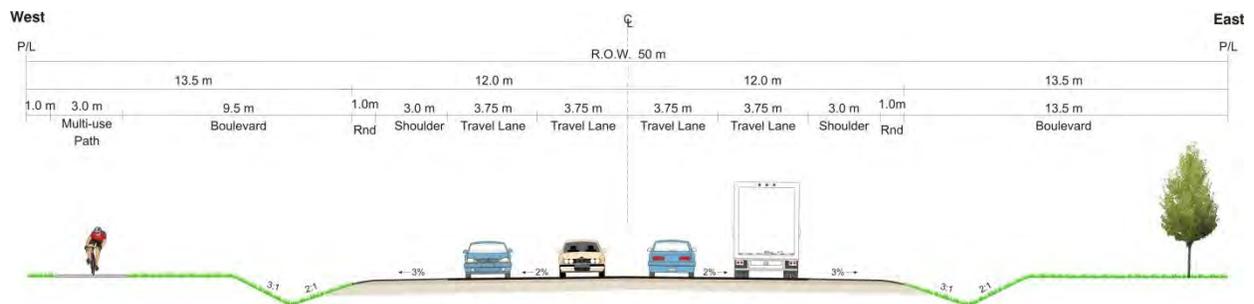


INTERIM ALTERNATIVE - 4 LANES - RURAL



ULTIMATE ALTERNATIVE - 4 LANES - RURAL

**EXHIBIT A.5-10: PIC 2 TYPICAL CROSS-SECTION LAUZON PARKWAY
 COUNTY ROAD 46 TO HIGHWAY 3**



ULTIMATE ALTERNATIVE - 4 LANES - RURAL

A.5.6 INTERCHANGES AND INTERSECTIONS ANALYSIS

The following sections outline the development of the preferred intersection alternatives, based on the preferred E-W Arterial alignment and cross-section.

All existing intersections within the Lauzon Parkway study area were analyzed, focusing on the existing operations and collision history. The *Traffic Analysis Report: Existing Conditions*, in Appendix H, contains all of the traffic analyses conducted for this study, as well as the collision history collected.

The proposed intersections along Lauzon Parkway were analyzed in order to determine the required lane configurations for the interim (2021), ultimate (2031), and full-build out of the Sandwich South area (beyond 2031), scenarios. Left and right turn lanes were provided at signalized intersections where required. All intersections, where a need for traffic signals was identified, were also considered for a roundabout. If the traffic analysis for the roundabout design indicated an acceptable level-of-service (LOS), then the feasibility of a roundabout was further assessed. In certain situations, although a roundabout was technically feasible, it was not preferred due to other factors such as pedestrian safety. The *Traffic Analysis Report: Future Traffic Conditions*, in Appendix I, contains the analyses for all intersection in the Study Area.

The following sections describe the development of the preferred interchange and intersection alternatives, based on the preferred Lauzon Parkway alignment and cross-sections.

A.5.6.1 E.C. Row Expressway Interchange

A review of the existing and future roadway geometrics, traffic, and safety conditions of the Lauzon Parkway/E.C. Row Expressway Interchange was undertaken. A detailed analysis of the interchange can be found in Appendix I – *Lauzon Parkway/E.C. Row Expressway Interchange: Existing & Future Conditions Report* (August 2012). This section summarizes the analysis of the existing E.C. Row Expressway Interchange and proposed improvements.

The review of existing traffic conditions assessed the existing level-of-service (LOS) of four intersections at the Lauzon Parkway/E.C. Row Expressway Interchange, and found that all four intersections are operating at an acceptable LOS in the peak hours:

- Forest Glade Drive/Quality Way – LOS C;
- North Ramp Terminal – LOS A;
- South Ramp Terminal – LOS A; and
- Twin Oaks Drive/South Service Road E – LOS B.

For future (2031) traffic conditions, the capacity of these four intersections along Lauzon Parkway was also assessed. Both the ramp terminals at the E.C. Row Expressway Interchange are currently unsignalized and would operate at LOS F under future traffic conditions. With the provision of traffic signals, both ramp terminal intersections will operate at an acceptable LOS - A at the north terminal and B and the south terminal. Some individual movements will operate near capacity, indicating the need for additional lanes on Lauzon Parkway beyond 2031.

Currently at Forest Glade intersection, the westbound left turn and westbound through traffic are sharing the centre lane on the westbound approach. For future traffic demand, the westbound through movement would require a dedicated lane. This could be achieved by converting the existing westbound right-turning lane into a dedicated westbound through lane (i.e. by removing shared left and through movements and providing dedicated dual left-turning lanes) with the provision of a dedicated westbound right-turning storage lane (with approximately 75 m of storage). This intersection would also require dedicated eastbound right-turning storage lane (with approximately 50 m of storage) in order to reduce the delays for the eastbound through and eastbound right-turning movements.

At the Lauzon Parkway and Twin Oaks Drive intersection, additional through lanes would be required in both the north and south directions on Lauzon Parkway.

A safety review was also completed for the interchange ramps and the two adjacent intersections. This Technical Memo is included in the Appendix of the *Lauzon Parkway/E.C. Row Expressway Interchange: Existing & Future Conditions Report* (August 2012). The total number of collision reported on the interchange ramps ranged between 1 and 12 collisions, which was reported on the eastbound on-ramp. The collision history of the interchange ramps was noted to be lower than average; however, the Technical Memo outlined opportunities to improve the existing radii of the N/S-E on-ramp.

It is recommended that the existing eastbound on-ramps at the Lauzon Parkway south ramp terminal be improved by reducing the existing right-turn channelization to the minimum length in order to reduce the potential for weaving conflicts with the Twin Oaks Drive/South Service E Road intersection, and increase the ramp radii to 90 m and 130 m respectively.

At the Forest Glade Drive intersection, the majority of incidents noted involved rear-end and turning type collisions. It is recommended that new directional signing be provided on westbound Forest Glade Drive and southbound Lauzon Parkway approaching the Forest Glade Drive intersection to give drivers advance way-finding information, thereby minimizing weaving potential on Lauzon Parkway between the Forest Glade Drive intersection and the E.C Row Expressway ramps.

An illustration of the proposed Lauzon Parkway/E.C. Row Expressway Interchange improvements is illustrated in Exhibit A.5-11, and the proposed lane arrangements is illustrated in Exhibit A.5-12.

EXHIBIT A.5-11: PROPOSED 2031 LAUZON PARKWAY E.C. ROW EXPRESSWAY INTERCHANGE IMPROVEMENTS

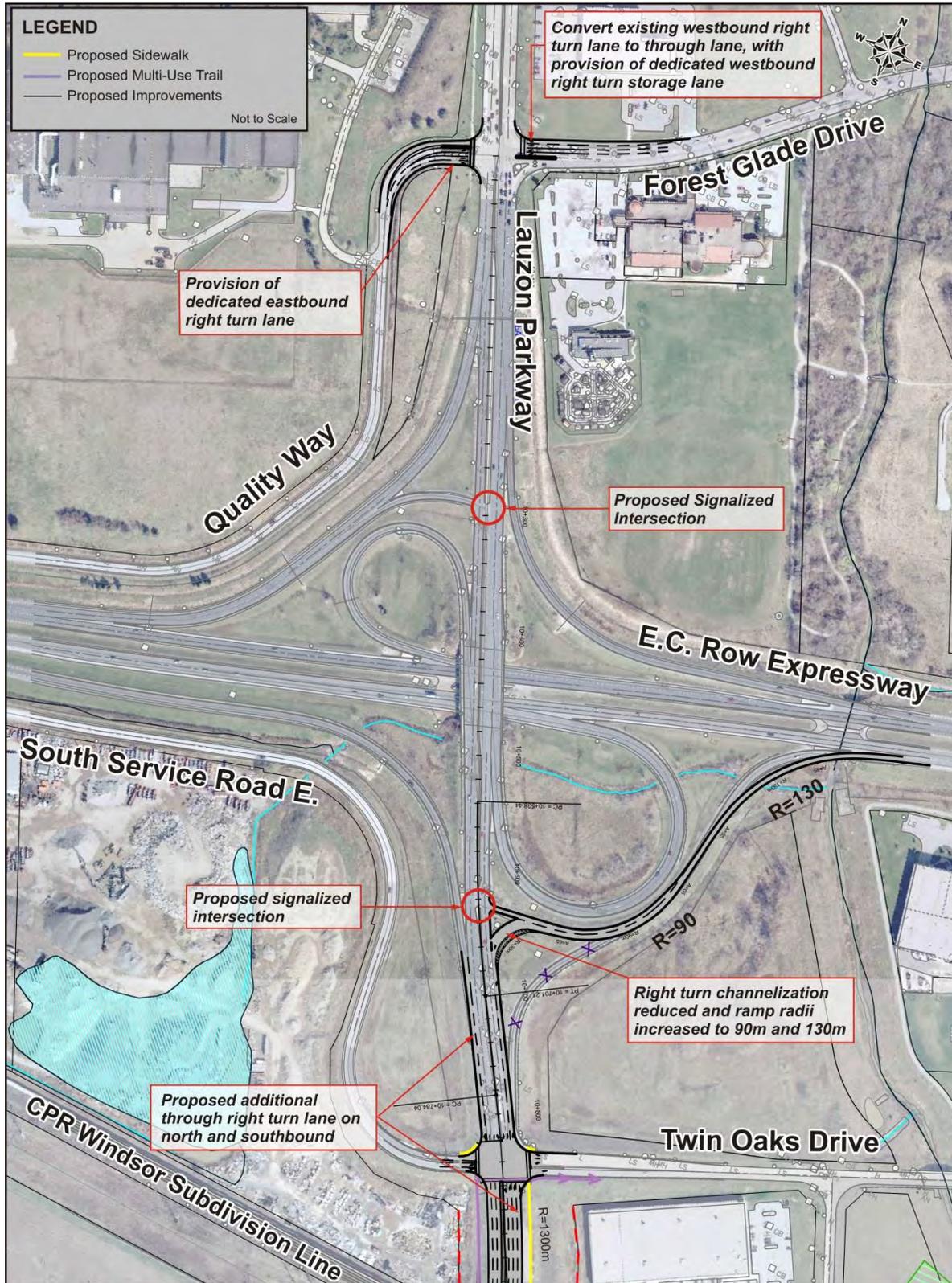
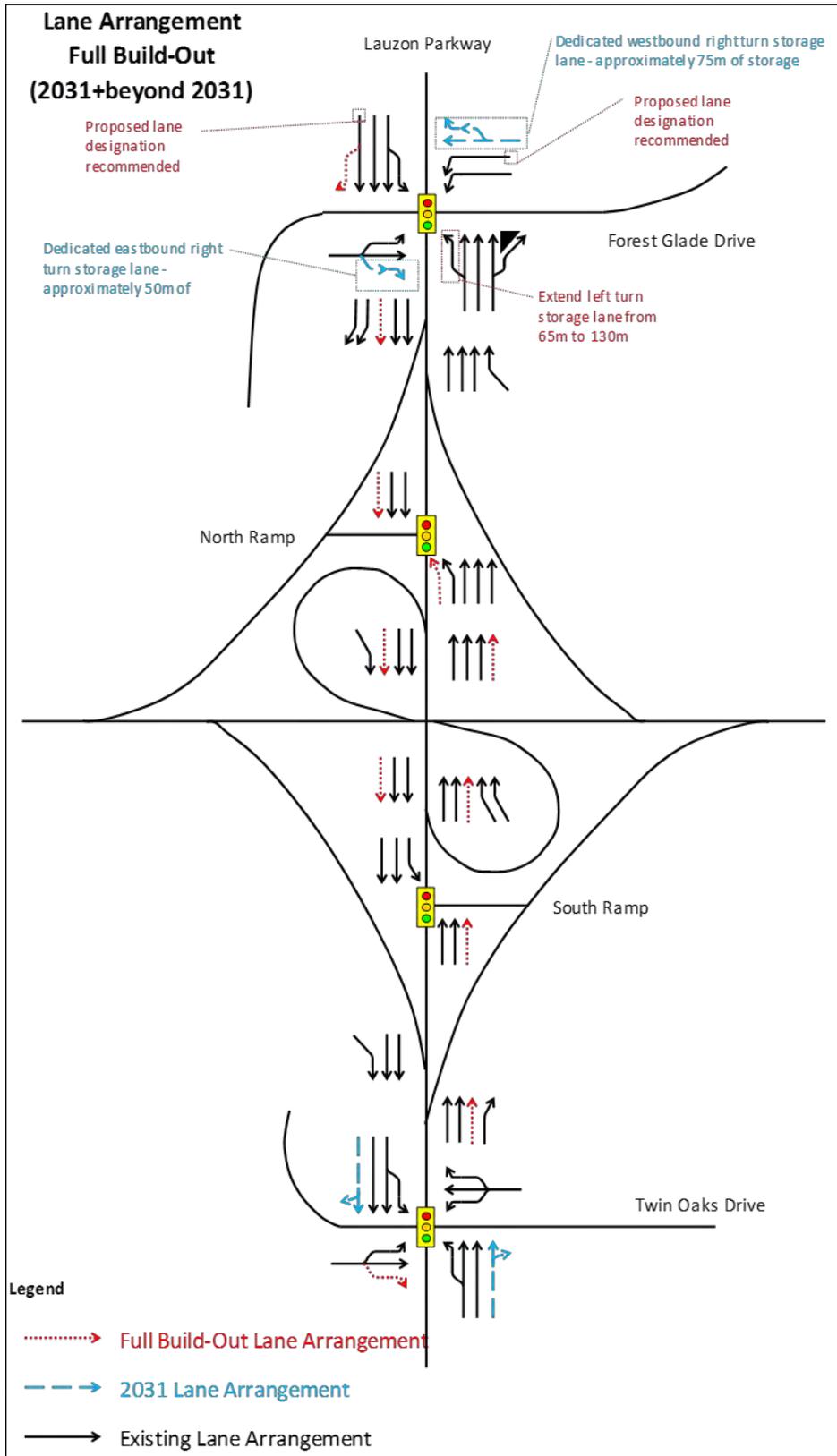


EXHIBIT A.5-12: PROPOSED 2031 AND FULL BUILD-OUT LAUZON PARKWAY E.C. ROW EXPRESSWAY INTERCHANGE IMPROVEMENTS LANE CONFIGURATION



A.5.6.2 County Road 42 Intersection

The existing Lauzon Parkway/County Road 42/10th Concession off-set intersection is proposed to be improved as part of the Lauzon Parkway extension. A new 4-leg intersection is planned west of the existing intersection, closer to the Little River. The 2021 and 2031 traffic analysis indicated that signalization of this intersection is required to accommodate the high volumes along both Lauzon Parkway and County Road 42.

Due to the high traffic volume, with 6 lanes on Lauzon Parkway intersecting with 4 lanes on County Road 42, a roundabout at this location was not recommended as the level of service, delay, and queue lengths for a roundabout would be significantly higher than that of a signalized intersection. Additionally, at this intersection the multi-use trail location along the Little River corridor must cross both the Lauzon Parkway and County Road 42 legs of the intersection; therefore, pedestrian and cyclist movements through a multi-lane (3-lane) roundabout face potential multiple conflict points with high speed, high volume traffic.

Therefore, a signalized intersection is recommended.

Once the new intersection of Lauzon Parkway is constructed, the traffic signals at 10th Concession Road / County Road 17 intersection will be removed; the intersection will be converted to a right-in-right-out (RIRO) in the interim condition based on the following triggers:

- the westbound left-turn traffic volume at Lauzon Parkway reaches 200 vph; or
- the traffic volume on County Road 42 reaches 650-700 vph in both directions and northbound left turn volume on 10th Concession Road / County Road 17 is about 50 vph.

A median will be included on County Road 42, easterly from the Lauzon Parkway intersection, in order to ensure safe turning movements. The 10th Concession Road / County Road 17 intersection will be closed for the ultimate 2031 scenario as part of the Sandwich South Secondary Plan.

A.5.6.3 E-W Arterial Intersection

A new intersection is proposed for Lauzon Parkway and E-W Arterial, as part of the draft Sandwich South Secondary Plan primary road network. The traffic analysis for the Lauzon Parkway/E-W Arterial intersection indicated that a 2-lane roundabout would provide an acceptable level-of-service (LOS) for the interim 4-lane Lauzon Parkway, but would not meet the ultimate 6-lane Lauzon Parkway traffic demand, approximately 1600 vph in peak direction, which corresponds to 50% of the full Sandwich South “build-out” development traffic forecast. Therefore, the Project Team assessed two options for this intersection:

- Option 1:** Build a signalized intersection on ‘Day 1’, and widen the intersection for the ultimate 6-lane Lauzon Parkway.
- Option 2:** Build a roundabout on ‘Day 1’, and reconstruct as a signalized intersection for the ultimate 6-lane Lauzon Parkway.

A present day cost analysis was conducted in order to determine the economic benefits for each option. Although initial estimates of the EA anticipated that 50% of the full Sandwich South “build-out” would be developed by 2031, the cost analysis assessed three different scenarios of when the conversion from a roundabout to a signalized intersection would be required; 2031, 2041, and 2051. The present day value cost was determined for each alternative for each scenario. The cost analysis indicated that, in order to be economically feasible, the roundabout would need to be in operation for at least 30 years.

It is expected, however, that while the initial capital cost to construct a 2-lane roundabout is relatively high compared to a signalized intersection, the total life cycle costs (i.e., ongoing maintenance costs) of a roundabout are typically lower than a signalized intersection, as summarized in Exhibit A.5-13.

EXHIBIT A.5-13: COST-BENEFIT ASSESSMENT OF SIGNALS AND ROUNDABOUTS

Cost-Benefit Item	Signals	Roundabout
Roadway Construction Cost	High	High
Maintenance Cost	Low	Low
Frequency of Safety Conflicts	High	Low
Signals/Illumination & Maintenance	High	Medium
Total Present Value	High	Medium/High
2031 Traffic Operations	Good	Good
Beyond 2031 Traffic Operations	Good	Poor
Overall Assessment		Preferred

Therefore, the preferred design for the Lauzon Parkway/E-W Arterial intersection is a roundabout, which could be converted to a signalized intersection when Lauzon Parkway needs to be widened to 6 lanes.

A.5.6.4 Highway 401 Interchange

A new interchange at Highway 401 is identified as one of the opportunities for the Lauzon Parkway Extension in Section 2.8. The Lauzon Parkway Extension will provide an opportunity to develop a gateway and community transportation corridor. Walker Road (via Provincial Road/County Road 46) and County Road 19 (Manning Road) are the only two north-south links with interchanges at Highway 401 and E.C. Row Expressway. This results in traffic from other road networks being attracted to these two corridors. These two links are already operating near capacity, supporting the need for a new interchange with Highway 401 to meet future traffic demand in the study area. Therefore, a new interchange at Highway 401 with the Lauzon Parkway Extension will provide a potential opportunity for an access and gateway to the new Sandwich South developments.

INTERCHANGE ALTERNATIVES

Two alternative designs were developed for the Lauzon Parkway / Highway 401 interchange:

- Option 1:** Build a Parclo A4 on ‘Day 1’
- Option 2:** Build a Teardrop Roundabout on ‘Day 1’ and protect for future conversion to Parclo A4. The conversion to the Parclo A4 interchange would require widening of the bridge deck, construction of two loop ramps, and minor ramp modifications

The Parclo A4 offers high capacity, operational and safety characteristics, as it has mostly free-flow moves. Only the two freeway exit ramps are stop controlled, with one exit ramp and two entrance ramps for each direction, and with six ramps in total, this interchange type has a larger footprint than the other alternative.

The Teardrop Roundabout has a roundabout located at both of the ramp terminal intersections of the interchange on and off ramps. This design only requires four ramps in total, reducing the overall footprint of the interchange. The recommended plan meets the traffic demand of the EA planning horizon (2031). However, the Project Team recognized that the bridge will have a 75 year life span and also that the Full Build Out traffic volumes of the Sandwich South need to be accommodated in the long term plans. Therefore, the Teardrop Roundabout option (Option 2) includes the protection of converting to a Parclo A4 in the long-term future.

The Parclo A4 and Teardrop Roundabout designs are illustrated in Exhibit A.5-14 and Exhibit A.5-15, and the assessment and evaluation of the two options is described in the following section.

ASSESSMENT AND EVALUATION

A comparative assessment and evaluation of the alternatives for the Highway 401 Interchange was carried out based on a comprehensive list of factors considering impacts to the socio-economic, cultural, natural environments, as well as technical considerations, including engineering, constructability, and cost. The impact of each of the alternatives was based on the existing environmental conditions compiled through field visits and secondary source information, and is summarized in Section A.4. Then a comparative evaluation of the alternatives

was undertaken within four major groupings: Socio-Economic, Cultural, and Natural Environment, as well as Technical Considerations.

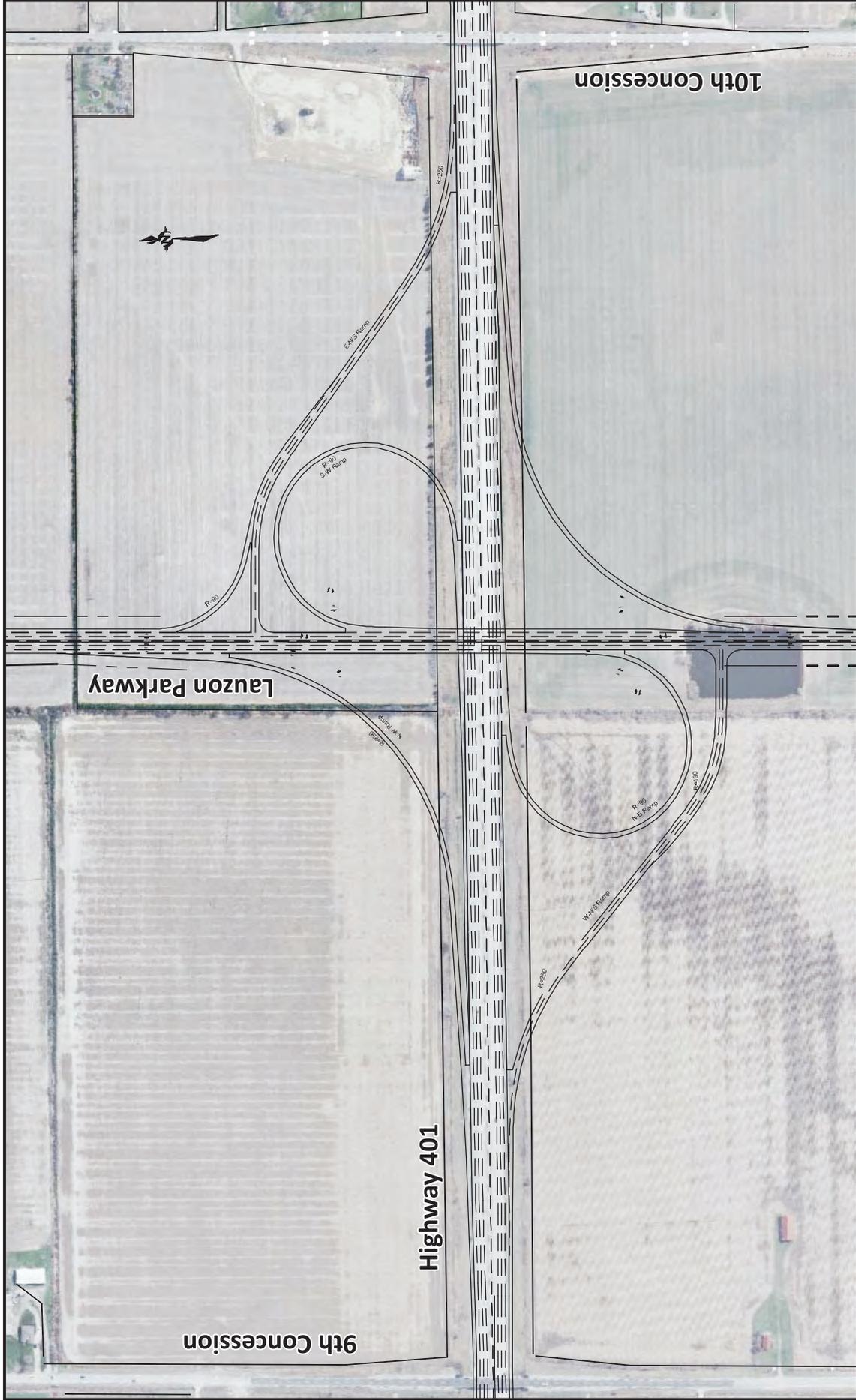
The Roundabout has an initial build of 4 ramps, compared with 6 ramps in the Parclo A4, and eliminates the need to construct and maintain traffic signals. Although the roundabout ramp terminal may be unconventional, it reduces the severity of accidents by increasing driver attentiveness and decreasing T-Bone collisions.

Additionally, the roundabout offers unique and special gateway features for the planned Sandwich South Secondary Plan area, without major differences on impacts to the surrounding properties, cultural or natural environments.

Overall, Option 2 offers flexibility to reduce initial construction costs with staged implementation of interchange capacity (i.e., ramps and structure width) to meet the forecasted traffic demands as growth occurs in the Sandwich South Secondary Plan area for the next 30-40 years and beyond.

It was noted that the conversion from the Teardrop Roundabout to the Parclo A4 would be required when more than 50% of the full Sandwich South “build-out” is developed (beyond 2031). Based on the preliminary cost estimate, the Teardrop Roundabout would have to be in place approximately 20 years to provide a financial benefit.

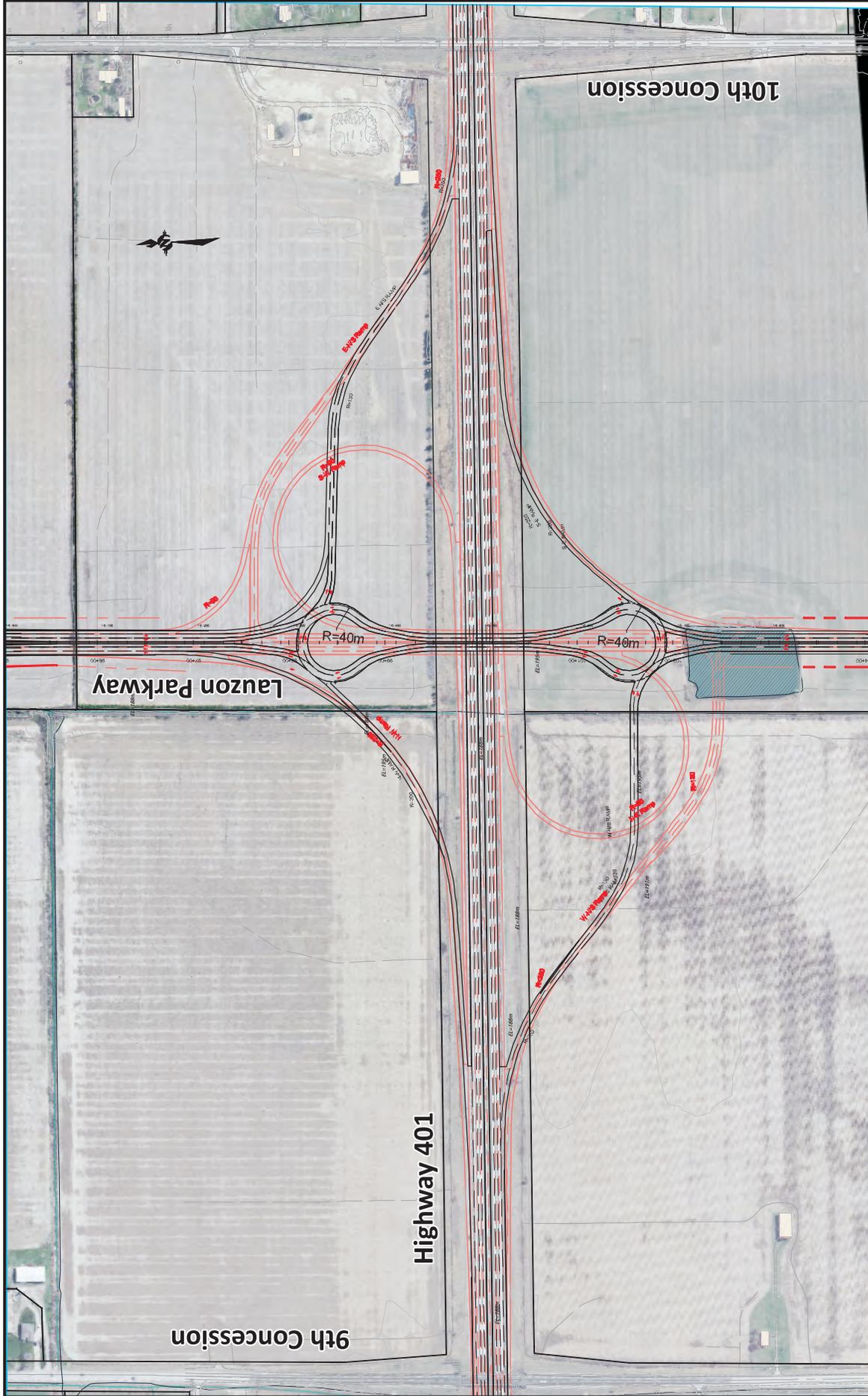
The summary of the assessment and evaluation of the Highway 401 Interchange alternatives is illustrated in Exhibit A.5-16. The detailed assessment of the environmental effects associated with each of the alternatives and the corresponding comparative evaluation was documented and is included in Appendix G.



Lauzon Parkway Improvements
 Class Environmental Assessment Study
 Environmental Study Report

HIGHWAY 401/LAUZON PARKWAY
 INTERCHANGE OPTION 1 : PARCLO A4

Exhibit
A.5-14



Lauzon Parkway Improvements
 Class Environmental Assessment Study
 Environmental Study Report

Exhibit
A.5-15

**HIGHWAY 401/ LAUZON PARKWAY INTERCHANGE OPTION 2 :
 BUILD TEARDROP ROUNDABOUT & PROTECT FOR PARCLO A4**

**EXHIBIT A.5-16: ASSESSMENT AND EVALUATION OF LAUZON PARKWAY HIGHWAY 401
INTERCHANGE ALTERNATIVES**

Factor/Criteria	Option 1 Parclo A4 Alternative	Option 2 Roundabout (& Ultimate Parclo A4)
SOCIO-ECONOMIC ENVIRONMENT <ul style="list-style-type: none"> • Impacts to property and access • Community effects • Agricultural Properties 	●	●
CULTURAL ENVIRONMENT <ul style="list-style-type: none"> • Archaeology and heritage features 	●	●
NATURAL ENVIRONMENT <ul style="list-style-type: none"> • Impacts to stormwater management • Impact on vegetation, wildlife, landscape, and aquatic resources 	●	●
TECHNICAL CONSIDERATIONS <ul style="list-style-type: none"> • Traffic operations (level of service) • Geometric and safety • Flexibility to meet future needs • Integration to adjacent network • Emergency services • Cost 	●	●
OVERALL SUMMARY	●	●
<p>The Roundabout has an initial build of 4 ramps, compared with 6 ramps in the Parclo A4, and eliminates the need to construct and maintain traffic signals. Although the roundabout ramp terminal may be unconventional, it reduces the severity of accidents by increasing driver attentiveness and decreasing T-Bone collisions.</p> <p>Additionally, the roundabout offers unique and special gateway features for the planned Sandwich South Secondary Plan area, without major differences on impacts to the surrounding properties, cultural or natural environments.</p> <p>Overall, Option 2 offers flexibility to reduce initial construction costs with staged implementation of interchange capacity (i.e., ramps and structure width) to meet the forecasted traffic demands as growth occurs in the Sandwich South Secondary Plan area for the next 30-40 years and beyond.</p>		



PREFERRED INTERCHANGE ALTERNATIVE

Overall, Option 2: Teardrop Roundabout and protect for an ultimate Parclo A4 is the preferred alternative as it meets the interim and ultimate traffic demand with good LOS and lower present day construction costs. The interim configuration with roundabout ramp terminal intersections has an initial build of four ramps, compared with six ramps in the Parclo A4, and eliminates the need to construct and maintain traffic signals for potentially upwards of 30-40 years.

Although the roundabout ramp terminal may be an unconventional intersection for a freeway interchange in Ontario, it has become more common in other parts of North America.

The roundabout reduces the severity of accidents by increasing driver attentiveness and decreasing T-Bone collisions. Additionally, it offers unique and special gateway features for the planned Sandwich South Secondary Plan area, without major differences on impacts to the surrounding properties, cultural or natural environments.

The timing of the conversion from the Roundabout to Parclo A4 interchange will be based on the circulating traffic volumes at the roundabouts. The trigger for a 2-lane roundabout to be converted to signalized intersection is a circulating volume of 2000 vph.

A.5.6.5 Highway 3 Intersection

The preferred alignment of Lauzon Parkway south of Highway 401 is to utilize the existing Sexton Sideroad. The existing Sexton Sideroad and Highway 3 intersection is skewed and was identified as needing improvements as part of a previous MTO Highway 3 EA Study. Therefore, with Lauzon Parkway replacing the existing Sexton Sideroad, north of Highway 3, a new improved intersection was proposed for Lauzon Parkway and Highway 3. In examining the feasibility of establishing an improved perpendicular intersection at Highway 3, it was noted that there are a number of private residences and driveways located in close proximity. Therefore, various intersection alternatives were developed and assessed to minimize potential impacts.

INTERSECTION ALTERNATIVES OF PREFERRED ALIGNMENT

Four intersection alternatives were developed for the Lauzon Parkway and Highway 3 intersection. The four alternatives are illustrated in Exhibit A.5-17.

Alternative 1: Existing Sexton Sideroad

Alternative 2: East of Sexton Sideroad

Alternative 3: West of Sexton Sideroad

Alternative 4: Further West of Sexton Sideroad

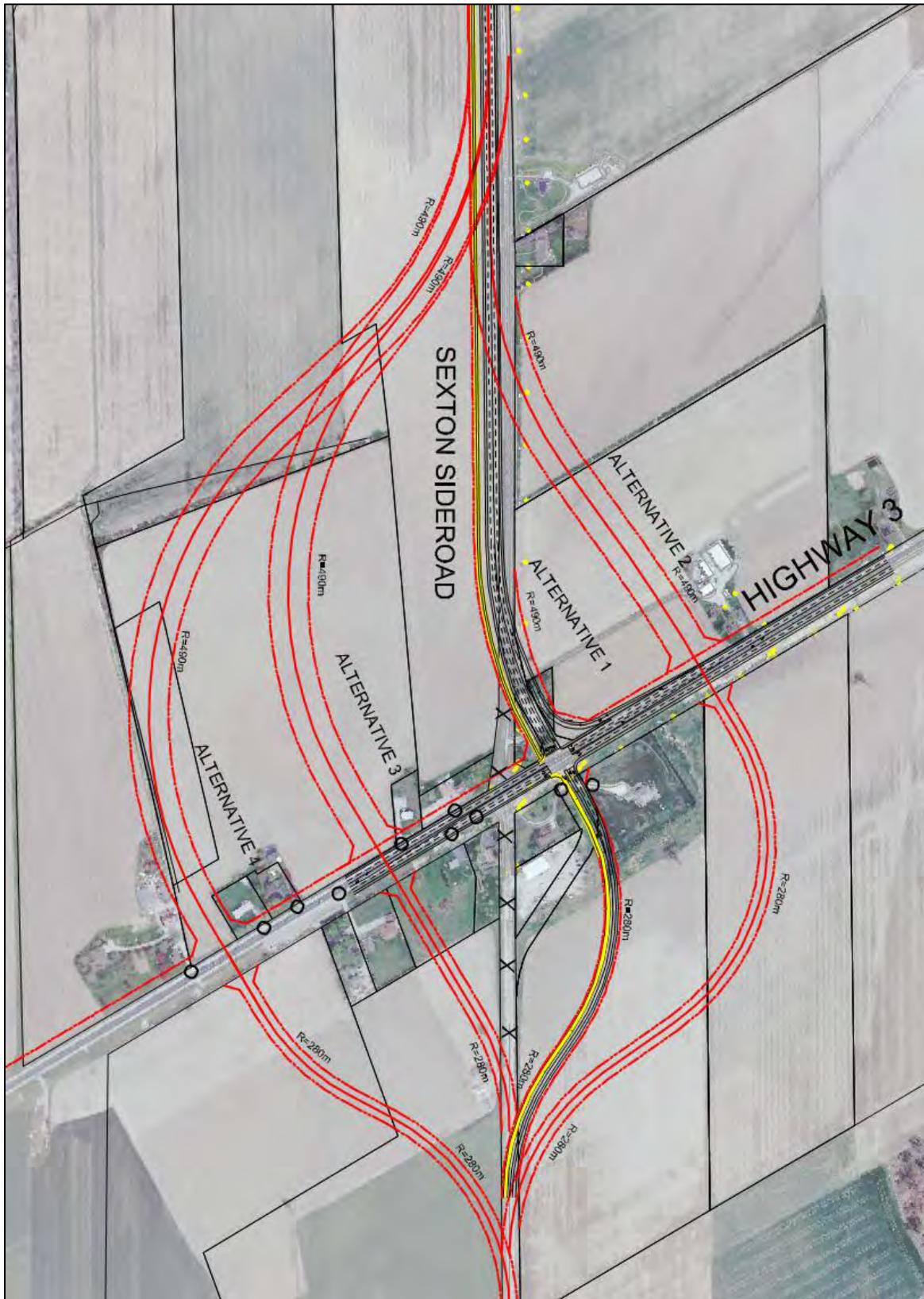
Alternative 1 follows the existing Sexton Sideroad and utilizes MTO property north and south of Highway 3 to create a perpendicular intersection. This alternative has minimal impacts to agricultural properties, but results in displacement of one residence; the property adjacent to the displaced residence was previously purchased by MTO to improve the existing skewed intersection with a perpendicular intersection.

Alternative 2 diverges east of Sexton Sideroad approximately 500 m north of Highway 3. This alternative would include the closure of the existing Sexton Sideroad intersection at Highway 3. Although, this alternative does not displace any residences, it results in significant agricultural impacts, severs multiple properties and impacts agricultural operations.

Alternative 3 diverges west of Sexton Sideroad, approximately 800 m north of Highway 3. This alternative would include the closure of the existing Sexton Sideroad intersection at Highway 3. Although, this alternative does not displace any residences, it results in significant agricultural property impacts. In addition, the location of the new intersection would result in undesirable intersection spacing on Highway 3, with 1.8 km from the adjacent intersection at Oldcastle Road.

Alternative 4 diverges west of Sexton Sideroad (west of Alternative 3), approximately 800 m north of Highway 3. This alternative would include the closure of the existing Sexton Sideroad intersection at Highway 3. It has significant agricultural property impacts (more than Alternative 3), but no displacement of residences. The location of the new intersection would provide poor intersection spacing, 1.5 km from the closest intersection on Highway 3 at Oldcastle Road.

EXHIBIT A.5-17: LAUZON PARKWAY AND HIGHWAY 3 INTERSECTION ALTERNATIVES



HIGHWAY 3 STAKEHOLDER MEETING

In an effort to adequately assess the alternatives, the Project Team held a meeting on June 7, 2012, with the stakeholders (residents and land owners) in the area of the proposed Lauzon Parkway/Highway 3 intersection. The purpose of the meeting was to present and discuss the assessment and evaluation of the Lauzon Parkway Extension alignment alternatives, and the Highway 3 intersection alternatives. Residents and land owners within approximately 1 km of the intersection were invited to attend the meeting via mailed letters, which were sent out on May 25, 2012.

The meeting was attended by 11 members of the public. The Team provided an overview of the intersection options and all attendees discussed the area land uses, property accesses, advantages and disadvantages for each alternative.

In general, most of the attendees noted that Alternative 1: Sexton Sideroad was the preferred option as it results in the least impacts to agricultural property and operations.

ASSESSMENT AND EVALUATION

A comparative assessment and evaluation of alternatives was carried out for the Lauzon Parkway & Highway 3 Intersection Alternatives, based on a comprehensive list of factors considering impacts to the socio-economic, cultural, natural environments, as well as technical considerations, including traffic operations, geometrics, and intersection spacing. The assessment of each of the alternatives was based on the existing environmental conditions compiled through field visits and secondary source information, and is summarized in Section A.4. Then a comparative evaluation of the alternatives was undertaken within four major groupings: Socio-Economic, Cultural, Natural Environment, and Technical Considerations.

The summary of the assessment and evaluation of the intersection alternatives is illustrated in Exhibit A.5-18. The detailed assessment of the environmental effects associated with each of the alternatives and the corresponding comparative evaluation was documented and is included in Appendix G.

PREFERRED INTERSECTION ALTERNATIVE

Alternative 1 is preferred overall as it results in the least direct impacts (4) to agricultural lands. Although, Alternative 1 potentially displaces 1 residence at the intersection of Highway 3 & Sexton Sideroad and newly exposes one residence on Highway 3 to increased traffic volumes, it does not sever any existing agricultural properties, and results in only minor edge impacts to two agricultural properties.

EXHIBIT A.5-18: ASSESSMENT AND EVALUATION OF HIGHWAY 3 INTERSECTION ALTERNATIVES

Factor/Criteria	Alternative 1 Sexton Sideroad	Alternative 2 East of Sexton Sideroad	Alternative 3 West of Sexton Sideroad	Alternative 4 West of Sexton Sideroad
SOCIO-ECONOMIC ENVIRONMENT <ul style="list-style-type: none"> Impacts to property and access Community effects Agricultural Properties 				
CULTURAL ENVIRONMENT <ul style="list-style-type: none"> Archaeology and Heritage Features 				
NATURAL ENVIRONMENT <ul style="list-style-type: none"> Impacts to stormwater management Impact on vegetation, wildlife, landscape, and aquatic resources 				
TECHNICAL CONSIDERATIONS <ul style="list-style-type: none"> Traffic operations (level of service) Geometric and Safety Flexibility to meet future needs Connectivity with local road network Highway 3 intersection spacing 				
OVERALL SUMMARY				
	<p>All alternatives accommodate forecasted traffic volumes, meet geometric design standards, and will require closure of the existing Sexton Sideroad and Highway 3 intersection.</p> <p>Alternative 4 is the least preferred overall as it results in the greatest direct property impacts (7) and the most out-of-way travel. In comparing Alternatives 2 and 3, it is noted they result in similar direct property impacts (5), however Alternative 3 results in additional nuisance effects, newly exposing three residences on Highway 3 to increased traffic volumes.</p> <p>Alternative 1 is preferred overall in that it results in the least direct impacts (4) to agricultural lands. Although, Alternative 1 potentially displaces 1 residence at the intersection of Highway 3 & Sexton Sideroad and newly exposes one residence on Highway 3 to increased traffic volumes, it does not sever any existing agricultural properties, and results in only minor edge impacts to two agricultural properties.</p>			



A.5.6.6 Other Intersections

Along the proposed Lauzon Parkway extension, in addition to the major interchanges/intersections discussed in the previous sections (i.e., E.C Row Expressway Interchange, County Road 42 Intersection, E-W Arterial, Highway 401 Interchange, and Highway 3 Interchange), all intersections/interchanges were reviewed and analyzed for future needs and are listed in Exhibit A.5-19. As noted previously, all intersections where traffic signals were warranted for the existing and future condition were also assessed for a roundabout option.

The intersection of Lauzon Parkway with Service Road B is currently signalized and therefore was also identified for a potential roundabout. The roundabout capacity analysis indicated that a roundabout would not provide an acceptable level of service at this intersection. Therefore, this intersection is recommended to remain signalized, with the addition of left and right-turning lanes on Lauzon Parkway.

The proposed intersection of Lauzon Parkway with Baseline Road warrants signalization for both the 2021 and 2031 conditions and therefore was also identified for a potential roundabout. It was noted that the proposed Baseline Road intersection is similar to the E-W Arterial intersection in terms of configuration and traffic volumes. The level-of-service analysis indicated that a 2-lane roundabout could accommodate traffic volumes with a 4-lane Lauzon Parkway, but with the ultimate 6-lane Lauzon Parkway a 3-lane roundabout cannot accommodate the traffic volumes. In considering the cost-benefit analysis that was prepared for the intersection with E-W Arterial, it is noted that the cost-benefit analysis for Baseline Road would be similar. Therefore, it is recommended that the roundabout at Baseline Road be provided for the interim 4-lane Lauzon Parkway scenario and then to meet ultimate requirements it could be converted to a signalized intersection when Lauzon Parkway is widened from 4 to 6 lanes (when volume in the peak direction on Lauzon Parkway reaches approximately 1600 vph).

The existing alignment of Baseline Road at the Little River curves to the south immediately west of the proposed Lauzon Parkway intersection. In order to avoid having a curve at the future intersection, opportunities to straighten the existing alignment were reviewed, and it is recommended to maintain the existing Baseline Road crossing of the Little River, continue Baseline Road on a straight alignment through Lauzon Parkway, and then curve south to tie back to the existing Baseline Road alignment to the east side of the proposed intersection.

The proposed intersection of Lauzon Parkway with County Road 46 warranted signalization and therefore was also identified for a potential roundabout. The travel demand modelling analysis assumed 2 lanes on County Road 46 and 4 lanes on Lauzon Parkway for the 2031 scenario. However, recently the County of Essex has indicated they have plans to widen County Road 46 to 4 lanes.

The roundabout capacity analysis was conducted assuming 2-lane approaches (i.e. a 4-lane cross-section) on Lauzon Parkway and County Road 46. The capacity analysis indicated that a roundabout would not provide an acceptable level of service at this intersection. For the afternoon peak hour, the roundabout capacity analysis indicated a poor level of service on Lauzon Parkway and County Road 46 approaches. The poor level of service was not due to un-balanced traffic volumes, and therefore the 4-laning of County Road 46 would not resolve the capacity issue of roundabout. Therefore, signalization is recommended at this intersection. The

signalized intersection would be able to provide an acceptable level of service for the projected traffic volume.

A.5.6.7 Summary of Intersections Along Lauzon Parkway

Exhibit A.5-19 identifies each of the intersections along Lauzon Parkway including: their existing condition; which one was identified as potential roundabout; and if the operational analysis showed an acceptable level-of-service for a roundabout.

EXHIBIT A.5-19: SUMMARY OF LAUZON PARKWAY INTERSECTION ROUNDABOUT ANALYSIS

Intersecting Road	Existing Intersection	Future Intersection Required	Potential for Roundabout	Acceptable LOS for Roundabout
Interchanges				
E.C. Row Expressway Westbound On Ramp	Unsignalized	Signalized	x	
E.C. Row Expressway Eastbound On Ramp	Unsignalized	Signalized	x	
Highway 401 Westbound On Ramp	N/A	Signalized	✓	x ¹
Highway 401 Eastbound On Ramp	N/A	Signalized	✓	x ¹
Intersections				
Forest Glade Drive	Signalized	Signalized	x	
Twin Oaks Drive/ South Service Road E	Signalized	Signalized	x	
Service Road B/ Airport Access	Stop Controlled at Service Road B	Signalized	✓	x
County Road 42	Signalized	Signalized	✓	x
Baseline Road	N/A	Signalized	✓	x ²
E-W Arterial	N/A	Signalized	✓	x ²
County Road 46	N/A	Signalized	✓	x
Highway 3	N/A	Signalized	✓	x

1. The LOS for a roundabout is acceptable up to 2031, but degrades to an unacceptable level for ultimate built-out (beyond 2031)
2. The LOS for a roundabout is acceptable up to 2021, does not meet 2031 demands (approximately 1600 vph in peak direction)

A.5.7 ACTIVE TRANSPORTATION

To develop the active transportation needs within the study area, the active transportation master plan studies for the City of Windsor (BUMP) and County of Essex (CWATS) were considered together on the project study area, and potential connections to the networks identified in BUMP and CWATS were developed and evaluated in conjunction with the Sandwich South Secondary Plan.

To integrate active transportation with the enhanced Little River corridor, it is recommended that a multi-use trail (MUT) be provided on the west side of Lauzon Parkway from E.C. Row Expressway to Highway 3, and would cross over Highway 401 to Highway 3. A sidewalk was also provided on the east side of the roadway from E.C. Row Expressway to Highway 401. For the short section between County Road 42 and the Little River, the MUT was provided on both sides of the roadway in order to give future access to the proposed MUT along the Little River corridor.

To provide a continuous multi-use trail along the west side of Lauzon Parkway, the need for a pedestrian crossing over Highway 401 was identified and several alternatives were developed. These included: 1) MUT on the proposed vehicle bridge; 2) separate active transportation bridge. It was noted that an active transportation tunnel was not permitted under the interchange ramps, and was not considered as an alternative.

In considering the feasibility of providing a MUT on the proposed vehicle bridge, there are safety concerns with having cyclists and pedestrians required to cross multiple interchange on and off ramps, especially considering Lauzon Parkway is designated a Class 1 Arterial with a posted speed of 70 km/h. A separate active transportation bridge was therefore the preferred option to accommodate pedestrians crossing Highway 401.

A.5.7.1 Active Transportation Bridge Alternatives

Four alternative locations for the Active Transportation bridge were developed and evaluated (Exhibit A.5-20):

Option 1: Adjacent to the Lauzon Parkway bridge

Option 2: Separate Crossing (225 m west of Lauzon Parkway alignment)

Option 3: Mid-block Separate Crossing (350 m west of Lauzon Parkway alignment)

Option 4: Shared Crossing with existing 9th Concession Road
(750 m from Lauzon Parkway alignment)

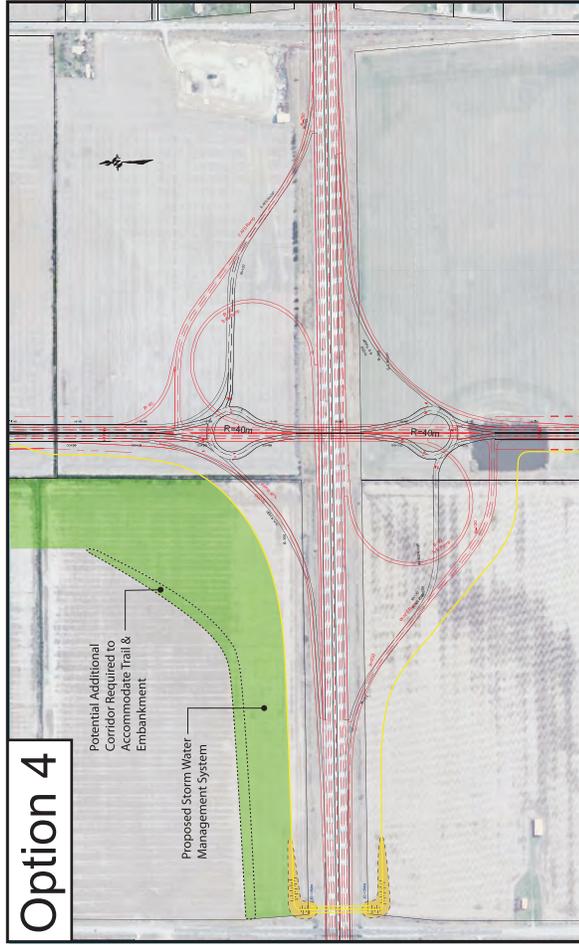
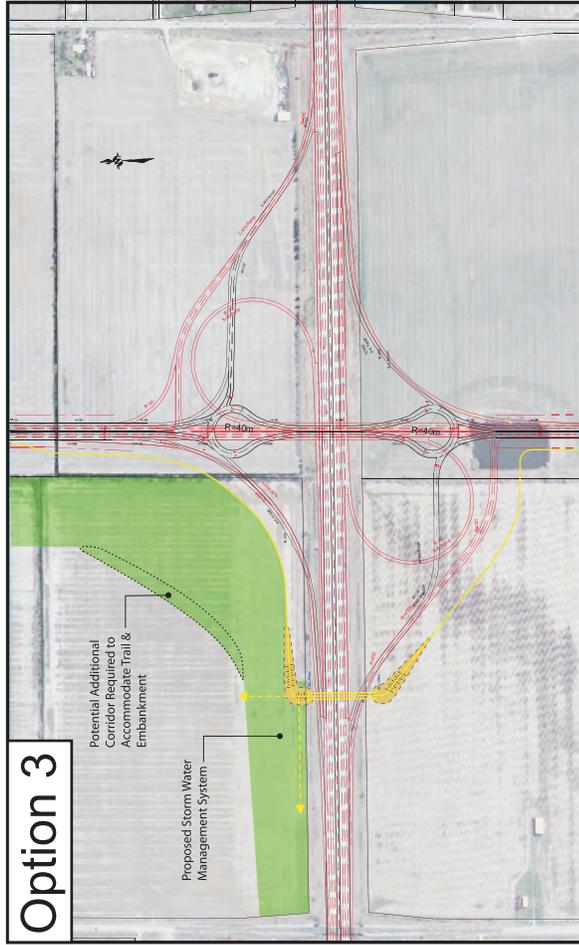
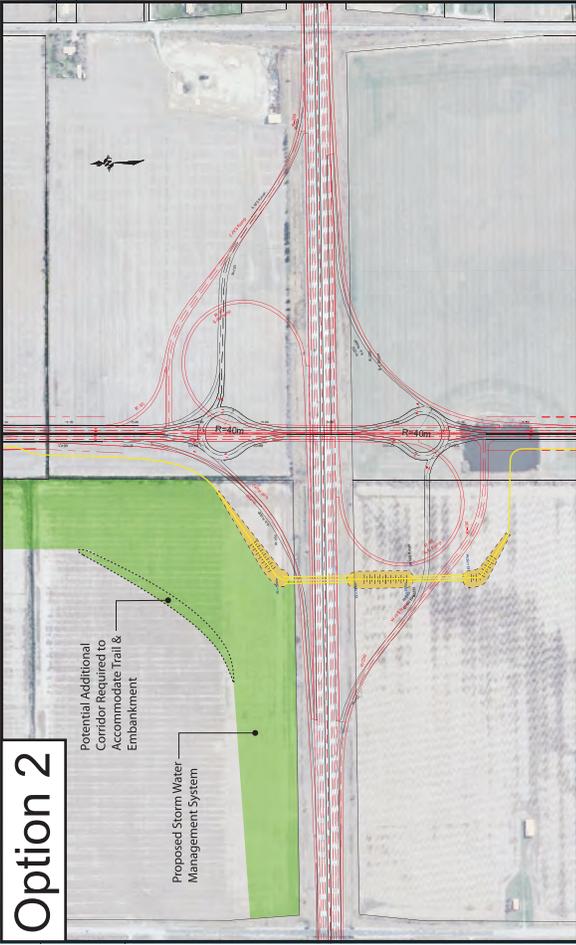
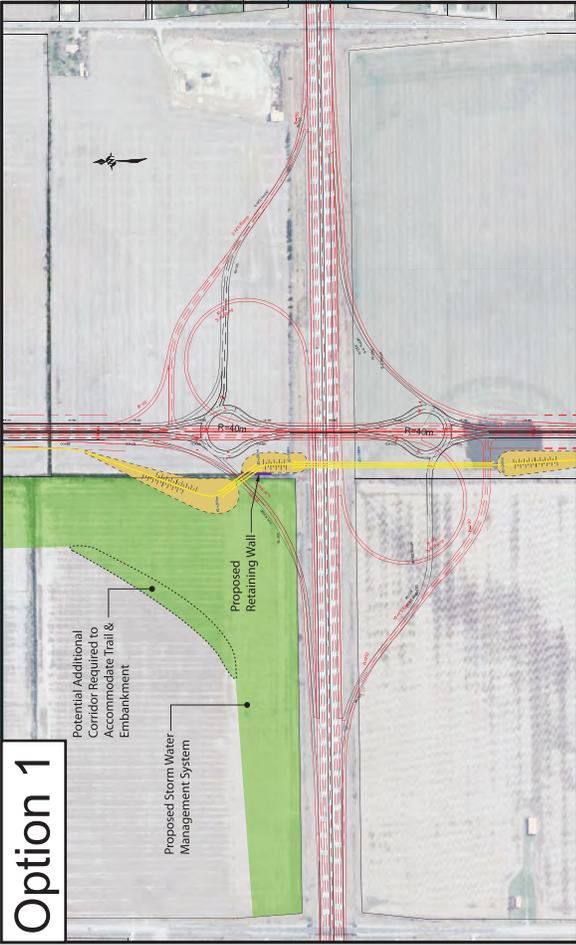
Option 1 is a separate active transportation bridge that is attached to the Lauzon Parkway bridge over Highway 401. In order to avoid conflicts at the on and off-ramps, the Active Transportation bridge would have to be grade-separated over the N/S-W on-ramp and the E-N/S off-ramp (in the northwest and southwest quadrant of the interchange respectively), but due to the proximity of the ramps, two bridges with three embankments would have to be provided. The total length of the bridges would be approximately 320 m, with three embankments and a retaining wall. Due

to the bridge length and embankments, this option would have a high construction cost. However, this option has the most direct route for pedestrians and cyclists.

Option 2 is a separate active transportation bridge that crosses Highway 401 just west of the S-E loop ramp. This location was developed because it reduces the span length of the bridge while minimizing out-of-way travel. This option would require an embankment between Highway 401 and the W-N/S off-ramp in order to minimize the span lengths of the bridge. The total length of the bridges would be approximately 220 m, and would require three embankments. Due to the bridge length and embankments, this option would have a high construction cost. This option results in 450 m of out-of-way travel.

Option 3 is a separate active transportation bridge that crosses Highway 401 west of the interchange area in order to minimize the bridge length. A constraint for the location of the bridge is the MTO Highway 401 off-ramp overhead sign that will be located at the bullnose of the E-N/S off-ramp. The bridge could not be located west of the MTO sign because it would obstruct the sign to eastbound vehicles. Therefore, the bridge was located just east of the future MTO sign. At this location, the total bridge length would be approximately 130 m, and require two embankments for the north and south approaches and bridge abutments. Due to the shorter bridge length and embankments, this option would have a medium construction cost. This option results in 700 m of out-of-way travel. Due to its central location between Lauzon Parkway and 9th Concession Road, this option has the potential to offer good connectivity with other future cycling routes as the surrounding areas are developed.

Option 4 is a separated active transportation crossing attached to the 9th Concession Road bridge over Highway 401. This option would have the shortest bridge length of approximately 100 m and would have the lowest construction costs. However, this option has the greatest out-of-way travel of 1500 m.



A.5.7.2 Assessment and Evaluation

A comparative assessment and evaluation of alternatives was carried out for the Highway 401 Active Transportation Bridge, based on a comprehensive list of factors considering impacts to the socio-economic, cultural, natural environments, as well as technical considerations, including traffic operations, and geometrics. A comparative evaluation of the alternatives was undertaken within four major groupings: Socio-Economic, Cultural, Natural Environment, and Technical Considerations.

The summary of the assessment and evaluation of the active transportation bridge alternatives is illustrated in Exhibit A.5-21. The detailed assessment of the environmental effects associated with each of the alternatives and the corresponding comparative evaluation was documented and is included in Appendix G.

EXHIBIT A.5-21: ASSESSMENT AND EVALUATION OF ACTIVE TRANSPORTATION BRIDGE ALTERNATIVES

Factor/Criteria	Option 1 Adjacent to Lauzon Parkway Bridge	Option 2 Separate Crossing	Option 3 Mid-block Separate Crossing	Option 4 Shared Crossing with 9 th Concession Road
SOCIO-ECONOMIC ENVIRONMENT <ul style="list-style-type: none"> Impacts to property and access Community effects Agricultural Properties 	●	●	●	●
CULTURAL ENVIRONMENT <ul style="list-style-type: none"> Archaeology and Heritage Features 	●	●	●	●
NATURAL ENVIRONMENT <ul style="list-style-type: none"> Impacts to stormwater management Impact on vegetation, wildlife, landscape, and aquatic resources 	●	●	●	●
TECHNICAL CONSIDERATIONS <ul style="list-style-type: none"> Geometrics and Safety Geometric and Safety Out-of-Way Travel Connectivity with active transportation network Cost 	●	●	●	●
OVERALL SUMMARY	●	●	●	●
	<p>All alternatives provide a continuous connection of the Lauzon Parkway Multi-use Trail north and south of Highway.</p> <p>Overall, Options 1 and 4 are the least preferred. Option 1 results in significantly higher construction costs requiring 2 new structures and 1 retaining wall. Option 4 results in significantly longer out-of-way travel, potentially reducing the attractiveness for recreational users. Option 4 also has to most property impacts.</p> <p>In comparing Options 2 and 3, it is noted that both alternatives have similar out-of-way travel, however Option 3 requires only 1 bridge resulting in lower construction costs. Option 3 also has the potential to offer good connectivity with other future cycling routes as the surrounding areas are developed.</p> <p>Therefore, Option 3 is preferred.</p>			



A.5.7.3 Preferred Alternative

Option 3 is preferred as it provides continuous connection of the MUT north and south of Highway 401, provides additional potential connections to planned development north and south of Highway 401, avoids excessive out-of-way travel for pedestrians and cyclists, and has a relative low cost in comparison to the other alternatives evaluated due to its shorter bridge span length.

A detailed description of the recommended bridge structure and construction cost estimate is provided in Section A.6.2.

A.5.8 REVIEW DURING SECOND ROUND OF CONSULTATION

The second Public Information Centre (PIC 2) was held on October 22, 2012. The third Public Workshop for the Sandwich South Secondary Plan was held concurrently with PIC 2. The Upper Little River Watershed Master Drainage Plan & Stormwater Management Plan PIC 2, was also held concurrently at the same time and venue.

The purpose of PIC 2 was to provide stakeholders with an opportunity to review the assessment and evaluation of alternatives, present the Technically Preferred Alternative and the associated potential impacts and mitigating measures, including property impact, key intersection analyses, overall stormwater management plan, noise analysis, active transportation plan, and next steps.

The notice for PIC 2 and Workshop 3 was placed in The Windsor Star (October 10 and 13), Lakeshore News (October 11), Shoreline Weekly (October 12), and Le Rempart (October 17). Notices were distributed by direct mail to government agencies, local emergency services, utility companies and interest groups. Stakeholders whose property was being directly impacted by the Technically Preferred Alternative, were also sent notices by direct mail.

The PIC was a “drop-in centre” format. Approximately 160 members of the public attended. They were informed of the availability of comment sheets, which they were encouraged to complete. They were then directed to follow the displays around the room. Duplicate design plans were provided on tables for the public and staff to mark-up with comments during the PIC. Staff members were available to answer questions and provide information on the study. In addition, the Workshop 3 was held concurrently, which allowed attendees the opportunity to attend both the PIC and Workshop sessions.

Attendees were encouraged to provide their comments on the comment sheets at the PIC. If individuals wished to take comment sheets home, they were requested to provide their responses via mail, email or fax by November 16, 2012.

The following is a summary of the key written and verbal comments that were received at or after PIC 2:

- Timing of transportation improvements/construction
- Timing of Sandwich South development
- Inquired about construction costs
- Inquired about the completion date of the study

- The alignment of Lauzon Parkway should be adjacent to the existing Little River corridor
- Concerns regarding noise impacts to properties in proximity to roadway
- Concerns regarding property impacts

There were 19 comment sheets submitted at PIC 2, and 7 received following the PIC. The Project Team reviewed all public input received and responded to each comment accordingly.

Copies of the display boards at the PIC and Workshop, as well as all comments sheets and responses, are included in the *Summary Report on Public Information Centre 2* in Appendix A.

A.5.8.1 Consultation with Individual Stakeholders

Further consultation with individual stakeholders was conducted as required, or requested. The following is a list of the key stakeholders for which additional consultation was held.

- 882885 Ontario Limited (Lauzon Parkway, Section A.5.8.1)
- 386823 Ontario Limited (County Road 42, Section B.5.6.1)
- Tecumseh Town Council (County Road 42, Section B.5.6.1)
- Windsor International Airport (County Road 42, Section B.5.2)
- The Windsor Christian Fellowship & Rosati Group (E-W Arterial, Section C.5.7.1)

Given that each stakeholders' concerns are related to specific elements of the Study (i.e., Lauzon Parkway, County Road 42, or E-W Arterial), details regarding the specific concerns and responses are provided in the appropriate sections of this report (Part A: Lauzon Parkway, Part B: County Road 42, or Part C: E-W Arterial).

882885 ONTARIO LIMITED

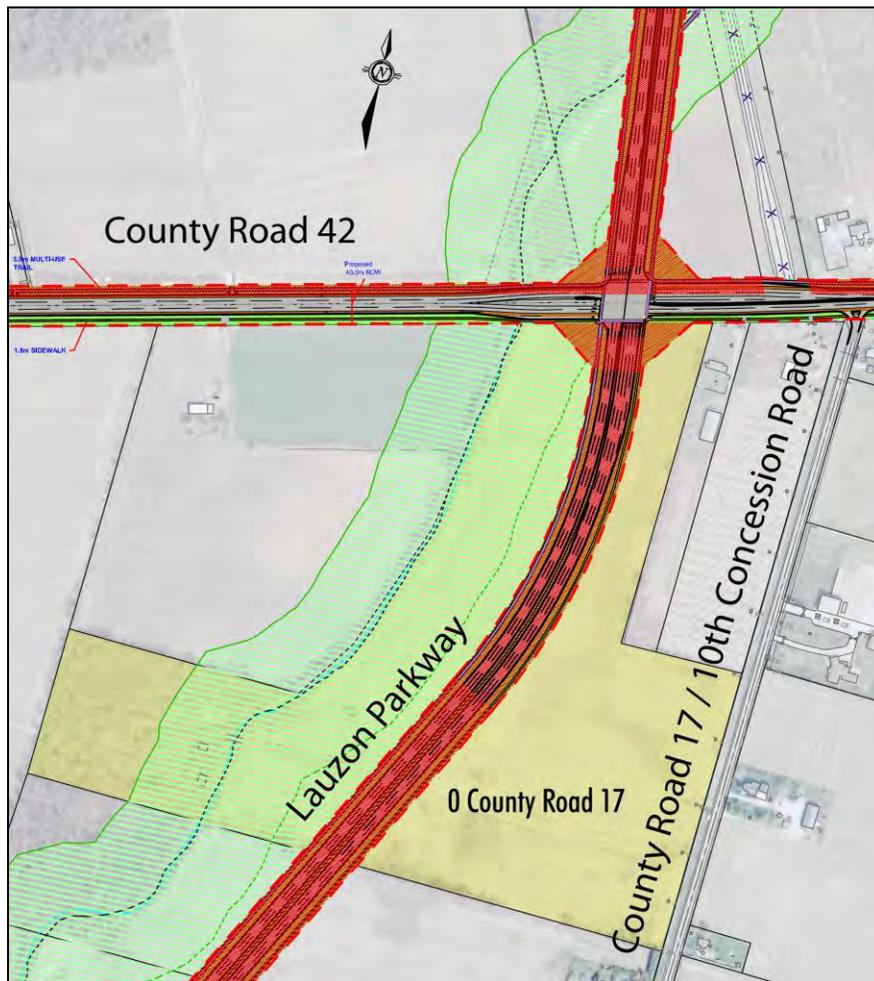
882885 Ontario Limited owns the property located immediately south and east of County Road 42 and the Little River corridor. The property, currently used for agricultural purposes, is illustrated in Exhibit A.5-22.

The extension of Lauzon Parkway south of County Road 42, in addition to the extension of the Little River Corridor, a part of the Upper Little River Stormwater Management Study, will impact this property.

A meeting was held with 882885 Ontario Limited on November 27, 2012 to discuss their concerns with the potential impacts of the Lauzon Parkway Extension on the stakeholder's property (located at south of the existing Lauzon Parkway and County Road 42 intersection).

The property owner noted that the proposed Lauzon Parkway, together with the Little River Corridor proposed in the City's Upper Little River Stormwater Management Study, would reduce their County Road 42 frontage. Although it still maintains access to County Road 17, in the owner's opinion, this would significantly reduce the value of their property.

EXHIBIT A.5-22: PROPERTY OF 882885 ONTARIO LTD. (0 COUNTY ROAD 17, ROLL NO. 9003001800)



Justification for the preferred Lauzon Parkway alignment was provided to the owner. Concerns regarding the Sandwich South Secondary Plan and Upper Little River Stormwater Management Study have been referred to those studies respectively.

The property owner submitted letters, on January 7, 2013, to each of the respective projects affecting their property: Lauzon Parkway Environmental Assessment Study, Sandwich South Secondary Plan Study, and Upper Little River Watershed Master Drainage Plan & Stormwater Management Plan Study. The key comments in the letter were that the property owner was requesting an alternate alignment of the Lauzon Parkway Extension, and that the City of Windsor should proceed with property negotiation immediately.

The Project Team responded to the property owner's letter on March 9, 2013, addressing those comments as related to the Lauzon Parkway EA Study. In response to the property owner's request, the Project Team considered an alternative alignment, however, in addition to property impact, the alternative alignment would result in a skew and unsafe intersection at County Road 42, and a separate corridor from the Little River Corridor. The Project Team noted that the originally proposed alignment is still preferred. Regarding the request for advanced property

acquisition, the Project Team advised that the EA deals only with identifying the potential property requirements for the proposed undertaking.

An illustration of the Lauzon Parkway plan at these properties is in Plates 6 and 7 of Section A.6.9.

A.5.8.2 Revisions to Technically Preferred Plan

Following PIC 2, and consultations with individual stakeholders, the Project Team reviewed the proposed alignment of Lauzon Parkway. Two alignment revisions were made based on the comments received at and following PIC 2. The revisions to the Technically Preferred Plan are described and illustrated in the following sections.

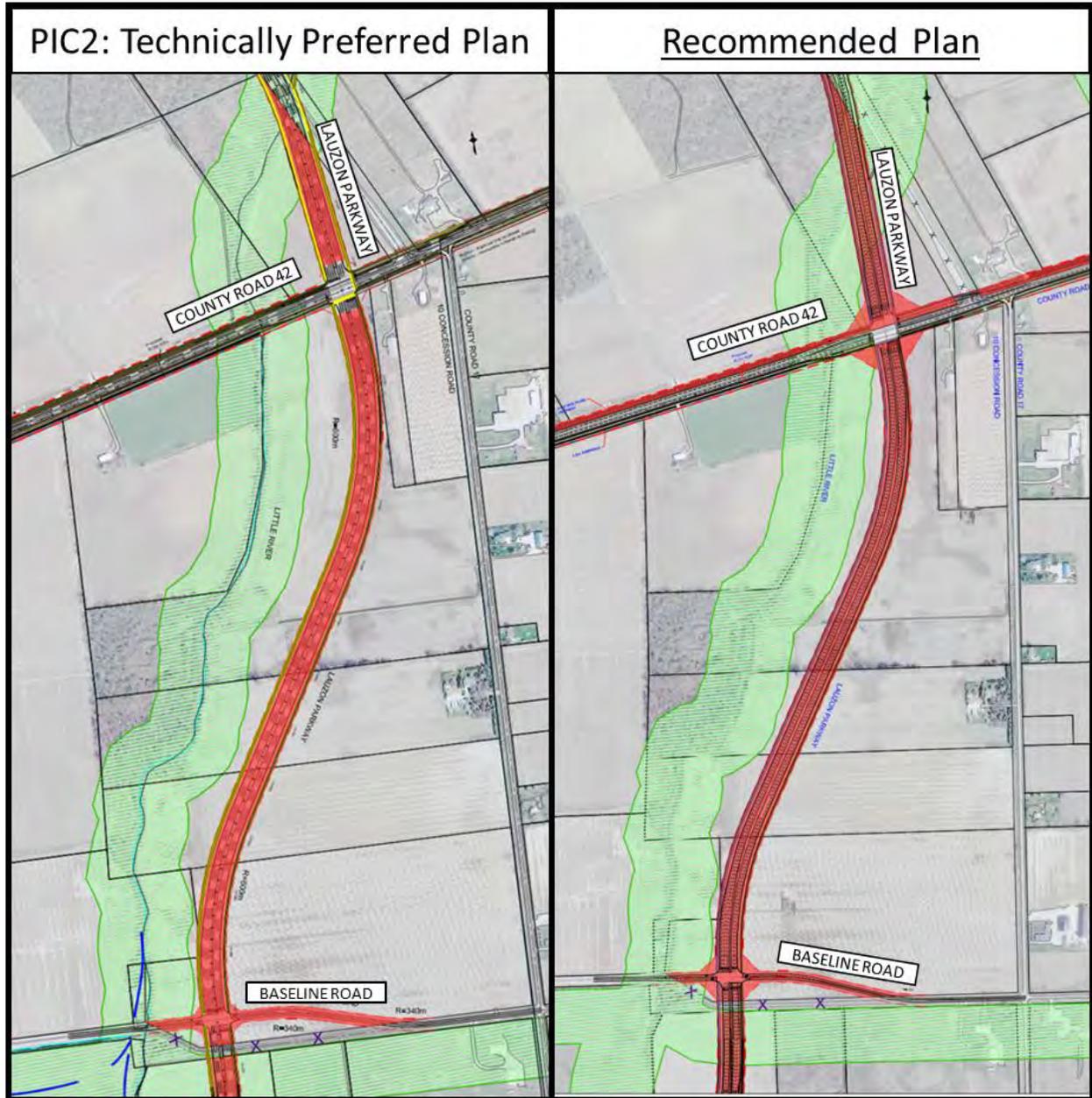
A description of the Recommended Plan is presented in Chapter A.6.

LAUZON PARKWAY ALIGNMENT FROM COUNTY ROAD 42 TO BASELINE ROAD

The alignment of Lauzon Parkway was further refined in coordination with the Upper Little River (ULR) Watershed Master Drainage Plan and Stormwater Management (SWM) Plan. From County Road 42 to Baseline Road, the Lauzon Parkway alignment was shifted west so that Lauzon Parkway followed as close as possible to the Little River SWM Corridor. This segment of the Little River corridor is being maintained on its natural channel alignment and has no flexibility to be re-aligned. Therefore, Lauzon Parkway was shifted as close as possible to avoid/minimize remnant land between the Little River corridor and the Lauzon Parkway Corridor, which would have no access ('land-locked'), but did not eliminate all remnant parcels in order to meet geometric standards. The intersection with County Road 42 was shifted slightly to the west, closer to the Little River. The lands between the Little River Corridor and Lauzon Parkway will be designated as part of the Natural Heritage System in the Sandwich South Secondary Plan. A partial illustration of the Technically Preferred Plan and the refined plan (Recommended Plan), of Lauzon Parkway between County Road 42 and Baseline Road, is shown in Exhibit A.5-23.

A description of the Recommended Plan is presented in Chapter A.6.

EXHIBIT A.5-23: PIC 2 TECHNICALLY PREFERRED PLAN AND RECOMMENDED PLAN OF LAUZON PARKWAY FROM COUNTY ROAD 42 TO BASELINE ROAD



LAUZON PARKWAY ALIGNMENT AT COUNTY ROAD 46

The Technically Preferred Plan of Lauzon Parkway at County Road 46 presented at PIC 2, was designed to connect with the existing Sexton Sideroad and to avoid direct impact to the residences at the existing County Road 46 and Sexton Sideroad intersection. The PIC 2 Plan bisected 6594 County Road 46, the property on the north side of the existing County Road 46 and Sexton Sideroad intersection.

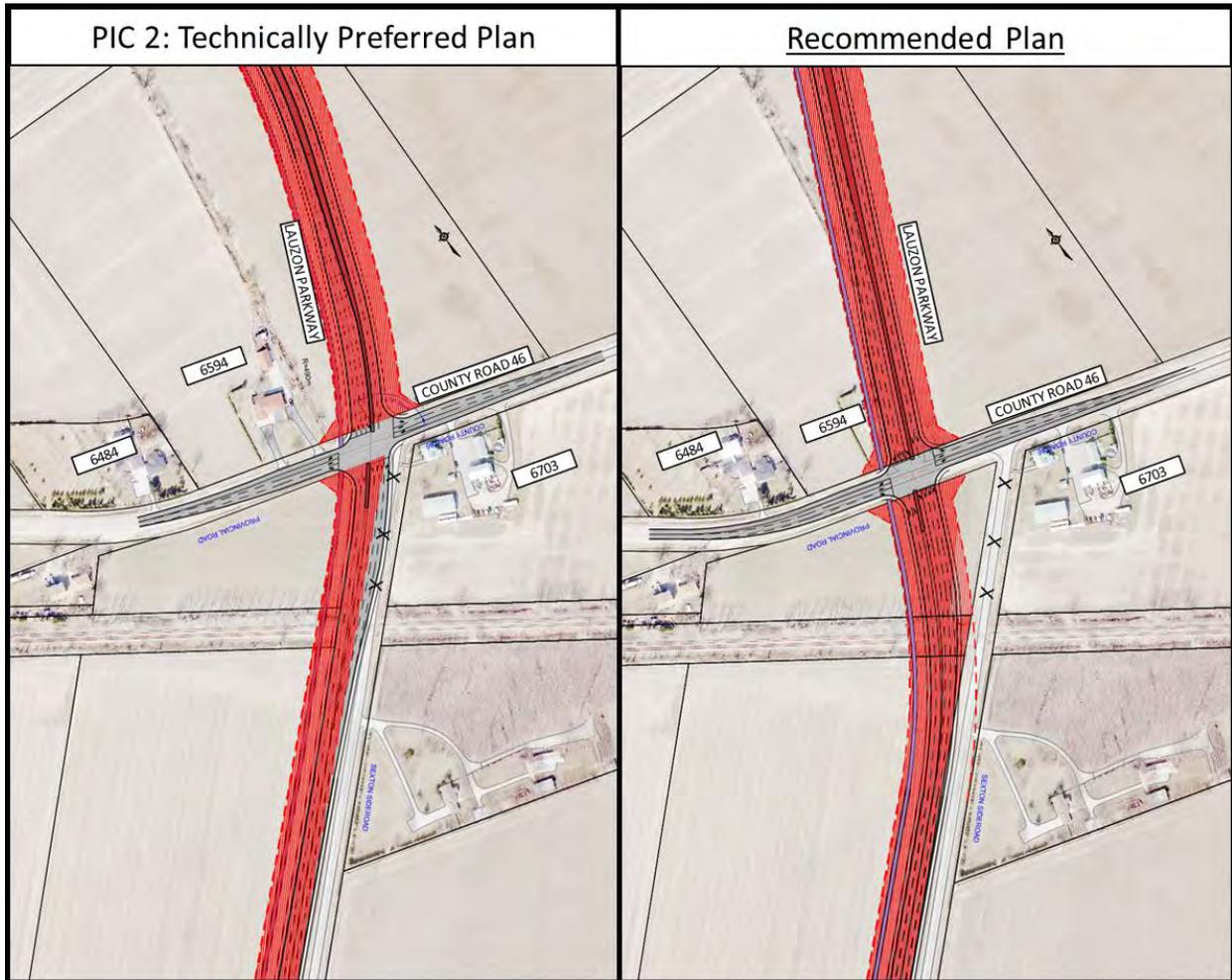
The residents of 6594 County Road 46 submitted a comment sheet at PIC 2 noting that the proposed intersection is too close to their property's accesses; furthermore, by bisecting their property it will be harder to subdivide the remaining properties to build future residences on the land. The residents requested the Project Team consider a full buy-out of the whole lot.

The residents at 6484 County Road 46 also submitted a comment sheet at PIC 2 noting their concern for the proximity of Lauzon Parkway to their business and residence.

The Project Team reviewed the alignment and noted that all possible alignments of Lauzon Parkway would impact the entire 6594 County Road 46 property, as well as the property accesses. It therefore led to an opportunity to re-align Lauzon Parkway in order to achieve the best possible geometrics for the Lauzon Parkway and County Road 46 intersection (including a more perpendicular intersection), and improve the intersection operations. The new alignment also centres the roadway between the two adjacent properties, 6484 and 6703 County Road 46. Although the alignment has been moved closer to 6484 County Road 46, it improves the overall separation between the adjacent properties. A partial illustration of the Technically Preferred Plan and the refined plan (Recommended Plan), of Lauzon Parkway at County Road 46, are in Exhibit A.5-24.

A description of the Recommended Plan is presented in Chapter A.6

EXHIBIT A.5-24: PIC 2 TECHNICALLY PREFERRED PLAN AND RECOMMENDED PLAN OF LAUZON PARKWAY AT COUNTY ROAD 46



REVISIONS TO THE PREFERRED CROSS-SECTIONS

Based on comments received at PIC 2, and a further review of the preferred cross-sections presented at PIC 2, the following changes were made to the cross-sections:

- a 0.3 m reserve was added inside ROW in the City of Windsor, to protect from future accesses and maintain Lauzon Parkway's designation as a Controlled Access Highway. This is further discussed in Section A.6.10.2;
- the illumination poles were set in the same location for the Interim and Ultimate conditions, to ensure they do not have to be relocated during the road widening;
- the preferred cross-section for Lauzon Parkway south of Highway 401 includes the 1 m flush median; however, should the area adjacent to Lauzon Parkway between Highway 401 and County Road 46 be developed in the future into an urban centre, there is sufficient right-of-way to change the cross-section to include a wider median, landscaping, and other aesthetic amenities.

A description of the recommended alternative plan is presented in Chapter A.6.

A.6 DESCRIPTION OF RECOMMENDED PLAN

Having identified the preferred alternatives, and revising the Technically Preferred Plan based on public input in Chapter A.5, Phase 3 of the Municipal Class EA process further involves the preliminary finalization of the Technically Preferred Plan into the Recommended Plan, which is described in this section.

The Recommended Plan for Lauzon Parkway between E.C. Row Expressway and Highway 401 includes the following:

- E.C. Row Expressway Interchange improvements;
- improvements to the existing Lauzon Parkway to an interim 4 lane, and ultimate 6 lane urban cross-section from E.C. Row Expressway to County Road 42 including a 6 m landscaped/hard-surface median;
- re-alignment of the existing Lauzon Parkway at County Road 42;
- extension of Lauzon Parkway from County Road 42 to Highway 401 with an interim 4 lane, and ultimate 6 lane urban cross-section including a 6 m landscaped/hard-surface median;
- a new interchange at Highway 401;
- enhancement of existing and plan of proposed intersections;
- active transportation facilities incorporated within the transportation corridor – sidewalk and multi-use path; and
- a new active transportation crossing of Highway 401.

The Recommended Plan for Lauzon Parkway between Highway 401 and Highway 3 includes the following:

- extension of Lauzon Parkway from Highway 401 to Highway 3 with a 4-lane rural cross-section;
- a 4-lane rural cross-section with a 1.0 m flush median;
- an improved intersection at Highway 3;
- a re-aligned Sexton Sideroad south of Highway 3; and
- active transportation facility, a multi-use trail, on the west side of the road.

The major features of the Recommended Plan for Lauzon Parkway are described in Section A.6.1, and illustrated in the plan/profile plates in Section A.6.9. A description of the active transportation improvements are described in Section A.6.2. During the next phase of design, there will be further consultation with review agencies, utilities, stakeholder groups, and affected property owners.

This information should be reviewed in conjunction with Chapter A.5 of the ESR which describes the alternative concept plans. While refinements may occur in the future, during the next phase of design, any changes should not alter the intent of the recommended undertaking or its components.

A.6.1 ROAD GEOMETRY

The widening of Lauzon Parkway, from E.C. Row Expressway to County Road 42, and the extension of Lauzon Parkway from County Road 42 to Highway 401 will occur in two phases: widening from 2 to 4 lanes and the 4-lane extension by 2021, and a further widening of Lauzon Parkway from E.C. Row Expressway to Highway 401 from 4 to 6 lanes by 2031 (when the peak hour traffic volumes reach approximately 1600 vph in the peak direction). The plan and profile of the Recommended Plan, as well as the adjacent road improvements are shown in Section A.6.9. Details of the Lauzon Parkway roadway and interchange geometrics are presented in Exhibit A.6-1 to Exhibit A.6-5.

The existing Lauzon Parkway within the study area extends from E.C. Row Expressway to County Road 42, transitioning from a 4-lane urban cross-section with auxiliary lanes through the Interchange, to a 2-lane Class I rural roadway. The posted speed of Lauzon Parkway is 70 km/h from E.C. Row Expressway to the CP Rail grade separation and 80 km/h from the CP Rail grade separation to County Road 42. Once the improvements have been implemented, the posted speed will be 70 km/h from E.C. Row Expressway to Highway 3.

The recommended alignment for Lauzon Parkway will follow the existing alignment from E.C. Row Expressway south, to the Little River. Just north of the Little River the alignment will curve west to create a perpendicular intersection at County Road 42. South of County Road 42, the roadway will have gradual curves, following the alignment of the Little River to Highway 401. South of Highway 401, the roadway will be re-aligned along the mid-lot property line, and curves west, north of the intersection with County Road 46. South of County Road 46, the road will be re-aligned along the existing Sexton Sideroad to Highway 3. Immediately north of Highway 3, Lauzon Parkway will curve west, in order to provide a perpendicular alignment at the intersection.

There are no existing driveway accesses along Lauzon Parkway between E.C. Row Expressway and County Road 42. There are existing residential and farm accesses located on the existing Sexton Sideroad, which will be maintained as part of the proposed southern section of Lauzon Parkway). Future access to Lauzon Parkway is discussed in Section A.6.10.2.

A.6.1.1 Design Criteria

Lauzon Parkway is planned as a controlled access Class I Arterial roadway. The geometric details for the interim and ultimate roadway are listed in Exhibit A.6-1. The roadway and intersections were planned to accommodate a WB-20 design vehicle (i.e., standard tractor-trailer), while the roundabout and Parclo A4 interchange designs were planned to accommodate a Long Combination Vehicle (LCV) design vehicle.

EXHIBIT A.6-1: DESIGN CRITERIA LAUZON PARKWAY – E.C. ROW EXPRESSWAY TO COUNTY ROAD 42

	Present Conditions	Design Standards	Proposed Conditions
Design Speed	90 and 100 km/h ¹	90 km/h	90 km/h
Posted Speed	70 and 80 km/h ¹	70 km/h	70 km/h
No. of Lanes and Width	2 lanes - 3.65 m	Interim 4 lanes - 3.65 m ² Ultimate 6 lanes - 3.65 m ²	Interim 4 lanes - 3.65 m ² Ultimate 6 lanes - 3.65 m ²
Total Lane Width	7.3 m	Interim 14.6 m Ultimate 21.9 m	Interim 14.6 m Ultimate 21.9 m
Median Width	No median	6.0 m	6.0 m
Provisions for Pedestrians and Cyclists	No sidewalks / multi-use trail	1.8 m sidewalk (east side) and 3.0 m multi-use trail (west side) ³	1.8 m sidewalk (east side) and 3.0 m multi-use trail (west side) ³
Minimum Grade (%)	N/A	0.4 %	0.4 %
Maximum Grade (%)	3.0%	6 – 8 %	3.0 %
Minimum Curve Radius	N/A	340 m	600 m
Minimum Stopping Sight Distance	N/A	160 m	153 m ⁴
Equivalent Minimum 'K' Factor	N/A	Crest 50 Sag 40	Crest 46 ⁴ Sag 35 ⁴
Basic Right-of-Way	45 m	50 m	50 m

1. 70 km/h post speed north of CP Rail Overpass and 80 km/h south of CP Rail Overpass. Design Speed assumed to be 20 km/h above posted speed.
2. Additional turning lanes provided at identified intersections
3. Except from Little River to County Road 42, where there is a 3.0 m multi-use trail on east and west side.
4. This is located at the existing CP Rail Overpass and will remain as existing, as it would require a complete bridge replacement to improve and the provided curve meets a design speed of 85 km/h, which exceeds the posted speed.

Lauzon Parkway will be extended from County Road 42 to Highway 401 with an ultimate 6-lane urban cross-section. The geometric details for the interim and ultimate roadway are listed in Exhibit A.6-2.

EXHIBIT A.6-2: DESIGN CRITERIA LAUZON PARKWAY - COUNTY ROAD 42 TO HIGHWAY 401

	Present Conditions	Design Standards	Proposed Standards
Design Speed	N/A	90 km/h	90 km/h
Posted Speed	N/A	70 km/h	70 km/h
No. of Lanes and Width	N/A	Interim 4 lanes - 3.65 m ¹ Ultimate 6 lanes - 3.65 m ¹	Interim 4 lanes - 3.65 m ¹ Ultimate 6 lanes - 3.65 m ¹
Total Lane Width	N/A	Interim 14.6 m Ultimate 21.9 m	Interim 14.6 m Ultimate 21.9 m
Median Width	N/A	6.0 m	6.0 m
Provisions for Pedestrians and Cyclists	N/A	1.8 m sidewalk (east side) and 3.0 m multi-use trail (west side)	1.8 m sidewalk (east side) and 3.0 m multi-use trail (west side)
Minimum Grade (%)	N/A	0.4 %	0.4 %
Maximum Grade (%)	N/A	6 – 8 %	3.0 %
Minimum Curve Radius	N/A	340 m	600 m
Minimum Stopping Sight Distance	N/A	160 m	195 m
Minimum Crest Curve	N/A	Crest 50 Sag 40	Sag 60
Basic Right-of-Way	N/A	50 m	50 m

1. Additional turning lanes provided at identified intersections

Lauzon Parkway will be extended from Highway 401 to Highway 3 with an ultimate 4-lane rural cross-section. The geometric details for the interim and ultimate roadway are listed in Exhibit A.6-3.

EXHIBIT A.6-3: DESIGN CRITERIA LAUZON PARKWAY - HIGHWAY 401 TO HIGHWAY 3

	Present Conditions	Design Standards	Proposed Standards
Design Speed	N/A	90 km/h	90 km/h
Posted Speed	N/A	80 km/h	80 km/h
No. of Lanes and Width	N/A	4 lanes - 3.75 ¹	4 lanes - 3.75 ¹
Total Lane Width	N/A	15 m	15 m
Median Width	N/A	1.0 m flush	1.0 m flush
Provisions for Pedestrians and Cyclists	N/A	3.0 m multi-use trail (west side)	3.0 m multi-use trail (west side)
Minimum Grade (%)	N/A	0.4 %	0.4 %
Maximum Grade (%)	N/A	6 – 8 %	3.0 %
Minimum Curve Radius	N/A	340 m	490 m
Minimum Stopping Sight Distance	N/A	160 m	195 m
Minimum Crest Curve	N/A	Crest 50 Sag 40	Crest 100 Sag 45
Basic Right-of-Way	N/A	50 m	50 m

1. Additional turning lanes provided at identified intersections

Details of the exit and entrance ramps for the new Highway 401 Interchange are presented in the following table Exhibit A.6-4.

EXHIBIT A.6-4: DESIGN CRITERIA HIGHWAY 401 LAUZON PARKWAY INTERCHANGE EXIT RAMPS - E-N/S AND W-N/S RAMPS

	Present Conditions	Design Standards	Proposed Standards
Design Speed	N/A	80 km/h	80 km/h
Grades Maximum (%)	N/A	6% - 8%	2.0 %
Minimum Radius	N/A	230 m	250 m
Pavement Width	N/A	3.75 m	2-lanes - 3.75 m
Shoulder Width	N/A	Left 1.0 m Right 2.5 m	Left 1.0 m Right 2.5 m
Speed Change Lane Length	N/A	535 m	E-N/S = 540 m W-N/S = 535 m
Sight Distance to Exit Bullnose	N/A	370 m to 470 m	490 m
Equivalent Minimum 'K' Factor	N/A	35 Crest 30 Sag	150 Crest 80 Sag

EXHIBIT A.6-5: DESIGN CRITERIA HIGHWAY 401 LAUZON PARKWAY INTERCHANGE ENTRANCE RAMPS - N/S-W AND N/S-E

	Present Conditions	Design Standards	Proposed Standards
Design Speed	N/A	80 km/h	80 km/h
Grades Maximum (%)	N/A	6% - 8%	2.8 %
Minimum Radius	N/A	230 m	250 m
Pavement Width	N/A	4.75 m	4.75 m
Shoulder Width	N/A	Left 1.0 m Right 2.5 m	Left 1.0 m Right 2.5 m
Speed Change Lane Length	N/A	500 m	N/S-W = 500 m N/S-E = 500 m
Sight Distance to End of Taper	N/A	370 m to 470 m	490 m
Equivalent Minimum 'K' Factor	N/A	35 Crest 30 Sag	200 Crest 40 Sag

A.6.1.2 Typical Cross-Sections

CITY OF WINDSOR – E.C. ROW EXPRESSWAY TO HIGHWAY 401

The typical proposed cross-sections for Lauzon Parkway between E.C. Row Expressway to Highway 401 are illustrated in Exhibit A.6-6 to Exhibit A.6-8. Following PIC 2 a 0.3 m reserve was added inside the ROW. The following summarizes the basic features of the cross-sections within the study area:

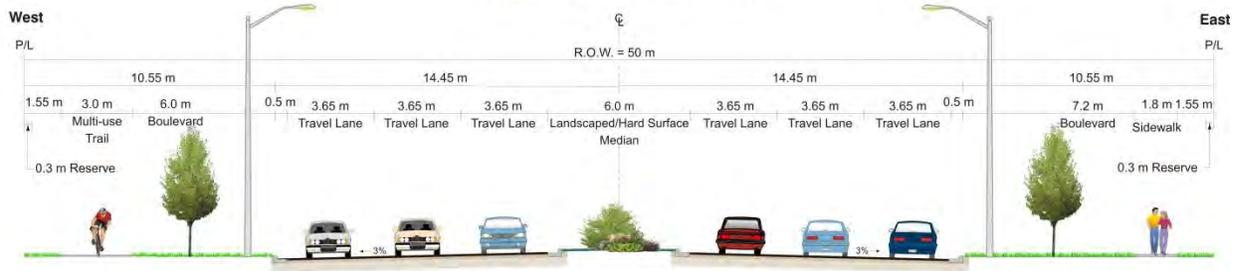
- 50 m right-of-way (ROW) urban cross-section
- Ultimate 6 lanes (interim 4 lanes) at 3.65 m each
- 6 m raised landscaped/hard-surface median
- 3.0 m multi-use trail (MUT) on west side and 1.8 m sidewalk on east side (a 3.0 m MUT is located on both sides between the Little River and County Road 42)
- All municipal utilities to be accommodated within ROW
- Landscaped boulevards
- Illumination on both sides
- 0.3 m reserve inside the ROW

Widening from 4 lanes to 6 lanes will be required when the volume in the peak direction reaches approximately 1600 vph. A 0.3 m reserve was added to the cross-section as part of Lauzon Parkway's designation as a Controlled Access Highway. This is further discussed in Section A.6.10.2.

**EXHIBIT A.6-6: TYPICAL CROSS-SECTION LAUZON PARKWAY
 E.C. ROW EXPRESSWAY TO LITTLE RIVER**



INTERIM - 4 LANES - URBAN



ULTIMATE ALTERNATIVE - 6 LANES - URBAN

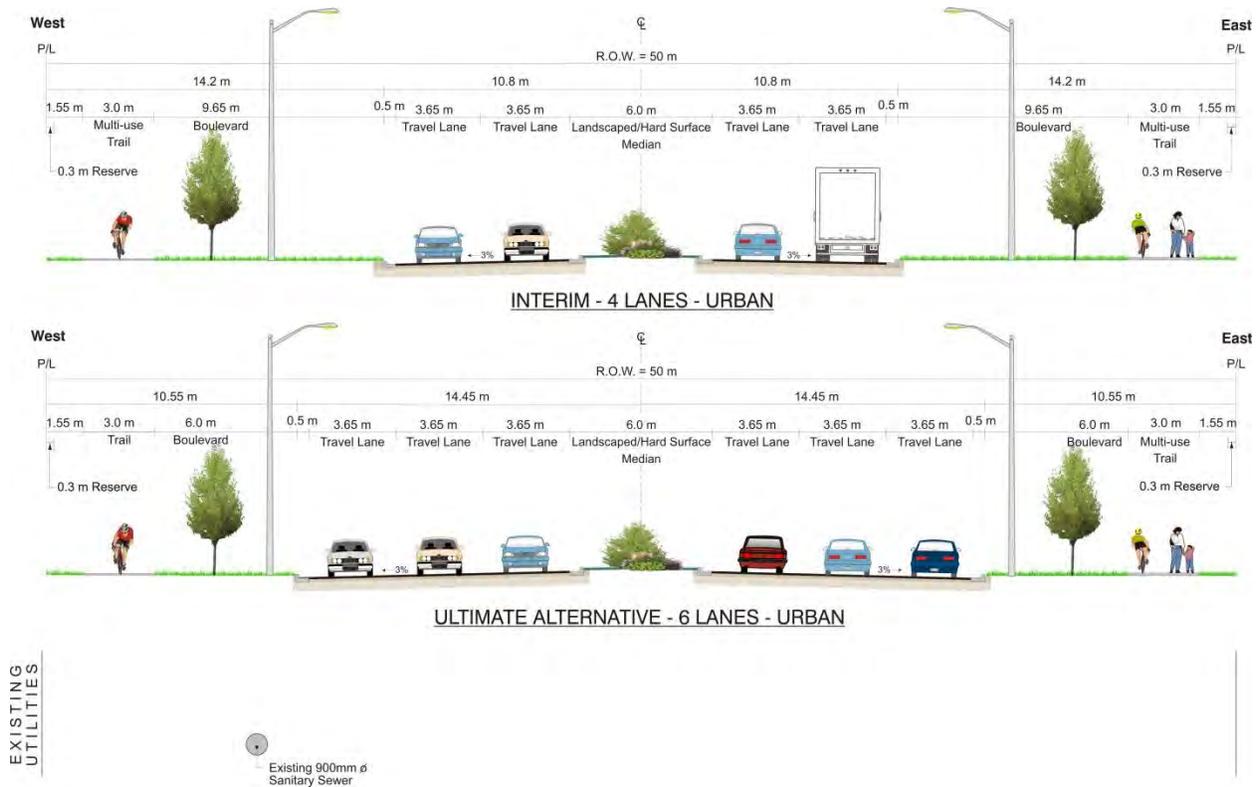
EXISTING UTILITIES

Existing Bell

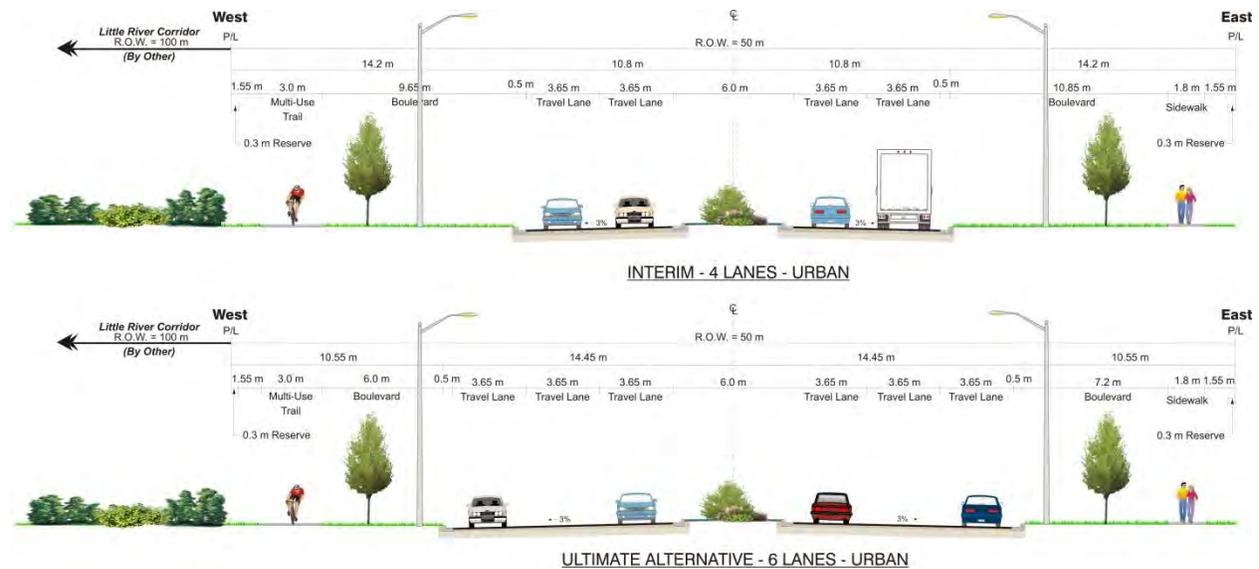


Existing 1650mm ϕ
 Sanitary Sewer
 Service Rd. to Little River

**EXHIBIT A.6-7: TYPICAL CROSS-SECTION LAUZON PARKWAY
 LITTLE RIVER TO COUNTY ROAD 42**



**EXHIBIT A.6-8: TYPICAL CROSS-SECTION LAUZON PARKWAY
 COUNTY ROAD 42 TO HIGHWAY 401**

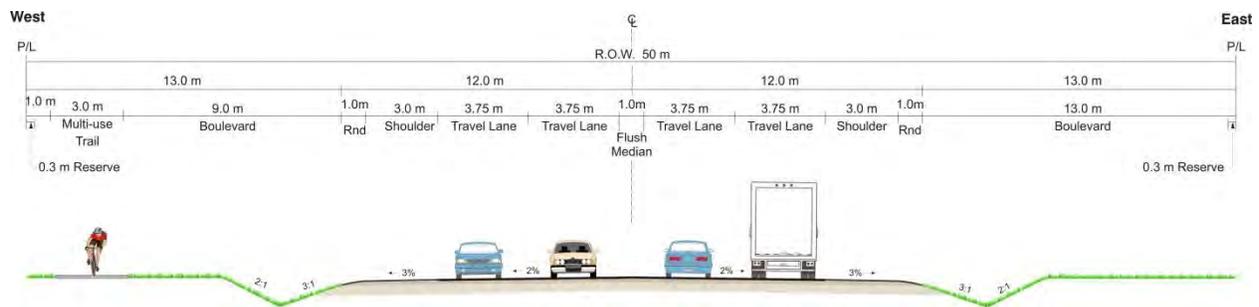


COUNTY OF ESSEX - HIGHWAY 401 TO HIGHWAY 3

The typical proposed cross-section for Lauzon Parkway between Highway 401 and Highway 3 is illustrated in Exhibit A.6-9. Following PIC 2, the preferred cross-section included the 4 lanes with 1.0 m flush median, should the area adjacent to Lauzon Parkway between Highway 401 and County Road 46 be developed in the future into an urban centre, there is sufficient right-of-way to change the cross-section to include a wider raised median with landscaping, and other aesthetic amenities. The following summarizes the basic features of the cross-sections within the study area:

- 50 m right-of-way (ROW) rural cross-section
- 4 lanes at 3.75 m each
- 1.0 m flush median
- 3.0 m MUT along west side of the roadway

**EXHIBIT A.6-9: TYPICAL CROSS-SECTION LAUZON PARKWAY
 HIGHWAY 401 TO HIGHWAY 3**



A.6.1.3 Interchanges and Intersections

The proposed Lauzon Parkway includes two interchanges and twelve intersections; as listed (from north to south) in Exhibit A.6-10, with the existing and future intersection type noted. Left and right turn lanes will be provided at signalized intersections where warranted. Existing intersections will be improved to include three through lanes, and left and right turning lanes. All intersections, where a need for traffic signals was warranted, were also considered for a roundabout.

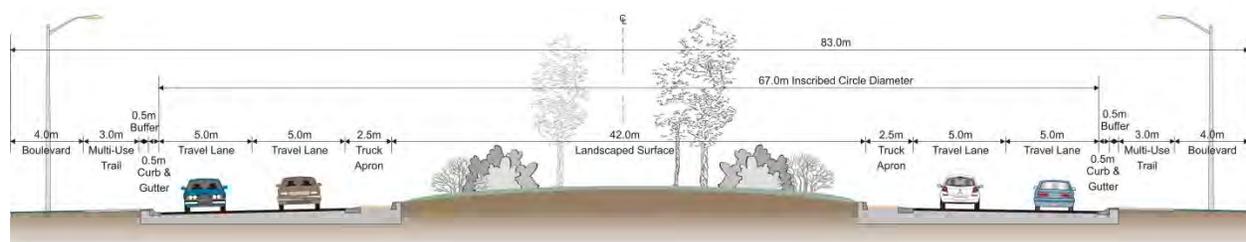
EXHIBIT A.6-10: SUMMARY OF LAUZON PARKWAY INTERSECTIONS

Intersecting Road	Existing Intersection	Future Intersection
Interchanges		
EC Row Expressway North Ramp Terminal	Unsignalized	Signalized for NB to WB; Free flow for SB to WB.
EC Row Expressway South Ramp Terminal	Unsignalized	Signalized for SB to EB; Free flow for NB to EB.
Highway 401 North Ramp Terminal	N/A	Roundabout ¹
Highway 401 South Ramp Terminal	N/A	Roundabout ¹
Intersections		
Forest Glade Drive	Signalized	Signalized
Twin Oaks Drive	Signalized	Signalized
Service Road B/Airport Access	Unsignalized	Signalized
County Road 42	Signalized	Signalized
Baseline Road	N/A	Roundabout ²
E-W Arterial	N/A	Roundabout ²
County Road 46	N/A </td <td>Signalized</td>	Signalized
Highway 3	N/A	Signalized

1. The LOS for a roundabout is acceptable for 2031, but is unacceptable for ultimate built-out (beyond 2031). The roundabouts will be converted to signalized intersections when the interchange is converted to a Parclo A4.
2. The LOS for a roundabout is acceptable for 2021, but is unacceptable for 2031

Details of each intersection are provided in the following sections and are illustrated in the Design Plates at the back of this report. The proposed typical cross-sections for the 2-lane roundabouts is illustrated in Exhibit A.6-11.

EXHIBIT A.6-11: TYPICAL CROSS-SECTION FOR 2-LANE ROUNDABOUT



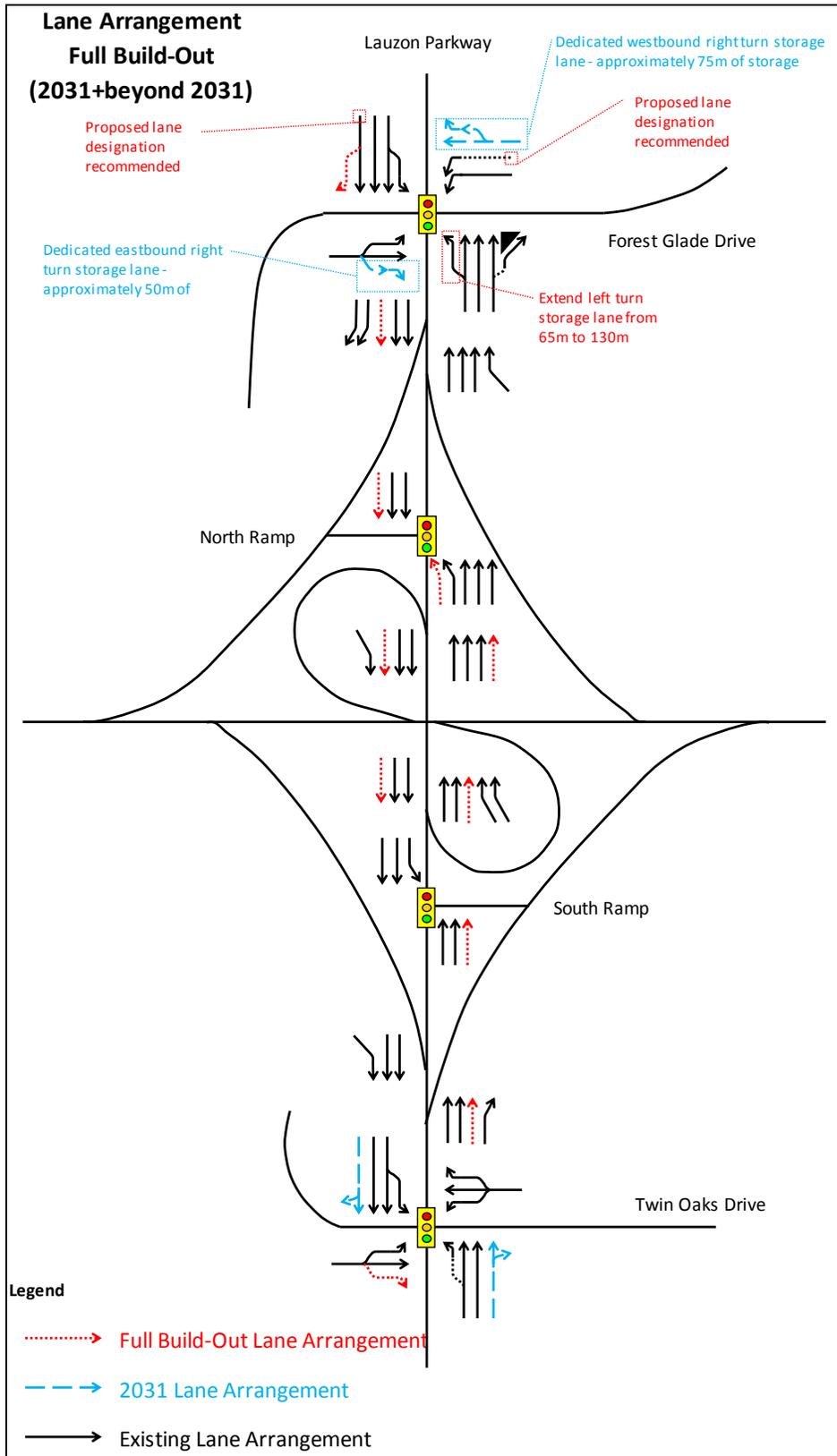
E.C. ROW EXPRESSWAY INTERCHANGE

The improvements for the 2031 horizon year include the reduction of the right turn channelization at the N/S-E on-ramp, to reduce potential weaving conflicts with the adjacent intersections further south on northbound Lauzon Parkway. The radii of the N/S-E on-ramp will be increased to 90 m and 130 m, in order to provide a safer ramp design. The recommended improvements at Forest Glade Drive intersection include the provision of a dedicated westbound right-turning storage lane (with approximately 75 m of storage), and a dedicated eastbound right-turning storage lane (with approximately 50 m of storage). The recommended improvements at Twin Oaks Drive include additional through lanes in both the north and south directions on Lauzon Parkway.

In addition, it is proposed that new lane designation directional signing, preferably overhead, be provided on westbound Forest Glade Drive and southbound Lauzon Parkway approaching the Forest Glade Drive intersection. The need for this signage is not tied to the forecasted traffic growth at this location. Therefore, this signage can be implemented as an immediate/short-term improvement to address the existing potential weaving conflicts on southbound Lauzon Parkway between Forest Glade Drive and the N-W on-ramp to E.C. Row Expressway. The E.C. Row Expressway Interchange improvements are illustrated in Exhibit A.6-12 and Exhibit A.6-13, and on Plate 1 - 3 of the Lauzon Parkway Design Plates located at the back of this document.

A detailed analysis of the interchange can be found in Appendix I – *Lauzon Parkway/E.C. Row Expressway Interchange: Existing & Future Conditions Report (August 2012)*.

EXHIBIT A.6-13: PROPOSED 2031 AND FULL BUILD-OUT LAUZON PARKWAY E.C. ROW EXPRESSWAY INTERCHANGE IMPROVEMENTS LANE CONFIGURATION



COUNTY ROAD 42

The existing County Road 42 intersection will be closed, and the new intersection will be located just west of the existing intersection. A double left-turn lane and a right-turn lane are proposed in both east and west directions. In the north-south direction, the proposed intersection will include 3-through lanes (2-through lanes for interim design) with exclusive left and right turn lanes. The Lauzon Parkway and County Road 42 intersection is illustrated on Plate 6 of the Lauzon Parkway Design Plates.

The existing 10th Concession Road / County Road 17 intersection will be a right-in-right-out for the interim 2021 scenario, and is planned to be closed by 2031, as part of the Sandwich South Secondary Plan.

BASELINE ROAD

The intersection with Baseline Road is planned with an interim 2-lane roundabout and ultimate signalized intersection, similar to the proposed E-W Arterial Intersection. The intersection will be converted to a signalized intersection once Lauzon Parkway is widened to six lanes (i.e. once it reaches approximately 1600 vph in peak direction). For the signalized intersection, additional left-turn lanes will be provided on Baseline Road at the new intersection with Lauzon Parkway.

The existing alignment of Baseline Road at the Little River curves to the south immediately west of the proposed Lauzon Parkway intersection. In order to improve the geometric design of the future intersection, opportunities to straighten the existing alignment were reviewed and it is recommended to maintain the existing Baseline Road crossing of Little River, continue Baseline Road on a straight alignment through Lauzon Parkway, and then curve south to tie back to the existing Baseline Road alignment to the east side of the proposed intersection.

The proposed Lauzon Parkway and Baseline Road intersection is illustrated on Plates 8 and 8a of the Lauzon Parkway Design Plates.

E-W ARTERIAL

The interim design for this intersection, where Lauzon Parkway has a 4-lane cross-section, will be a 2-lane roundabout, with a 67 m inscribed circle diameter. Additional right-turn lanes will be developed on E-W Arterial approaching the roundabout.

When Lauzon Parkway is widened to 6-lanes (i.e. once it reaches approximately 1600 vph in peak direction), the roundabout will be converted to a signalized intersection. The intersection will include 3-through lanes on Lauzon Parkway in each direction with exclusive left and right turn lanes. On E-W Arterial, the intersection will include 1-through lane in each direction with exclusive left and right turn lanes. The Lauzon Parkway and E-W Arterial intersection is illustrated on Plate 9 of the Lauzon Parkway Design Plates.

HIGHWAY 401 INTERCHANGE

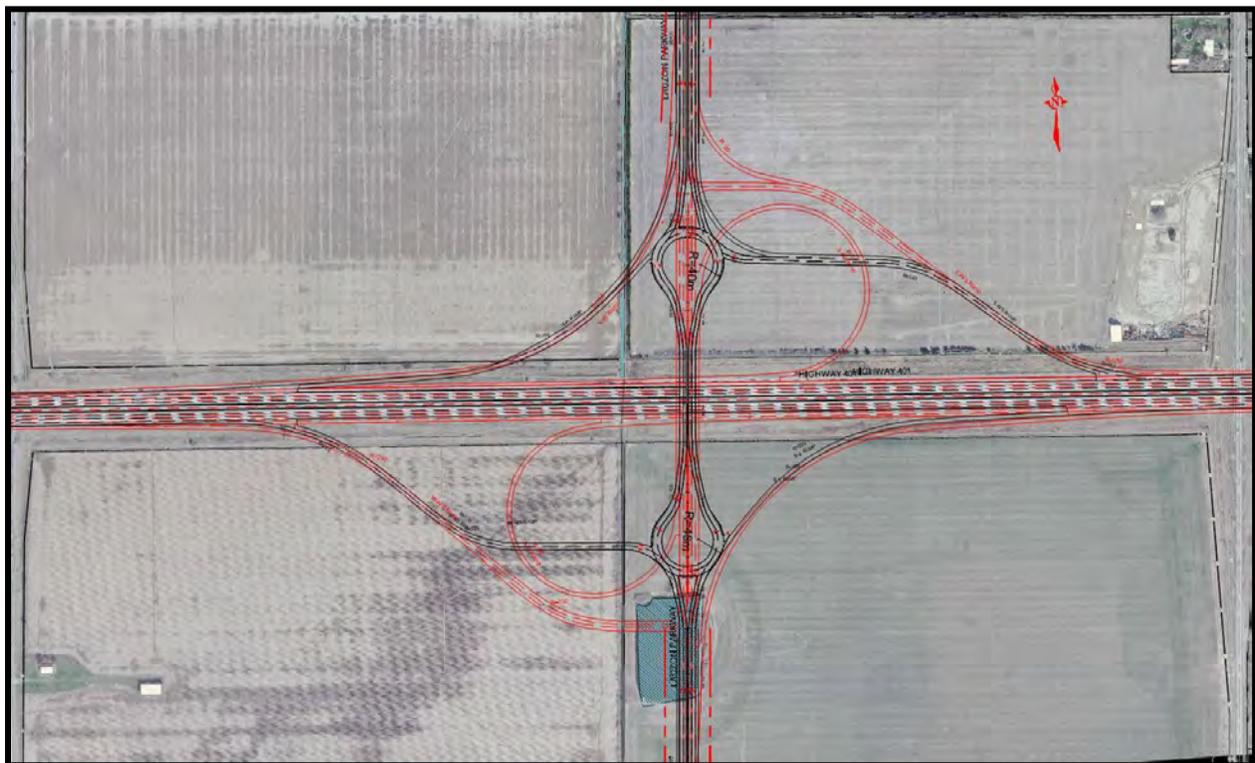
A double Teardrop Roundabout design is proposed for the Highway 401 Interchange. The design consists of two teardrop-roundabouts, located north and south of Highway 401, connecting four on-and-off ramps (one on-ramp and one off-ramp at each roundabout). All of the ramps, except

the N/S-E on-ramp, have right-turn channelized lanes. The Highway 401 Interchange is illustrated on Plates 10 to 12 of the Lauzon Parkway Design Plates.

The results of the interchange traffic analysis indicated that the roundabout design provides an acceptable level-of-service for 2031; however, the analysis indicated an unacceptable level-of-service for the ultimate build-out (corresponding to 100% of the Sandwich South development traffic forecast). Therefore, provision is made for the Teardrop Roundabout to be converted to a Parclo A4 once the circulating volume of the roundabouts reaches 2000 vph (estimated to occur beyond the year 2031). The Parclo A4 will have two inner loop on-ramps added, and two signalized intersections, replacing the two roundabouts, located north and south of Highway 401. By delaying the construction of a wider bridge structure, and the two ramps associated with the Parclo A4, this option is also more economically beneficial. The two interchange designs are illustrated in Exhibit A.6-14.

The comparative cost assessment indicated that initially building the Teardrop Roundabout interchange and then converting to a Parclo A4 interchange to meet long term traffic demand is more cost effective due to the lower initial construction costs, as described in Section A.5.6.4.

EXHIBIT A.6-14: LAUZON PARKWAY HIGHWAY 401: INITIAL TEARDROP ROUNDABOUT INTERCHANGE & LONG-TERM PARCLO A4 INTERCHANGE



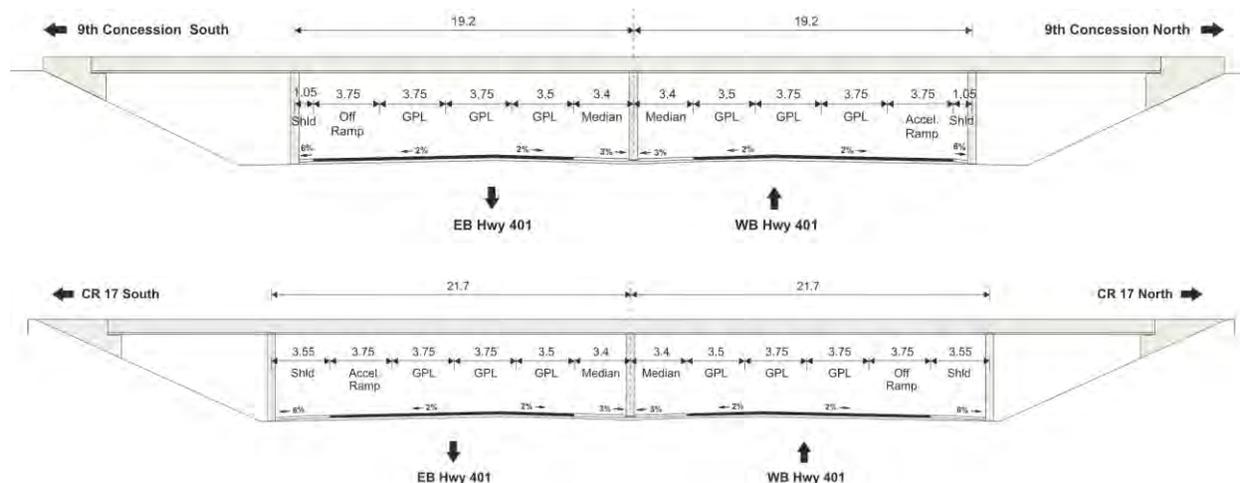
The proposed Highway 401 Interchange will be located approximately mid-way between the adjacent underpasses: 9th Concession Road and 10th Concession Road / County Road 17. As the new ramps associated with the Lauzon Parkway Interchange will extend beyond 9th Concession Road and 10th Concession Road / County Road 17, the potential impact to these existing bridges was reviewed.

The on and off-ramps for the interchange extend beyond the existing bridges on Highway 401 to the east and to the west of the proposed interchange. The location and age of these two bridges is summarized as follows:

- 9th Concession Road Underpass ~ 800 m west of the proposed interchange
 - Built 1968
 - Will reach the end of its' 75 year service life in 2043
- 10th Concession Road / County Road 17 Underpass ~ 650 m east of the proposed interchange
 - Built 1967
 - Will reach the end of its' 75 year service life in 2042

These two bridges will still be within usable service life at the 2021 estimated implementation of the Interchange. The bridges accommodate the existing 6-lane Highway 401; in 2021, when the new Interchange is implemented, the bridges will be able to accommodate the 6-lanes and additional auxiliary lanes from the interchange.

EXHIBIT A.6-15: HIGHWAY 401 CROSS-SECTIONS AT 9TH CONCESSION ROAD AND 10TH CONCESSION ROAD / COUNTY ROAD 17 OVERPASS WITH ADDITIONAL INTERCHANGE LANES



The Lauzon Parkway Interchange has been designed to protect for 2-lane off-ramps and the widening of Highway 401, which is likely required with the full 'build-out' of the Sandwich South development (estimated to be beyond 2031). It is anticipated that full build-out of the Sandwich South lands is beyond the service life of the existing structures, which is approximately 2042/2043. Therefore, at the time 2-lane off-ramps are required, it is likely that the adjacent bridges will need to be replaced and could be designed to accommodate a wider Highway 401 cross-section. Replacement of these bridges would also create an opportunity for active transportation to be provided along 9th and 10th Concession Road.

COUNTY ROAD 46

The intersection at County Road 46 and Lauzon Parkway is proposed to be signalized. An analysis of a roundabout at this intersection indicated that it would not accommodate the future

traffic conditions. The existing intersection of County Road 46 and Sexton Sideroad will be closed and removed once the new Lauzon Parkway alignment is in place. The new Lauzon Parkway and County Road 46 intersection will be aligned to achieve a more perpendicular approach angle that is closer to 90 degrees. Exclusive right and left turning lanes are proposed on Lauzon Parkway and County Road 46 for all approaches.

The proposed Lauzon Parkway and County Road 46 intersection is illustrated on Plate 13 of the Lauzon Parkway Design Plates.

HIGHWAY 3 INTERSECTION

The existing intersection of Highway 3 and Sexton Sideroad is proposed to be closed. Lauzon Parkway and Sexton Sideroad (from the south) will be constructed on new alignments to achieve perpendicular approaches north and south of Highway 3, just east of the existing intersection. A cul-de-sac is proposed for the existing Sexton Sideroad south of Highway 3, to provide alternate access to adjacent properties. The new Lauzon Parkway southbound approach to Highway 3 will provide a double left turn-lane; a Lauzon Parkway southbound right-turn channelization to westbound Highway 3; and Highway 3 westbound right-turn channelization to northbound Lauzon Parkway. The new Sexton Sideroad northbound approach to Highway 3 is designed with a slotted left-turn lane. The proposed Lauzon Parkway and Highway 3 intersection is illustrated on Plates 15 to 17 of the Lauzon Parkway Design Plates.

A.6.2 ACTIVE TRANSPORTATION

The City of Windsor's Official Plan requires sidewalks on both sides of Arterial Roadways. The City's *Bicycle Use Master Plan* (BUMP, 2001) calls for a cycling network of bike lanes, multi-use trails and signed bike routes, and provides design guidelines along with specific strategies for improving cycling awareness, the cycling-transit link and end-of-trip facilities. BUMP proposes a multi-use trail on Lauzon Parkway north of Forest Glade Drive. At the time when BUMP was prepared, the lands south of E.C. Row Expressway along Lauzon Parkway were still part of the Town of Tecumseh and not part of the City, therefore active transportation facilities were not proposed for this section of Lauzon Parkway.

The County of Essex has adopted the County Wide Active Transportation Study (CWATS, 2012) to guide the County and local area municipalities in implementing a County-wide network of cycling and pedestrian facilities for the next 20 years. CWATS identified an opportunity for a multi-use trail on the abandoned CN Rail CASO Subdivision line if/when the land becomes available. A multi-use trail was also identified on North Talbot Road from 8th Concession Road west to Walker Road, and north on Walker Road to Highway 401. Paved shoulders were proposed on County Road 46, and on County Road 42 from County Road 21 (Elmstead Road) to Patillo Road. There were no facilities proposed for 8th and 9th Concession Road, or 10th Concession Road / County Road 17.

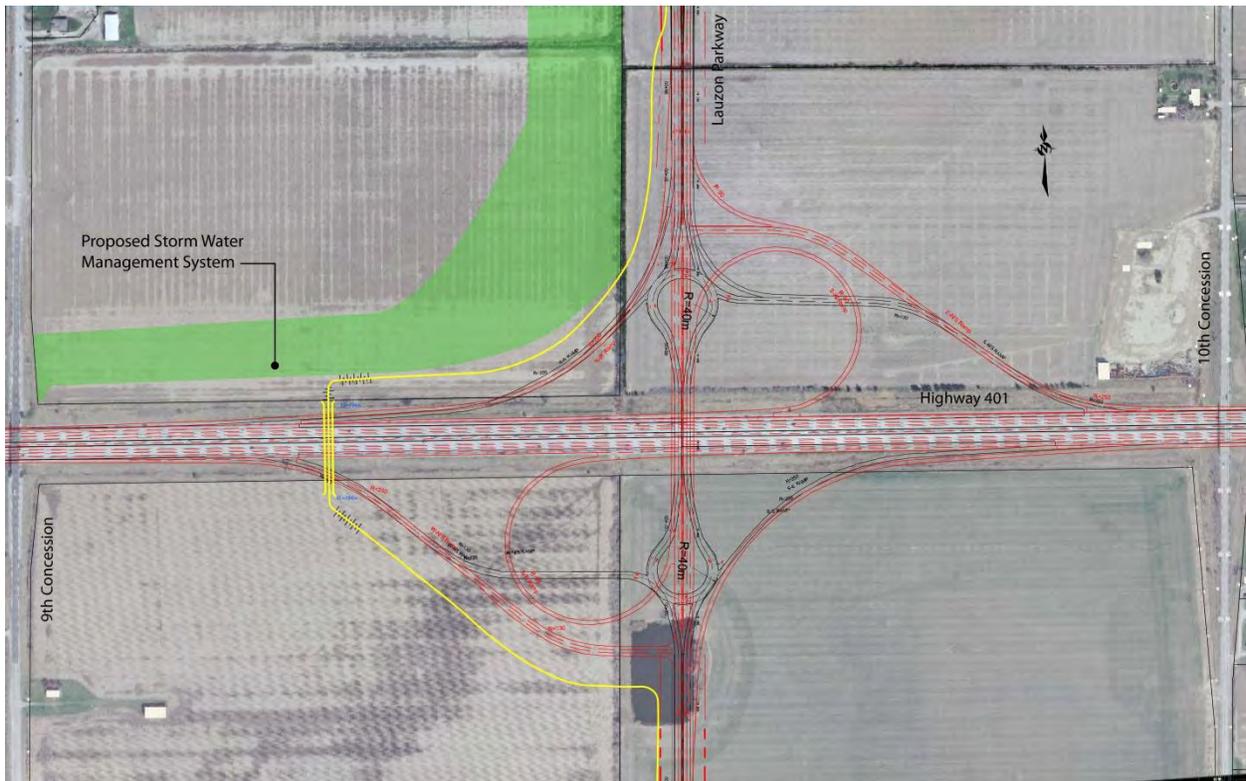
Recognizing the changes to the existing road network proposed by this EA, and the future land use being developed by the Sandwich South Secondary Plan, enhancements to the proposed active transportation networks in BUMP and CWATS were considered.

Within the City of Windsor, the active transportation facilities along Lauzon Parkway include a multi-use trail and sidewalk. Within the County of Essex, the active transportation facilities along Lauzon Parkway include a multi-use trail. The location of the active transportation facilities within the right-of-ways are illustrated in Exhibit A.6-6 to Exhibit A.6-9. Proposed revisions to the BUMP and CWATS networks, based on the active transportation facilities recommended in this EA, are illustrated in Exhibit 7-1 in Section 7.2.3.

A separate active transportation bridge over Highway 401 is proposed in order to link the multi-use trail (MUT) north and south of the highway. From the north, the MUT follows the Lauzon Parkway MUT and then follows the on-ramp and crosses Highway 401 approximately 350 m west of the Lauzon Parkway alignment. As documented in Section A.5.7, the location of the active transportation bridge provides continuous connection of the MUT north and south of Highway 401, provides additional potential connections to planned development north and south of Highway 401, avoids excessive out-of-way travel for pedestrians and cyclists, and has a relative low cost in comparison to the other alternatives evaluated, due to its shorter bridge span length. Property identified for the multi-use trail includes embankment requirements, and does not impact the property requirements for the Little River stormwater management corridor. The proposed location also provides future links into the Sandwich South lands, as well as a connection to 9th Concession Road.

Exhibit A.6-16 illustrates the location of the Active Transportation Bridge. The General Arrangement (GA) for the Active Transportation Bridge is illustrated in Section A.6.3.

EXHIBIT A.6-16: HIGHWAY 401 ACTIVE TRANSPORTATION ACTIVE TRANSPORTATION BRIDGE



A.6.3 ACCESS MANAGEMENT

Lauzon Parkway, between E.C Row Expressway and Highway 401, will be designed as a Class I Arterial as described in the *Official Plan: Volume I, Section 7.2.6.4*. The Class I Arterial will be designated as a Controlled Access Highway, and will be designed to carry a high volume of traffic. New intersections will only be permitted with Provincial Highways, Expressways, Class I and II Arterial Roads, or Class I Collector Roads. **Direct property access will not be permitted to the roadway.**

Lauzon Parkway, between Highway 401 and Highway 3, will be designated as a Class I Regional Road, with no new accesses, as per the County of Essex Official Plan. Existing residential and agricultural accesses are to be maintained.

Mitigating measures for existing and proposed accesses are noted in Section A.6.10.2 Access.

A.6.4 STRUCTURES

HIGHWAY 401 UNDERPASS

The recommended structure configuration for the new Highway 401 Underpass is summarized as follows and additional details are shown on the general arrangement drawing in Exhibit A.6-17.

- Two span bridge structure
- Spans: 2 x 33.0 m
- Deck Type: CPCI 1600 Prestressed Girders
- Abutments & Piers Foundations: Steel H-Piles (HP 310x110) with driving shoes
- Carries 4 lanes of traffic (design allows for future bridge widening to 6 lanes)

The Preliminary Structural Design Report for the Highway 401 Underpass is provided in Appendix K.

ACTIVE TRANSPORTATION BRIDGE

The recommended structure configuration for the new Lauzon Parkway Active Transportation Bridge over Highway 401 is summarized as follows and additional details are shown on the general arrangement drawing on Exhibit A.6-18.

- Three span bridge structure
- Spans: 3 x 40.0 m
- Deck Type: Prefabricated Steel Truss Foot Bridge
- Total clear deck width = 3.6 m (0.3 offset + 3.0 m MUT + 0.3 m offset)

Although the bridge is recommended to be a typical truss type structure, there is flexibility for future design alternatives or considerations during the next phase of design.



DISTRICT
CONT. No.
GWP No. 3017-09-00

LAUZON PARKWAY
HIGHWAY 401 UNDERPASS

EXHIBIT
A.6-17

PRELIMINARY GENERAL ARRANGEMENT



GENERAL NOTES

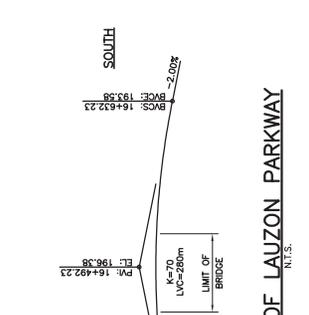
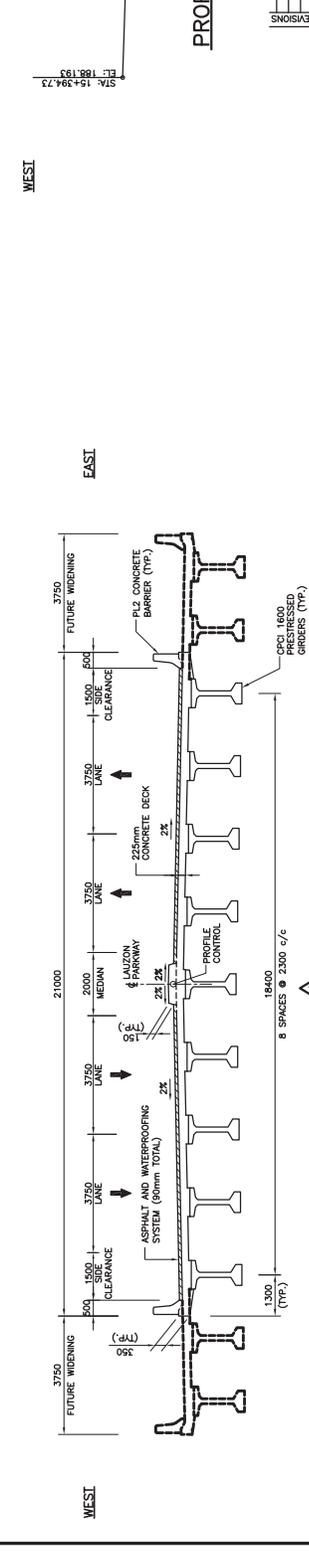
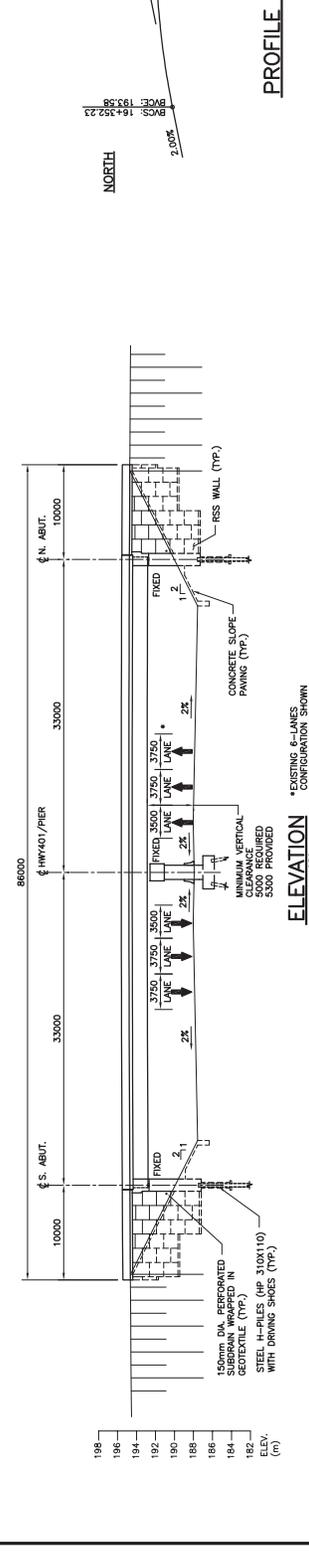
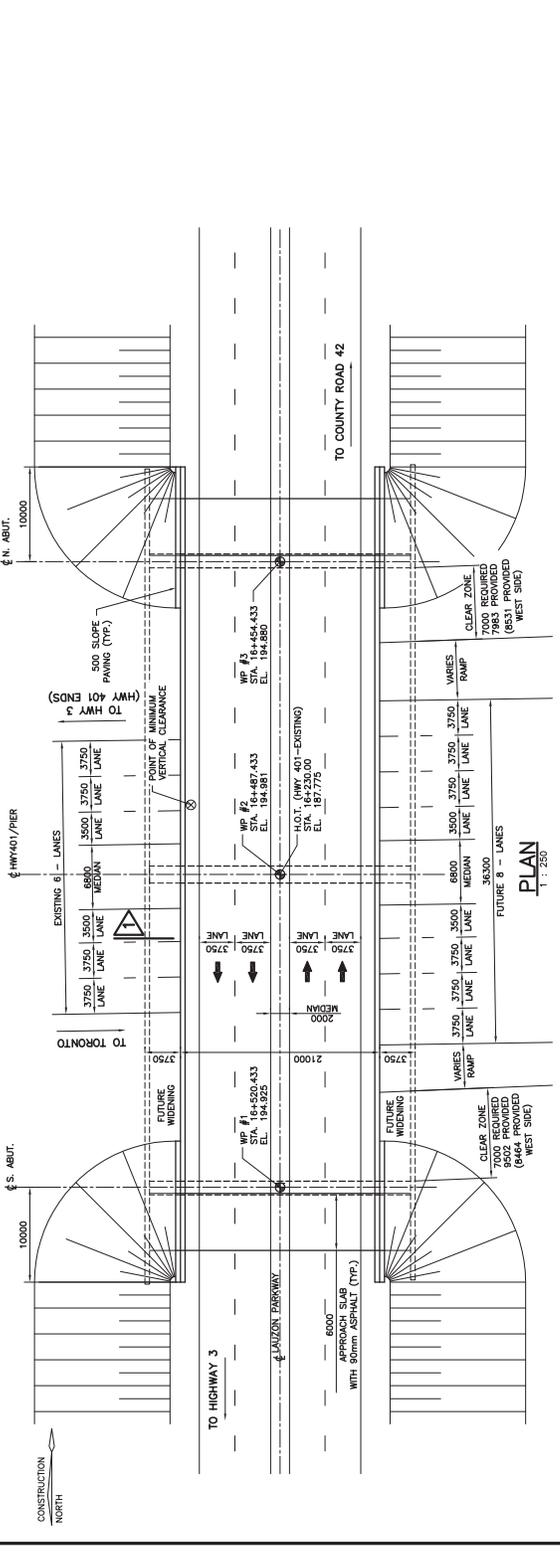
CLASS OF CONCRETE
PRECAST ORDERS
REINFORCER (UNLESS OTHERWISE NOTED)

REINFORCING STEEL
REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE SPECIFIED.

STAINLESS REINFORCING STEEL SHALL BE TYPE 316 LN OR 316L LN UNLESS OTHERWISE SPECIFIED.

LIST OF ABBREVIATIONS

- ABUT - DENOTES ABUTMENT
- H.O.T. - DENOTES HOT ON TANGENT
- N.W.T. - DENOTES NORTH WEST TANGENT
- S.N. - DENOTES SOUTH NORTH
- S.T.A. - DENOTES TYPICAL
- WP - DENOTES WORKING POINT



REVISIONS	DESCRIPTION
DESIGN	CHK. KA. CORE CHECK - LOCAL TO 605 - ONT DATE MAR/13
DRAWN	AV. CHK. KS. SITE
DATE	CHK. KS. SITE
DATE	CHK. KS. SITE

DRAWING NOT TO BE SCALED
FORMED ON ORIGINAL DRAWING

Lauson Parkway Improvements
Class Environmental Assessment Study
Environmental Study Report

Exhibit
A.6-17

HIGHWAY 401
BRIDGE PRELIMINARY GA

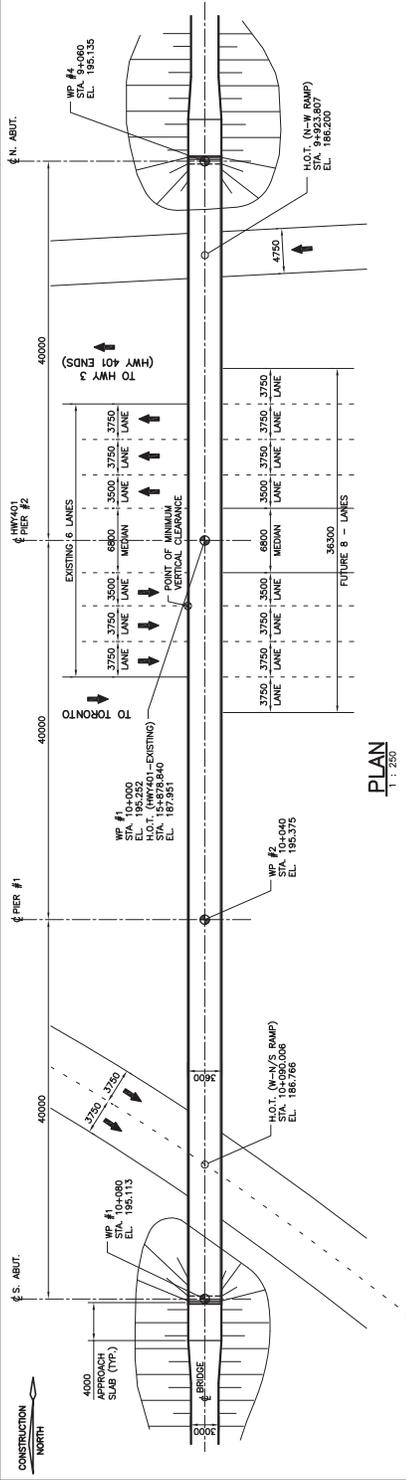
 DISTRICT CONT. No.	GWP No. 3107-09-00
	EXHIBIT A.6-18
	LAUZON PARKWAY PEDESTRIAN BRIDGE OVER HIGHWAY 401 PRELIMINARY GENERAL ARRANGEMENT
 MCCORMICK RANKIN A member of 	METRIC

GENERAL NOTES

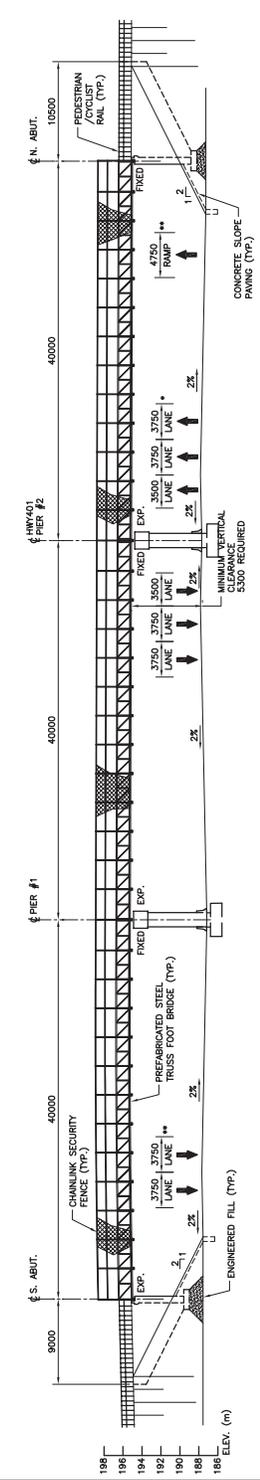
- 3-SPAN PRE-FABRICATED STEEL TRUSS PEDESTRIAN BRIDGE.
- CLASS OF CONCRETE**
UNLESS OTHERWISE NOTED 30 MPa
- REINFORCING STEEL**
1. REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE NOTED.
2. UNLESS OTHERWISE NOTED, REINFORCING STEEL SHALL BE TYPE S16 U4 OR DUPLEX 220S.
- STRUCTURAL STEEL**
1. STRUCTURAL STEEL SHALL CONFORM TO CSA STANDARD CAN/CSA S350.8-08.
2. ALL ELEVATIONS ARE TO GEODETIC DATUM.
- CONSTRUCTION NOTES**
1. BRIDGE SUPERSTRUCTURE SHOWN IS SCHEMATIC ONLY. THE BRIDGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DESIGN CRITERIA AND REQUIREMENTS SPECIFIED IN THE SPECIFICATIONS. BOTH BRIDGE SPANS SHALL BE CONSTRUCTED USING THE STRUCTURAL STEEL, MEMBERS AND OVERALL STRUCTURE DEPTH.
2. LIST OF ABBREVIATIONS
- DESIGN LOADS**
THE STRUCTURE SHALL BE CAPABLE OF SUPPORTING SNOW REMOVAL EQUIPMENTS.

LIST OF ABBREVIATIONS

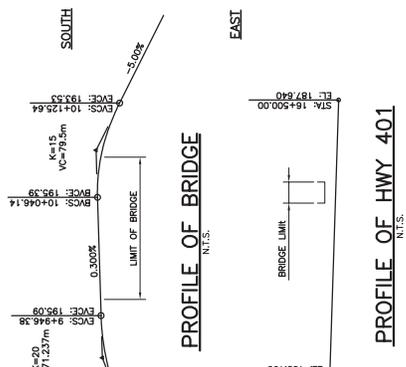
- WP - DENOTES WORKING POINT
- H.O.T. - DENOTES HUB ON TANGENT
- E.L. - DENOTES ELEVATION



PLAN
1:250

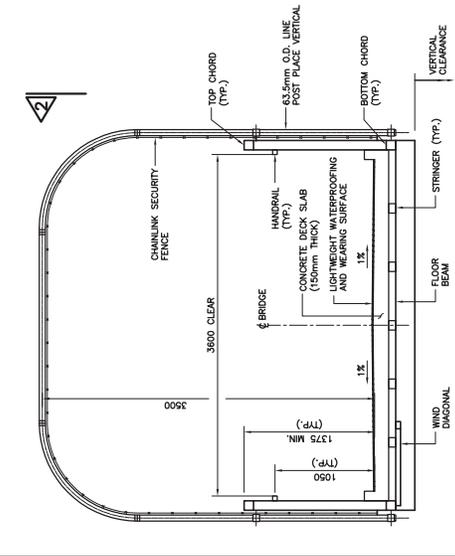
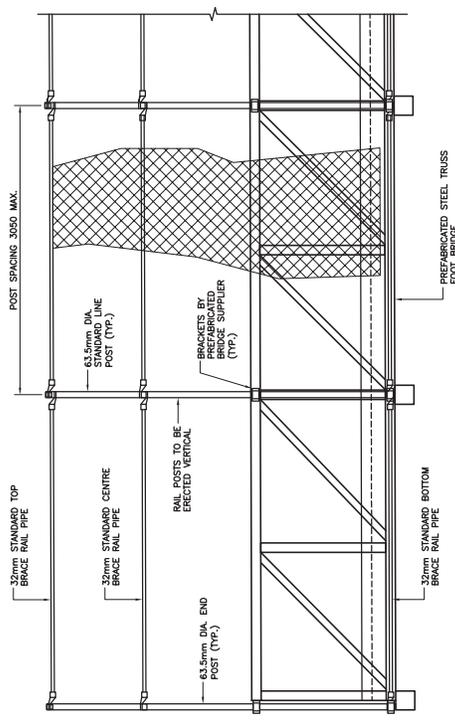


ELEVATION
1:250



PROFILE OF BRIDGE
N.T.S.

PROFILE OF HWY 401
N.T.S.



DRAWINGS NOT TO BE SCALE D FOR PLAN OR ORIGINAL DRAWING



Lauzon Parkway Improvements
Class Environmental Assessment Study
Environmental Study Report



Exhibit
A.6-18

**HIGHWAY 401 ACTIVE TRANSPORTATION
BRIDGE PRELIMINARY GA**

DESIGN BY	CHK BY	CODE	CHRGD-10	LOAD	DATE	MAR/13
DRAWN BY	CHK BY	AS	STALUC	SCHEME	DWG	P1

LAUZON PARKWAY OVER CP RAIL

The Lauzon Parkway Bridge over the CP Rail is a 3-span pre-stressed concrete girder bridge built in 1980. It has a total span length and width of approximately 76 m and 25 m respectively. The structure was rehabilitated in 2008. The proposed cross-section of Lauzon Parkway, at the structure, is as follows, west to east:

- 3.0 m multi-use-trail (MUT)
- 1.5 m shoulder (min side clearance)
- 3 x 3.65 m lanes
- 2.0 m median (raised)
- 3 x 3.65 m lanes
- 1.5 m shoulder (min side clearance)
- 1.8 m sidewalk
- Total = 31.7 m clear deck width**

To accommodate the proposed improvements, the existing 25 m wide bridge deck must be widened by approximately 8 m, with an additional 3 to 4 pier columns, on widened piled foundations.

LAUZON PARKWAY OVER MCGILL DRAIN

The McGill Drain culvert under the existing Lauzon Parkway is a concrete rigid frame culvert, located approximately 800 m south of E.C. Row Expressway (300 m south of the CPR tracks). It has a total span and width of approximately 3.0 m and 25.6 m respectively. The proposed cross-section of Lauzon Parkway, at the structure, is as follows, west to east:

- 3.0 m multi-use-trail (MUT)
- 1.5 m shoulder (min side clearance)
- 3 x 3.65 m lanes
- 2.0 m median (raised)
- 3 x 3.65 m lanes
- 1.5 m shoulder (min side clearance)
- 1.8 m sidewalk
- Total = 31.7 m clear deck width**

To accommodate the proposed improvements, the existing 25.6 m long culvert, must be lengthened by approximately 6 m. The specific structure type will be determined in the next phase of design. Additional details regarding the existing McGill Drain culvert is provided in the Structural Culvert Inspection Report, in Appendix L.

LAUZON PARKWAY OVER LITTLE RIVER

The preferred alignment of Lauzon Parkway shifts to the west, just north of the Little River, away from the existing structure. Based on this shifted alignment, and a new skew relative to the river, a replacement concrete rigid frame structure will be required. The proposed cross-section of Lauzon Parkway, at the structure, is as follows, west to east:

- 3.0 m multi-use-trail (MUT)
- 1.5 m shoulder (min side clearance)
- 3 x 3.65 m lanes
- 2.0 m median (raised)
- 3 x 3.65 m lanes
- 1.5 m shoulder (min side clearance)
- 3.0 m multi-use-trail (MUT)
- Total = 32.9 m clear deck width**

The specific skew and structure type will be determined in the next phase of design.

A.6.5 DRAINAGE AND STORMWATER MANAGEMENT

The existing conditions and proposed stormwater management measures for the study area are documented in the *Drainage and Stormwater Management Report*, provided in Appendix M.

As part of the *Upper Little River (ULR) Watershed Master Drainage Plan and Stormwater Management Plan* (2013), now being prepared concurrently with this Lauzon Parkway Class EA, conceptual drainage and stormwater management measures will be proposed for the study area. The drainage and stormwater management components available to date have been incorporated in this report. The ULR Class EA is recommending a stormwater management corridor, including a system of drainage ponds, along the existing and partially re-aligned Upper Little River (ULR). The corridor will also follow the Lauzon Parkway and E-W Arterial alignments proposed in this Lauzon Parkway Class EA, and along Baseline Road. The County Road 42 road drainage is to outlet to the proposed drainage and SWM system identified in the ULR Class EA.

The Lauzon Parkway Extension is proposed to have an urban cross-section with roadway drainage provided by storm sewers, from E.C. Row Expressway to Highway 401. The storm sewers will be designed with several outlet locations to minimize the overall slope of the roadway, due to the flat topography of the area. Preliminary outlet locations and proposed SWM facility locations are shown on the future conditions drainage mosaic in Exhibits 13 to 15 of Appendix M.

South of Highway 401, Lauzon Parkway will consist of a rural cross-section with road drainage discharging to roadside grassed swales, on both sides of the road, for treatment and conveyance.

Water quality treatment at the Lauzon Parkway Highway 401 Interchange will consist entirely of grassed swales.

Parameters for the stormwater management plan will be provided in the ULR Class EA. A detailed stormwater management plan will be developed as part of the next phase of design.

A.6.6 ILLUMINATION

Currently, there is no illumination on the existing Lauzon Parkway south of Twin Oaks Drive, except for a single street light at Service Road B. Illumination is proposed on both sides of Lauzon Parkway between E.C. Row Expressway and Highway 401, and all intersections in accordance to City standards. The illumination is proposed in the boulevards of the cross-section and will provide lighting for all roadway users including pedestrians and cyclists. Illumination will also be provided at the Highway 401 Interchange, and along the Active Transportation Bridge, per MTO guidelines.

South of Highway 401, continuous illumination is not warranted along Lauzon Parkway, but will be placed at the intersections with County Road 46 and Highway 3.

Further details regarding illumination are provided in Appendix N.

A.6.7 UTILITIES

The utility companies contacted as part of this EA Study and their correspondence with the Project Team is listed in Section A.4.1.8, and below, including potential impacts and recommendations. Relocation of a utility may be desirable if it is in direct conflict with construction or if it encroaches on the recommended clear zone width. It is recommended that all utilities be contacted early in the next phase of design to confirm locates and establish relocation strategies.

Existing and future utilities along Lauzon Parkway have been planned to be accommodated within the right-of-way. The key utility information has been illustrated on the cross-sections in Section A.6.1.2. The existing utilities located within the Lauzon Parkway corridor and potential impacts are identified in Exhibit A.6-19.

EXHIBIT A.6-19: EXISTING AND PROPOSED UTILITIES WITHIN LAUZON PARKWAY CORRIDOR

Utility	Description	Impacts/Recommendations
City of Windsor – E.C. Row Expressway to Highway 401		
Cable (Bell)	There is existing underground Bell line on Lauzon Parkway from Service Road B to County Road 42.	Actual location and depths will need to be confirmed during next phase of design to determine if relocation will be necessary.
Fibre Optics (City of Windsor)	A traffic conduit is located at the intersection of Lauzon Parkway and Twin Oaks Drive/South Service Road E, and extends north, along the east side of Lauzon Parkway. The conduit is redirected east to cross the E.C. Row Expressway eastbound off-ramp. It is then redirected north, crossing the Expressway, and then re-	The traffic conduit may be impacted between Twin Oaks Drive/South Service Road E and the S-E on-ramp.

Utility	Description	Impacts/Recommendations
	aligns with Lauzon Parkway.	
Gas (Union Gas)	No facilities within existing Lauzon Parkway.	
Hydro (ENWIN)	<p>There is existing ENWIN street lighting on Lauzon Parkway within the E.C. Row Expressway Interchange.</p> <p>There is also street lighting at the intersection of Service Road B and County Road 42.</p> <p>There are hydro poles on the west side of Lauzon Parkway from the CP Rail line south, approximately 350 m, at which point they cross Lauzon Parkway and enter Hydro One’s Transformer Station.</p>	<p>Four street lights may be relocated by the proposed re-alignment of the N/S-E on-ramp.</p> <p>One street light at Service Road B and two at County Road 42 will need to be relocated.</p> <p>Some hydro poles may require relocation. The need for relocation will be determined in the next phase of design.</p>
Hydro (Essex Power)	Essex Power confirmed they do not have any infrastructure within the Study Area.	
Hydro (Hydro One)	<p>There is a Hydro One transmission corridor running east-west crossing Lauzon Parkway south of the CP Rail Windsor Subdivision Line. In addition, overhead hydro poles are located along the east side of Lauzon Parkway.</p> <p>There are overhead power lines from Service Road B to County Road 42.</p> <p>There is also a significant hydro sub-station located between Lauzon Parkway and Lauzon Road.</p>	<p>No impact to the Hydro One transmission corridor is proposed.</p> <p>Some hydro poles, located between Service Road B and the Little River, may need to be relocated. The need for relocation will be determined in the next phase of design.</p> <p>No impact to the hydro sub-station is proposed.</p>
Sanitary Sewer (City of Windsor)	There is a 1650 mm dia. CP sanitary sewer along the west side of Lauzon Parkway from Service Road B to the	The sanitary sewer between Service Road B and the Little River may require manhole

Utility	Description	Impacts/Recommendations
	Little River, and follows the Little River south to County Road 42. There is a 900 mm dia. CP sanitary sewer along Lauzon Parkway from the Little River to County Road 42.	elevation adjustments.
Storm Sewer (City of Windsor)	There is a proposed 900 mm dia. storm sewer from Twin Oaks Drive to the Highway 401 Interchange.	
Water (WUC)	<p>There is no existing water infrastructure within the Lauzon Parkway corridor.</p> <p>The Windsor Utilities Commission (WUC) is proposing to loop the existing feeder mains on County Road 42 and County Road 43 (Banwell Road). This may include a future water feeder main on Lauzon Parkway or Lauzon Road.</p>	
County of Essex –Highway 401 to Highway 3		
Cable (Bell)	<p>There is a Bell Canada plant at the northeast corner of Sexton Sideroad and Highway 3 with various cable lines connecting to it.</p> <p>There is an underground Bell plant on the west side of Sexton Sideroad. There is also a fibre optic cable crossing Sexton Sideroad at County Road 46.</p>	<p>Bell Plant structure is not anticipated to be affected; however actual locations and depths of the Bell lines will need to be confirmed during next phase of design to determine if relocation will be necessary.</p> <p>Underground Bell may be affected; however actual locations and depths of the Bell lines will need to be confirmed during next phase of design to determine if relocation will be necessary.</p>
Fibre Optics (County of Essex)	There is a fibre optic cable crossing Sexton Sideroad at County Road 46.	Actual locations and depths of the fibre optic line will need to be confirmed during next phase of design to determine if relocation will be necessary.
Gas	There is a 500 mm dia. gas main crossing Sexton Sideroad just south of	Actual locations and depths of the gas lines will need to be confirmed during next phase of

Utility	Description	Impacts/Recommendations
	the CN Railway.	design to determine if relocation will be necessary.
Hydro (ENWIN)	There is no existing Hydro (ENWIN) infrastructure in the Lauzon Parkway corridor in the County of Essex.	
Hydro (Essex Power)	Essex Power confirmed they do not have any infrastructure within the Study Area.	
Hydro (Hydro One)	There are hydro poles on Sexton Sideroad from County Road 46 to Highway 3. From County Road 46, the hydro poles are located on the west for approximately 250 m, and then on the east side until Highway 3	Some hydro poles, located between on the west side of Sexton Sideroad may require relocation. The need for relocation will be determined in the next phase of design.
Sanitary Sewer (Town of Tecumseh)	Within the existing Lauzon Parkway corridor in the County of Essex, no sanitary sewer facilities were noted.	
Storm Sewer (Town of Tecumseh)	There are no existing storm sewer facilities in the Lauzon Parkway corridor in the County of Essex. Proposed storm sewer information is provided in Section A.6.5.	
Water (Town of Tecumseh)	There is an existing 250 mm dia. watermain on the west side of Sexton Sideroad.	Actual locations and depths of the gas lines will need to be confirmed during next phase of design to determine if relocation will be necessary.

A.6.8 PRELIMINARY COST ESTIMATE

The preliminary construction cost estimate summary for Lauzon Parkway is presented in the following sections:

- E.C. Row Expressway to Highway 401;
- Highway 401 Interchange;
- Highway 401 Active Transportation Bridge; and
- Highway 401 to Highway 3.

Refer to the plan/profile plates attached at the back of this report, for details of the Lauzon Parkway Recommended Plan.

A summary of construction costs estimates is presented in the following section in 2013 dollars and the detailed breakdown is included in Appendix O. The costs include roadway construction costs, traffic signals, street lighting, and minor hydro distribution, storm sewers/stormwater management, landscaping and gateway features, and cut/fill, where applicable. The minor items included are: curb and gutter, subdrains, traffic staging, signing and line painting.

The construction costs do not include new municipal services (i.e., sanitary sewers, watermains); utility relocations (i.e., sanitary sewers, watermains, municipal drains, hydro, gas, etc); and property acquisition costs. Major hydro distribution along new roadways is also not included.

E.C. ROW EXPRESSWAY TO HIGHWAY 401

For the purposes of this cost estimate, the widening between E.C. Row Expressway and County Road 42 was estimated as new roadway construction, due to the anticipated significant reconstruction of the existing rural to the proposed urban cross-section.

The cost estimate includes:

- the future widening of Lauzon Parkway from 4 to 6 lanes;
- the conversion of the Baseline Road and E-W Arterial intersection roundabouts to signalized intersections;
- widening of the Lauzon Parkway Bridge over CP Rail;
- replacement of the bridge over the Little River; and
- proposed gateway features at the intersections with County Road 42 and E-W Arterial.

LAUZON PARKWAY - FOREST GLADE DRIVE TO HIGHWAY 401 (City of Windsor) INTERIM BUILD 4 LANES (2021)	
Location	Estimated Cost (2013 \$M)
Twin Oaks Drive to Service Road B - Build 4 Lanes	\$6.6
Service Road B - Build New Signalized Intersection	\$1.9
Service Road B to County Road 42 - Build 4 Lanes	\$6.2
County Road 42 - Build New Signalized Intersection	\$5.6
County Road 42 to Baseline Road - Build 4 Lanes	\$3.5
Baseline Road - Build New 2-lane Roundabout (includes 400 m realignment of Baseline Road)	\$2.9
Baseline Road to E-W Arterial - Build 4 Lanes	\$2.6
E-W Arterial - Build New 2-lane Roundabout	\$4.6
E-W Arterial to Highway 401 Interchange - Build 4 Lanes	\$2.4
Total (M)	\$36.3

LAUZON PARKWAY - FOREST GLADE DRIVE TO HIGHWAY 401 (City of Windsor) ULTIMATE WIDEN FROM 4 TO 6 LANES (2031)	
Location	Estimated Cost (2013 \$M)
Forest Glade Drive - Intersection Improvements	\$0.1
E.C. Row Expressway - Interchange Improvements	\$0.9
Twin Oaks Drive - Intersection Improvements	\$0.3
Twin Oaks Drive to County Road 42 - Widen from 4 to 6 Lanes	\$1.6
County Road 42 Intersection Improvements	\$0.4
County Road 42 to Baseline Road - Widen from 4 to 6 Lanes	\$0.7
Baseline Road Intersection - Convert to Signalized Intersection	\$0.9
Baseline Road to E-W Arterial - Widen from 4 to 6 lanes	\$0.6
E-W Arterial Intersection - Convert to Signalized Intersection	\$1.2
E-W Arterial to Highway 401 Interchange - Widen from 4 to 6 Lanes	\$0.5
Total (M)	\$7.2

HIGHWAY 401 INTERCHANGE

The Highway 401 Interchange cost estimate includes the present value of both the interim and ultimate construction costs. The interim interchange, with a teardrop roundabout design, is proposed to be constructed with the Lauzon Parkway 4-lane extension to Highway 401, and further extension to Highway 3. In order to accommodate the Sandwich South Secondary Plan full build-out future traffic demand, the interchange will be converted to a Parclo A4 type interchange, beyond the planning horizon of this EA (2031).

The interim bridge will be constructed to accommodate the 4-lane Lauzon Parkway and the initial interchange construction would include the 4 ramps intersecting at the two roundabout ramp terminals. Gateway features were also included in the cost estimate.

The Parclo A4 Interchange will include widening of the bridge, the addition of two inner-loop ramps, and replacing the roundabouts with signalized intersections. As these will be constructed beyond the horizon study of this EA, the estimated cost is to convert the interchange from a Teardrop Roundabout to a Parclo A4, is provided, but not included in the overall total costs.

LAUZON PARKWAY - HIGHWAY 401 INTERCHANGE (2021)	
Location	Estimated Cost (2013 \$M)
Highway 401 Interchange - Teardrop Roundabout	\$25.3
Estimated Cost to Convert Teardrop Roundabout Interchange to Parclo A-4 Interchange (not included in project costs)	\$15.8*
Total (M)	\$25.3

ACTIVE TRANSPORTATION BRIDGE

The Active Transportation Bridge is recommended to be a typical truss type bridge. The cost estimate includes the bridge structure, an estimate of the approach embankment fills using a 5% slope, and a cost for the pavement leading to and from Lauzon Parkway.

LAUZON PARKWAY – Active Transportation Bridge over Highway 401	
Location	Estimated Cost (2013 \$M)
Active Transportation Bridge over Highway 401	\$5.5
Total (M)	\$5.5

HIGHWAY 401 TO HIGHWAY 3

For the purposes of this cost estimate, the proposed Lauzon Parkway, between County Road 46 and Highway 3, and along the existing Sexton Sideroad alignment, was estimated as new roadway construction, due to the anticipated significant reconstruction of the existing rural to the proposed urban cross-section. Illumination is provided at the intersections with County Road 46 and Highway 3 and is included in this cost estimate.

LAUZON PARKWAY - HIGHWAY 401 TO HIGHWAY 3 (County of Essex) BUILD 4 LANES (2021)	
Location	Estimated Cost (2013 \$M)
Highway 401 Interchange to County Road 46 - Build 4 Lanes	\$2.6
Lauzon Parkway and County Road 46 Intersection	\$2.0
County Road 46 to Highway 3 - Build 4 Lanes	\$2.1
Lauzon Parkway and Highway 3 Intersection	\$1.5
Highway 3 to Sexton Sideroad - Build 2 Lanes	\$0.8
Total (M)	\$9.0

A.6.9 PLAN/PROFILE PLATES OF RECOMMENDED PLAN

The Recommended Plan and profile is shown on the Key Plan and Plates 1 – 17, which are included at the back of this document.

A.6.10 ENVIRONMENTAL EFFECTS AND MITIGATING MEASURES

Mitigation of impacts is applied throughout the EA process, including development of alternatives to avoid constraints, and selection of the Technically Preferred Plan by identifying the alternative that has the least overall effects on the environment. Additional mitigation measures are identified in this report to minimize any adverse impacts that cannot be completely avoided through the selection of the Technically Preferred Plan. These measures will be further refined and finalized in the next phase of design, and will be included in the contract documents for implementation during construction.

This section describes the potential environmental effects, direct and indirect, associated with the Recommended Plan, as well as mitigating measures that will be implemented to minimize the effects and any necessary commitments to future work (design and construction). Mitigation includes planning decisions, design features, construction requirements and construction constraints.

The key to ensuring effective environmental quality control and risk management during the project is the development and proactive implementation of an approach that:

- identifies the environmental sensitivities;
- presents the environmental protection measures in a way that can be translated into contractual requirements and for which compliance can be verified; and
- includes a monitoring program that verifies that the environmental protection measures are being implemented and are effective.

It is important to ensure that the designers, contract administrator and contractor are made aware of, and are prepared to deal with, all environmental issues that may arise during construction.

A.6.10.1 Transportation and Infrastructure

The proposed undertaking as described in this ESR will address the identified problems and opportunities by addressing the existing congestion, supporting economic development and improving accessibility for residents and businesses in East Windsor and neighbouring municipalities.

The associated transportation benefits are as follows:

- Addresses existing road network and intersection peak period congestion and deficiencies;
- Improved and new north-south and east-west linkages establishing a grid transportation system;
- Additional capacity to accommodate future projected growth in the City of Windsor and County of Essex; and
- Additional linkages and capacity to support the future development associated with the draft Sandwich South Secondary Plan area.

UTILITIES

The existing utilities located within the Lauzon Parkway study area are noted in Section A.4.1.8 and potential impacts to these utilities are identified in Section A.6.7. The utilities information presented in this ESR is based on mark-ups/information received from the municipalities and agencies. More specific details of all existing infrastructure and specific relocation strategies must be established during the next phase of design. Space for additional utilities has been accommodated in the planned right-of-way. The placement of utilities and trees within the ROW should ensure the designated tree planting space requirements and proper separation from utilities.

A.6.10.2 Socio-Economic Environment

PROPERTY

The proposed improvements to Lauzon Parkway from E.C. Row Expressway to County Road 42 and the Lauzon Parkway Extension from County Road 42 to Highway 3, including the proposed Highway 401 Interchange, will require private property beyond the existing City of Windsor, County of Essex, and MTO right-of-way's. This private property is primarily designated rural/agricultural land. The existing City, County and MTO right-of-way limits and the additional private property required is shown on the plates of the Recommended Plan. The plates identify the civic address, roll number, and extent of property requirements for each property that is affected by the Recommended Plan.

Property requirements are shown on the Design Plates in which are included at the back of this document, and a detailed list of individual property requirements is in Appendix P. A summary of the overall property requirements for Lauzon Parkway is provided in Exhibit A.6-20.

EXHIBIT A.6-20: SUMMARY OF PROPERTY REQUIREMENTS

Roadway and Jurisdiction	Property Required (ha.)
Lauzon Parkway in City of Windsor E.C. Row Expressway to Highway 401	33.7
Lauzon Parkway in County of Essex Highway 401 to Highway 3	21.7

Following completion and approval of the ESR, MTO will be in a position to designate portions of the Lauzon Parkway at Highway 401 and Highway 3 as controlled-access highway. A 'Designation Plan of a Proposed Highway' is used when the proposed route does not follow the course of an existing road and may also be used when the Ministry does not have title to the lands along the proposed route. The filing of the Plan and Order in Council has the effect of designating the lands shown on the plan as a controlled-access highway. The designation becomes effective on the date it is approved by the Lieutenant Governor in Council, and places obligations upon adjoining owners as set out in the Public Transportation and Highway Improvement Act. Further development of these lands is subject to a permit from the MTO. The limits of the designation will be based on upon the ESR approved property limits, and only include those portions directly affecting the interchange at Highway 401, and intersection with Highway 3.

The decision to proceed with and/or fund the acquisition of property and subsequent phases of design and construction will be reviewed following completion and approval of this Environmental Assessment Study. During the next phase of design, individual property owners will be contacted to discuss and negotiate compensation for the property required for the Recommended Plan.

ACCESS

Lauzon Parkway, between E.C. Row Expressway and Highway 401, will be designed as a Class I Arterial, as described in the City's Official Plan: Volume I, Section 7.2.6. In general, it will be designed as a Controlled Access Highway, where direct property access shall not be permitted. Potential impacts to existing property accesses, including residential and agricultural accesses, were reviewed and identified as part of developing the Recommended Plan.

The roadway will include a 0.3 m reserve to protect from future access. The 0.3 m reserve is a strip of land on either side of the right-of-way which separates the privately owned properties from the right-of-way. The 0.3 m reserve will not be imposed across existing accesses. Reserves are commonly used by municipalities to prevent direct access from private property to public highway; if permission has been granted through either the land division or Site Plan Approval process, the reserve must be "lifted" in order to gain legal access to public highway. This is done by making a formal application to the municipality. In most cases the municipality "lifts" reserves by dedicating them as public highway after which they become part of the road right-of-way they abut.

Along the proposed Lauzon Parkway, the section from County Road 46 to Highway 3 has existing residential and agricultural accesses. The cross-section of Lauzon Parkway in this area was designed as an undivided roadway in order to maintain the existing accesses. Therefore, the existing residential accesses on Sexton Sideroad, from County Road 46 to Highway 3, will be maintained.

Details for the removed/re-aligned accesses on Lauzon Parkway are described in Exhibit A.6-21 and shown on the Design Plates which are included at the back of this document.

Properties and/or developments located within MTO's permit control area under the Public Transportation and Highway Improvement Act (PTHIA) are subject to MTO review and approval prior to issuance of entrance, building, and land use permits. This includes currently vacant properties with, or without existing access, which make an application for development/re-development.

EXHIBIT A.6-21: PROPERTY ACCESS IMPACTS

Property/Address	Potential Impact / Proposed Modifications
6594 County Road 46 ARN: 374453000000200	Full buyout required.
5300 Highway 3 ARN: 374449000000100	Two access points to Highway 3 were reduced to a single driveway as part of highway widening contract. Access to Highway 3 proposed to be realigned to the western limit of the property.
5412 Highway 3 ARN: 3744480000008700	Full buyout required.
5676 Highway 3 ARN: 3744480000008600	Existing access to Highway 3 to remain. However, the existing farm access to existing Sexton Sideroad proposed to be realigned further north as part of construction of the proposed Highway 3 intersection.
5255 Highway 3 ARN: 3744470000009305	Access point to Highway 3 proposed relocated to the western limit of the property.
5299 Highway 3 ARN: 3744470000009308	MTO acquired this property and subsequently resold it under the condition that direct access to Highway 3 is not permitted and access is provided to Sexton Sideroad. Access to be provided from proposed cul-de-sac of Sexton Sideroad.
5369 Highway 3 ARN: 374446000001800	Access point to Sexton Sideroad proposed to be realigned further south from intersection.
5395 Highway 3 ARN: 374446000001900	Access point to Sexton Sideroad proposed to be realigned further south from intersection. Access to the maintenance yard proposed to be provided from proposed cul-de-sac of Sexton Sideroad.

NOISE

A noise assessment was conducted to assess the potential increase in noise level to noise sensitive areas as a result of the proposed improvements to Lauzon Parkway and County Road 42, as well as the proposed construction of the Lauzon Parkway extension and the E-W Arterial. There were 33 residential houses selected to be included in the noise calculations to represent the noise sensitive areas in the overall study area. Of those, 8 were located along the Lauzon Parkway study area. The full Noise Assessment Report is documented in Appendix Q.

The conclusions of the noise assessment for the proposed improvements are as follows:

- The difference between the projected noise levels with and without the proposed improvements was determined to be less than 5 dBA at 2 of the 8 receiver locations; therefore, the consideration of noise mitigation is not warranted at these locations based on MTO/MOE Noise Protocol.
- The remaining 6 receiver locations were predicted to have an increase in noise level of greater than 5 dBA.

- 4 of the 6 receiver locations were considered for noise mitigation based on the MTO/MOE Noise Protocol.
- The remaining 2 of 6 receiver locations are frontage properties, therefore noise mitigation is not considered.
- A 3 meter high noise wall is predicted to lower noise levels at the 4 receiver locations by 0.5 dBA to 1.6 dBA.
- A 3 meter noise wall is not considered to be technically feasible as it would not achieve the minimum 5 dBA reduction per MTO/MOE Noise Protocol; therefore, a noise wall at the 4 receiver locations is not recommended.

Based on the conclusions of the noise assessment, no noise mitigation is recommended.

CONTAMINATION OVERVIEW STUDY

A Contamination Overview Study of the Study Area in support of the Lauzon Parkway EA Study was conducted to identify and review actual or potential contaminated areas/properties and identify appropriate environmental future work and mitigation measures. The purpose of the study was to determine the potential for contamination on each property and if a Phase I and II Environmental Site Assessment is required during the next phase of design. The areas of potential environmental concern (APECs) were placed into one of the following categories:

High potential for contamination – areas where land uses consist of commercial/industrial operations that could impact soil and/or groundwater.

Moderate potential for contamination – areas which represent land uses that are agricultural operations, which may be directly affected by the project; or are small commercial/industrial properties suspected of using chemical compounds or performing activities that could impact soil and/or groundwater, but may not be directly impacted by road improvements.

Low potential for contamination – areas are generally classified as open space, residential, or agricultural areas that are not suspected of using chemical compounds harmful to the environment or human health. Another low contamination potential of concern includes road salt impacts along right-of-ways, roads, and parking lots.

The study concluded that in the Lauzon Parkway Study Area in the City of Windsor:

- 5 properties which will be directly impacted by the proposed improvements have a high potential for contamination and recommends carrying out a Phase I and/or Phase II Environmental Site Assessment for due diligence purposes.
- 2 properties which will be directly impacted by the proposed improvements have moderate potential for contamination and recommends carrying our Phase I and/or Phase II Environmental Site Assessments for due diligence purposes.

The study concluded that in the Lauzon Parkway Study Area in the County of Essex:

- 4 properties which will be directly impacted by the proposed improvements have a high potential for contamination and recommends carrying out a Phase I and/or Phase II Environmental Site Assessment for due diligence purposes.
- 2 properties which will be directly impacted by the proposed improvements have moderate potential for contamination and recommends carrying our Phase I and/or Phase II Environmental Site Assessments for due diligence purposes.

The study also recommended for other high and medium APECs where there are no property takings, carrying out a soil contaminant investigation in areas where excavation may be required, to assess soil quality and determine suitable soil management options during construction. The purpose of this investigation is to confirm presence of environmental impacts related to existing/historical land uses in the APECs described above.

All other areas, generally classified as open space, residential, or agricultural areas, are considered to have low potential for site contamination. Another low contamination potential of concern includes road salt impacts along right-of-ways, roads, and parking lots. No additional environmental investigations are recommended for these areas.

A.6.10.3 Cultural Environment

BUILT HERITAGE RESOURCES AND CULTURAL HERITAGE LANDSCAPES

A cultural heritage resource assessment was undertaken for built heritage and cultural landscapes in the study area. A windshield survey was completed in May 2011 to identify cultural heritage landscapes and built heritage resources within the study area. Descriptions of the identified built heritage and cultural landscape features located within the study area, direct and indirect effects, and the recommended mitigating measures associated with each of the heritage resources can be found in Appendix D.

Within the Lauzon Parkway study area, there is one property listed on the City of Windsor Municipal Heritage Register (2012):

- 4601 County Road 17: BHR, Residential, Dolphice St. Louis House dates to 1932

At this time, the other municipalities do not have any listed or designated properties on a municipal register.

The field survey identified 28 potential resources within the Lauzon Parkway study area, categorized as Cultural Heritage Landscape (CHL) or Built Heritage Resources (BHR). The majority of resources were found to be residential or farm complexes dating back to the mid-20th century. One potential direct impact in respect to cultural heritage resources was identified for the extension of Lauzon Parkway: 5412 Highway 3, is a former schoolhouse which was decommissioned in 1955 and has since been converted into a residence.

Generally, road improvement projects such as the introduction of a new roadway or the widening of an existing roadway have the potential to adversely affect cultural heritage landscapes and built heritage resources by displacement and/or disruption during, as well as after construction. Cultural heritage landscapes and/or built heritage resources may experience displacement, or

direct impacts, i.e., removal, if they are located within the right-of-way of the undertaking. There may also be potential for disruption, or indirect impacts, to cultural heritage resources by the introduction of physical, visual, audible or atmospheric elements that are not in keeping with their character and/or setting.

The potential direct impacts (displacement) and indirect impacts (disruption) of this project are principally associated with the construction of new road rights-of-way and the widening of existing roadways.

Direct Impacts

One potential direct impact in respect to cultural heritage resources was identified for the proposed expansion of the Lauzon Parkway to Highway 3:

- Site #36¹²: URCSS #7, 5412 Highway 3, Town of Tecumseh.

Indirect Impacts

The principal impacts for the Lauzon Parkway improvements are indirect. They can be grouped into the following categories: modifications to the existing transportation network, land acquisition and general construction and operational impacts relating to increased traffic and higher noise levels as a result of the road improvements.

Modifications to the existing transportation network

- Site #16: County Road 42, City of Windsor, Town of Tecumseh and Town of Lakeshore
- Site #30: Provincial Road, County Road 46, Town of Tecumseh
- Site #33: Sexton Sideroad, Town of Tecumseh
- Site #34: Canadian National Railway, Town of Tecumseh
- Site #35: Highway 3 (Talbot Road), Town of Tecumseh

Land acquisition

- Site #31: 6703 & 6715 Provincial Road, Town of Tecumseh

General construction and operational impacts

- Site #20: 7405 County Road 42, City of Windsor
- Site #31: 6703 & 6715 Provincial Road, Town of Tecumseh
- Site #35: Highway 3 (Talbot Road), Town of Tecumseh

Mitigation Measures

A proposed undertaking should not adversely affect cultural heritage resources and intervention should be managed in such a way that its impact is sympathetic with the value of the resources. When the nature of the undertaking is such that adverse impacts are unavoidable it may be

¹² Site # as noted in Appendix D: Cultural Heritage Assessment Report – Table 2.

necessary to implement management or mitigation strategies that alleviate the deleterious effects to cultural heritage resource. Mitigation is the process of causing lessening or negating anticipated adverse impacts to cultural heritage resources and may include, but are not limited to, such actions as avoidance, monitoring, protection, relocation, remedial landscaping, documentation of the cultural heritage landscape and/or built heritage resource if to be demolished or relocated, salvage of building materials.

Mitigating measures and best management practices will be implemented to address potential impacts. Identified mitigation strategies will be carried through the next phase of design as applicable. Refinements and enhancements to the mitigations recommendations will be made as warranted throughout all phases of the project.

The following mitigation measures for the **direct impacts** are recommended:

Prepare a Cultural Heritage Evaluation Report (CHER) as part of detail design:

- Site #36¹³: URCSS #7, 5412 Highway 3, Town of Tecumseh

The following mitigation measures for the **indirect impacts** are recommended:

Prepare a photographic documentation report as part of detail design:

- Site #16: County Road 42, City of Windsor, Town of Tecumseh and Town of Lakeshore
- Site #30: Provincial Road, County Road 46, Town of Tecumseh
- Site #33: Sexton Sideroad, Town of Tecumseh

No mitigation:

- Site #20: 7405 County Road 42, City of Windsor
- Site #31: 6703 & 6715 Provincial Road, Town of Tecumseh
- Site #34: Canadian National Railway, Town of Tecumseh
- Site #35: Highway 3 (Talbot Road), Town of Tecumseh

ARCHAEOLOGICAL ASSESSMENT

A Stage 1 Archaeological Assessment was completed for the study area. A search of the Ministry of Tourism, Culture and Sports' registered archaeological site database revealed that there are no registered archaeological sites within the existing roadway corridors of Lauzon Parkway and County Road 42, nor are any sites located within a one kilometer of the subject corridors. This is likely not a reflection of lack of sites within the area, but a lack of archaeological investigation.

The existing portion of Lauzon Parkway between E. C. Row Expressway and County Road 42 is disturbed from previous construction activities. Given this, it is recommended that this section of the corridor is free of any further archaeological concerns. However, the widening of Lauzon Parkway and extension to Highway 3 requires additional property beyond the existing corridor which does not appear to be disturbed.

¹³ Site # as noted in Appendix D: Cultural Heritage Assessment Report – Table 2.

The existing Lauzon Parkway is identified on historic maps, the planned extension lies within 100 m of historic transportation routes and cross modern watercourses and therefore lands required beyond the existing Lauzon Parkway right-of-way are considered to have archaeological potential based on provincial archaeological criteria.

A Stage 2 Archaeological Assessment will be required prior to construction for the proposed right-of-way, and should also be completed prior to any intrusive investigations (such as boreholes associated with foundations, pavements, contaminated properties) required during detailed design on lands required outside the existing Lauzon Parkway right-of-way.

The assessment reports must conform to the Ministry of Tourism, Culture and Sport's *Standards and Guidelines for Consultant Archaeologists (2011)*. The licensed archaeologist will forward all completed archaeological assessment reports for to the Ministry of Tourism and Culture for review and clearance prior to construction.

A.6.10.4 Natural Environment

This impact and mitigation review has been developed with a focus on the protection of Species at Risk (SAR) and SAR habitat, as well as general vegetation and aquatic habitat.

The strategies described in the following section apply to Lauzon Parkway from E.C. Row Expressway south to Highway 3.

Two SAR snakes, Butler's Gartersnake and Eastern Foxsnake (both Endangered) have been documented in the study area. Habitat for Snapping Turtle (Special Concern) is also present. Some (limited) habitat for Bobolink (Threatened) and possibly other grassland birds has been recorded. Both Wood Thrush and Eastern Wood Peewee have also been recorded by Ecoplans. These are COSEWIC SAR that are being considered for uplisting to the Ontario Species at Risk list (COSSARO) In addition noteworthy flora (SC, S1 to S3) have also been documented.

Exhibit A.6-22 identifies the anticipated construction works, potential/anticipated impacts, and recommended mitigation strategies and monitoring activities associated with the Recommended Plan for Lauzon Parkway from E.C. Row Expressway to Highway 3. These measures will be further refined and refined in the future during the next phase of design and with further agency input. The measures identified reflect strategies that have been developed and discussed with agencies (including MNR) on other similar projects in this area.

It is important to note that these roadway undertakings are expected to be phased over a number of years. During that time, there may well be further changes in Endangered Species Act, R.S.O. 2007 (ESA) policies and regulations, land use policies, development priorities, and land uses themselves (agricultural practices, changes in crop types). As a result, ESA requirements may change. For this reason, during the next phase of design, further liaison is required with MNR staff to identify potential risks to SAR species, based on ESA protected species lists and regulations and land use activities at the time, develop appropriate mitigation measures, and determine final permitting/approval requirements.

EXHIBIT A.6-22: LAUZON PARKWAY NATURAL ENVIRONMENT POTENTIAL EFFECTS AND MITIGATING MEASURES

PROPOSED WORKS	POTENTIAL/ANTICIPATED IMPACTS	MITIGATING MEASURES AND MONITORING REQUIREMENTS
<p>Lauzon Parkway from E.C. Row south to Highway 3</p> <ul style="list-style-type: none"> Widening of existing Lauzon Parkway from 2 to 6 lanes, south to County Road 42 New alignment extension (6 lanes) from County Road 42 south, crossing 401, to Highway 3 Upgraded drain crossing at McGill Outlet drain New structure crossing of Little River (north of County Road 42) Parallels Little River corridor south of County Road 42 to Highway 401 	<p>Vegetation</p> <p>DIRECT IMPACTS</p> <ul style="list-style-type: none"> Localized riparian vegetation disturbance at drain crossing and Little River crossing. Intrusion along St. Louis Woods, bordering existing Lauzon Parkway (north of County Road 42). Disturbance to vegetation patches supporting noteworthy rare flora in refuge habitat in roadside ditches, roadside margins, and selected hedgerows (SC, S1 to S3). <p>INDIRECT IMPACTS</p> <ul style="list-style-type: none"> Potential for damage to vegetation outside the work zone; sedimentation; spills of contaminants/fuels; root pruning; damage to limbs; and soil compaction. <p>Wildlife</p> <p>DIRECT IMPACTS</p> <ul style="list-style-type: none"> Area between E.C. Row Expressway and County Road 42 has high potential for presence of Butler’s Gartersnake and Eastern Foxsnake, in suitable habitat, and in proximity to previous snake records. These areas include McGill drain crossing, Little River corridor, airport forest, and meadow habitat bordering road and at south edge of airport forest. Issues are potential habitat removal/disturbance and maintenance of future snake movement opportunities. Any watercourse has the potential to support Snapping Turtle (SC), even irregularly, based on seasonal flow and awareness of this possibility is important. Elsewhere, there is potential to encounter SAR snakes moving into construction zone where roadway extension parallels the Little River corridor south of County Road 42. Potential for SAR snake encounters during construction is also an issue for the upper Lauzon section north of County Road 42, and, north of Twin Oaks Drive. Wood Thrush and Eastern Wood Peewee were recorded in the airport forest and adjacent regenerating meadow to the immediate south (St. Louis Woods). Both species are COSEWIC SAR with expectation for uplisting to COSSARO (Species at Risk in Ontario). Some Bobolink (Threatened) individuals were observed in winter wheat fields between County Road 42 and Baseline Road during field surveys. The new alignment extension traverses these fields. Possible disturbance to nesting migratory birds during construction. Potential wildlife encounters during construction. Possible disturbance to SAR snake hibernacula (overwintering sites). <p>INDIRECT IMPACTS</p> <ul style="list-style-type: none"> Potential for temporary disturbances to species occupying adjacent 	<p>Vegetation (and Wildlife)</p> <ul style="list-style-type: none"> Minimize the road widening and ultimate road ROW footprint during the next phase of design to the extent feasible. Endeavor to avoid or at least minimize intrusion into the airport forest edge. Where feasible, retain fence line vegetation at west side of ROW edge (north of airport forest) which provides refuge habitat for SC species. Assess salvage feasibility for noteworthy flora directly affected by construction to available publicly owned lands in study area with compatible habitat conditions. If forest edge intrusion is unavoidable, undertake Arborist review and tree root management/edge protection assessment at Detailed Design. Install temporary erosion control measures along the construction limits. If erosion control blankets are required, the MNR recommends Curlex® Net Free™ 100% biodegradable erosion control blankets to avoid snake entanglement. However an alternate product may be utilized upon approval by the MNR. Install sediment and erosion control measures prior to the commencement of construction and maintain until the site has been stabilized. Construction phasing should be scheduled to minimize the extent and period to which disturbed soils are exposed to weathering. <p>Wildlife</p> <p>In order to protect nesting migratory birds, in accordance with the Migratory Birds Convention Act (MBCA), the following guidance is provided:</p> <ul style="list-style-type: none"> Ensure that construction timing constraints are applied to avoid vegetation clearing (including grubbing) and/or structure works (construction, maintenance) during the breeding bird season (approximately May 1st to August 8th). Occasionally bird species will precede (e.g. mid-April nesting) or exceed (e.g. September) the approximate breeding bird season window. If clearing cannot be timed to avoid this window, the contractor is advised to contact Environment Canada for advice on appropriate / acceptable mitigation. The Contractor shall not destroy active nests (nests with eggs or young birds) of protected migratory birds, including SAR protected under the Provincial Endangered Species Act (ESA 2007). If any such nests are encountered the Contractor Administrator must be contacted. If a nesting migratory bird (or SAR protected under ESA 2007) is identified within or adjacent to the construction site and the construction activities are such that continuing construction in that area would result in a contravention of the MBCA, or ESA (2007), all activities will stop and MNR and Environment Canada will be contacted to discuss mitigation options. <p>Wildlife Movements</p> <ul style="list-style-type: none"> Consider supplementary wildlife passage at the McGill outlet drain crossing (for SAR snakes) if it is expected that the drain corridor to the Little River will be maintained over the long term. Ensure that the new structure at the Little River crossing is designed to accommodate hydraulics, aquatic passage, and terrestrial passage (including SAR snakes). Wildlife funnel fencing designed for reptiles is recommended in association with the wildlife structure (s) to maximize structure effectiveness. <p>SAR Wildlife Management</p> <ul style="list-style-type: none"> Consult with MNR to determine SAR snake risk, and status of Wood Thrush/Eastern Wood Peewee presence/habitat, to develop appropriate mitigation strategies based on final design information and requirements, and other factors (ESA policy status, land use changes, etc.) as highlighted in Introduction. This consultation should also include Bobolink habitat use, because winter wheat fields are not currently (2013) considered Bobolink habitat by MNR. These consultations will clarify habitat presence, SAR risk,

PROPOSED WORKS	POTENTIAL/ANTICIPATED IMPACTS	MITIGATING MEASURES AND MONITORING REQUIREMENTS
	<p>habitats during construction.</p> <ul style="list-style-type: none"> Potential for damage to habitat outside the work zone (as noted above in relation to vegetation impacts) <p>For aquatic habitat, the issue is protection of fish habitat at the Little River crossing, and provision of aquatic passage at both the McGill Drain crossing and the Little River crossing</p>	<p>SAR snake hibernacula potential, and mitigation requirements during Detailed Design for implementation during construction. Note: there is high potential for SAR snake presence in this Lauzon section, particularly north of the railway tracks, the airport forest habitat and associated moist meadow to south, and the Little River corridor, and therefore a higher likelihood of MNR required LOA or permitting requirements prior to construction.</p> <p>In order to protect SAR snakes during construction (including Butler’s Gartersnake and Eastern Foxsnake) as well as Snapping Turtle (SC), the following measures are recommended:</p> <ul style="list-style-type: none"> Implement all conditions of Endangered Species Act Permit issued by MNR In consultation with MNR, design and erect temporary reptile barrier fencing around the construction zone prior to the initiation of works, and maintain throughout construction. Provide reptile encounter training to Contractor staff to deal with possible reptile encounters during construction and MNR liaison. A Biologist (familiar with SAR snake and turtle identification) should be on site at key times (such as drain and Little River crossing work, forest/meadow work) to monitor for reptile encounters and inspect the reptile barrier fencing. The contractor should conduct daily external and internal inspections of all pieces of equipment on the active construction site prior to start up or operation to ensure that there are no snakes or turtles in or on the equipment. Should individuals of any SAR snake species or Snapping Turtles (SC) be encountered within or on any equipment, or within the active construction site enclosed by the reptile barrier, the contractor shall maintain a minimum operating distance of 30 m from the individual until the following day in order to allow the individual to disperse out of the active construction site on its own ability. Should the contractor be unable to allow an incidentally encountered individual of the above species to disperse from the active construction site under its own ability, the contractor shall immediately contact the MNR Aylmer District Species at Risk Biologist to seek direction. <p><u>Aquatic Habitat</u></p> <ul style="list-style-type: none"> During Detailed Design undertake agency consultation (CA) to confirm fish presence/use (direct/indirect). Based on these consultations, ensure that habitat functions are maintained (indirect use) and, if necessary, additional measures are implemented (such as compensation) during design and construction, if direct use is affected.

PART B COUNTY ROAD 42

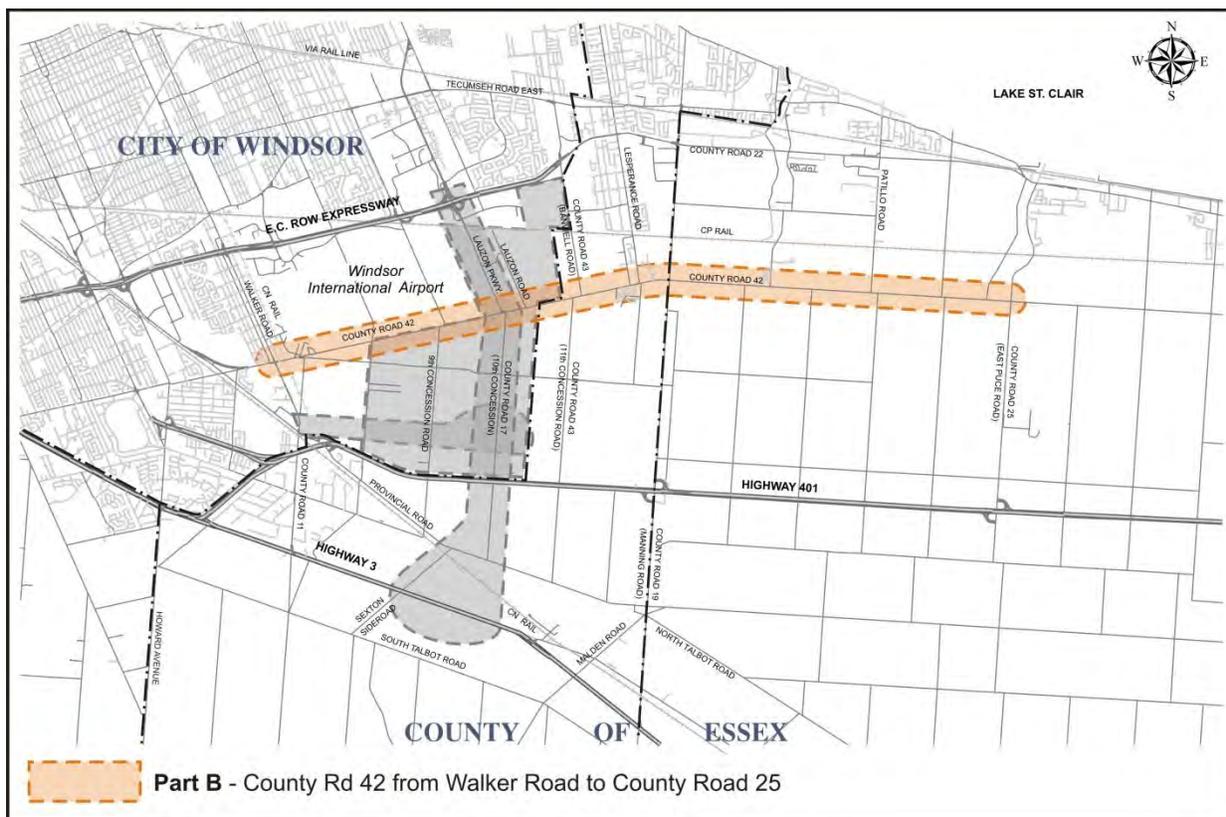
B.4 EXISTING CONDITIONS

The existing environmental conditions within the County Road 42 study area are presented in this section. This information was used to assist in the generation and evaluation of design alternatives. The existing conditions related to the natural environment, socio-economic environment, cultural environment, transportation and utilities were established through collection of background information from numerous sources, including:

- The review of pertinent background studies and reports;
- Investigations undertaken by the project team;
- Correspondence or meetings with the Project Team and participating technical/approval agencies; and
- Public consultation.

The four main components of the study, with Part B: County Road 42 highlighted, are illustrated in Exhibit B.4-1.

EXHIBIT B.4-1: COUNTY ROAD 42 STUDY AREA



B.4.1 TRANSPORTATION AND INFRASTRUCTURE

B.4.1.1 Existing Road Network

The existing County Road 42 within the project limits extends from Walker Road in the west to County Road 25 (E. Puce Road) in the east. Beyond the project boundaries it extends from Division Road in the City of Windsor, in the west, to Highway 401 in the east. County Road 42 provides full moves grade separated access to Highway 401 and at-grade intersections with major north-south arterial roadways within the City of Windsor and Towns of Tecumseh and Lakeshore. County Road 42 is generally a 2-lane rural roadway with open-ditch areas.

In the City of Windsor, County Road 42 is a rural 2-lane Class II Arterial Road¹⁴ which extends, within the study limits, from Walker Road, easterly to the City/County Boundary. County Road 42 extends from the west City limit to the east City limit with three name changes: Todd Lane, Cabana Road West/East, and County Road 42. For the purposes of this document, the name County Road 42 will refer to the whole roadway from Walker Road to the City/County Boundary, and further to County Road 25 (E. Puce Road). It is noted in Chapter 7 of this document, that the City is planning a name change of County Road 42 to Cabana Road, between Provincial Road and the City/County Boundary to reflect jurisdiction and maintain consistency.

In the County of Essex, County Road 42 is a rural 2-lane roadway and is designated as an Arterial Road from the City/County Boundary to County Road 19 (Manning Road), and as a Regional Road easterly to County Road 25 (E. Puce Road), the eastern study limit.

An overview of the existing study area road network is presented in Section 2.3. The key components of the existing road network within the study area are described in Exhibit B.4-2, and illustrated in Exhibit B.4-3:

EXHIBIT B.4-2: EXISTING ROAD NETWORK COMPONENTS

North-South Roadways	Key Characteristics
Walker Road	<ul style="list-style-type: none"> - Currently, a 4-lane Class II Arterial Road, with a posted speed of 60 km/h, under the jurisdiction of the City of Windsor and County of Essex, north and south of Highway 401, respectively. - Existing interchange with E.C. Row Expressway and an indirect interchange with Highway 401 via County Road 46/Provincial Road. - Existing signalized intersection with County Road 42. - The City completed a Class EA Study for roadway widening and alignment improvements in March 2001.

¹⁴ City of Windsor Official Plan (2007) – Schedule F: Roads and Bikeways

7 th Concession Road	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Collector Road under the jurisdiction of the City of Windsor, with a posted speed of 50 km/h. - Existing signalized intersection with Walker Road and a stop controlled intersection with County Road 42. - Planned to be classified as an Arterial Road in the Sandwich South Secondary Plan.
8 th Concession Road	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Collector Road, with a posted speed of 60 km/h (40 km/h from Baseline Road to approximately 400 m south of Joy Road), under the jurisdictions of the City of Windsor and Town of Tecumseh, north and south of Highway 401, respectively. - Existing overpass at Highway 401. - Existing stop controlled intersection with County Road 42. - Planned to be classified as a Collector Road in the Sandwich South Secondary Plan.
9 th Concession Road	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Arterial Road, with a posted speed of 60 km/h, under the jurisdiction of the City of Windsor and Town of Tecumseh, north and south of Highway 401, respectively. - Existing overpass at Highway 401. - Existing stop controlled intersection with County Road 42. - Planned to be classified as an Arterial Road in the Sandwich South Secondary Plan.
Lauzon Parkway	<ul style="list-style-type: none"> - Currently, a 2-lane Class I Arterial Road, with a posted speed of 70 km/h and 80 km/h, under the jurisdiction of the City of Windsor. - Existing interchange with E.C. Row Expressway. - Existing signalized intersection with County Road 42.
10 th Concession Road/ County Road 17	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 60 km/h, under the jurisdiction of the City of Windsor and the County of Essex, north and south of Highway 401, respectively. - Existing overpass at Highway 401. - Existing signalized intersection with County Road 42.

<p>County Road 43 (Banwell Road)</p>	<ul style="list-style-type: none"> - Currently, Banwell Road is a 2-lane Class II Arterial Road, with a posted speed of 50 km/h and 60 km/h, in the City of Windsor. - Currently, County Road 43 a 2-lane Arterial Road with a posted speed of 60 km/h in the County of Essex (Town of Tecumseh). - Existing signalized intersections with County Road 22/E.C. Row Expressway and County Road 42. - In 2009, the County completed a Class EA Study for roadway and alignment improvements. A similar study for the City is nearing finalization for the Banwell Road EA. - The jurisdictional boundary for County Road 43 (Banwell Road) is the CP Railway north of County Road 42.
<p>County Road 19 (Manning Road)</p>	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 80 km/h, under the jurisdiction of the County of Essex. - In 2006, the County completed a Class EA Study for roadway improvements. - Existing signalized intersections with County Road 22 and County Road 42, and an interchange with Highway 401. - The municipal boundary between the Towns of Tecumseh and Lakeshore is located in the middle of County Road 19 (Manning Road).
<p>County Road 21 (Elmstead Road)</p>	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 50 km/h, under the jurisdiction of the County of Essex.
<p>Patillo Road</p>	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 60 km/h, under the jurisdiction of the Town of Lakeshore. - At County Road 42 the roadway has been widened to 4 lanes, to approximately 300 m north of County Road 42. - There is a paved shoulder cycling route on the west side of the roadway. - Patillo Road will be a 4-lane road from County Road 42 to the CP Rail tracks, and a 5-lane road from the CP Rail tracks to County Road 22 in the future (Patillo Road EA).
<p>County Road 25 (E. Puce Road)</p>	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 80 km/h, under the jurisdiction of the County of Essex.
<p>East-West Roadways</p>	<p>Key Characteristics</p>
<p>Forest Glade Drive</p>	<ul style="list-style-type: none"> - Currently, a 5-lane Class I Collector Road, with a posted speed of 50 km/h, under the jurisdiction of the City of Windsor.
<p>E.C. Row Expressway/ County Road 22</p>	<ul style="list-style-type: none"> - Currently, a 4-lane east-west Expressway with a posted speed of 100 km/h from 250 m west of Banwell Road, westerly, in the jurisdiction of the City of Windsor, and a 4-lane Class I Arterial to the east of this point, in the jurisdiction of the County of Essex, with a posted speed 80 km/h. - This is the busiest route in the study area, where AADT volumes reach over 50,000 in some sections.

Twin Oaks Drive/South Service Road E.	<ul style="list-style-type: none"> - Currently, a 2-lane Class I Collector Road with a posted speed of 50 km/h, under the jurisdiction of the City of Windsor. - The City has completed a Class EA Study which recommended roadway re-alignment to accommodate the proposed rail spur extension.
Cabana Road/ Division Road/ County Road 42	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Arterial Road, with a posted speed of 50 km/h, 60 km/h and 80 km/h, under the jurisdiction of the City of Windsor and the County of Essex. Cabana Road is 50 km/h at Division Road. - Existing signalized intersection with Lauzon Parkway.
Baseline Road	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Arterial Road west of 10th Concession Road / County Road 17, and a Collector Road east of 10th Concession Road / County Road 17, in the jurisdiction of the City of Windsor. It continues as a Collector Road in the jurisdiction of the County of Essex. - It has a posted speed of 40 km/h, 50 km/h and 60 km/h. - Intersects with 7th Concession Road and continues west of 7th Concession Road for eastbound traffic only from County Road 42. - The section between 9th Concession Road and 10th Concession Road / County Road 17 contains an S-bend as it crosses the Little River.
Highway 401	<ul style="list-style-type: none"> - Currently, a 6-lane divided provincial freeway, with a posted speed of 100 km/h, with a high proportion of truck traffic. - Existing interchanges at County Road 46, County Road 19 (Manning Road), and County Road 25 (E. Puce Road).
County Road 46/ Provincial Road	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 80 km/h, under the jurisdiction of the County of Essex. - Existing interchange with Highway 401.
Highway 3	<ul style="list-style-type: none"> - Currently, a 4-lane undivided provincial highway, with a posted speed of 80 km/h.

The following table, Exhibit B.4-4, lists the existing intersections on County Road 42 within the study area as Signalized, 1-way Restricted Flow, and 2-way Stop¹⁵.

EXHIBIT B.4-4: EXISTING INTERSECTIONS ON COUNTY ROAD 42

Name	Control	Jurisdiction
Walker Road	Signalized	City of Windsor
Baseline Road	1-way Restricted Flow	City of Windsor
7 th Concession Road	2-way Stop	City of Windsor
8 th Concession Road	2-way Stop	City of Windsor
9 th Concession Road	2-way Stop	City of Windsor
Lauzon Parkway	Signalized	City of Windsor
10th Concession Road / County Road 17	Signalized	City of Windsor
Lauzon Road	2-way stop	City of Windsor
11 th Concession Road	2-way Stop	Town of Tecumseh
County Road 43 (Banwell Road)	Signalized	County of Essex
Odessa Drive	2-way Stop	Town of Tecumseh
Shiff Drive	2-way Stop	Town of Tecumseh
Le Boeuf Avenue	2-way Stop	Town of Tecumseh
St. Alphonse Avenue	2-way Stop	Town of Tecumseh
Lesperance Road/12 th Concession Road	Signalized	Town of Tecumseh
Strawberry Drive	2-way Stop	Town of Tecumseh
County Road 19 (Manning Road)	Signalized	County of Essex
Lakeshore Road 101	2-way Stop	Town of Lakeshore
Suncrest Drive	2-way Stop	Town of Lakeshore
County Road 21 (Elmstead Road)	2-way Stop	County of Essex
Lakeshore Road 103	2-way Stop	Town of Lakeshore
Patillo Road	Signalized	Town of Lakeshore
Lakeshore Road 105	2-way Stop	Town of Lakeshore
Wallace Line Road	2-way Stop	Town of Lakeshore
Lakeshore Road 107	2-way Stop	Town of Lakeshore
W. Puce Road	2-way Stop	Town of Lakeshore
County Road 25 (E. Puce Road)	Signalized	County of Essex

¹⁵ A ‘2-way Stop’ controlled intersection has stop control on the minor street approaches only, including both 4-leg and T-intersections.

COUNTY OF ESSEX: COUNTY ROAD 42 – CORRIDOR PROTECTION STRATEGY

As described previously, the existing County Road 42 through the County of Essex is a rural 2-lane Arterial Regional Road. However, considerable growth has and continues to occur north of Highway 401 and specifically along east-west roadways such as County Road 22 and 42. The County Road 42 - Corridor Protection Strategy (2006) recommends guidelines for corridor protection to support these functions:

- A strategic east-west commuter and inter-regional corridor;
- A truck route to service the adjacent commercial, industrial and other land uses;
- Emergency and routine detour for Highway 401 and County Road 22; and
- Local access to a limited number of private homes and businesses.

The Essex Windsor Regional Transportation Master Plan (EWRTMP, 2005) identifies a Regional Road System that should be protected from any conditions that reduce the capabilities of the system to serve the regional traffic needs. County Road 42 is an integral element of the Regional Road System. County Road 42 is planned as a strategic east-west corridor to provide a good level of service to through traffic. As a major regional road, it is expected to accommodate heavy truck movements of all types for detour/emergency routing from Highway 401, and to provide local access to adjacent farm, industrial and other uses.

The Objectives of the Strategy are to provide a safe operating environment for all road users, allow motorists to operate vehicles with fewer delays, coordinate land use and transportation decisions over time while providing reasonable access to properties at interim and ultimate conditions, and maintain the roadway's functional integrity and efficiency. Based on these objectives, the following principles were set forth in the strategy development:

- Limit direct access to preserve its through traffic function;
- Promote intersection hierarchy to ensure that arterial and major collector roadways only connect to County Road 42, and minor roadways and accesses are minimized;
- Preserve the functional area of the major intersections by limiting accesses within this area which may severely impact the capacity of the intersection and turning movements;
- Locate signals to favour through movements with long and uniformly spaced signalized intersections on major roadways; and
- Limit the number of conflict points and separate multi-threat locations.

As part of this EA Study, in considering the improvements needs of County Road 42, evaluating alternatives and developing the recommended plan, the County Road 42 – Corridor Protection Strategy provides direction for design criteria including roadway right-of-way requirements (i.e., cross-section), design speed, intersection design, and access provisions. This is described further in the relevant Sections B.5 and B.6.

The County of Essex, through reviews of the Official Plan, should ensure there is sufficient policy direction to protect the long-term operational effectiveness of the Regional Road System. These corridors must be protected from land use forms, access, and encroachments that would restrict or constrain Regional Road operations. It is also noted that there must be appropriate

consultation through legislated implementation measures, most notably this environmental assessment process and recommendations resulting from this report, to ensure protection of some of the specific components of the Regional Road System such as recommended extensions, connections, widening, and other capacity enhancement measures.

B.4.1.2 Existing Geometry

HORIZONTAL AND VERTICAL ALIGNMENT

The horizontal alignment of County Road 42, within the study area, from Walker Road to County Road 25 (E. Puce Road), has a generally straight horizontal alignment with a short curve just west of County Road 19 (Manning Road).

County Road 42 generally slopes down to the east, from Walker Road to County Road 25 (E. Puce Road). Three vertical sag curves occur at the 3 watercourses which cross County Road 42: Little River, Pike Creek, and Puce River.

CROSS-SECTION

County Road 42 is a 2-lane rural roadway with ditch and gravel/stone shoulders, as shown in the photo in Exhibit B.4-5. A small section of Banwell Road / County Road 42, in the City of Windsor, at Riberdy Road looking west, has an urban cross-section with turning lanes, as illustrated in Exhibit B.4-6. The City's current Official Plan identifies Banwell Road / County Road 42 as a Class II Arterial roadway with a right-of-way (ROW) of 42 m. The County's *County Road 42: Corridor Protection Strategy* identifies a minimum ROW of 36 m for rural areas, and a minimum 30 m ROW for urban areas; it also notes that wider ROWs may be secured in urban areas to accommodate for urban design features, and cycling and pedestrian facilities. The existing ROW of Banwell Road / County Road 42 through the City and the County varies from approximately 25 m to 30 m.

The posted speed of Banwell Road / County Road 42 through the study limits varies through the City of Windsor and County of Essex:

- 60 km/h from east of Riberdy Road to 8th Concession Road;
- 80 km/h from 8th Concession Road to west of 10th Concession Road / County Road 17;
- 60 km/h from west of 10th Concession Road / County Road 17 to the City/County Boundary;
- 60 km/h from the City/County Boundary to County Road 19 (Manning Road), due to the urban nature of the surrounding areas; and
- 80 km/h from County Road 19 (Manning Road) to County Road 25 (E. Puce Road).

**EXHIBIT B.4-5: COUNTY ROAD 42 - 2-LANE RURAL CROSS-SECTION - EAST OF LAKESHORE
ROAD 101 LOOKING WEST**



EXHIBIT B.4-6: COUNTY ROAD 42 URBAN CROSS-SECTION - AT RIBERDY ROAD LOOKING WEST



B.4.1.3 Traffic Signals and Illumination

There is existing full illumination along County Road 42 between Walker Road and the CN Rail Pelton Spur at-grade crossing, approximately 300 m east of Walker Road, consisting of conventional poles along both sides of County Road 42. The County Road 42 and Lauzon Parkway intersection has partial illumination consisting of two (2) combination traffic signal/illumination poles. At the County Road 42 and 10th Concession Road / County Road 17 intersection there is also partial illumination which consists of one (1) combination traffic signal/illumination pole, one (1) single illumination pole, and one (1) luminaire, and bracket arm mounted on a hydro pole.

There is existing full illumination along County Road 42 between Lesperance Road and County Road 19 (Manning Road), consisting of conventional poles along the south side of the roadway. In addition, there is partial illumination at the intersection with Lesperance Road and County Road 19 (Manning Road), with two (2) combination traffic signal/illumination poles.

There is existing partial illumination at Patillo Road and County Road 25 (E. Puce Road), each with two (2) combination traffic signal/illumination poles.

B.4.1.4 Active Transportation

There are no existing active transportation facilities (sidewalk, multi-use trail, cycling facilities) on County Road 42 between Walker Road and County Road 25 (E. Puce Road).

The City of Windsor's Official Plan requires sidewalks on both sides of Arterial Roadways. The City's Bicycle Use Master Plan (BUMP, 2001) calls for a cycling network of bike lanes, multi-use trails and signed bike routes, and provides design guidelines along with specific strategies for improving cycling awareness, the cycling-transit link and end-of-trip facilities. BUMP proposes a bike lane on Division Road, west of Walker Road. However, at the time when BUMP was being prepared, the lands east of Walker Road on County Road 42 were still part of the Town of Tecumseh and not part of the City; therefore, active transportation facilities were not considered for this section of Division Road/County Road 42.

The County of Essex has adopted the County Wide Active Transportation Study (CWATS, 2012) to guide the County and local area municipalities in implementing a County-wide network of cycling and pedestrian facilities for the next 20 years. CWATS proposed an MUT on County Road 43 (Banwell Road); an MUT with bike lanes on County Road 19 (Manning Road) north of County Road 42 and a signed route to the south; a signed route on Patillo Road north of County Road 42; paved shoulders on County Road 25 (E. Puce Road) north of County Road 42 and a signed route to the south.

On County Road 42 between Patillo Road and County Road 25 (E. Puce Road), CWATS proposed paved shoulders. County Road 42 was not identified as a major active transportation corridor at the time CWATS was completed, due to the existing roadway classification and characteristics, and at that time other routes were deemed more suitable for east-west connections in the area. The County Road 42 Corridor Protection Strategy noted that the existing operations and vehicle mix along the rural areas of County Road 42 do not provide comfortable pedestrian or bicycle operating conditions and recommended that primary pedestrian and bicycle connections be promoted through adjacent land uses, through the local road network, or off-road facilities.

The Town of Tecumseh's Parks and Recreation Master Plan proposes a MUT on County Road 42 from the City/County Boundary to County Road 19 (Manning Road) as well as on County Road 43 (Banwell Road), County Road 19 (Manning Road), and Lesperance Road. The County's recent EA Studies for County Road 43 (Banwell Road) and County Road 19 (Manning Road), in 2009 and 2008 respectively, also included an MUT in the proposed designs. Respectively, the EAs recommend a MUT on the east side of County Road 43 (Banwell Road) north of County Road 42, and a MUT on the west side of County Road 19 (Manning Road) north of County Road 42. These were included in CWATS.

With the proposed widening of County Road 42 and the urbanization of the corridor through the Hamlet of Tecumseh, opportunities to incorporate new active transportation facilities within the County Road 42 study area were reviewed as part of this EA Study and are discussed further in Section B.5.5.

B.4.1.5 Rail

The existing rail network within the study area is illustrated in Exhibit B.4-7. On County Road 42, there is an at-grade CN Rail crossing of the Pelton Spur, just west of 7th Concession Road (Exhibit B.4-8).

The Pelton Spur is a north-south connecting track between the CASO Subdivision and the CP Rail Windsor Subdivision and is used solely by CN. Train movements between Van de Water Yard and Little Yard use this track. CN has one train per day that moves traffic between the two yards. In 1999, the diamond crossing of the CP Rail mainline and the Pelton Spur was removed and a new crossover between CN’s Little Yard and the CP Rail mainline was installed. The land north of the diamond was sold to Daimler Chrysler for plant expansion.

The CN CASO Subdivision also passes through the south portion of the study area, with at-grade crossings of County Road 46 and Sexton Sideroad north of Highway 3. In 2012, the portion of the CN CASO Subdivision, east of Highway 401, was abandoned and is proposed to become a multi-use trail as part of the County cycling network.

EXHIBIT B.4-7: EXISTING RAIL NETWORK WITHIN THE STUDY AREA

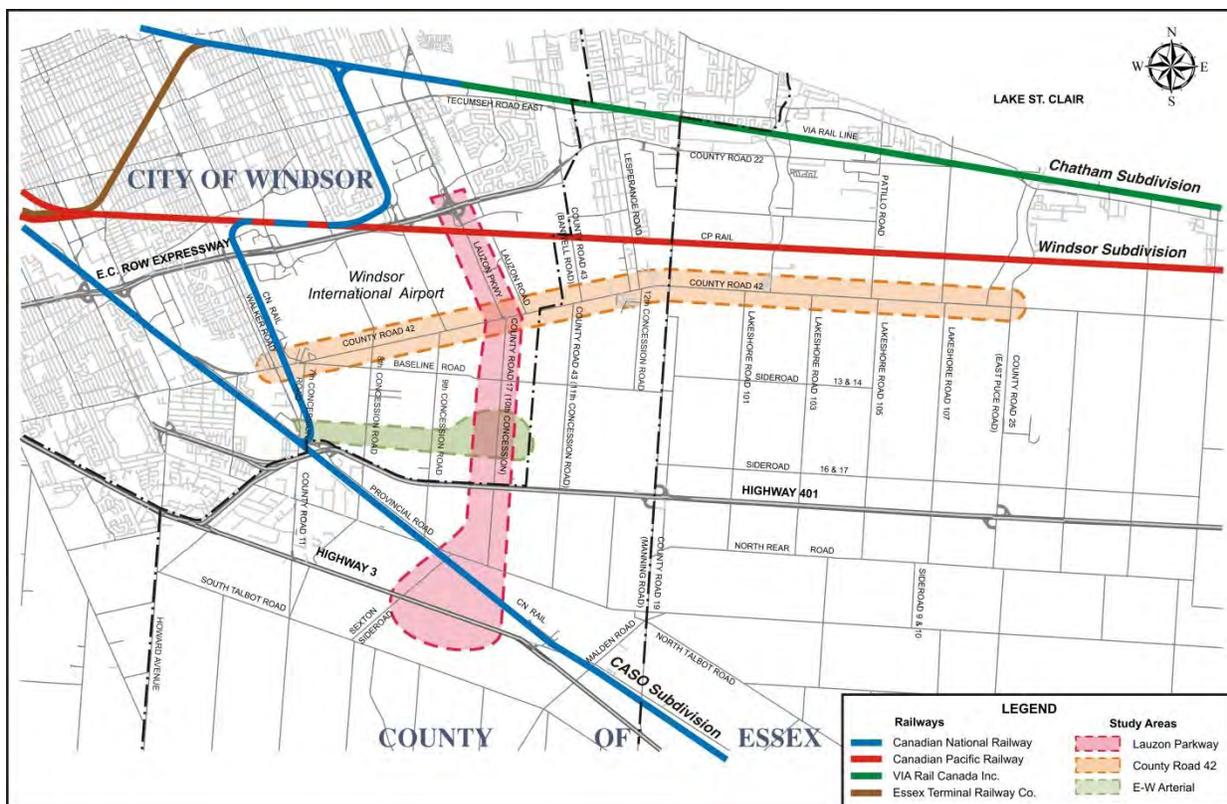


EXHIBIT B.4-8: COUNTY ROAD 42 CN AT-GRADE CROSSING LOOKING EAST



B.4.1.6 Bridges

There are two bridges along County Road 42 within the County of Essex. The Pike Creek Bridge is located approximately 250 m east of County Road 19 (Manning Road). The second is the Puce River Bridge, located 270 m west of County Road 25 (E. Puce Road).

The existing Pike Creek Bridge structure is summarized as follows:

- Span: approximately 19.6 m
- Overall Structure Width: 11.9 m
- Lane Width: 7.0 m
- Deck Type: Concrete Rigid Frame, Vertical Legs
- Year Built: 1931
- Legal Speed Limit: 60 km/h
- Last Inspected: July 2008
- Last Rehab: Rehabilitation/reconstruction of deck in July 2006

The existing Puce River Bridge structure is summarized as follows:

- Span: 18.45 m
- Overall Structure Width: 11.8 m
- Lane Width: 7.0 m
- Deck Type: Concrete Rigid Frame, Vertical Legs
- Year Built: 1931
- Legal Speed Limit: 60 km/h

- Last Inspected: July 2008
- Last Rehab: Rehabilitation/reconstruction of deck in July 2002

B.4.1.7 Drainage and Stormwater Management

The existing drainage conditions within the study area are documented in the *Drainage and Stormwater Management: Existing Conditions Report* (Appendix C) prepared as part of this study. The purpose of this report was to detail the existing drainage patterns, complete hydrologic assessments for existing conditions, and hydraulic assessments of existing roadway culverts and crossings within the project study area.

A site reconnaissance was carried out in May 2011 to confirm existing culvert locations and sizes, to assess the physical condition of each culvert, and to record characteristics of significant drainage features within the project study area.

All centreline and side-road culverts, as well as major entrance culverts within the study area were inspected. There are a total of 42 transverse and 14 entrance culverts, as well as three bridges (Little River, Pike Creek, and Puce River) within the entire study area. Of the 42 transverse culverts, seven (7) transverse culverts are located within the County Road 42 Study Area. The existing drainage conditions and plans of the culverts are illustrated in Exhibits 5 to 10 of Appendix C. Additional documentation on the findings of the site reconnaissance is described in the *Culvert Inspection Report*, included in Appendix A of *Drainage and Stormwater Management: Existing Conditions Report* (Appendix C). Of the 7 culverts assessed within the County Road 42 Study Area during the site reconnaissance, 1 was found to be in poor condition, and 3 in poor to fair condition.

Hydraulic modelling was carried out by MRC, as part of this study, for the crossings of the Little River, Pike Creek, Kerr Drain, and Puce River within the proposed study limits. In addition, hydraulic modelling of the Little River, Pike Creek, Kerr Drain, Puce River, and 8th Concession Drain was provided by the Essex Region Conservation Authority. As presented in the *Existing Conditions Report*, there were no cases of road overtopping under existing conditions for the 100-year storm.

Limited information was available to assess the existing hydraulic conditions of the culverts within the Study Area. The available data was deemed insufficient to perform a hydraulic assessment for the culverts within the Study Area. During the next phase of design, a detailed survey will be required to obtain the required culvert information to perform a comprehensive hydraulic assessment.

In addition to the above, Stantec, on behalf of the City of Windsor and ERCA, is currently in the process of preparing the *Upper Little River Watershed Master Drainage Plan and Stormwater Management Plan*. The Master Plan is being prepared concurrently with this Class EA. Information provided within the Master Plan will be incorporated into this Class EA, including but not limited to drainage and stormwater management methods and locations.

B.4.1.8 Utilities

The following utility authorities were contacted as part of the consultation process to confirm the presence or not of utilities within the study area. A summary of the information received is summarized below. Some utility information has been extracted from other sources such as engineering drawings and municipal GIS mapping, to supplement information provided by utility authorities.

The existing utilities, located along County Road 42, from Walker Road to the City/County Boundary, in the City of Windsor are described in Exhibit B.4-9:

EXHIBIT B.4-9: EXISTING UTILITIES WITHIN COUNTY ROAD 42 CORRIDOR

Utility	Description
City of Windsor – Walker Road to City/County Boundary	
Cable (Bell and Cogeco)	Bell and Cogeco plants are located on both sides of County Road 42.
Gas (Union Gas)	A 100 mm dia. PE gas main extends along the north side of County Road 42 from Riberdy Road to 4205 County Road 42. A 50 mm dia. C&W gas main extends from 7 th Concession Road to 8 th Concession and beyond.
Hydro (ENWIN)	Between Walker Road and the CN Pelton Spur at-grade crossing there are hydro poles located on both sides of the roadway.
Hydro (Essex Power)	Essex Power confirmed they do not have any infrastructure within the Study Area.
Hydro (Hydro One)	Between the CN Pelton Spur and the City/County Boundary hydro lines are located, intermittently along the north and south side of the roadway, as follows: <ul style="list-style-type: none"> - CN Pelton Spur to Baseline Road: above ground, north side - Baseline Road to 3645 County Road 42: above ground, south side - 3645 County Road 42 to 4205 County Road 42: underground - 4205 County Road 42 to 5255 County Road 42: above ground, south side - 5255 County Road 42 to 6424 County Road 42: underground - 6424 County Road 42 to the City/County Boundary: above ground, north side
Sanitary Sewer (City of Windsor)	1200 mm dia. sanitary trunk sewer extends on County Road 42 from 8 th Concession Road to 9 th Concession Road, and changes to 1350 mm dia. to the Little River.

Utility	Description
Storm Sewer (City of Windsor)	<p>From Walker Road, the existing storm sewer is located as follows:</p> <ul style="list-style-type: none"> - A 600 mm dia. CP storm sewer extends on the south side from Walker Road to Riberdy Road - A 600 mm dia. CP storm sewer extends from CN Rail Pelton Spur line to 3393 dia. Country Road 42 - A 600 mm dia. CP storm sewer extends on the south side from 7th Concession Road to 3755 County Road 42
Water (WUC)	<p>From Walker Road, the existing watermain is located as follows:</p> <ul style="list-style-type: none"> - A 150 mm dia. watermain extends from Riberdy Road to Baseline Road. - East of 7th Concession Road to 3575 County Road 42, residences are serviced from Baseline Road. - From 3575 to 3755 County Road 42 there is a 50 mm dia. watermain. - From 4051 to 4445 County Road 42 there is a 250 mm dia. watermain. - A 150 mm dia. watermain extends from 4445 County Road 42 to 9th Concession Road. - A 200 mm dia. watermain extends from 9th Concession Road to Lauzon Road. <p>A 900 mm dia. CPP feedermain is located on the north side of County Road 42, from Riberdy Road to 8th Concession Road. From 3325 County Road 42, the feedermain is located in an easement within the Airport property.</p> <p>The Windsor Utility Commission (WUC) is proposing to extend the feedermain along County Road 42, to Lauzon Parkway or Lauzon Road.</p> <p>The WUC is proposing to loop the existing feedermain on County Road 42 and County Road 43 (Banwell Road). This may include a future water feedermain on Lauzon Parkway or Lauzon Road.</p>
County of Essex – County Boundary to County Road 25 (Puce Road)	
Cable (Bell and Cogeco)	Bell and Cogeco plants are located on both sides of County Road 42.
Gas (Union Gas)	A 100 mm dia. gas main extends on the north side of County Road 42.
Hydro (Essex Power)	Essex Power confirmed they do not have any infrastructure within the Study Area.

Utility	Description
Hydro (Hydro One)	<p>There is a hydro corridor which crosses County Road 42 east of County Road 19 (Manning Road).</p> <p>Hydro lines extend on the north side of the roadway from the City/County Boundary to County Road 25 (E. Puce Road).</p>
Sanitary Sewer (Town of Tecumseh)	<p>A 250 mm dia. sanitary sewer extends on the north side of County Road 42 from County Road 43/11th Concession Road to County Road 19/ Manning Road.</p>
Water (Town of Tecumseh/Town of Lakeshore)	<p>A 600 mm dia. PVC water feedermain extends on the south side of County Road 42 from the City/County Boundary to Shiff Drive, where it is reduced to 400 mm dia. and continues to 12th Concession Road.</p> <p>A 250 mm dia. watermain extends on the north side of County Road 42 from west of the City/County Boundary to County Road 19 (Manning Road).</p> <p>A 200 mm dia. watermain extends on the north side of County Road 42 from County Road 19 (Manning Road) to County Road 25 (E. Puce Road).</p>

B.4.2 SOCIO-ECONOMIC ENVIRONMENT

B.4.2.1 Existing Land Use

The surrounding environment of County Road 42 varies as it passes through the City of Windsor and the County of Essex (Towns of Tecumseh and Lakeshore). Through the City, County Road 42 can be divided into three sections based on the existing land use: Walker Road to 7th Concession Road has existing commercial properties; 7th Concession Road to 8th Concession Road has the Airport Operations Area to the north and mixed residential and commercial properties to the south; and 8th Concession Road to the City/County Boundary the roadway is primarily bounded by agricultural lands. The Official Plan of the former Township of Sandwich South designated most of the lands south of County Road 42 as agricultural. The City of Windsor is updating their OP to include the Sandwich South land.

Through the Town of Tecumseh, from County Road 43 (Banwell Road) to County Road 19/Manning Road, County Road 42 is bounded by a mix of commercial/industrial/residential subdivisions. This section from Shiff Drive to County Road 19 (Manning Road), is primarily residential communities adjacent to the roadway including parks, schools, and retirement homes. East of County Road 19 (Manning Road), through the Town of Lakeshore, to County Road 25 (E. Puce Road), the road is bounded by rural residential and agricultural lands.

The City of Windsor Official Plan – Land Use Plan (Exhibit B.4-10) identifies the lands along the County Road 42 as Business Park, Future Employment Area, Open Space, and Future Urban Area, and Airport. The City of Windsor is completing the Sandwich South Secondary Plan to designate these lands, the Windsor Annexed Lands.

The County of Essex Official Plan (Exhibit B.4-11) designates the lands adjacent to County Road 42 from County Road 43 (Banwell Road) to County Road 19 (Manning Road) as a Settlement Area, and from County Road 19 (Manning Road) to County Road 25 (E. Puce Road) as Agricultural.

The Town of Tecumseh is presently guided by three separate official plans instituted prior to amalgamation and the land transfer associated with the Sandwich South Secondary Plan. The Town is in the process of an Official Plan review to consolidate these into one plan. These official plans represent the three former municipalities (Town of Tecumseh, Township of Sandwich South and Village of St. Clair Beach) that existed separately prior to amalgamation. The Tecumseh Hamlet Urban Area Land Use Plan, approved in 1998, includes the lands adjacent to County Road 42 between County Road 43 (Banwell Road) and County Road 19 (Manning Road) (Exhibit B.4-12). The lands adjacent to County Road 42 are designated as General Commercial, Low Density Residential, Business Park, and Neighbourhood Commercial.

B.4.2.2 Future Land Use

The Sandwich South Secondary Plan will establish detailed development guidelines and a future land use pattern for the remainder of lands transferred to the City of Windsor in 2003, and will be incorporated into the City of Windsor's Official Plan. Currently, the formal review of the draft Sandwich South Secondary Plan by the Planning and Economic Standing Committee has been deferred until the completion and final approval of the Lauzon Parkway Improvements EA.

A preliminary draft of the Secondary Plan Land Use Plan designates the lands adjacent to the County Road 42 study area between 8th Concession Road and Lauzon Parkway as Employment, and between Lauzon Parkway and the east City Limits as Residential.

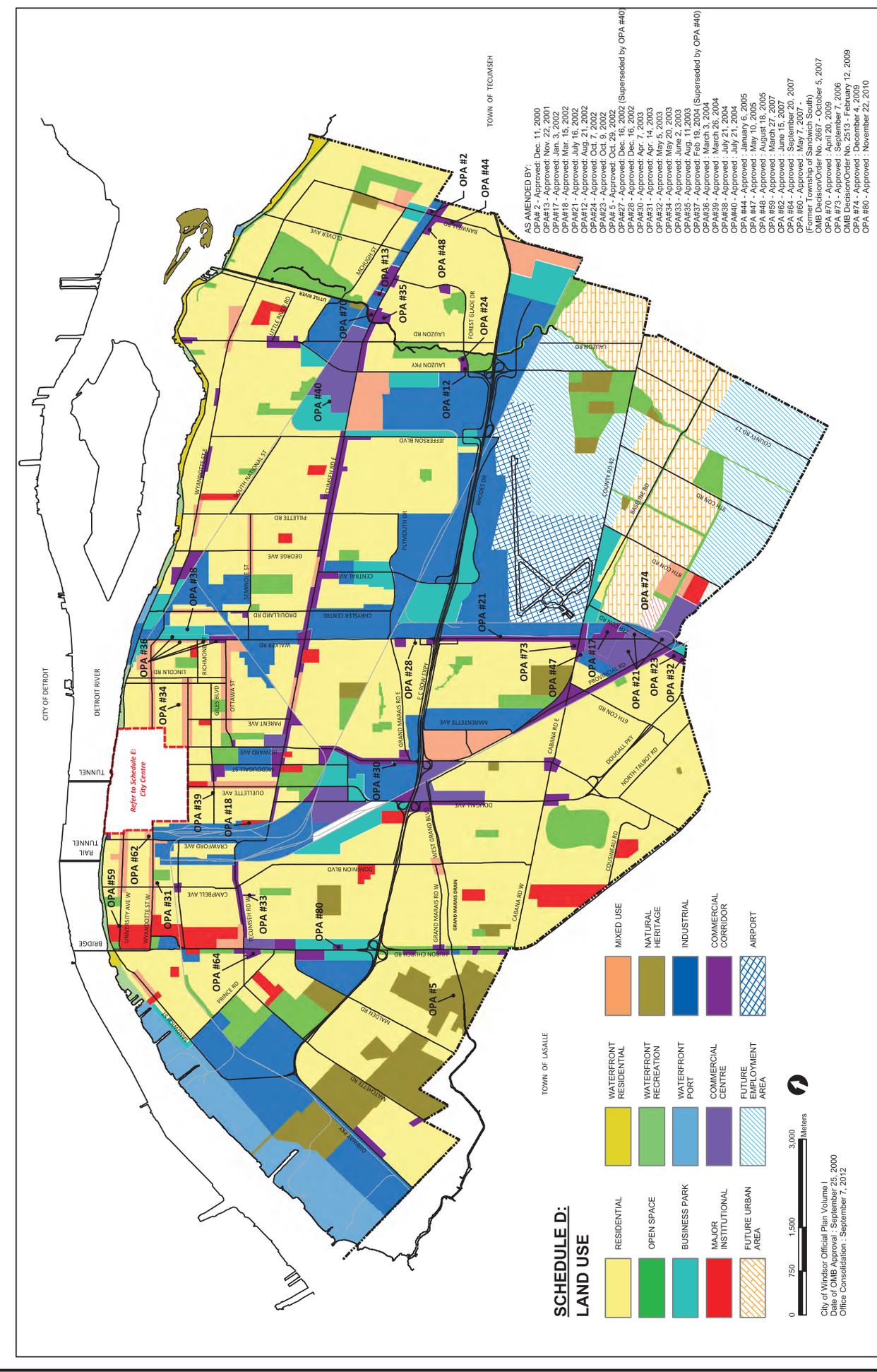
The Town of Tecumseh is currently completing a Secondary Plan for the Tecumseh Hamlet, which envisions a compact pedestrian-oriented community, with a mix of land uses to support the residential lands. The Secondary Plan focuses on the lands between County Road 42 and County Road 22, and between County Road 43 (Banwell Road) and Lesperance Road.

**SCHEDULE D:
LAND USE**

	RESIDENTIAL		WATERFRONT RESIDENTIAL		MIXED USE
	OPEN SPACE		WATERFRONT RECREATION		NATURAL HERITAGE
	BUSINESS PARK		WATERFRONT PORT		INDUSTRIAL
	MAJOR INSTITUTIONAL		COMMERCIAL CENTRE		COMMERCIAL CORRIDOR
	FUTURE URBAN AREA		FUTURE EMPLOYMENT AREA		AIRPORT

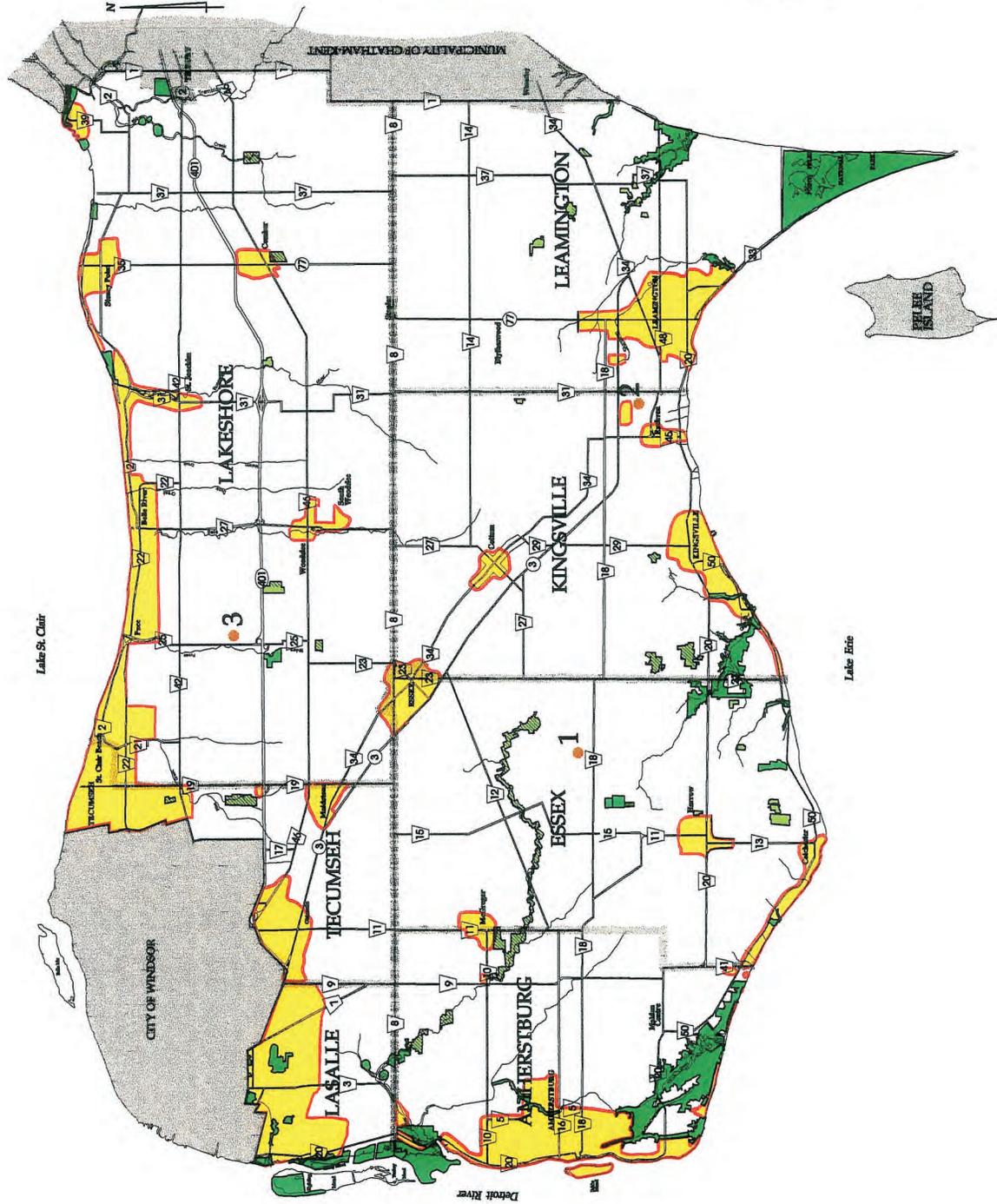


City of Windsor Official Plan Volume I
Date of OMB Approval: September 25, 2000
Office Consolidation: September 7, 2012



AS AMENDED BY:
 OPA#42 - Approved: Dec. 11, 2000
 OPA#13 - Approved: Nov. 22, 2001
 OPA#17 - Approved: Jan. 3, 2002
 OPA#18 - Approved: Mar. 15, 2002
 OPA#21 - Approved: July 16, 2002
 OPA#22 - Approved: Oct. 7, 2002
 OPA#24 - Approved: Oct. 9, 2002
 OPA#5 - Approved: Oct. 29, 2002
 OPA#27 - Approved: Dec. 16, 2002 (Superseded by OPA #40)
 OPA#28 - Approved: Dec. 16, 2002
 OPA#29 - Approved: Dec. 16, 2002
 OPA#30 - Approved: Apr. 14, 2003
 OPA#31 - Approved: Apr. 14, 2003
 OPA#32 - Approved: May 5, 2003
 OPA#34 - Approved: May 20, 2003
 OPA#33 - Approved: June 2, 2003
 OPA#35 - Approved: Aug. 11, 2003
 OPA#36 - Approved: March 3, 2004
 OPA#39 - Approved: March 26, 2004
 OPA#38 - Approved: July 21, 2004
 OPA#40 - Approved: January 6, 2005
 OPA#44 - Approved: January 6, 2005
 OPA#45 - Approved: May 18, 2005
 OPA#48 - Approved: May 18, 2005
 OPA#59 - Approved: March 27, 2007
 OPA#62 - Approved: June 15, 2007
 OPA#64 - Approved: September 20, 2007
 OPA#60 - Approved: May 7, 2007 -
 (City of Windsor Official Plan Volume I, 2000)
 OMB Decision/Order No. 2867 - October 5, 2007
 OPA#70 - Approved: April 20, 2009
 OPA#73 - Approved: September 7, 2006
 OMB Decision/Order No. 2513 - February 12, 2009
 OPA#74 - Approved: December 4, 2009
 OPA#80 - Approved: November 22, 2010

**SCHEDULE 'A'
COUNTY OF ESSEX
OFFICIAL PLAN
LAND USE PLAN**



- Agricultural Areas
- Settlement Areas
- Natural Environment Areas

- 1. Essex-Windsor Regional Landfill Site
- 2. Former Essex County Landfill Currently Waste Transfer Station
- 3. Former Essex County Landfill

Overlay depicting Regionally Significant Woodlands, ANSI's and Locally Significant Sites designated in Local Official Plans

Notes:

1. Notwithstanding the agricultural areas or settlement areas designation the goals and policies contained within Subsection 3.4 may also apply if the site contains natural features.
2. The scale of this map is such that gaps in the natural environment areas designation are not always accurately depicted. Refer to local Official Plans for detailed depiction of various natural environment classifications.



DRAFT Sandwich South Secondary Plan

SCHEDULE D Land Use

Legend

- Land Use**
- Employment
 - Prestige Employment
 - Community Core
 - Neighbourhood - Low Density
 - Neighbourhood - Medium Density
 - Recreation & Open Space
 - Natural Heritage System
- Infrastructure**
- Railway
 - Interchange
 - Secondary Plan Boundary
 - City of Windsor Boundary



December 5, 2012



Lauzon Parkway Improvements
Class Environmental Assessment Study
Environmental Study Report

DRAFT
SANDWICH SOUTH SECONDARY PLAN
SCHEDULE D - LAND USE

Exhibit

B.4-13

B.4.3 CULTURAL ENVIRONMENT

B.4.3.1 Built Heritage Resources and Cultural Heritage Landscapes

A cultural heritage resource assessment was undertaken for built heritage and cultural landscapes in the study area. A windshield survey was completed in May 2011 to identify cultural heritage landscapes and built heritage resources within the study area. For the most part, the analysis of cultural heritage resources in the study area addresses those above-ground, person-made heritage resources 40 years of age and older. The application of this rolling 40-year principle is an accepted federal and provincial practice for the preliminary identification of cultural heritage resources that may be of heritage interest or value. However, its application does not imply that all built heritage resources or cultural heritage landscapes that are over 40 years old are worthy of the same levels of protection or preservation.

Resources were identified by category:

- Cultural Heritage Landscape (CHL); or
- Built Heritage Resource (BHR); and
- by type;
 - roadscape,
 - residential subdivision,
 - cemetery,
 - bridge,
 - residence,
 - church, etc.

Within the County Road 42 study area, there are no properties listed on the municipal registries.

The field survey identified 18 potential resources within the County Road 42 study area, categorized as Cultural Heritage Landscape (CHL) or Built Heritage Resources (BHR). The majority of resources were found to be residential or farm complexes dating back to the mid-20th century.

One property of note was the Puce Memorial Cemetery, located at 898 County Road 42. A plaque on the cemetery gates indicates that it was established in 1850.

Descriptions of the identified built heritage and cultural landscape features and further details of the built heritage and cultural landscape assessment can be found in Figure 2, Figure 3, and Table 1 of the *Cultural Heritage Assessment Report (CHAR)* in Appendix D.

B.4.3.2 Archaeology

A Stage 1 Archaeological Assessment was completed for the study area. A search of the Ministry of Tourism, Culture, and Sport's registered archaeological site database revealed that there are no registered archaeological sites within the subject corridors, nor are any sites located within a one kilometer of the subject corridors. This is likely not a reflection of lack of sites within the area, but a lack of archaeological investigation.

A historical investigation of the study area revealed that the first European settlement in the Detroit-Windsor area took place in 1701. The settlement remained on the Detroit side of the river until 1748 when the Jesuit mission to the Huron was established on the south shore (Windsor area). Between 1748 and 1760, French agriculturalists settled along the south shore of the river, paralleling a similar settlement on the north side (Detroit). The street pattern on both sides of the river still reflects the French method of agricultural land division of long narrow farms fronting the river.

An 1881 map of the East and West Sandwich Township and Maidstone Township in Essex County (Appendix E – Figure 3) indicates that the study area corridors pass through rural farmlands. The corridors indicated on the map are transportation corridors. As well, a number of building markers are located within the study corridor, indicating that the possibility of locating historic cultural materials is quite high given the proximity to the historic roadway.

The major concerns for identifying archaeological potential and the recovery of archaeological material include all land within 100 metres of historic transportation routes, all property within 300 metres of water courses and within 300 metres of registered archaeological sites. Also, all areas of Euro-Canadian settlement require archaeological assessment.

According to the *Ministry of Tourism, Culture, and Sports Standards and Guidelines for Consultant Archaeologists (2011)*, areas that are previously disturbed by construction activities are identified as having no further archaeological concerns. Most of the existing roadway corridors within this study area are identified as disturbed.

The County Road 42 corridor is completely disturbed from the edge of pavement to the property line by ditching. Given this, it is recommended that this right-of-way is clear of any further archaeological concern; however, any property required outside of the existing County Road 42 right-of-way will require a Stage 2 assessment before construction commences.

B.4.4 NATURAL ENVIRONMENT

The County Road 42 corridor traverses the watersheds of the Little River, Pike Creek and Puce River, all of which drain northerly to Lake St. Clair. The dominant land uses within the corridor include agriculture, the Windsor International Airport, and urban residential development. Scattered and isolated occurrences of religious, rural residential, hamlet, highway commercial and light industrial uses are also present, especially east of the Little River.

Field surveys of the corridor were conducted in the County Road 42 corridor by Ecoplans in 2011-2012 to characterize existing conditions and to identify species and habitats of conservation concern. The wildlife surveys focused on natural features, watercourses, drains, and anthropogenic lands with potential to provide habitat for SAR species and species of conservation concern. The vegetation survey focused on the ditches and cultural meadows on existing right of way, and, on adjacent riparian woods at the crossing of the Little River, River aux Peche (8th Concession Drain) and Puce River. The surveys were conducted on optimal dates to document resident plants, butterflies, dragonflies, damselflies, reptiles, amphibians, birds and mammals. Fish communities in the study corridor were characterized with reference to DFO, OMNR and ERCA records. A description of field protocols and a field chronology, locations of the botanical survey units and wildlife survey units within the study corridor are presented in Appendix F.

B.4.4.1 Fish and Fish Habitat

Twenty-four Municipal Drains are present in the study corridor. These are presented in mapping provided in Appendix F. According to DFO's Draft Drain Classification mapping there is/are:

- 6 Class E Drains (permanent flow, with sensitive species and/or communities present);
- 2 Class C Drains (permanent flow);
- 15 Class F Drains (intermittent or ephemeral flow); and
- 1 unclassified Drain.

All drains have been affected by dredging, channelization, realignment and tile drainage. The drains appear to experience extreme fluctuations in water levels associated with precipitation events. This fluctuation in flow volumes has resulted in localized bank erosion along with deposits of silt, sand, organic debris (woody and herbaceous) and refuse within the drains. The habitats documented within the drains are described in Appendix F.

Based on consultation with OMNR, no provincial aquatic SAR (endangered or threatened) was identified within the corridor (Amanda McCloskey, pers. comm., March 23, 2012). However, the MNR did refer the study team to DFO for further guidance since the MNR uses the DFO's screening tool mapping when reviewing the status of aquatic SAR. A review of DFO SAR mapping and discussions with Dave Balint, DFO biologist (pers. comm., April 18, 2012,) indicates that Grass Pickerel (*Esox americanus vermiculatus*) is present in four drains within the corridor: Kerr Drain, Pike Creek Drain, Chauvin Drain and 10th Concession Drain.

Grass Pickerel has been designated as Special Concern (SC) under the federal Species at Risk Act (SARA) and provincial Endangered Species Act 2007 (ESA). The latter requires any proposed works to be conducted in accordance with the species' management plan. Since this species is listed as SC, it is anticipated that standard mitigating measures used during construction will be suitable to minimize any potential adverse effects to the species and/or habitat.

B.4.4.2 Terrestrial Ecosystems

Background environmental information for the corridor was compiled from available sources, including: topography; soils; aerial photographs; MNR's NRVIS and district office databases; ERCA watershed monitoring databases; and published and unpublished reports, including the Windsor Annexed Lands Master Plan Study (Stantec 2006), the City of Windsor Update to the CNHS Inventory (ERCA 2008) (hereafter referred to as CNHS), the Town of Tecumseh Natural Heritage Inventory (ERCA 2011), and The Town of Lakeshore Natural Heritage Feature Inventory (ERCA 2007). Mr. Phil Roberts, Director of Operations, Windsor International Airport, also provided information regarding the status of Butler's Gartersnake (Endangered), Eastern Foxsnake (Endangered), and Snapping Turtle (Special Concern), at the Windsor International Airport, based on observations documented during surveys in 2004 and 2010.

The sensitive natural environment features in the study corridor are primarily associated with the riparian woodlands along the Little River, Pike Creek, River aux Peche (8th Concession Drain) and Puce River. Key botanical and wildlife features of significance and sensitivity are summarized below. Many features described below are depicted on mapping provided in Appendix F.

VEGETATION – KEY FEATURES AND SENSITIVITY

- Designated Natural Areas within and adjacent to the study corridor are:
 - Windsor “Airport Woodlands” (CNHS #39), classified as “Significant Woodland” (ERCA 2008). The “Airport Woodlands” were identified as Natural Heritage features for the Windsor Annexed Lands in 2006 and the designation was approved by Council in Official Plan Amendment (OPA) #60. OPA # 60 identifies both the Natural Heritage features and Open Space within the study corridor. Lands recommended as Open Space serve to connect these Natural Heritage features and provide an opportunity to enhance the Natural Heritage System in the future with natural corridors or linkages.
 - Windsor International Airport Swamps PSW (MNR 2009). As noted in Section A.4.4, the portion of the “Airport Woodlands” that lies within the Windsor International Airport lands (Jefferson Woods, Shooting Range Woods and East Perimeter Woods) was recently classified by MNR as the Windsor International Airport Swamps Provincially Significant Wetland (PSW) (MNR 2009);
 - Fairbairn Woods (CNHS #41), classified as “Significant Woodland” (ERCA 2008);

- Pike Creek Valley (NHS Site #4), classified as “Significant Valleyland” (ERCA 2007);
- River aux Peche Valley (8th Concession Drain, East Side) (NHS Site #5), classified as “Significant Valleyland” (ERCA 2007);
- Puce River Valley (NHS Site #18 south), classified as “Significant Valleyland” and “Significant Woodland” (ERCA 2007);
- No endangered or threatened plant species were recorded.
- Two Special Concern species were recorded: Climbing Prairie Rose and Riddell’s Goldenrod.
- ERCA has confirmed that they do not consider remnant prairies communities to be present within the study area. However, roadside meadows and ditches which provide refuge habitat for two SAR plants of prairie affinity and four S1-S3 plant species.

WILDLIFE AND HABITAT – KEY FEATURES AND SENSITIVITY

- The habitats of the eleven fish/wildlife faunal Species at Risk were documented within the study corridor: one SAR insect, two SAR reptiles and seven SAR birds and one SAR fish.
- The Little River riparian corridor, in the vicinity of County Road 42, provides excellent habitat for nearby populations of Butler’s Gartersnake (Endangered) and Eastern Foxsnake (Endangered). This includes the including the regenerating field at the south end of St. Louis Woods. This habitat lies within 1500 metres of recent Foxsnake sightings and may thus be subject to ESA habitat regulation.
- The project limits are in close proximity to recent sightings of Butler’s Gartersnake and may thus be subject to the protection provision of the Endangered Species Act (2007) (S.9).
- The Puce River, in the vicinity of County Road 42, which provides habitat for Snapping Turtle (Special Concern). Northern Map Turtle (Special Concern) was observed downstream of the study corridor and presumably move through and make use of habitat within the corridor.
- Cultural features in the study corridor which provide habitat for SAR species include:
 - The Kerr Drain, Pike Creek Drain, Chauvin Drain and 10th Concession Drain, which provide habitat for documented populations of Grass Pickerel (Special Concern);
 - Open municipal drains and roadside ditches which provide foraging habitat and movement corridors for Snapping Turtle (Special Concern); culverts at road crossing represent potential nesting sites when gravel is present;
 - Agricultural fields and pasture which provide foraging habitat for Barn Swallow (Threatened); and
 - Planted grass meadows at two sites within the corridor which provide excellent foraging and nesting habitat for Bobolink (Threatened).

B.5 ALTERNATIVES AND EVALUATION

The County Road 42 alternative concept plans, evaluation of alternatives, and selection of the preferred, is presented in this section.

Phase 3 of the Municipal Class EA process involves the development and review of alternative concept plans. Having established the need for improvements to the County Road 42 corridor, this phase involved the following activities:

- review of the problems and opportunities being addressed (Section B.5.1);
- inviting the public and participating agencies to attend PIC 1 to review and provide input on the study scope, existing conditions, need and justification, analysis of planning alternatives and preliminary generation of alternatives (Section B.5.2);
- developing and assessing roadway widening alternatives, cross-section elements, and intersection analysis in the City of Windsor (Section B.5.3);
- developing and assessing roadway widening alternatives, cross-section elements, and intersection analysis in the County of Essex (Section B.5.4);
- developing and assessing active transportation alternatives to determine the preferred concept plan (Section B.5.5);
- inviting the public and participating agencies to attend PIC 2 to review and provide comments on the assessment and evaluation of the refined alternatives, and the preliminary preferred design (Section B.5.6);

Given the different jurisdictions and characteristics and varying issues along the corridor, County Road 42 was reviewed in the following sections:

- Walker Road to the City/County Boundary (City of Windsor)
- City/County Boundary to County Road 19 (Manning Road) (Town of Tecumseh)
- County Road 19 (Manning Road) to County Road 25 (E. Puce Road) (Town of Lakeshore)

B.5.1 PROBLEMS AND OPPORTUNITIES BEING ADDRESSED

There is a need for the widening of County Road 42 based on the projected growth within the study area. Improvements to County Road 42, which provides the continuous connection between the Town of Tecumseh, Town of Lakeshore and the future growth areas in the City of Windsor, will also include provisions for active transportation facilities. The development and identification of transportation needs, and the assessment of transportation alternatives is described in Chapters 2 and 3 respectively.

County Road 42 is a key east-west arterial in the study area. In general, this corridor is currently operating at an acceptable level-of-service. However, during peak hours, the roadway is approaching capacity in the vicinity of the Lauzon Parkway and 10th Concession Road / County Road 17 intersections. In addition, there are movements (i.e. through traffic, left-turns and right-turns) at key intersections (such as Walker Road, Lauzon Parkway, County Road 43 (Banwell

Road), 10th Concession Road / County Road 17, Lesperance Road and County Road 19 (Manning Road) that are approaching capacity during peak hours.

Considering the future anticipated growth in the study area, there are limited spare capacities available on the existing road network. In addition, there is limited existing north-south and east-west linkage to provide a grid transportation system. Future projected growth in the City of Windsor and County of Essex results in further demand on the existing road network. It is expected that congestion on the road network will worsen as a result of the future development associated with the draft Sandwich South Secondary Plan area, which cannot be accommodated by the existing road network.

B.5.2 REVIEW DURING FIRST ROUND OF CONSULTATION

The first Public Information Centre (PIC 1) was held on July 14, 2011. The second Public Workshop for the Sandwich South Secondary Plan was held concurrently with PIC 1.

The purpose of PIC 1 was to provide the public and stakeholders with an opportunity review the study scope, existing conditions, transportation needs and justifications, transportation planning alternatives, preliminary generation of corridor alternatives for the Lauzon Parkway Extension, preliminary generation of County Road 42 cross-sections, E-W Arterial corridor routes and connections, a description of the EA evaluation criteria, and next steps in the study.

The notice for PIC 1 and Workshop 2 was placed in The Windsor Star (June 28 and July 2), Tecumseh Tribune (July 7), Lakeshore News (July 7), Shoreline Weekly (July 8), and Le Rempart (July 6). Notices were distributed by direct mail to local residents, government agencies, local emergency services, utility companies and interest groups. A separate notice for Workshop 2 for the Sandwich South Secondary Plan was prepared for the direct mailing; both notices were included in one envelope.

The PIC was a “drop-in centre” format. Approximately 80 members of the public attended. They were informed of the availability of comment sheets, which they were encouraged to complete. They were then directed to follow the displays around the room. Staff members were available to answer questions and provide information on the study. In addition, the Workshop 2 was held concurrently with offset participation times, which allowed attendees the opportunity to attend both the PIC presentation and Workshop session.

Attendees were encouraged to provide their comments on the comment sheets at the PIC. If individuals wished to take comment sheets home, they were requested to provide their responses via mail, email or fax by August 5, 2011.

The following is a summary of the key written and verbal comments related to County Road 42 that were received at or after PIC 1:

- Timing of the transportation improvements
- Timing of the development of the Sandwich South lands
- Inquired about construction costs
- Inquired about the completion date of study
- Inquired about property impacts
- Concern regarding the potential increase in truck traffic along County Road 42
- Concern regarding noise impacts to the properties along County Road 42

There were 10 comment sheets submitted at PIC 1, and 2 received following the PIC. In addition, 9 comments were received prior to the PIC. The Project Team reviewed all public input received and responded to each comment accordingly.

Copies of the display boards at the PIC and Workshop, as well as comments sheets and responses, are included in the *Summary Report on Public Information Centre 1* in Appendix A.

B.5.2.1 Consultation with Individual Stakeholders

Further consultation with individual stakeholders was conducted as required, or requested.

WINDSOR INTERNATIONAL AIRPORT

The Windsor International Airport is located on the north side of County Road 42 between the CN Pelton Spur line and Lauzon Parkway. The airport has runways and taxiways in close proximity to County Road 42 which create an Airport Operational Area from 3393 County Road 42 to 8th Concession Road, where effects of the aircraft operations are noticeable on the roadway, as described below.

During project planning, two meetings were held with representatives from the Windsor International Airport.

- The purpose of the first meeting, on September 20, 2011, was to discuss the initial transportation analysis of the project and the draft Windsor International Airport Master Plan (2010).
- The purpose of the second meeting held on July 10, 2012 was to discuss the Airport's concern regarding the proximity of the proposed active transportation facilities (sidewalk, bike lanes, and multi-use trail) adjacent to the Airport Operations Area. The Airport notified the Project Team that jet blast, rapid gusts of air produced by jet engines, could potentially impact pedestrians and cyclists. The Airport provided jet blast contour drawings to the Project Team, indicating wind scales across County Road 42 for various types of airplanes. The contour drawings indicated that jet blasts up to 56 km/h were projected across County Road 42; this is classified as a moderate gale, with difficulty walking into the wind.
- On November 26, 2012, the Airport provided written comments notifying the Project Team of the potential hazard of jet blast in relation to the proposed active

transportation facilities, citing that where low-flying or taxiing aircraft are likely to be hazardous to pedestrians or vehicular traffic, and where the public way is not owned or controlled by the airport, they shall inform the authorities responsible for posting notices on the public way that there is a hazard.¹⁶

- A defined event of jet blast, in terms of occurrences and frequency, could not be established by the Airport or the Project Team.

In view of the uncertainties, the Project Team decided that this Environmental Assessment not include any changes to the preferred plans. Continued monitoring of the issue with the Airport is proposed, and should be further investigated during the next phase of design.

B.5.3 CITY OF WINDSOR – WALKER ROAD TO CITY/COUNTY BOUNDARY

The City of Windsor's current Official Plan identifies County Road 42, a Class II Arterial, as having a minimum right-of-way (ROW) of 42 m; however, the ROW was adjusted based on property restrictions while accommodating the future needs of underground infrastructure. Adjustments to the ROW only occurred within the boulevard; the other cross-section elements remained the same.

Road widening alternatives were assessed, included those centered on the existing ROW, widening to the south, and widening to the north.

From Walker Road to the City/County Boundary, it was determined that a 'best-fit' widening approach was preferred due to the varying characteristics, limitations of adjacent lands, and minimizing adverse impacts to existing properties. A 'best-fit' widening approach entails widening the roadway, to the north, south, or symmetrically, along the corridor, to best minimize impacts. The corridor was divided into four sections, based on differing characteristics.

- Walker Road to 7th Concession Road has more commercial properties and accesses located on the south side of the roadway. In order minimize impact to the commercial properties, widening this section of road to the north was preferred.
- 7th Concession Road to 8th Concession Road is uniquely defined by the Windsor International Airport's operations area, located on the north side of the roadway, and mixed residential and commercial properties to the south. The Airport confirmed that due to the proximity of their runway and taxiway to County Road 42, the roadway must only be widened to the south. In order to reduce impacts to the properties south of the roadway, the boulevard widths were minimized. It was noted that the landscaping and illumination on County Road 42 within the Airport Operations Area (between 7th Concession Road and 8th Concession Road) would be restricted or removed based on the proximity height regulations of the Airport.
- From 8th Concession Road to Lauzon Road, the majority of the properties north of County Road 42 are undeveloped Windsor International Airport properties, which are already encumbered by a municipal sewer easement. A 40 m ROW widened to the north was preferred for this section.

¹⁶Canadian Aviation Regulations (CAR) Part III, Subpart 2, Section 302.09 Warning Notice

- Lauzon Road to the City/County Boundary is a 40 m wide transitional section between the cross-section immediately west, widened to the north, and the cross-section in the County, widened symmetrically. Achieving this will require a municipal boundary adjustment between the City of Windsor and the Town of Tecumseh:
 - Should a boundary adjustment not be supported at the next phase of design, the alternate preferred solution would be to maintain the existing boundary and widen to the south. This alternative creates a minor shift in the roadway alignment and is not the preferred alternative.
 - Both of these alternatives will require a 6 m easement for sanitary sewer service to the City of Windsor properties north of the ROW.

The preferred roadway alignment is illustrated on Plates 1 to 9 in Section B.6.9.

B.5.3.1 Cross-Section

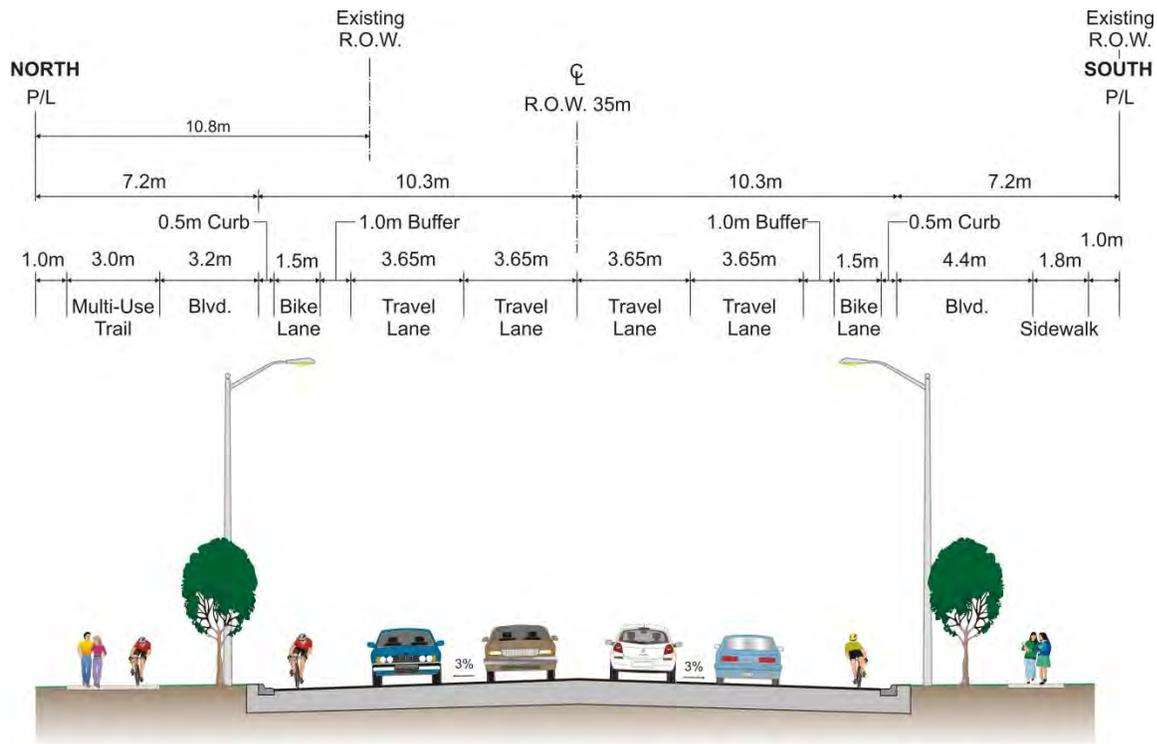
Appropriate ROW widths consistent with the City's Official Plan were assessed. The recommended improvements for County Road 42 from Walker Road to the City/County Boundary include widening from two to four lanes with an undivided urban cross-section, 1.5 m bike lanes plus 1.0 m buffer in both directions, a 1.8 m sidewalk, and a 3.0 m multi-use trail. The City standard lane width is 3.65 m. The road right-of-way (ROW) must also accommodate illumination, municipal utilities, and landscaping.

The typical cross-sections for County Road 42 from Walker Road to the City/County Boundary, as presented at PIC 2, are illustrated in Exhibit B.5-1 to Exhibit B.5-3. The following summarizes the basic features of the cross-sections within the study area:

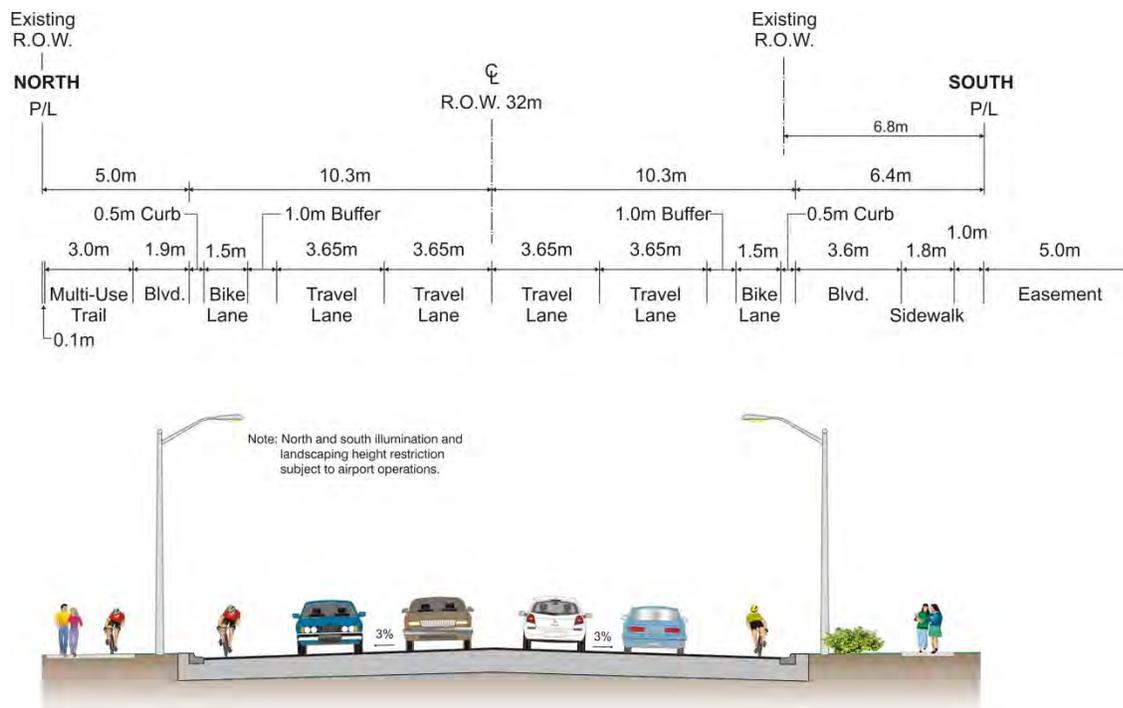
- Varying right-of-way (ROW) widths, from 32 m to 40 m, with urban cross-section
- 4 lanes at 3.65 m each
- 1.5 m bike lanes and 1.0 m buffers
- 3.0 m multi-use trail (MUT) on north side and 1.8 m sidewalk on south side

The preferred cross-sections, including refinements following PIC 2, with available existing utility information are illustrated in Section B.6.1.2.

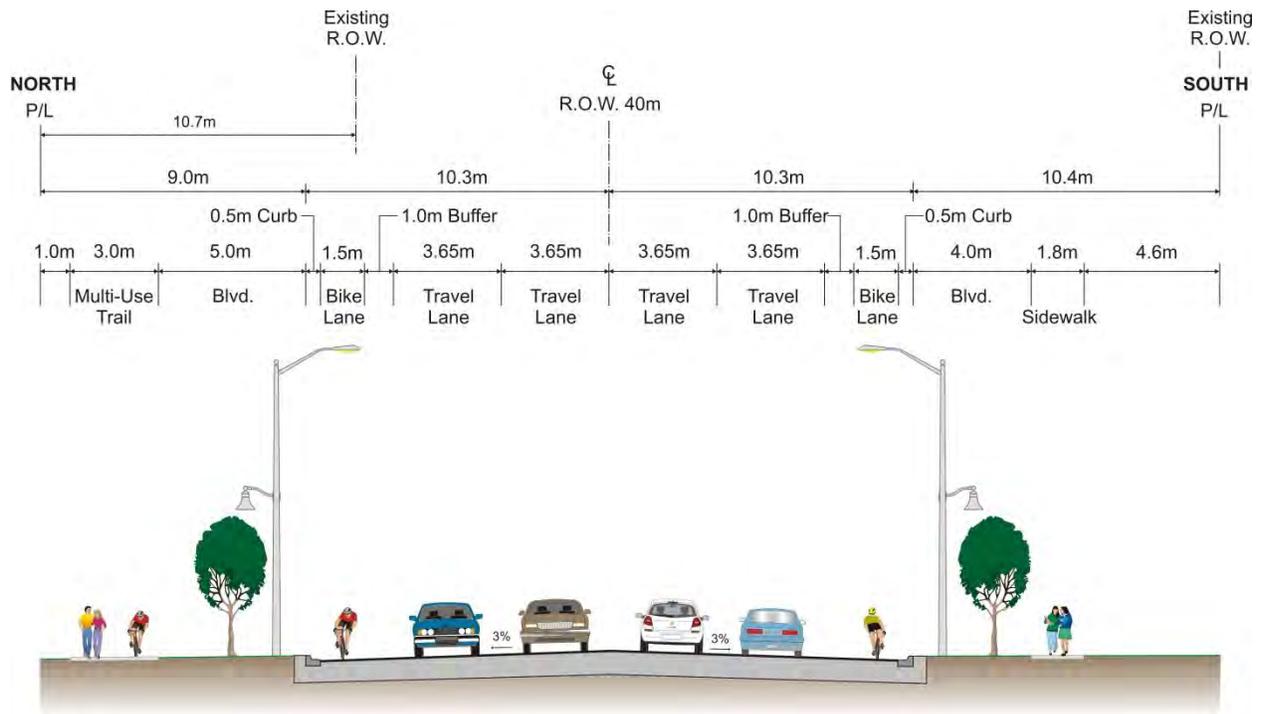
**EXHIBIT B.5-1: PIC 2 TYPICAL CROSS-SECTION COUNTY ROAD 42
 WALKER ROAD TO 7th CONCESSION ROAD**



**EXHIBIT B.5-2: PIC 2 TYPICAL CROSS-SECTION COUNTY ROAD 42
 7th CONCESSION ROAD TO 8th CONCESSION ROAD**



**EXHIBIT B.5-3: PIC 2 TYPICAL CROSS-SECTION COUNTY ROAD 42
 8th CONCESSION ROAD TO THE CITY/COUNTY BOUNDARY**



B.5.3.2 Intersection Analysis

The following sections outline the development of the preferred intersection alternatives, based on the preferred County Road 42 alignment and cross-section.

All existing intersections within the County Road 42 study area were analyzed, focusing on the existing operations and collision history. The *Traffic Analysis Report: Existing Conditions*, in Appendix H, contains all of the traffic analyses conducted for this study, as well as the collision history collected.

The proposed intersections along County Road 42 were analyzed in order to determine the required lane configurations for the interim (2021), ultimate (2031), and full-build out of the Sandwich South area (beyond 2031), scenarios. Left and right turn lanes were provided at signalized intersections where required. All intersections, where a need for traffic signals was identified, were also considered for a roundabout. If the traffic analysis for the roundabout design indicated an acceptable level-of-service (LOS), then the feasibility of a roundabout was further assessed. In certain situations, although a roundabout was technically feasible, it was not preferred due to other factors such as pedestrian safety. The *Traffic Analysis Report: Future Traffic Conditions*, in Appendix I, contains the analyses for all intersection in the Study Area.

WALKER ROAD

The intersection of Walker Road is proposed to remain as a signalized intersection. An analysis of a roundabout at this intersection indicated that it would not accommodate the future traffic conditions. A roundabout would also require additional property at the intersection, which would

impact the surrounding commercial properties. A detailed description of the recommended intersection is provided in Section B.6.1.3.

BASELINE ROAD AND 7th CONCESSION ROAD

The intersections of Baseline Road and 7th Concession Road are proposed as a single 2-lane roundabout to rationalize the two existing closely-spaced intersections into one intersection, while maintaining connectivity of the main roads (County Road 42 and Baseline Road). A detailed description of the recommended intersection is provided in Section B.6.1.3.

8th CONCESSION ROAD AND 9th CONCESSION ROAD

The intersections of 8th Concession Road and 9th Concession Road are proposed as single lane roundabouts. There is an existing and proposed access to the Airport lands at 8th Concession Road and 9th Concession Road, respectively. A detailed description of the recommended intersection is provided in Section B.6.1.3.

LAUZON PARKWAY

The existing Lauzon Parkway/County Road 42/10th Concession off-set intersection is proposed to be improved as part of the Lauzon Parkway extension. A new 4-leg intersection is planned west of the existing intersection, closer to the Little River. The 2021 and 2031 traffic analysis indicated that signalization of this intersection is required to accommodate the high volumes along both Lauzon Parkway and County Road 42.

Due to the high traffic volume, with 6 lanes on Lauzon Parkway intersecting with 4 lanes on County Road 42, a roundabout at this location was not recommended as the level of service, delay, and queue lengths for a roundabout would be significantly higher than that of a signalized intersection. Additionally, at this intersection the multi-use trail location along the Little River corridor must cross both the Lauzon Parkway and County Road 42 legs of the intersection; therefore, pedestrian and cyclist movements through a multi-lane (3-lane) roundabout face potential multiple conflict points with high speed, high volume traffic.

Therefore, a signalized intersection is recommended. A detailed description of the recommended intersection is provided in Section B.6.1.3.

10th CONCESSION ROAD / COUNTY ROAD 17

Once the new intersection of Lauzon Parkway is constructed, the traffic signals at 10th Concession Road / County Road 17 intersection will be removed; the intersection will be converted to a right-in-right-out (RIRO) in the interim condition based on the following triggers:

- the westbound left-turn traffic volume at Lauzon Parkway reaches 200 vph; or
- the traffic volume on County Road 42 reaches 650-700 vph in both directions and northbound left turn volume on 10th Concession Road / County Road 17 is about 50 vph.

A median will be included on County Road 42, easterly from the Lauzon Parkway intersection, in order to ensure safe turning movements. The 10th Concession Road / County Road 17 intersection will be closed for the ultimate 2031 scenario as part of the Sandwich South Secondary Plan. A detailed description of the recommended intersection is provided in Section B.6.1.3.

OTHER INTERSECTIONS

Along County Road 42, in addition to the major intersections discussed in the previous sections (i.e., Walker Road, Baseline Road, 7th, 8th, and 9th Concession Road, Lauzon Parkway, and 10th Concession Road / County Road 17), all intersections were reviewed and analyzed for future needs and are listed in Exhibit B.5-4. As noted previously, all intersections where traffic signals were warranted for the existing and future condition were also assessed for a roundabout option.

The proposed intersection of County Road 42 with Riberdy Road is, in effect, a right-in-right-out intersection. In order to improve the safe operations of the traffic movements at the Walker Road intersection, a raised median, separating the eastbound and westbound traffic, is proposed. The raised median is proposed to extend past Riberdy Road, in order to prevent the eastbound left-turn movement.

The proposed intersection of County Road 42 with Lauzon Road is recommended to be realigned in order to create a perpendicular intersection.

B.5.3.3 Summary of Intersections Along County Road 42

Exhibit B.5-4 identifies each of the intersections along County Road 42 including: their existing condition; which one was identified as potential roundabout; and if the operational analysis showed an acceptable level-of-service for a roundabout.

EXHIBIT B.5-4: SUMMARY OF COUNTY ROAD 42 INTERSECTION ROUNDABOUT ANALYSIS

Intersecting Road	Existing Intersection	Future Intersection Required	Potential for Roundabout	Acceptable LOS for Roundabout
Walker Road	Signalized	Signalized	x	
Riberdy Road	Unsignalized/All Access	Unsignalized/ RIRO	x	
Baseline Road	Unsignalized (only eastbound movement)	Combined with 7 th Concession Road	✓	✓
7 th Concession Road	Unsignalized	Unsignalized	✓	✓
Airport Access – West	Unsignalized (outbound only)	Unsignalized	x	
Airport Access – East	Unsignalized (inbound only)	Unsignalized	x	
8 th Concession Road	Unsignalized	Signalized	✓	✓
9 th Concession Road	Unsignalized	Signalized	✓	✓
Lauzon Parkway	Signalized	Signalized – Realigned	✓	x
County Road 17	Signalized	RIRO (median protected)	x ¹	
Lauzon Road	Unsignalized	Signalized - realigned	✓	x

1. Due to close proximity to Lauzon Parkway and County Road 42 intersection, this intersection is recommended to be restricted to right-in-right-out.

A description of the proposed intersections within the County of Essex, from the City/County Boundary to County Road 25 (E. Puce Road), is provided in Section B.5.4.3.

B.5.4 COUNTY OF ESSEX – CITY/COUNTY BOUNDARY TO COUNTY ROAD 25 (E. PUCE ROAD)

The County of Essex identifies County Road 42 as a 2-lane Regional Road which would be protected for a minimum right-of-way (ROW) of 36 m for rural areas, and a minimum 30 m ROW for urban areas. The Essex Windsor Regional Transportation Master Plan (EWRTMP) identifies County Road 42 as an integral element of the Regional Road System, and expected to accommodate heavy truck movements. The EWRTMP 2021 baseline Do-Nothing scenario, identified that County Road 42 from County Road 19 (Manning Road) to County Road 25 (E. Puce Road) will experience level-of-service F.

The future traffic conditions presented in Chapter 2 indicated that 4 basic lanes will be required to meet the 2021 and 2031 future traffic demands on County Road 42 through the Towns of Tecumseh and Lakeshore. A 3-lane road (2-lanes with a median left-turn lane) could not accommodate the forecasted future traffic demands for County Road 42 and therefore was not considered.

B.5.4.1 City/County Boundary to County Road 19 (Manning Road)

ALIGNMENT

This section of County Road 42 is within the Town of Tecumseh. Road widening alternatives were assessed, including those centered on the existing ROW, widening to the south, and widening to the north.

From the City/County Boundary to County Road 19 (Manning Road) it was determined that widening from the centerline was preferred to minimize impacts to the adjacent residential and commercial properties on both sides of the roadway. For approximately 600 m west of County Road 46, the City/County Boundary runs east-west along the exiting north ROW limit of County Road 42. The proposed widening of County Road 42 will require additional ROW along both sides of the existing ROW and correspondingly will require an adjustment to the existing municipal boundary. A 6 m easement for City of Windsor municipal services along the north side of the ROW/municipal boundary will be required.

Without a jurisdictional boundary adjustment, the existing boundary would be maintained, and County Road 42 would be widened to the south. This would require a minor shift in the roadway alignment.

CROSS-SECTIONS

Appropriate ROW widths consistent with the County's Official Plan were assessed. The recommended improvements for County Road 42 from the City/County Boundary to County Road 19 (Manning Road) include widening from 2 to 4 lanes. A fifth lane, median, two-way-left-turn-lane is proposed between County Road 43 (Banwell Road) and County Road 19 (Manning Road) to support the adjacent commercial/industrial land uses, while maintaining traffic operations for through traffic along County Road 42. The County standard lane width is 3.75 m. The active transportation facilities include 1.5 m bike lanes plus 1.0 m buffer, and 1.8 m

sidewalks in both directions. The road right-of-way (ROW) must also accommodate illumination, municipal utilities, and landscaping.

In considering a context sensitive design for this section of road, the following characteristics have been taken into account:

- adjacent land uses;
- level of traffic congestion;
- intersection and driveway impediments;
- presence of vulnerable road users;
- posted speed;
- width of lanes; and
- degree of maneuvering restriction

The County standard lane width of 3.75 m was reduced to 3.65 m to accommodate all of the urban design features within the narrow ROW. Additional information regarding the context sensitive design is provided in the *County Road 42 – County Road 43 to County Road 19: Consideration of Context Sensitive Design Report*, in Appendix R.

The cross-section design on County Road 42 from the City/County Boundary to County Road 43 is consistent with the City of Windsor’s cross-section west of the Boundary (see Exhibit B.5-3). The County Road 43 (Banwell Road) EA recommended re-aligning County Road 43 (Banwell Road), and identified a new intersection of County Road 43 (Banwell Road) at County Road 42. The location of this new intersection lends itself to be an ideal location for the transition between the City and County cross-sections.

The cross-section between Shiff Drive and St. Alphonse Avenue was reduced to a 30 m right-of-way due to the adjacent property impacts. On the north side of the right-of-way, the residential properties are in close proximity to the roadway, and are ‘front-lotted’ with driveways directly accessing the travelled roadway. Residences on the south side are ‘back-lotted’, with their backyards adjacent to the roadway, separated by a fence.

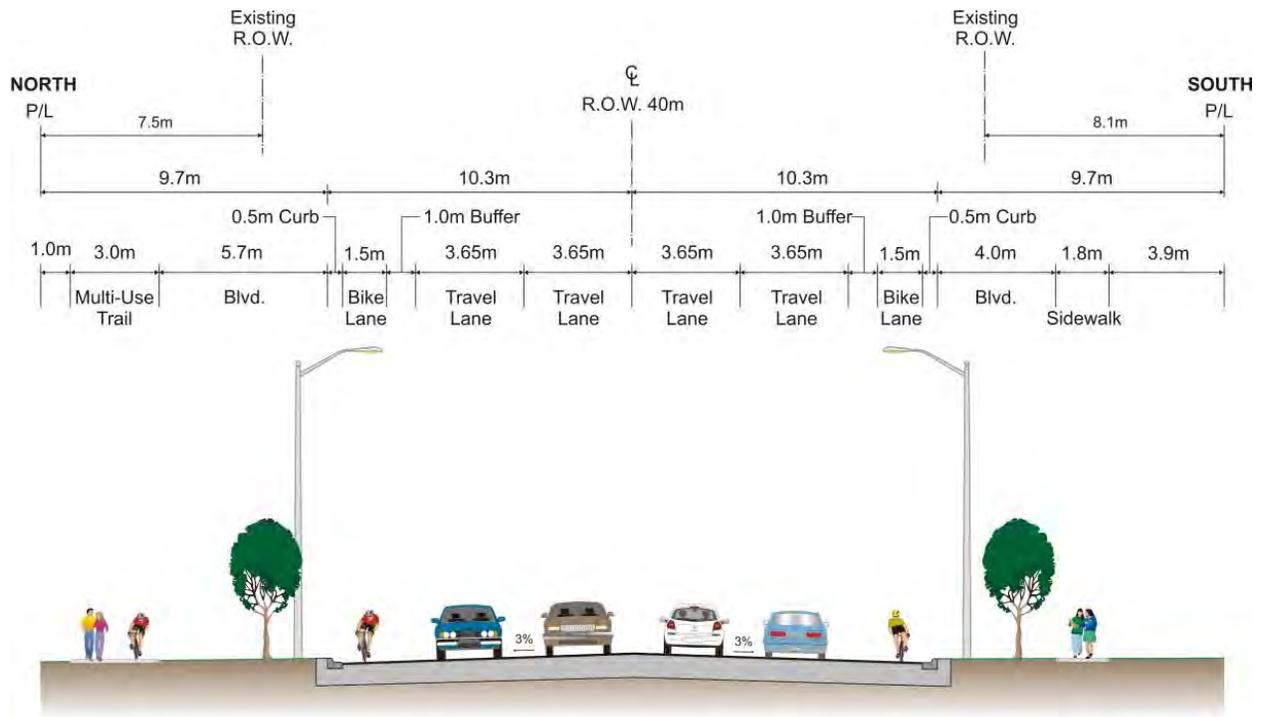
For this section of road, the south bike lane buffer was reduced to 0.5 m, and the south boulevard and sidewalk were reduced and combined into one paved surface 2.3 m wide. Based on these adjustments the ROW for this section was reduced to 30 m.

The typical cross-sections for County Road 42 from the City/County Boundary to County Road 19 (Manning Road), as presented at PIC 2, are illustrated in Exhibit B.5-5 to Exhibit B.5-8. The following summarizes the basic features of the cross-sections within the study area:

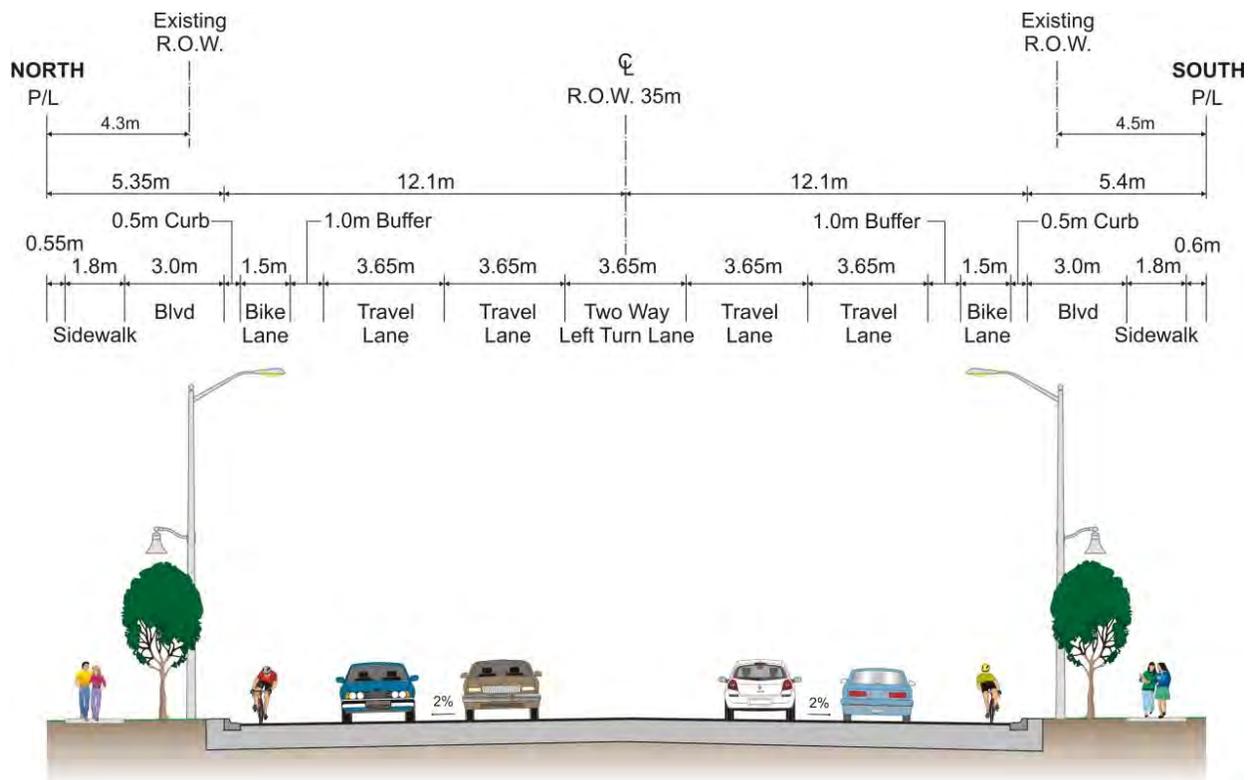
- Varying right-of-way (ROW) widths, from 35 m to 30 m, with urban cross-section
- 4 lanes at 3.65 m each
- Centre two-way-left-turn-lane at 3.65 m
- 1.5 m bike lanes and 1.0 m buffers (modified in some areas)
- 1.8 m sidewalk north and south of roadway (modified in some areas)

The preferred cross-sections, including refinements following PIC 2, with existing utility information are illustrated in Section B.6.1.2.

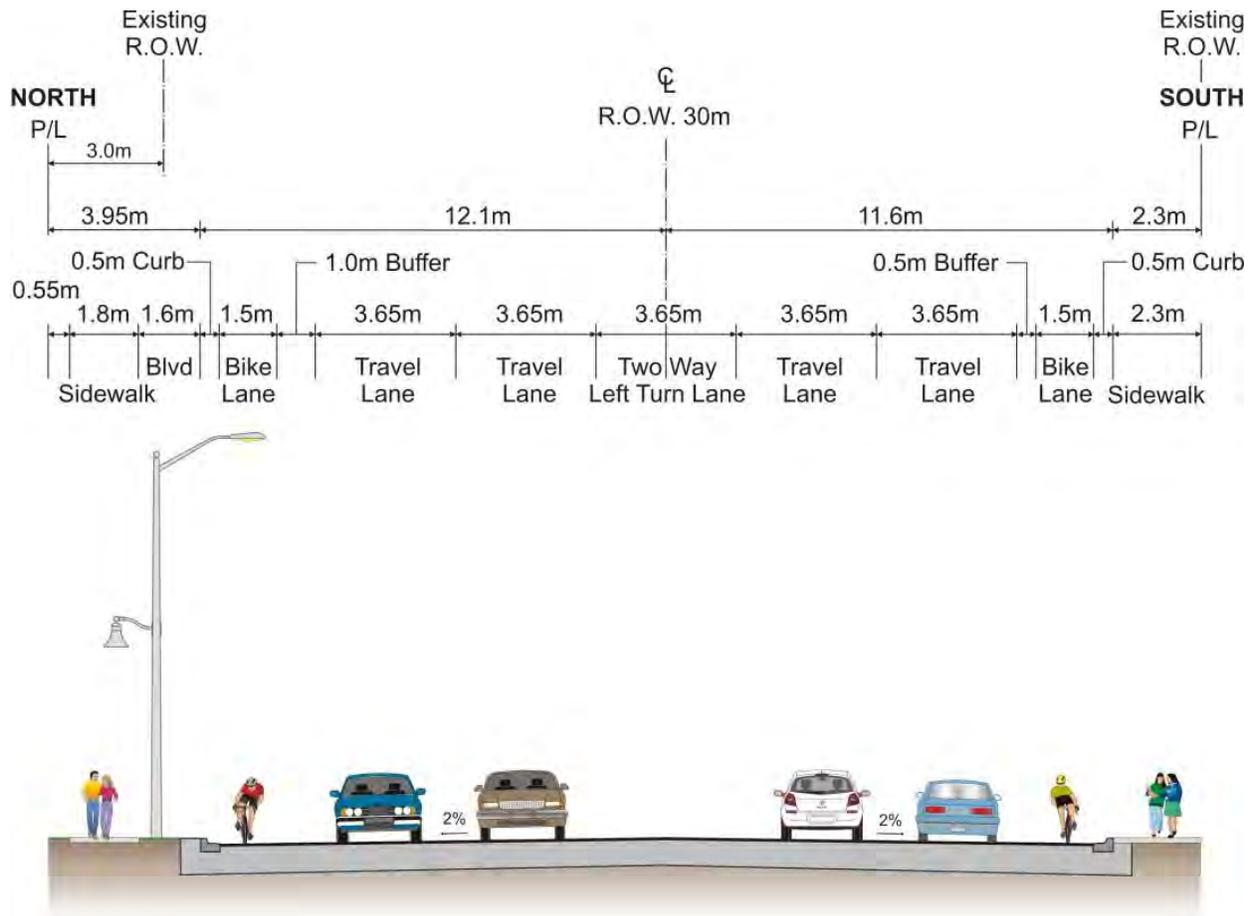
**EXHIBIT B.5-5: PIC 2 TYPICAL CROSS-SECTION COUNTY ROAD 42
 CITY/COUNTY BOUNDARY TO COUNTY ROAD 43 (BANWELL ROAD)**



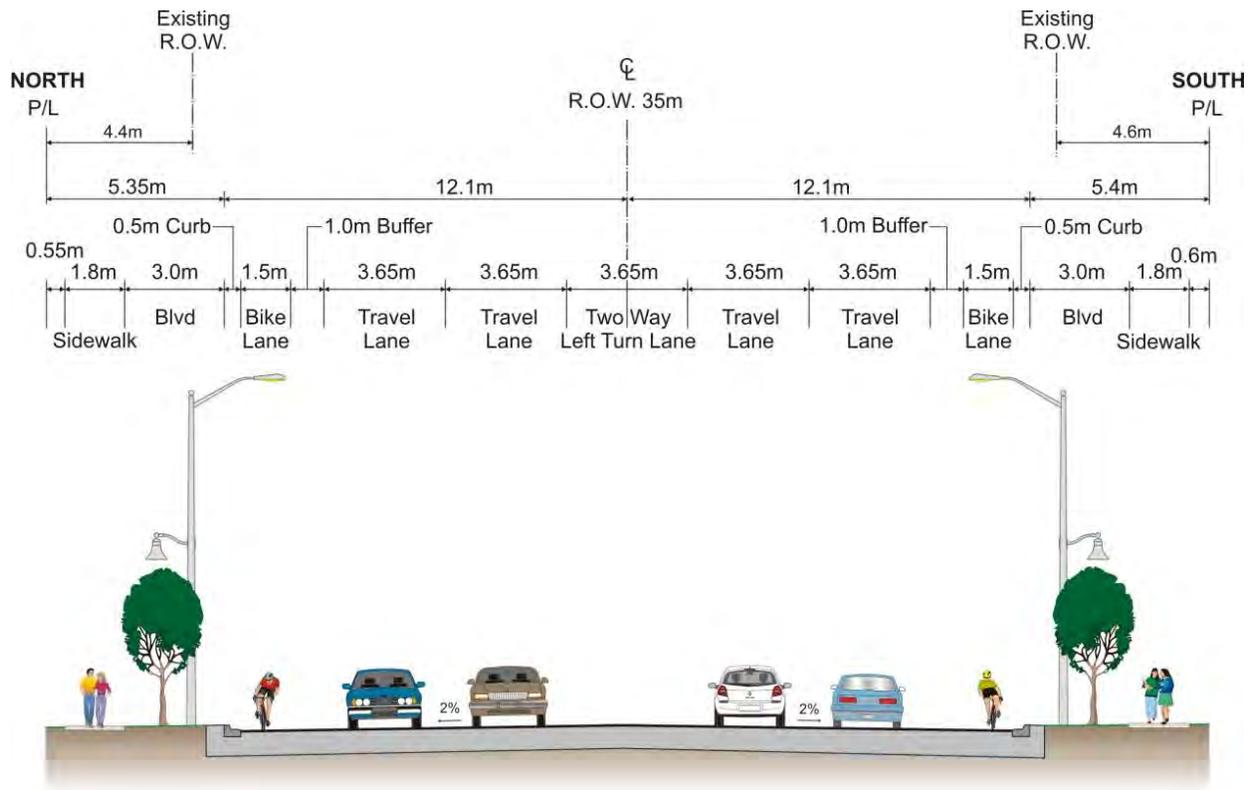
**EXHIBIT B.5-6: PIC 2 TYPICAL CROSS-SECTION COUNTY ROAD 42
 COUNTY ROAD 43 (BANWELL ROAD) TO SHIFF DRIVE**



**EXHIBIT B.5-7: PIC 2 TYPICAL CROSS-SECTION COUNTY ROAD 42
 SHIFF DRIVE TO ST. ALPHONSE AVENUE**



**EXHIBIT B.5-8: PIC 2 TYPICAL CROSS-SECTION COUNTY ROAD 42
 ST. ALPHONSE AVENUE TO COUNTY ROAD19/MANNING ROAD**



B.5.4.2 County Road 19 (Manning Road) to County Road 25 (E. Puce Road)

This section of County Road 42 extends from County Road 19 (Manning Road), westerly to County Road 25 (E. Puce Road). It has a rural section, and is less constrained by adjacent properties and land use. Road widening alternatives were assessed, including those centered on the existing ROW, widening to the south, and widening to the north.

ALIGNMENT

This section of County Road 42 has multiple municipal drains extending along the southern limit including the Baseline Drain, 8th Concession Drain, and Chauvin Drain. Therefore, widening to the south was not considered as a feasible alternative. The widening alternatives considered were:

- Widen north
- Widen from centreline

A comparative assessment and evaluation of widening alternatives was carried out, based on a comprehensive list of factors considering impacts to the socio-economic, cultural, natural environments, as well as technical considerations, including traffic operations, geometrics, and intersection spacing. The impact of each of the alternatives was based on the existing environmental conditions compiled through field visits and secondary source information, and is summarized in Section A.4. Then a comparative evaluation of the alternatives was undertaken within four major groupings: Socio-Economic, Cultural, Natural Environment, and Technical Considerations.

The summary of the assessment and evaluation of widening alternatives is illustrated in Exhibit B.5-9. The detailed assessment of the environmental effects associated with each of the alternatives and the corresponding comparative evaluation was documented and is included in Appendix G.

EXHIBIT B.5-9: ASSESSMENT AND EVALUATION OF COUNTY ROAD 42 WIDENING ALTERNATIVES IN THE TOWN OF LAKESHORE

Factor/Criteria	Option 1 Widen North	Option 2 Widen from Centreline
SOCIO-ECONOMIC ENVIRONMENT <ul style="list-style-type: none"> • Impacts to property and access • Community effects • Agricultural Properties 	●	●
CULTURAL ENVIRONMENT <ul style="list-style-type: none"> • Archaeology and heritage features 	●	●
NATURAL ENVIRONMENT <ul style="list-style-type: none"> • Impacts to stormwater management • Impact on vegetation, wildlife, landscape, and aquatic resources 	●	●
TECHNICAL CONSIDERATIONS <ul style="list-style-type: none"> • Utilities • Cost 	●	●
OVERALL SUMMARY	●	●
<p>Overall, Option 1 results in fewer impacts to properties, cultural heritage landscapes, and the natural environment. Although, both options displace one residence, are in close proximity to the Puce Memorial Cemetery, and involve the re-alignment of the existing hydro poles along the north side of CR42, Option 2 also results in additional cost to re-align the municipal drains located on the south side of CR42.</p> <p>It is noted that the potential property impacts along the north side of CR42 between the Puce River Bridge and Puce Road can be avoided through refinement of the roadway alignment in preliminary design, recognizing that there is available ROW along the south side of CR42 and north of the Standish Drain. It is also noted that there are opportunities to reduce the standard cross-section in limited areas to minimize/avoid potential residential/ commercial property impacts.</p> <p>Therefore Option 1 is preferred overall.</p>		



Widening north is preferred as it avoids impacting the municipal drains on the south side of the roadway. However, due to the Puce Memorial Cemetery and a new residential land development located on the north side of the road just east of the Puce River, the roadway was shifted south starting 100 m west of W. Puce Road to County Road 25 (E. Puce Road).

CROSS-SECTIONS

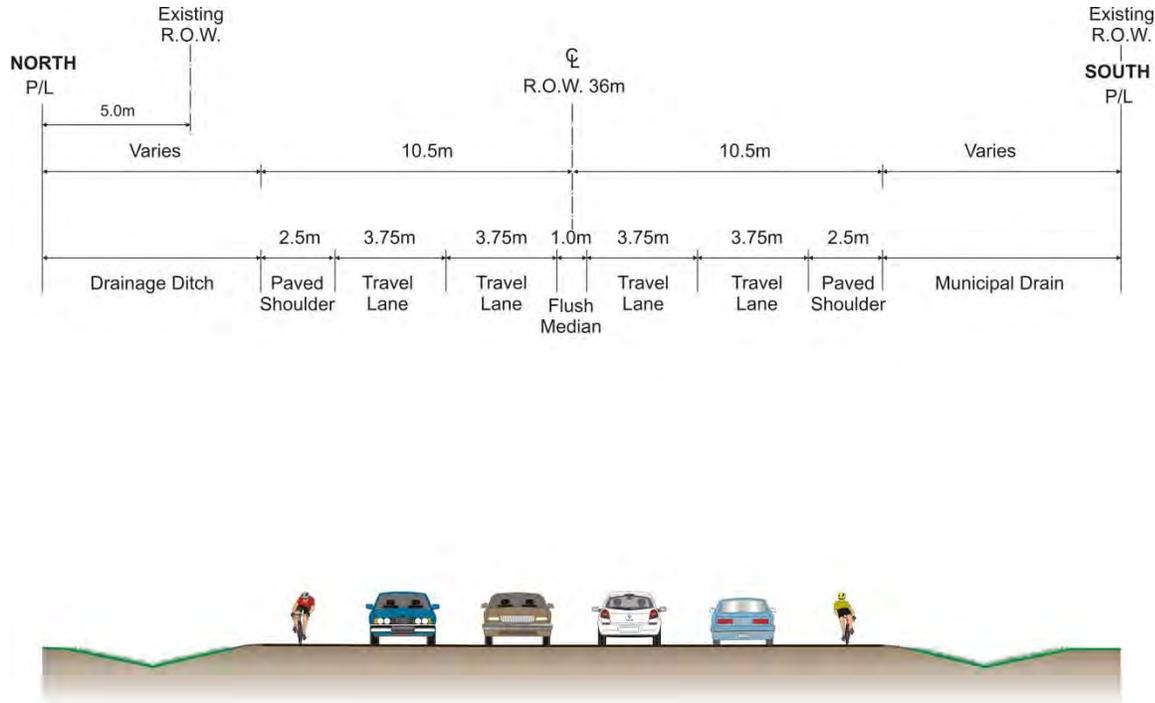
Appropriate ROW widths consistent with the County’s Official Plan were assessed. The recommended improvements for County Road 42 from County Road 19 (Manning Road) to County Road 25 (E. Puce Road) include widening from two to four lanes with a divided rural cross-section with a 1.0 m flush median, 2.5 m paved shoulders. The County standard lane width is 3.75 m, and the preferred ROW for this section of road was 36 m.

The typical cross-sections for County Road 42 from County Road 19 (Manning Road) to County Road 25 (E. Puce Road), as presented at PIC 2, are illustrated in Exhibit B.5-10 to Exhibit B.5-12. The following summarizes the basic features of the cross-sections within this section:

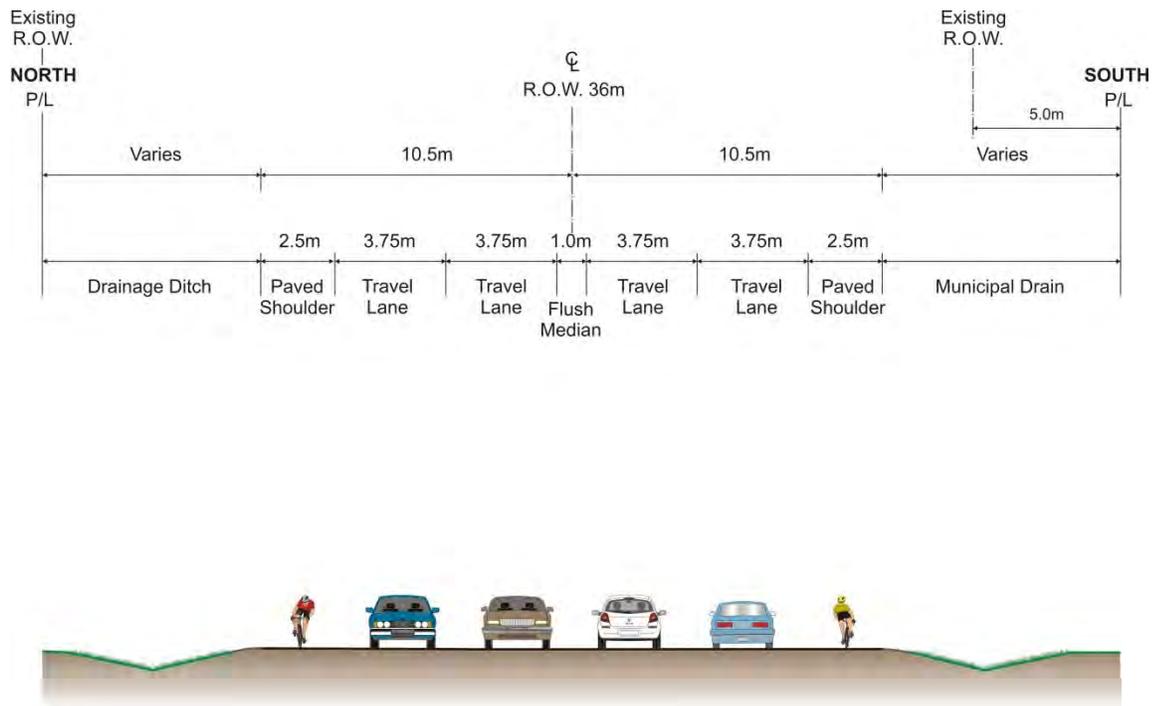
- 36 m right-of-way (ROW) rural cross-section
- 4 lanes at 3.75 m each
- 1.0 m flush centre median
- 2.5 m paved shoulders
- Drainage ditch on north side and existing municipal drains on south side

The preferred cross-sections, including refinements following PIC 2, with existing utility information are illustrated in Section B.6.1.2.

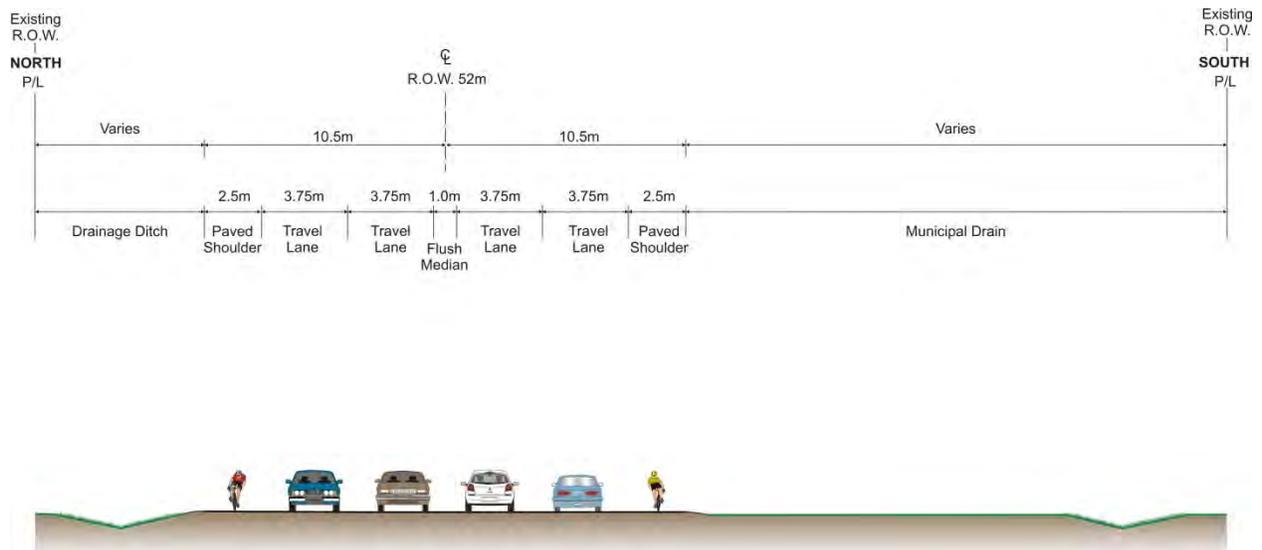
**EXHIBIT B.5-10: PIC 2 TYPICAL CROSS-SECTION COUNTY ROAD 42
 COUNTY ROAD 19 (MANNING ROAD) TO W. PUCE ROAD**



**EXHIBIT B.5-11: PIC 2 TYPICAL CROSS-SECTION COUNTY ROAD 42
 W. PUCE ROAD TO PUCE RIVER BRIDGE**



**EXHIBIT B.5-12: PIC 2 TYPICAL CROSS-SECTION COUNTY ROAD 42
 PUCE RIVER BRIDGE TO COUNTY ROAD 25 (E. PUCE ROAD)**



B.5.4.3 Intersection Analysis

The following sections outline the development of the preferred intersection alternatives, based on the preferred County Road 42 alignment and cross-section.

All existing intersections within the County Road 42 study area were analyzed, focusing on the existing operations and collision history. The *Traffic Analysis Report: Existing Conditions*, in Appendix H, contains all of the traffic analyses conducted for this study, as well as the collision history collected.

All existing and proposed intersections along County Road 42 were analyzed in order to determine the required lane configurations for the interim (2021), ultimate (2031), and full-build out of the Sandwich South area (beyond 2031), scenarios. Left and right turn lanes were provided at all County Road intersections where required. Additional information regarding the intersection analyses is located in the *Traffic Analysis Report: Future Traffic Conditions* in Appendix I.

Exhibit B.5-13 identifies each of the intersections along County Road 42 including: their existing condition; which one was identified as potential roundabout; and if the operational analysis showed an acceptable level-of-service for a roundabout. All intersections, where a need for traffic signals was identified, were also considered for a roundabout. If the traffic analysis for the roundabout design indicated an acceptable level-of-service (LOS), then the feasibility of a roundabout was further assessed. In certain situations, although a roundabout was technically feasible, it was not preferred due to other factors such as property impacts, pedestrian safety, etc. Further details of the analysis at key intersections are described in the following sections.

EXHIBIT B.5-13: SUMMARY OF COUNTY ROAD 42 INTERSECTION ROUNDABOUT ANALYSIS

Intersecting Road	Existing Intersection	Future Intersection Required	Potential for Roundabout	Acceptable LOS for Roundabout
11 th Concession Road	Unsignalized	Signalized – Realigned	✓	✓
County Road 43 (Banwell Road)	Signalized	Roundabout	✓	✓
Access to Tecumseh Hamlet	N/A	Unsignalized	x	
Odessa Drive	Unsignalized	Unsignalized	x	
Shiff Drive	Unsignalized	Unsignalized	x	
Le Boeuf Avenue	Unsignalized	Unsignalized	x	
St Alphonse Avenue	Unsignalized	Unsignalized	x	
Lesperance Road/12 th Concession Road	Signalized	Signalized	✓	✓ ¹
Strawberry Drive	Unsignalized	Unsignalized	x	
County Road 19 (Manning Road)	Signalized	Signalized	✓	✓
Lakeshore Road 101	Unsignalized	Unsignalized	x	
Suncrest Court	Unsignalized	Unsignalized	x	
Suncrest Drive	Unsignalized	Unsignalized	x	
County Road 21 (Elmstead Road)	Unsignalized	Unsignalized	x	
Lakeshore Road 103	Unsignalized	Unsignalized	x	
Patillo Road	Signalized	Signalized	✓	✓
Lakeshore Road 105	Unsignalized	Unsignalized	x	
Wallace Road	Unsignalized	Unsignalized	x	
Lakeshore Road 107	Unsignalized	Unsignalized	x	
W. Puce Road	Unsignalized	Unsignalized	x	
Puce Road/ County Road 25	Signalized	Signalized	✓	✓

1. Roundabout not recommended; the LOS for a roundabout was acceptable, but the significant property cost outweighed the minor improvement in LOS.

COUNTY ROAD 43 (BANWELL ROAD)

The County of Essex recently completed the *County Road 43 (Banwell Road) Class EA Study (2009)*, which recommended the existing 2-lane roadway be widened from 2 to 4 lanes from south of the CR Rail line to south of County Road 42, and an improved realigned signalized intersection with County Road 42, to eliminate the existing off-set 3-leg intersections on County Road 42.

As part of the proposed widening of County Road 42, this intersection, including consideration for a roundabout, was evaluated. Based on the proposed road network improvement work-programs (provided by City of Windsor and County of Essex and MTO), and updated land use (population and employment) assumptions, the intersection capacity analysis undertaken for this

EA confirmed that the County Road 43 (Banwell Road) intersection would have an acceptable level-of-service with a multi-lane (2-lane) roundabout. A 2-lane roundabout is preferred as it will provide a good level of service, has a safer design, and creates a transition between the City of Windsor and the County of Essex. Although there may be higher property impacts at the intersection, there are lower property impacts on the approach legs.

The widening and realignment of County Road 43 (Banwell Road) is identified in the County's 2021 road network improvements. The widening of County Road 42 is also required by 2021, based on this EA Study. However, it is recognized that the construction of these two improvements are not likely to occur concurrently. Therefore, it is recommended that if the widening of County Road 42 proceeds, prior to the widening of County Road 43, that it includes the construction of the proposed intersection improvements (2-lane roundabout) and associated realignment of County Road 43 (Banwell Road), including the proposed cul-de-sacs of the existing intersections at County Road 43 (Banwell Road) and 11th Concession Road. This will avoid the need for interim intersection improvements at County Road 43 and will coordinate the localized improvements of the roadways. A detailed description of the recommended intersection is provided in Section B.6.1.3.

LESPERANCE ROAD/12TH CONCESSION ROAD

An improved signalized intersection is recommended at Lesperance Road/12th Concession Road. A roundabout alternative was considered and it could accommodate the future traffic volume; however, the significant cost of property acquisition for roundabout construction and the negative effect on the surrounding area outweighed the minor improvement in LOS. The gas station in the northwest quadrant would have to be removed as well as the structure in the southwest quadrant to make way for the roundabout. The signals are proposed to be semi-actuated, whereby the intersection will provide free flow on County Road 42 until triggered by a vehicle on the side road. A detailed description of the recommended intersection is provided in Section B.6.1.3.

COUNTY ROAD 19 (MANNING ROAD)

The County of Essex recently completed the *County Road 19 (Manning Road) Class EA Study (2009)*, which recommended the existing 2-lane roadway be widened from 2 to 4 lanes from Highway 3 to the VIA Rail Line, conversion of the section from south of County Road 42 to County Road 22 from rural to an urban cross-section, and an improved signalized intersection at County Road 42.

As part of the proposed widening of County Road 42, this intersection, including consideration for a roundabout, was evaluated. Based on the proposed road network improvement work-programs (provided by City of Windsor and County of Essex and MTO), and updated land use (population and employment) assumptions, the intersection capacity analysis undertaken for this EA confirmed that the County Road 19 (Manning Road) intersection would provide for acceptable level-of-service with multi-lane (2-lane) roundabout. A 2-lane roundabout is preferred as it will provide a good level of service, has a safer design, and creates a gateway between the Towns of Tecumseh and Lakeshore. Although there may be higher property impacts at the intersection, there are lower property impacts on the approach legs.

The widening and realignment of County Road 19 (Manning Road) is identified in the County's 2021 road network improvements. The widening of County Road 42 is also required by 2021, based on this EA Study. However, it is recognized that the construction of these two improvements are not likely to occur concurrently. Therefore, it is recommended that if the widening of County Road 42 proceeds, prior to the widening of County Road 19 (Manning Road), that it includes the construction of the proposed intersection improvements (2-lane roundabout), including construction of 4-lane approaches on County Road 19. This will avoid the need for future widening of the roundabout and improvements on the County Road 19 approach legs. A detailed description of the recommended intersection is provided in Section B.6.1.3.

Sensitivity Analysis

A sensitivity analysis for the roundabout at County Road 42 and County Road 19 (Manning Road) was undertaken to assess the impact on the roundabout for the future 2021 and 2031 traffic demand, without the proposed extension of Lauzon Parkway between County Road 42 and Highway 3. The full analysis is provided in Appendix I. It was assumed that both County Road 42 and County Road 19 (Manning Road) would be widened by 2021. Two scenarios were developed for the 2021 and 2031 traffic demands; Scenario A assumed a 2% growth per annum from the existing (2011) traffic volume; Scenario B used the 2021 and 2031 TransCAD Model, described in Section 2.7.1, by closing the Lauzon Parkway Extension in the model.

Considering both sensitivity scenarios analyzed, the roundabout at County Road 42 and County Road 19 (Manning Road) would provide a reasonable level-of-service with the most conservative scenario. Hence, the roundabout is recommended at this intersection.

COUNTY ROAD 21 (ELMSTEAD ROAD)

The traffic analysis for the intersection of County Road 42 and County Road 21 (Elmstead Road) indicated that signalization of the intersection would not be required. Left and right turn lanes will be added to the intersection on County Road 42 in order to optimize the capacity of its through traffic. A detailed description of the recommended intersection is provided in Section B.6.1.3.

PATILLO ROAD

The intersection of County Road 42 and Patillo Road is currently a signalized intersection. The traffic analysis indicated an acceptable LOS for a roundabout. Therefore, this intersection is proposed as a double lane roundabout. A detailed description of the recommended intersection is provided in Section B.6.1.3.

The County of Essex recently reconstructed the County Road 42 and Patillo Road intersection in accordance with the Town of Lakeshore's *Patillo Road Class EA* (2006), which recommended the existing 2-lane roadway be widened from to 4 lanes from County Road 42 to the CPR Tracks and 5 lanes north of the CPR Tracks to County Road 22. Currently, Patillo Road has been widened to 4 lanes from County Road 42 to approximately 200 m north. The intersection was also signalized based on the recommendation of the Patillo Road EA, which did not account for the widening of County Road 42.

As part of the proposed widening of County Road 42, this intersection, including consideration for a roundabout, was evaluated. Based on the proposed road network improvement work-programs (provided by City of Windsor and County of Essex and MTO), and updated land use (population and employment) assumptions, the intersection capacity analysis undertaken for this EA confirmed that the Patillo Road intersection would provide for acceptable level-of-service with multi-lane (2-lane) roundabout. A 2-lane roundabout is preferred as it will provide a good level of service, and has a safer design. Although there may be higher property impacts at the intersection, there are lower property impacts on the approach legs.

WALLACE LINE ROAD

The traffic analysis for the intersection of County Road 42 and Wallace Line Road indicated that signalization of the intersection would not be required. Left and right turn lanes will be added to the intersection on County Road 42 in order to optimize the capacity of its through traffic. A detailed description of the recommended intersection is provided in Section B.6.1.3.

WEST PUCE RIVER ROAD

The traffic analysis for the intersection of County Road 42 and West Puce River Road indicated that signalization of the intersection would not be required. Left and right turn lanes will be added to the intersection on County Road 42 in order to optimize the capacity of its through traffic. A detailed description of the recommended intersection is provided in Section B.6.1.3.

COUNTY ROAD 25 (E. PUCE ROAD)

The intersection of County Road 42 and Patillo Road is currently a signalized intersection. The traffic analysis indicated an acceptable LOS for a roundabout. Therefore, this intersection is proposed as a double lane roundabout. A detailed description of the recommended intersection is provided in Section B.6.1.3.

FUTURE INTERSECTIONS

An Intersection Traffic Impact Study should be conducted prior to the installation of future intersections along this corridor, such as an access to the Tecumseh Hamlet west of Odessa Drive. The study should determine the appropriate intersection control which will provide for optimal traffic conditions along County Road 42.

B.5.5 ACTIVE TRANSPORTATION

As part of developing and evaluating the alternatives for the County Road 42 corridor, the active transportation needs within the roadway corridor were assessed in the context of the overall study area, including the Sandwich South Secondary Plan and the potential connections to the BUMP and CWATS planned networks.

At the time the County Wide Active Transportation Study (CWATS, 2012) was completed County Road 42 was not identified as a major active transportation corridor, due to existing classification and characteristics of the roadway, and that there were other routes which were deemed more suitable to make east-west connections in the area. The County Road 42 Corridor Protection Strategy noted that the existing operations and vehicle mix along the rural areas of County Road 42 do not provide comfortable pedestrian or bicycle operating conditions. It recommended that primary pedestrian and bicycle connections be promoted through adjacent land uses, through the local road network, or off-road facilities.

Recognizing the proposed land uses changes within the Sandwich South Secondary Plan area and the Hamlet of Tecumseh, enhancements to the proposed active transportation networks in BUMP and CWATS were considered. County Road 42 is identified as a cycling route between the City of Windsor and the County of Essex, and active transportation facilities were proposed along the from Walker Road in the City of Windsor to County Road 25 (E. Puce Road) in the County of Essex.

In the City of Windsor, from Walker Road to the City/County Boundary is proposed to include active transportation facilities to accommodate various active transportation users. On-road buffer-separated bike lanes are proposed as well as a multi-use trail on the north side, and a sidewalk on the south side (in keeping with the City's OP requirements). These facilities are further extended to County Road 43 (Banwell Road) to provide connectivity to the future active transportation facilities on County Road 43 (Banwell Road).

In the County of Essex, from County Road 43 (Banwell Road) to County Road 19 (Manning Road), the roadway cross-section is being converted from the existing 2-lane rural to a 4-lane urban roadway. The reduced speed and urban nature of the roadway provided the opportunity to recommend additional active transportation facilities beyond the normal paved shoulders for County Roads. Therefore, on-road buffer-separated bike lanes and sidewalks on both sides of the roadway are recommended.

The County's County Road 19 (Manning Road) Class EA Study (2008), and County Road 43 (Banwell Road) EA (2009), include a 3.0 m and 4.0 m, respectively, multi-use trail which connect to County Road 42.

In the County of Essex, from County Road 19 (Manning Road) to County Road 25 (Puce Road), the existing 2-lane rural is being widened to a 4-lane rural roadway. With the higher posted speed and rural character of the roadway a signed bike route with paved shoulders is recommended. Based on the roadway design speed, traffic volumes and truck traffic it is recommended the paved shoulder be 2.5 m wide on both sides of the roadway.

B.5.6 REVIEW DURING SECOND ROUND OF CONSULTATION

The second Public Information Centre (PIC 2) was held on October 22, 2012. The third Public Workshop for the Sandwich South Secondary Plan was held concurrently with PIC 2. The Upper Little River Watershed Master Drainage Plan & Stormwater Management Plan PIC 2, was also held concurrently at the same time and venue.

The purpose of PIC 2 was to provide stakeholders with an opportunity to review the assessment and evaluation of alternatives, present the Technically Preferred Alternative and the associated potential impacts and mitigating measures, including property impact, key intersection analyses, overall stormwater management plan, noise analysis, active transportation plan, and next steps.

The notice for PIC 2 and Workshop 3 was placed in The Windsor Star (October 10 and 13), Lakeshore News (October 11), Shoreline Weekly (October 12), and Le Rempart (October 17). Notices were distributed by direct mail to government agencies, local emergency services, utility companies and interest groups. Stakeholders whose property was being directly impacted by the Technically Preferred Alternative, were also sent notices by direct mail.

The PIC was a “drop-in centre” format. Approximately 160 members of the public attended. They were informed of the availability of comment sheets, which they were encouraged to complete. They were then directed to follow the displays around the room. Duplicate design plans were provided on tables for the public and staff to mark-up with comments during the PIC. Staff members were available to answer questions and provide information on the study. In addition, the Workshop 3 was held concurrently, which allowed attendees the opportunity to attend both the PIC and Workshop sessions.

Attendees were encouraged to provide their comments on the comment sheets at the PIC. If individuals wished to take comment sheets home, they were requested to provide their responses via mail, email or fax by November 16, 2012.

The following is a summary of the key written and verbal comments that were received at or after PIC 2:

- Timing of transportation improvements/construction
- Timing of Sandwich South development
- Inquired about construction costs
- Inquired about the completion date of the study
- Concerns regarding noise impacts to properties in proximity to roadway
- Concerns regarding property impacts
- Concerns regarding pedestrian safety crossing County Road 42 in the vicinity of Shiff Drive with increased traffic
- Concerns regarding left turning movement from Shiff Drive onto County Road 42

There were 19 comment sheets submitted at PIC 2, and 7 received following the PIC. The Project Team reviewed all public input received and responded to each comment accordingly.

Copies of the display boards at the PIC and Workshop, as well as comments sheets and responses, are included in the *Summary Report on Public Information Centre 2* in Appendix A.

B.5.6.1 Consultation with Individual Stakeholders

Further consultation with individual stakeholders was conducted as required, or requested. The following is a list of the key stakeholders for which additional consultation was held.

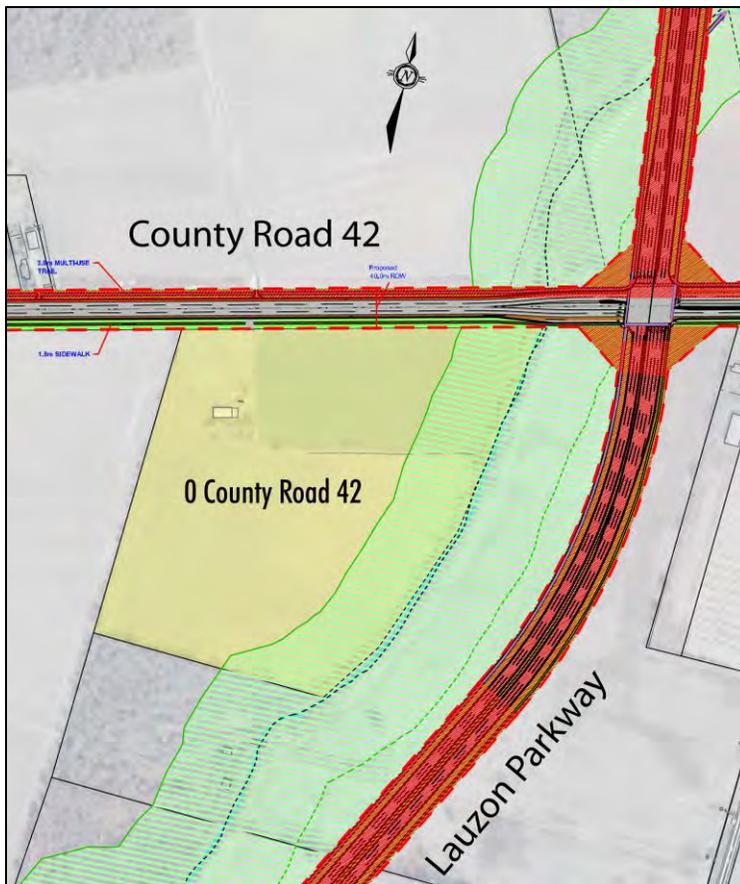
- 882885 Ontario Limited (Lauzon Parkway, Section A.5.8.1)
- 386823 Ontario Limited (County Road 42, Section B.5.6.1)
- Tecumseh Town Council (County Road 42, Section B.5.6.1)
- Windsor International Airport (County Road 42, Section B.5.2.1)
- The Windsor Christian Fellowship & Rosati Group (E-W Arterial, Section C.5.7.1)

Given that each stakeholder's concerns are related to specific elements of the Study (i.e., Lauzon Parkway, County Road 42, or E-W Arterial), details regarding the specific concerns and responses are provided in the appropriate sections of this report (Part A: Lauzon Parkway, Part B: County Road 42, or Part C: E-W Arterial).

386823 ONTARIO LIMITED

386823 Ontario Limited owns the property located immediately southwest of County Road 42 and the Little River. The property, currently used for agricultural purposes, is illustrated in Exhibit A.5-22.

EXHIBIT B.5-14: PROPERTY OF 386823 ONTARIO LTD. (0 COUNTY ROAD 42, ROLL NO. 9003001500)



A meeting was held with 386823 Ontario Limited on November 28, 2012 to discuss their concerns regarding the land-use designation of their property in the Lauzon Parkway EA Study as well as the Sandwich South Secondary Plan and the Upper Little River Stormwater Management Study. The Lauzon Parkway EA does not designate land-use; therefore further correspondence with this owner was arranged through the Sandwich South Secondary Plan and Upper Little River Stormwater Management Study.

An illustration of the County Road 42 plan at these properties is in Plate 7 of Section B.6.9.

TOWN OF TECUMSEH COUNCIL RESOLUTION

The Tecumseh Town Council commented on the Lauzon Parkway Class EA Study through Resolution 18.14 which requested that the County of Essex amend the speed limit on County Road 42 from 60 km/h to 50 km/h, from County Road 19 (Manning Road) west to the City/County Boundary. The Resolution also proposed that the County consider narrower lane widths for County Road 42, and an enhanced context sensitive design taking into account the urbanized nature and multiple users of this segment of road.

The County of Essex a staff report to County council on May 8, 2013 in response to the Tecumseh Council. The report noted that the current proposed cross-section includes an undivided urban section with bike lanes and sidewalks in both directions. The right-of-way will also accommodate numerous “Urban Design Features” such as illumination, utilities, and landscaping. The standard lane width of 3.75 m has been reduced for this segment of road to 3.65 m.

The County of Essex also completed a speed study to determine an appropriate posted and design speed of the roadway. The speed study determined that the mean speed (85th percentile) of the motorists was approximately 78 km/h. The results from the speed study would suggest that the posted speed of 60 km/h is too low and should more appropriately be 70 km/h. However, the County recommended a posted speed of 60 km/h to achieve a balance between the need to facilitate inter-regional traffic, and provide for local traffic access and other road users.

Upon consideration of the staff report, the County Council approved a speed limit reduction to 50 km/h from 60 km/h, on County Road 42 from County Road 19 (Manning Road) west to the City/County Boundary. It is recommended, however, that when County Road 42 is widened to 4 lanes, the posted speed should be re-assessed at that time.

B.5.6.2 Considerations to Amend Supportive Policies

The preferred plan for County Road 42 in the Town of Tecumseh identifies a context sensitive design with an urban cross-section in a rural setting that connects the City of Windsor and the Town of Lakeshore. The benefits of the context sensitive design are mainly localized between County Road 43 (Banwell Road) and County Road 19 (Manning Road). The recommended enhancements are supportive of a County Connecting Link classification and should be considered between the County of Essex and the Town of Tecumseh. This development lends itself to a higher activity of uses and further growth at a local municipal level.

B.5.6.3 Revisions to Technically Preferred Plan

Following PIC 2, and consultations with individual stakeholders, the Project Team reviewed the proposed improvements of County Road 42. One of the key comments received at PIC 2 was a concern for pedestrians crossing the widened roadway, and a request for a pedestrian crossing in the vicinity of Shiff Drive. The Project Team reviewed this request, considering the public concern, and the proposed corridor improvements. Considering the plans for future development in the area, with the implementation of the Town of Tecumseh's proposed new road and development plans on County Road 42, it is recommended that, as development proceeds in the Town of Tecumseh, future analysis should be undertaken to assess pedestrian crossing warrants and locations in the vicinity of Shiff Drive. It is the goal of this EA to establish the recommended corridor requirements, which, as related to pedestrian safety, include the recommended bike lanes and sidewalks extending along County Road 42 on both sides.

REVISIONS TO THE PREFERRED CROSS-SECTIONS

Based on comments received at PIC 2, and a further review of the preferred cross-sections presented at PIC 2, the following changes were made to the cross-sections:

- The active transportation facilities on County Road 42, east of County Road 19 (Manning Road) were reviewed. Based on the design speed and the volume of commercial traffic on the road, it is recommended to provide a 2.0 m paved shoulder with a 1.0 m buffer, in order to provide further separation between cyclists and passing vehicles. To accommodate these revisions, the recommended ROW width was changed from 36 m to 38 m.
- The proposed cross-section from County Road 19 (Manning Road), east, approximately 700 m, to Sta: 19+100, was revised after PIC 2. It was noted that the five residential properties on the north side of County Road 42, just east of Pike Creek, share an access road which is parallel to County Road 42. The widening of County Road 42 would require shifting the access road north, resulting in it being in proximity to the residences. It was therefore recommended to extend the urban cross-section of County Road 42 from west of County Road 19 (Manning Road) to just west of these residences. This provides a narrower cross-section at these properties, minimizing property impacts. A similar cross-section was proposed for County Road 42 from the 9th Concession Drain, approximately at Sta: 20+000 to County Road 21 (Elmstead Road), to minimize the right-of-way, and increase the distance to residences and businesses.
- The two-way-left-turn-lane on County Road 42 was extended west, past County Road 43 (Banwell Road) to Lauzon Road, in order to maximize the through lane capacity of the roadway.

A description of the recommended alternative plan is presented in Chapter B.6.

B.6 DESCRIPTION OF RECOMMENDED PLAN

Having identified the preferred alternatives, and revising the Technically Preferred Plan based on public input in Chapter B.5, Phase 3 of the Municipal Class EA process further involves the preliminary finalization of the Technically Preferred Plan into the Recommended Plan, which is described in this section.

CITY OF WINDSOR

The Recommended Plan for County Road 42 between Walker Road and the City/County Boundary includes the following:

- widening of County Road 42 from 2 to 4 lanes;
- active transportation facilities within the corridor – multi-use trail, buffer-separated bike lanes, and sidewalks; and
- improvements to existing and new intersections.

A short section from Lauzon Road to the City/County Boundary also includes a two-way-left-turn-lane.

COUNTY OF ESSEX

The Recommended Plan for County Road 42 between the City/County Boundary to County Road 43 (Banwell Road) is consistent with the cross-section to the west from the City of Windsor, with the addition of a short section including a two-way-left-turn-lane. The proposed roundabout at County Road 43 (Banwell Road) will act as a natural transition between the City and County.

The Recommended Plan for County Road 42 between County Road 43 (Banwell Road) and County Road 19 (Manning Road) includes the following:

- widening of County Road 42 from 2 to 4 lanes, with a median two-way left-turn-lane;
- active transportation facilities within the corridor – buffer-separated bike lanes and sidewalks; and
- improvements to existing and new intersections.

The proposed roundabout at County Road 19 (Manning Road) will act as a natural transition between the Towns of Tecumseh and Lakeshore.

Within the County of Essex, the Recommended Plan for County Road 42 between County Road 19 (Manning Road) and County Road 25 (E. Puce Road) includes the following:

- widening of County Road 42 from 2 to 4 lanes, with a centre flush median;
- active transportation facilities within the corridor – buffer-separated paved shoulders for a signed bike route; and
- improvements to existing intersections.

The major features of the Recommended Plan for County Road 42 are described in Section B.6.1, and illustrated in the plan/profile plates in Section B.6.9. A description of the active transportation improvements are described in Section B.6.2.

This information should be reviewed in conjunction with Chapter B.5 of the ESR which describes the alternative concept plans. While refinements may occur in the future, during the next phase of design, any changes should not alter the intent of the recommended undertaking or its components. During the next phase of design, there will be further consultation with technical approval/review agencies, utilities, and affected property owners.

B.6.1 ROAD GEOMETRY

The plan and profile of the recommended County Road 42 improvements are shown in Section B.6.9. Details of the County Road 42 roadway are presented in three sections due to the change in jurisdiction and adjacent land use in Exhibit B.6-1 to Exhibit B.6-4.

The posted speed on County Road 42 is being reduced from 60 km/h to 50 km/h on County Road 42 from County Road 43 (Banwell Road) to County Road 19 (Manning Road), and will be maintained at 80 km/h east of County Road 19 (Manning Road). County Road 42 is planned to be widened from two to four lanes (rural to urban) from Walker Road to County Road 25 (E. Puce Road).

B.6.1.1 Design Criteria

The widening of County Road 42 is proposed to occur in two sections. The widening from 2 to 4 lanes between Walker Road and County Road 19 (Manning Road) will occur when the peak hour traffic volumes reach approximately 700 vph in the peak direction (anticipated to be by 2021). Widening from County Road 19 (Manning Road) to County Road 25 (E. Puce Road) will also occur when the peak hour traffic volumes reach approximately 700 vph in the peak direction; however based on the development projections, this is anticipated to occur by 2031.

The design speed on County Road 42 in the City of Windsor changes between 60 km/h and 80 km/h. It is recommended that at the time of the proposed widening, the posted speed will be 60 km/h in the City of Windsor. In the County of Essex, in the Town of Tecumseh, the posted speed is 50 km/h, however, as noted in Section B.5.6.1, the posted speed should be re-assessed as the current concerns will be alleviated with the preferred design.

As noted previously, the roadway design between the City and the County changes at Lauzon Road, then again at County Road 43 (Banwell Road), and not at the City/County Boundary, as the roundabout will be a natural transition point: The design criteria for County Road 42 is developed in 4 sections;

- Walker Road to Lauzon Road;
- Lauzon Road to County Road 43 (Banwell Road);
- County Road 43 (Banwell Road) to County Road 19 (Manning Road); and
- County Road 19 (Manning Road) to County Road 25 (E. Puce Road).

Although the typical cross-sections are differentiated further within these sections, those differences are a result of minor variations in the widening alignment or boulevard widths, and not due to any differences in the design criteria. The roadway and intersections were planned to accommodate a WB-20 design vehicle (i.e., standard tractor-trailer).

The design criteria for County Road 42 from Walker Road to County Road 25 (E. Puce Road) are described in Exhibit B.6-1 to Exhibit B.6-4.

**EXHIBIT B.6-1: DESIGN CRITERIA COUNTY ROAD 42
 WALKER ROAD TO LAUZON ROAD**

	Present Conditions	Design Standards	Proposed Standards
Design Speed	100 km/h ¹	80 km/h	80 km/h
Posted Speed	80 km/h and 60 km/h	60 km/h	60 km/h
No. of Lanes and Width	2 lanes - 3.65 m ²	4 lanes - 3.65 m	4 lanes -3.65 m
Total Lane Width	7.3 m	14.6 m	14.6 m
Median Width	N/A	N/A	N/A
Provisions for Pedestrians and Cyclists	N/A	1.5 m bike lanes with 1.0 m buffers; 1.8 m sidewalk (south side); and 3.0 m MUT (north side)	1.5 m bike lanes with 1.0 m buffers; 1.8 m sidewalk (south side); and 3.0 m MUT (north side)
Minimum Grade (%)	0.1 %	0.4 %	0.4 %
Maximum Grade (%)	0.3 %	6 – 12 %	0.8 %
Minimum Curve Radius	350 m	190 m	800 m
Minimum Stopping Sight Distance		110 m	>110 m
Equivalent Minimum 'K' Factor	N/A	Crest 25 Sag 25	>25
Basic Right-of-Way	25 – 30 m	42 m	32 – 44 m

1. Design Speed estimated based on 20 km/h above posted speed
2. Additional turning lanes provided at identified intersections

**EXHIBIT B.6-2: DESIGN CRITERIA COUNTY ROAD 42
 LAUZON ROAD TO COUNTY ROAD 43 (BANWELL ROAD)**

	Present Conditions	Design Standards	Proposed Standards
Design Speed	100 km/h ¹	80 km/h	80 km/h
Posted Speed	80 km/h and 60 km/h	60 km/h	60 km/h
No. of Lanes and Width	2 lanes - 3.65 m ²	4 lanes - 3.65 m	4 lanes -3.65 m
Total Lane Width	7.3 m	14.6 m	14.6 m
Median Width	N/A	1 TWLTL - 3.65 m	1 TWLTL - 3.65 m
Provisions for Pedestrians and Cyclists	N/A	1.5 m bike lanes with 1.0 m buffers; 1.8 m sidewalk (south side); and 3.0 m MUT (north side)	1.5 m bike lanes with 1.0 m buffers; 1.8 m sidewalk (south side); and 3.0 m MUT (north side)
Minimum Grade (%)	0.1 %	0.4 %	0.4 %
Maximum Grade (%)	0.3 %	6 – 12 %	0.8 %
Minimum Curve Radius	350 m	190 m	800 m
Minimum Stopping Sight Distance		110 m	>110 m
Equivalent Minimum 'K' Factor	N/A	Crest 25 Sag 25	>25
Basic Right-of-Way	25 – 30 m	42 m	40 – 44 m

1. Design Speed estimated based on 20 km/h above posted speed
2. Additional turning lanes provided at identified intersections

**EXHIBIT B.6-3: DESIGN CRITERIA COUNTY ROAD 42
 COUNTY ROAD 43 (BANWELL ROAD) TO COUNTY ROAD 19 (MANNING ROAD)**

	Present Conditions	Design Standards	Proposed Standards
Design Speed	80 km/h ¹	80 km/h	80 km/h
Posted Speed	60 km/h	60 km/h	60 km/h
No. of Lanes and Width	2 lanes - 3.65 ²	4 lanes - 3.65 m ¹	4 lanes - 3.65 m
Total Lane Width	7.3 m	14.6 m	14.6 m
Median Width	N/A	1 TWLTL - 3.65 m	1 TWLTL - 3.65 m
Provisions for Pedestrians and Cyclists	N/A	1.5 m bike lanes with 1.0 m buffers; 1.8 m sidewalks;	1.5 m bike lanes with 1.0 m buffers; 1.8 m sidewalks;
Minimum Grade (%)	0.03 %	0.5 %	0.4 %
Maximum Grade (%)	0.3	6 – 12 %	1.3 %
Minimum Curve Radius	1000 m	190 m	>190 m
Minimum Stopping Sight Distance	N/A	110 m	>110 m
Equivalent Minimum 'K' Factor	N/A	Crest 25 Sag 25	>25
Basic Right-of-Way	25 – 30 m	36 m	30 – 35 m

1. Design Speed estimated based on 20 km/h above posted speed
2. Additional turning lanes provided at identified intersections

**EXHIBIT B.6-4: DESIGN CRITERIA COUNTY ROAD 42
 COUNTY ROAD 19 (MANNING ROAD) TO COUNTY ROAD 25 (E. PUCE ROAD)**

	Present Conditions	Design Standards	Proposed Standards
Design Speed	100 km/h ¹	100 km/h	100 km/h
Posted Speed	80 km/h	80 km/h	80 km/h
No. of Lanes and Width	2 lanes - 3.75 m ²	4 lanes - 3.75 m	4 lanes -3.75 m
Total Lane Width	7.5 m	15 m	15 m
Median Width	N/A	1.0 m flush	1.0 m flush
Provisions for Pedestrians and Cyclists	N/A	2.5 m paved shoulders	2.5 m paved shoulders
Minimum Grade (%)	0.04	0.5 %	0.1 %
Maximum Grade (%)	0.1	6 – 8 %	0.6%
Minimum Curve Radius	N/A	420 m	>420 m
Minimum Stopping Sight Distance		185 m	>1850 m
Equivalent Minimum 'K' Factor	N/A	Crest 70 Sag 45	>70
Basic Right-of-Way	22 m	36 m	29.8 – 38 m

1. Design Speed estimated based on 20 km/h above posted speed
2. Additional turning lanes provided at identified intersections

B.6.1.2 Typical Cross-Sections

CITY OF WINDSOR – WALKER ROAD TO CITY/COUNTY BOUNDARY

The following summarizes the basic features of the cross-sections within this section:

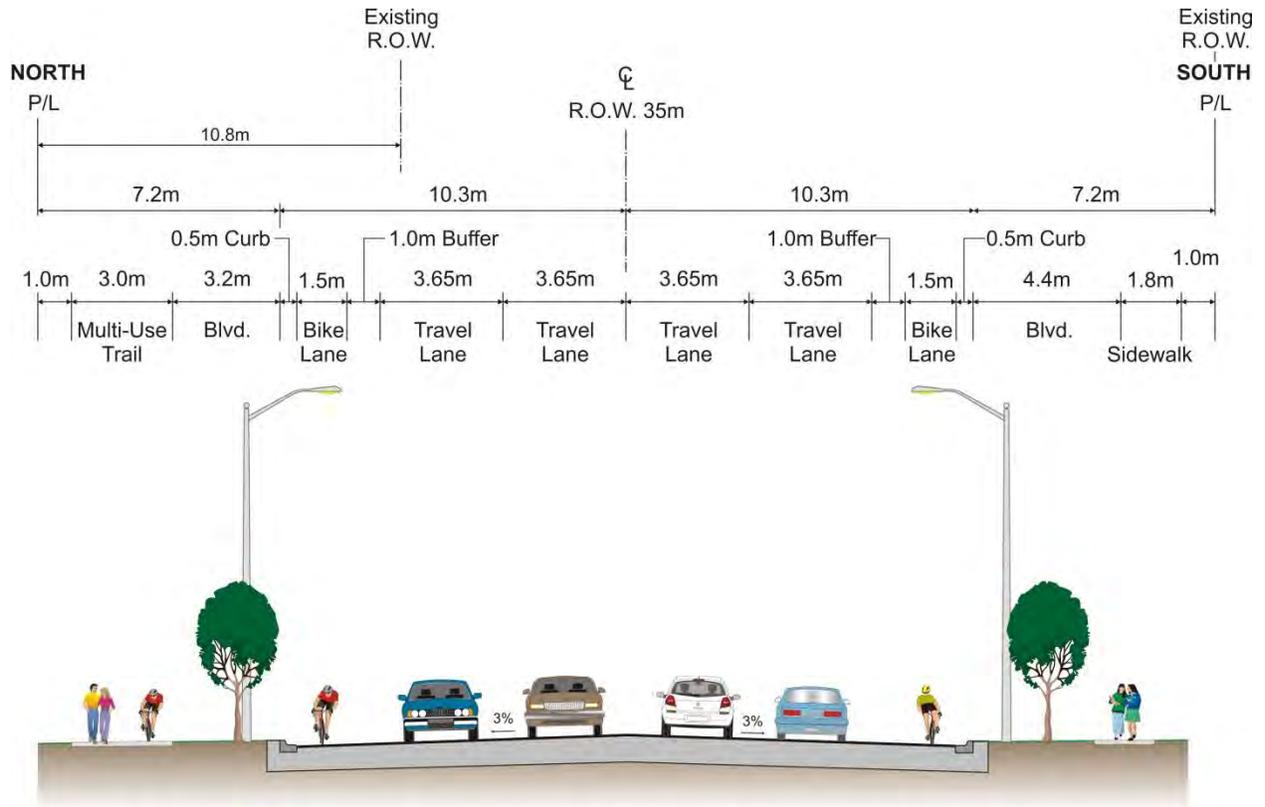
- 32 m – 44 m right-of-way (ROW) urban cross section
- 4 lanes at 3.65 m
- 1.5 m bike lanes with 1.0 m buffers, a 1.8 m sidewalk on the south side and a 3.0 m multi-use-trail on the north side
- All municipal utilities to be accommodated within ROW
- Landscaped boulevards
- Illumination on both sides¹⁷

The typical proposed cross-sections for County Road 42 between Walker Road and County Road 43 (Banwell Road) are illustrated in Exhibit B.6-5 to Exhibit B.6-8.

¹⁷ Airport Operations Area height restrictions are described in Section B.5.2.1.

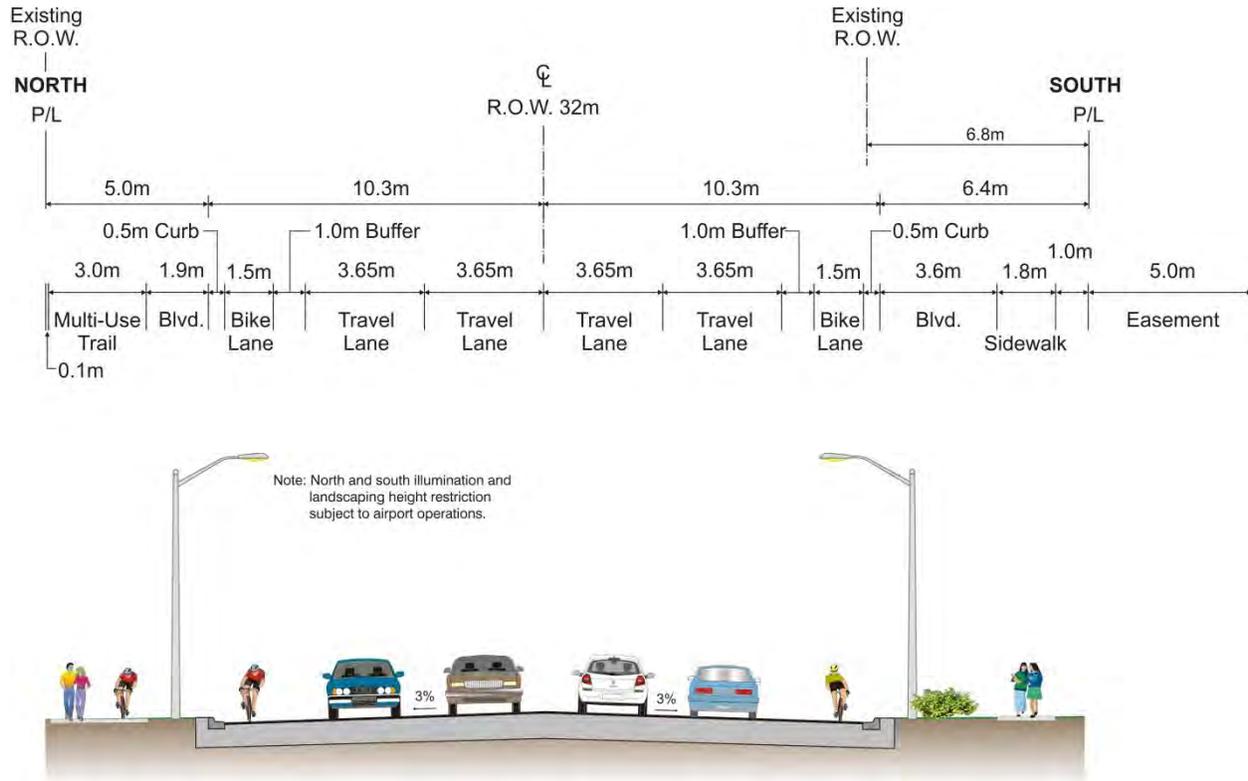
The preferred alignment alternative for County Road 42 between Walker Road and 7th Concession Road is widening north, holding the south property line. Some property was required from the south right-of-way limit at the intersection with Walker Road.

**EXHIBIT B.6-5: TYPICAL CROSS-SECTION COUNTY ROAD 42
 WALKER ROAD TO 7th CONCESSION ROAD**



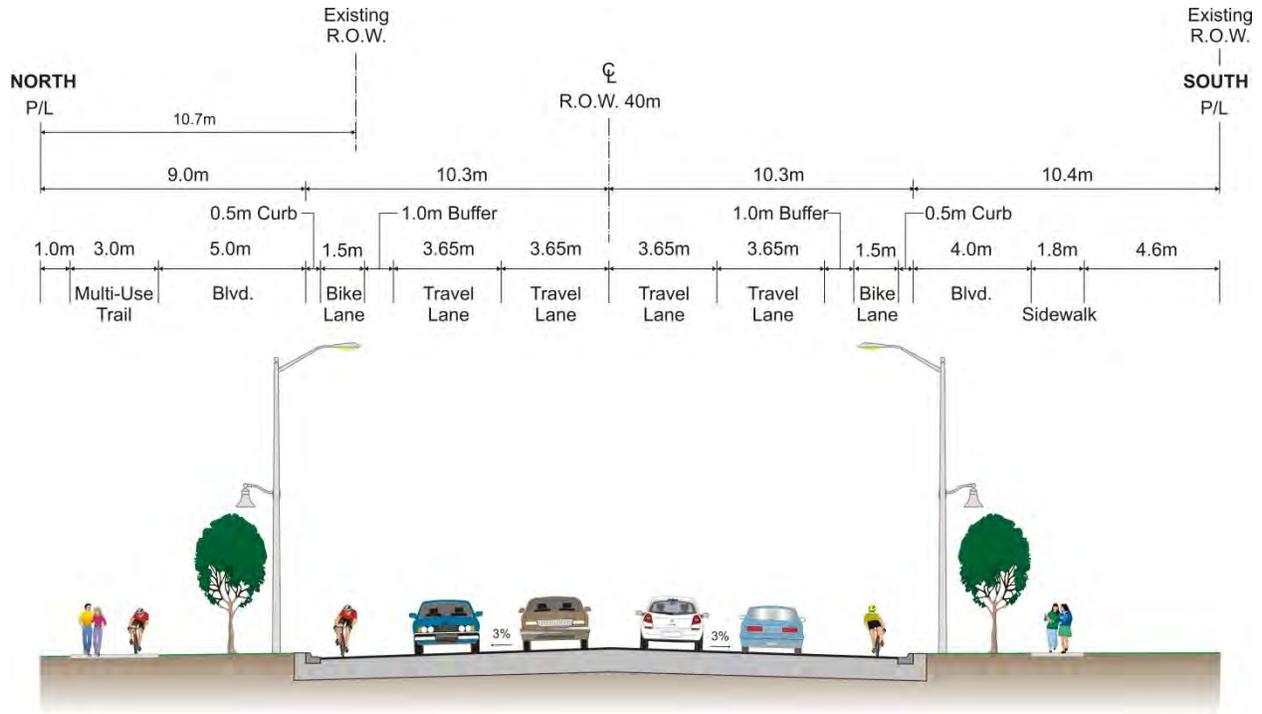
The preferred alignment alternative for County Road 42 between 7th Concession Road and 8th Concession Road is widening south, holding the north property line, and providing a 5.0m wide easement to accommodate the future needs of proposed or relocated underground municipal infrastructure and utilities.

**EXHIBIT B.6-6: TYPICAL CROSS-SECTION COUNTY ROAD 42
 7th CONCESSION ROAD TO 8th CONCESSION ROAD**



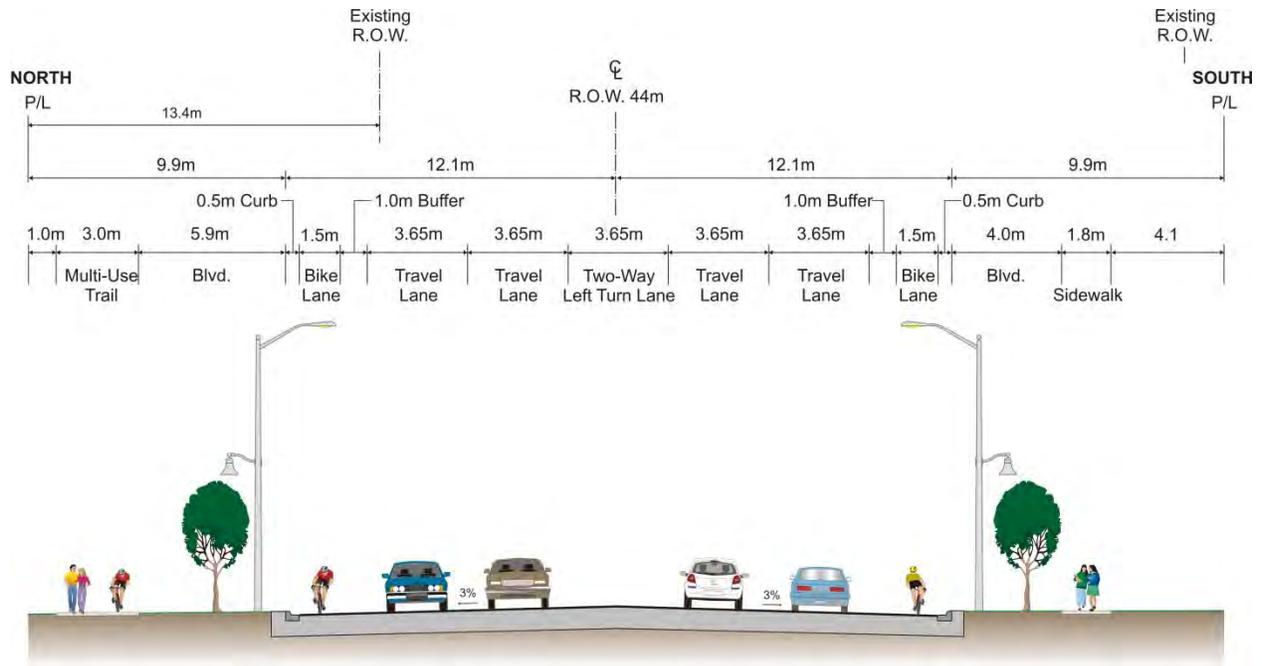
The preferred alignment alternative for County Road 42 between 8th Concession Road and Lauzon Road is widening north, holding the south property line.

**EXHIBIT B.6-7: TYPICAL CROSS-SECTION COUNTY ROAD 42
 8th CONCESSION ROAD TO LAUZON ROAD**



From Lauzon Road to the City/County Boundary, the road alignment will transition from widening north (west of Lauzon Road) to widening from centerline (east of City/County Boundary), pending a boundary adjustment. Should a boundary adjustment not be supported at the next phase of design, the alternate preferred solution is to maintain the existing boundary and widen to the south. A two-way-left-turn-lane (TWLTL) is also included in this short section of road, widening the right-of-way to 44 m.

**EXHIBIT B.6-8: TYPICAL CROSS-SECTION COUNTY ROAD 42
 LAUZON ROAD TO THE CITY/COUNTY BOUNDARY**



COUNTY OF ESSEX – CITY/COUNTY BOUNDARY TO COUNTY ROAD 25 (E. PUCE ROAD)

City/County Boundary to County Road 19 (Manning Road)

The preferred alignment alternative for County Road 42 between City/County Boundary and County Road 43 (Banwell Road) is widening from centreline, pending a boundary adjustment. Should a boundary adjustment not be supported at the next phase of design, the alternate preferred solution is to maintain the existing boundary and widen to the south.

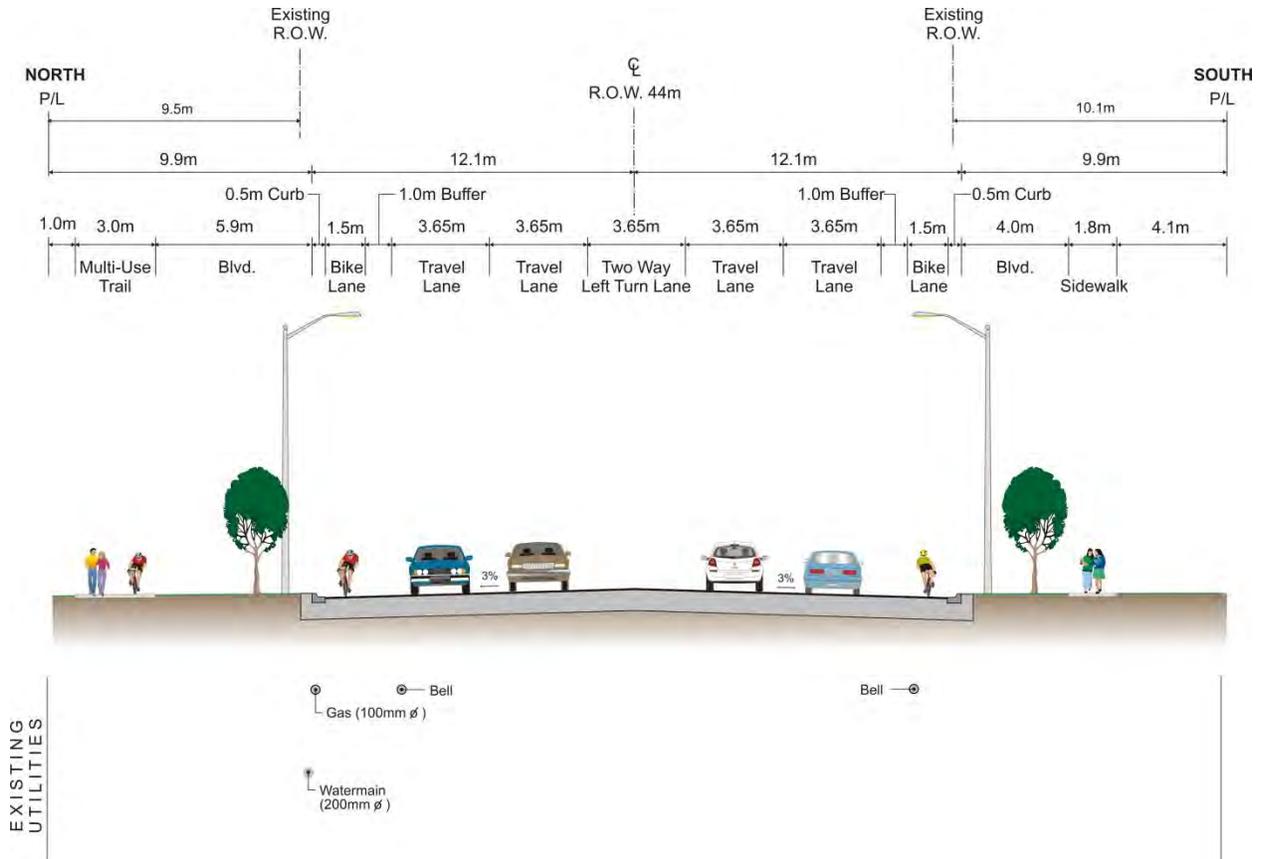
The following summarizes the basic features of the cross-sections within this section:

- 30 m – 44 m right-of-way (ROW) urban cross section
- 4 lanes at 3.65 m
- 1 centre left-turn-lane at 3.65 m
- 1.5 m bike lanes with 1.0 buffers, and a 1.8 m sidewalks on both sides
- All municipal utilities to be accommodated within ROW
- Landscaped boulevards
- Illumination on both sides

The typical proposed cross-sections for County Road 42 between County Road 43 (Banwell Road) and County Road 19 (Manning Road) are illustrated in Exhibit B.6-9 to Exhibit B.6-12.

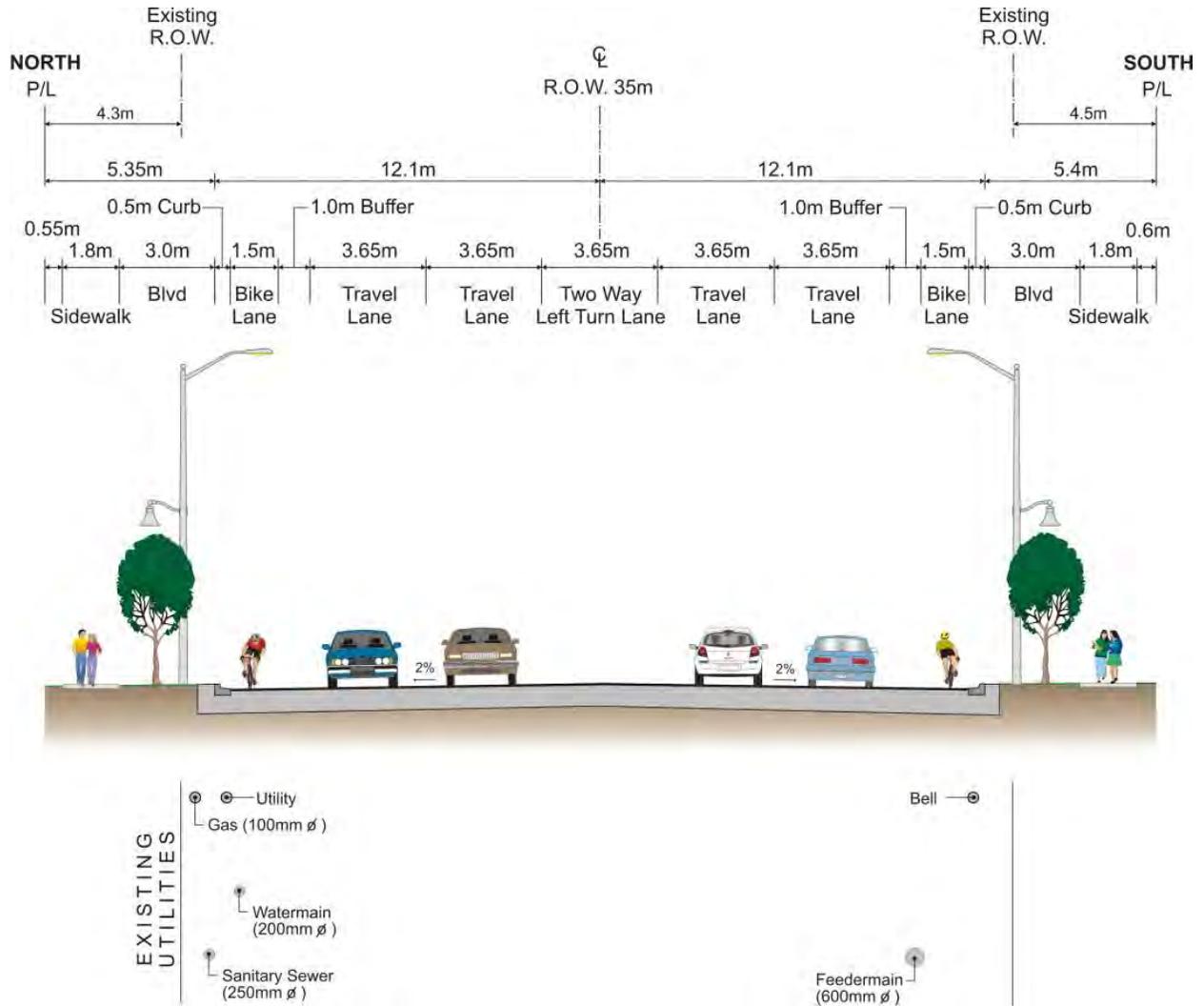
Following PIC 2 a two-way-left-turn-lane was added to County Road 42 from Lauzon Road to County Road 43 (Banwell Road), as a result, the ROW was widened from 40 m to 44 m. The active transportation facilities and City lane widths were maintained leading into the County to County Road 43 (Banwell Road), as the surrounding roadway environment and land uses is consistent until the County Road 43 (Banwell Road) intersection. The County Road 43 (Banwell Road) intersection was planned as the transition point between roadway cross-sections, as it marks the west boundary of the Tecumseh Hamlet Urban Area.

**EXHIBIT B.6-9: TYPICAL CROSS-SECTION COUNTY ROAD 42
 CITY/COUNTY BOUNDARY TO COUNTY ROAD 43 (BANWELL ROAD)**



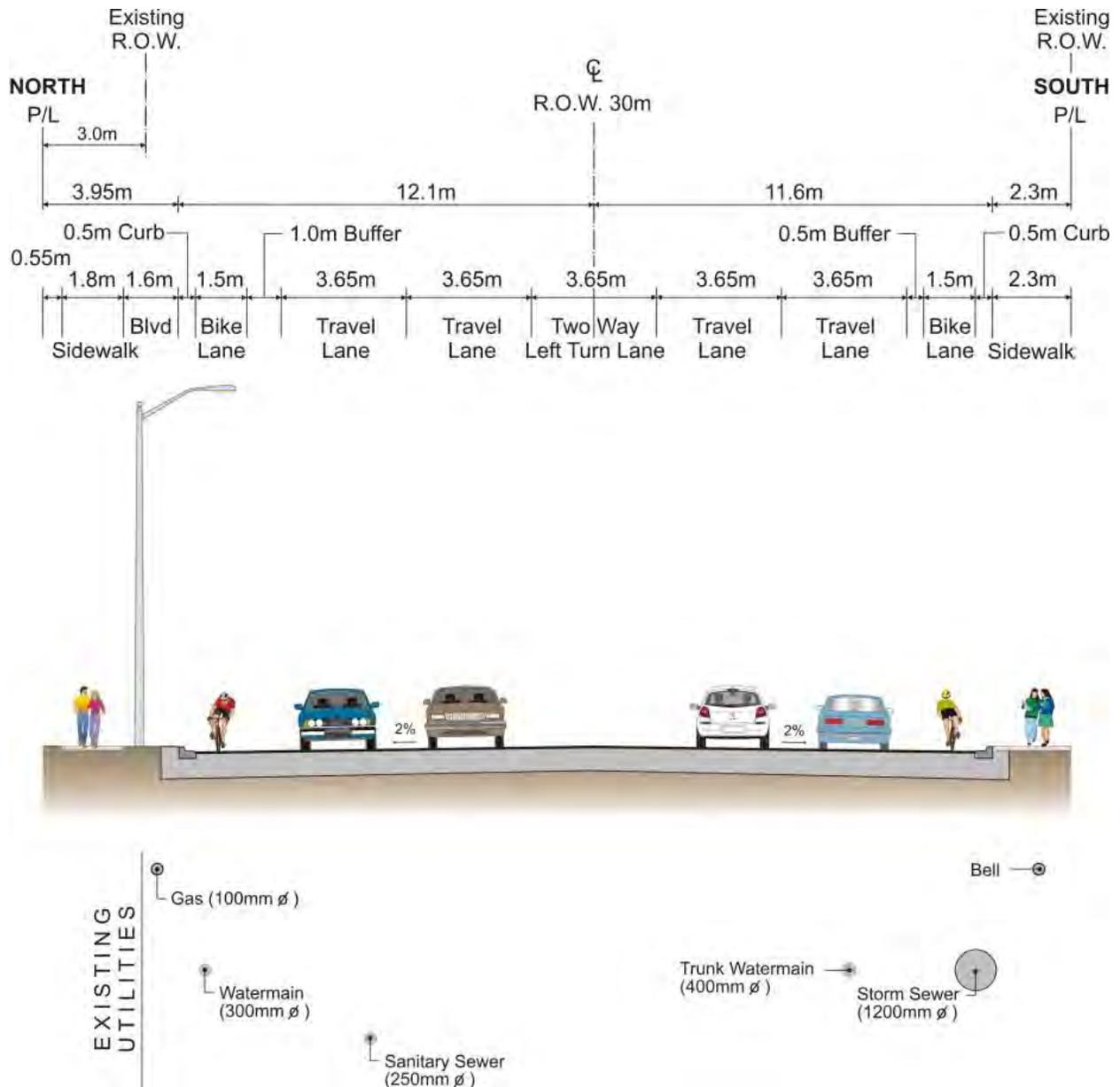
The preferred alignment alternative for County Road 42 between County Road 43 (Banwell Road) and Shiff Drive is widening from centreline.

**EXHIBIT B.6-10: TYPICAL CROSS-SECTION COUNTY ROAD 42
 COUNTY ROAD 43 (BANWELL ROAD) TO SHIFF DRIVE**



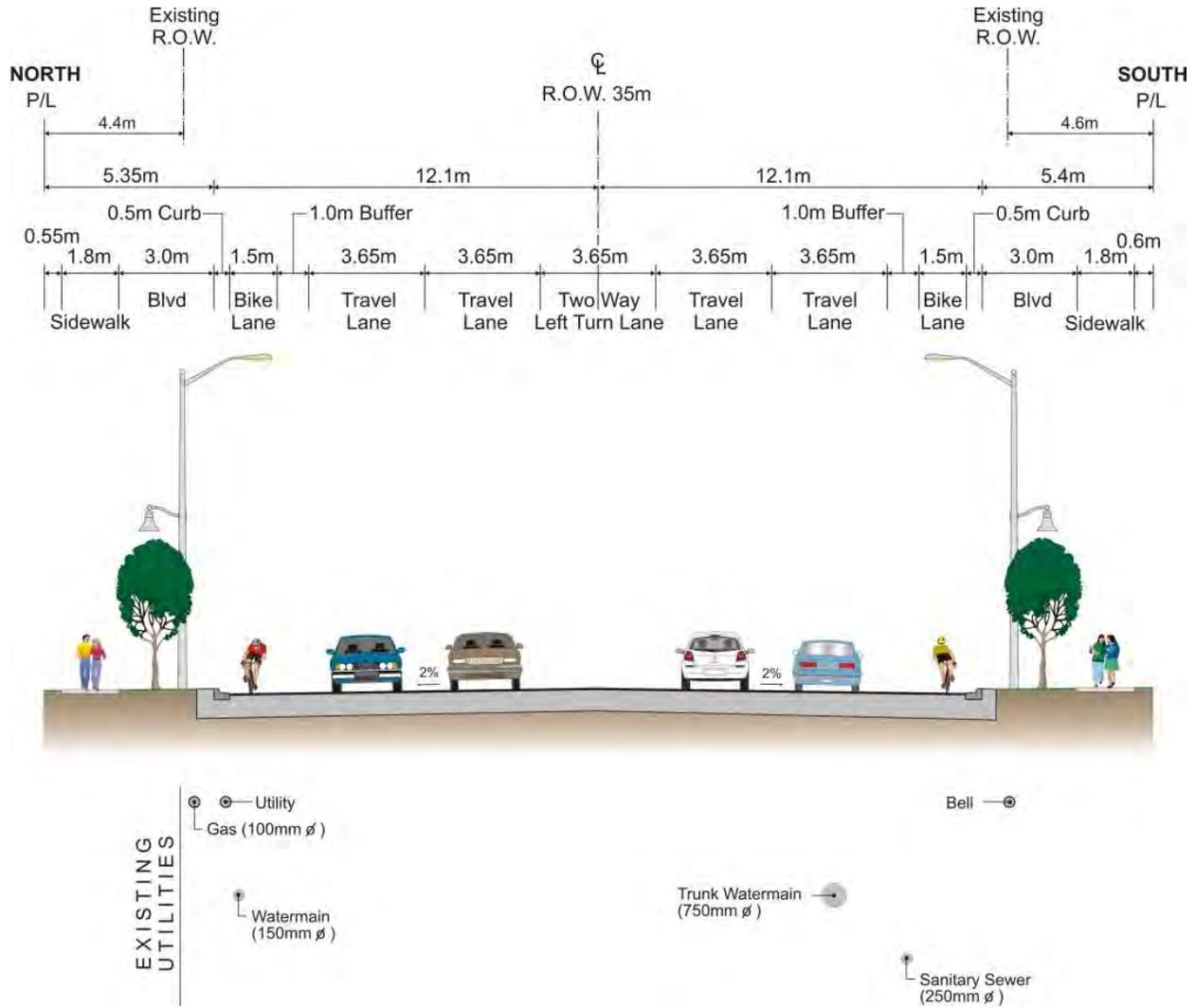
The cross-section between Shiff Drive and St. Alphonse is planned with a reduced buffer and boulevard due to property constraints. The boulevard on the south side has been removed and replaced with a wider sidewalk (2.3 m). Furthermore, illumination will only be provided on the north side of the road within this segment: due to the short length of this road segment (140 m), adequate illumination will be provided to the south side of the road from the east and west limits of this section.

**EXHIBIT B.6-11: TYPICAL CROSS-SECTION COUNTY ROAD 42
 SHIFF DRIVE TO ST. ALPHONSE AVENUE**



The preferred alignment alternative for County Road 42 between St. Alphonse Avenue and County Road 19 (Manning Road) is widening from centreline.

**EXHIBIT B.6-12: TYPICAL CROSS-SECTION COUNTY ROAD 42
 ST. ALPHONSE AVENUE TO COUNTY ROAD 19/MANNING ROAD**



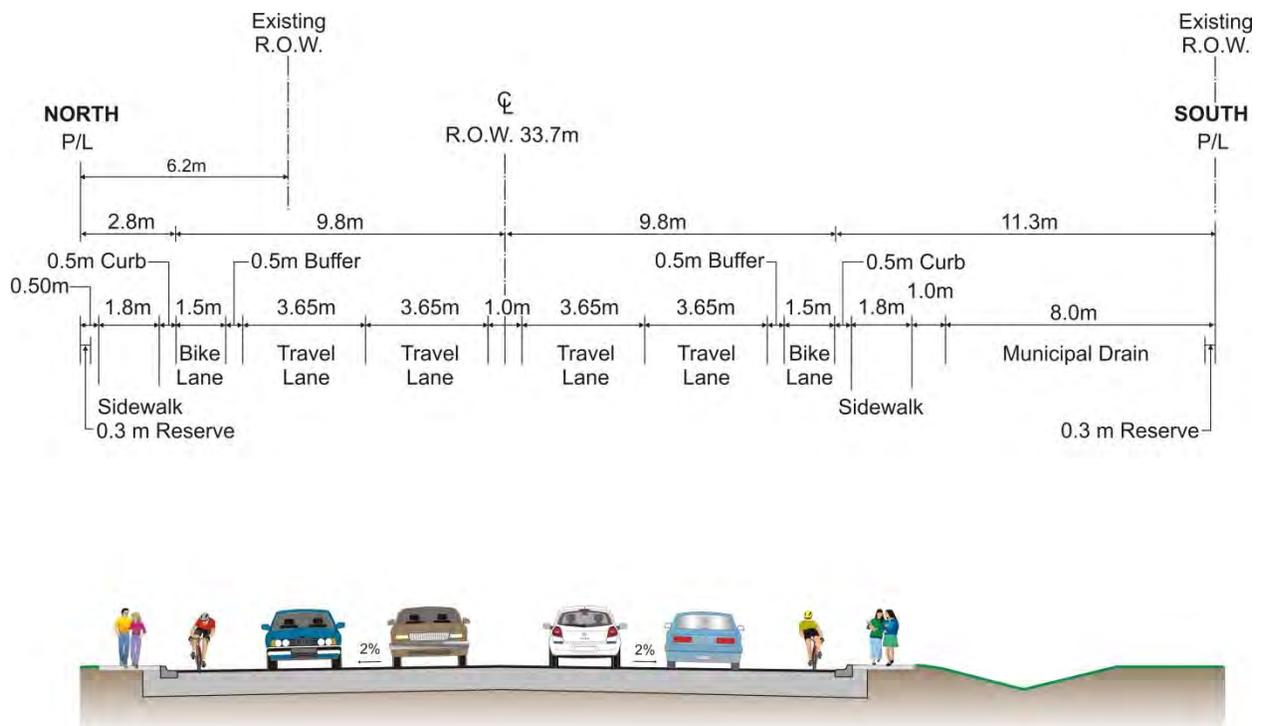
County Road 19 (Manning Road) to County Road 25 (E. Puce Road)

The typical proposed cross-sections for County Road 42 between County Road 19 (Manning Road) and County Road 25 (E. Puce Road) is illustrated in Exhibit B.6-13 to Exhibit B.6-19. Following PIC 2 the 2.5 m bike lanes were modified to 2.0 m paved shoulders and 1.0 m buffers, as a result, the typical right-of-way (ROW) was widened to 38 m. The following summarizes the basic features of the cross-sections within this section:

- 33 – 38 m right-of-way (ROW) rural cross-section
- 4 lanes at 3.75 m
- 1.0 m flush centre median
- 2.0 m paved shoulders and 1.0 m buffer
- Drainage ditch on north side and existing municipal drains on south side

The preferred alignment alternative for County Road 42 between County Road 19 (Manning Road) to W. Puce Road is widening north.

**EXHIBIT B.6-13: TYPICAL CROSS-SECTION COUNTY ROAD 42
 COUNTY ROAD 19 (MANNING ROAD) TO EAST OF PIKE CREEK BRIDGE**



**EXHIBIT B.6-14: TYPICAL CROSS-SECTION COUNTY ROAD 42
 EAST OF PIKE CREEK BRIDGE TO STA: 19+100**

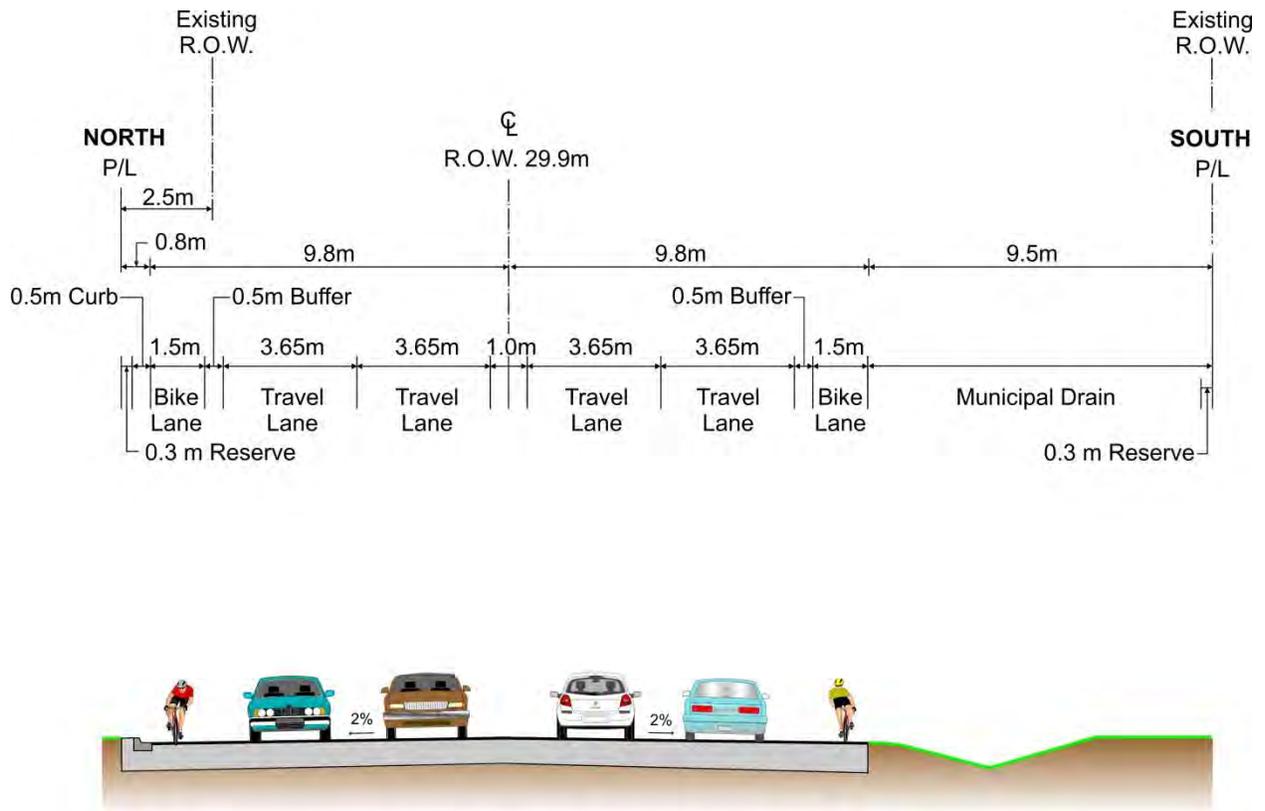


EXHIBIT B.6-15: TYPICAL CROSS-SECTION COUNTY ROAD 42
STA: 19+100 TO STA: 20+000 (JUST WEST OF THE 9TH CONCESSION DRAIN
CULVERT)

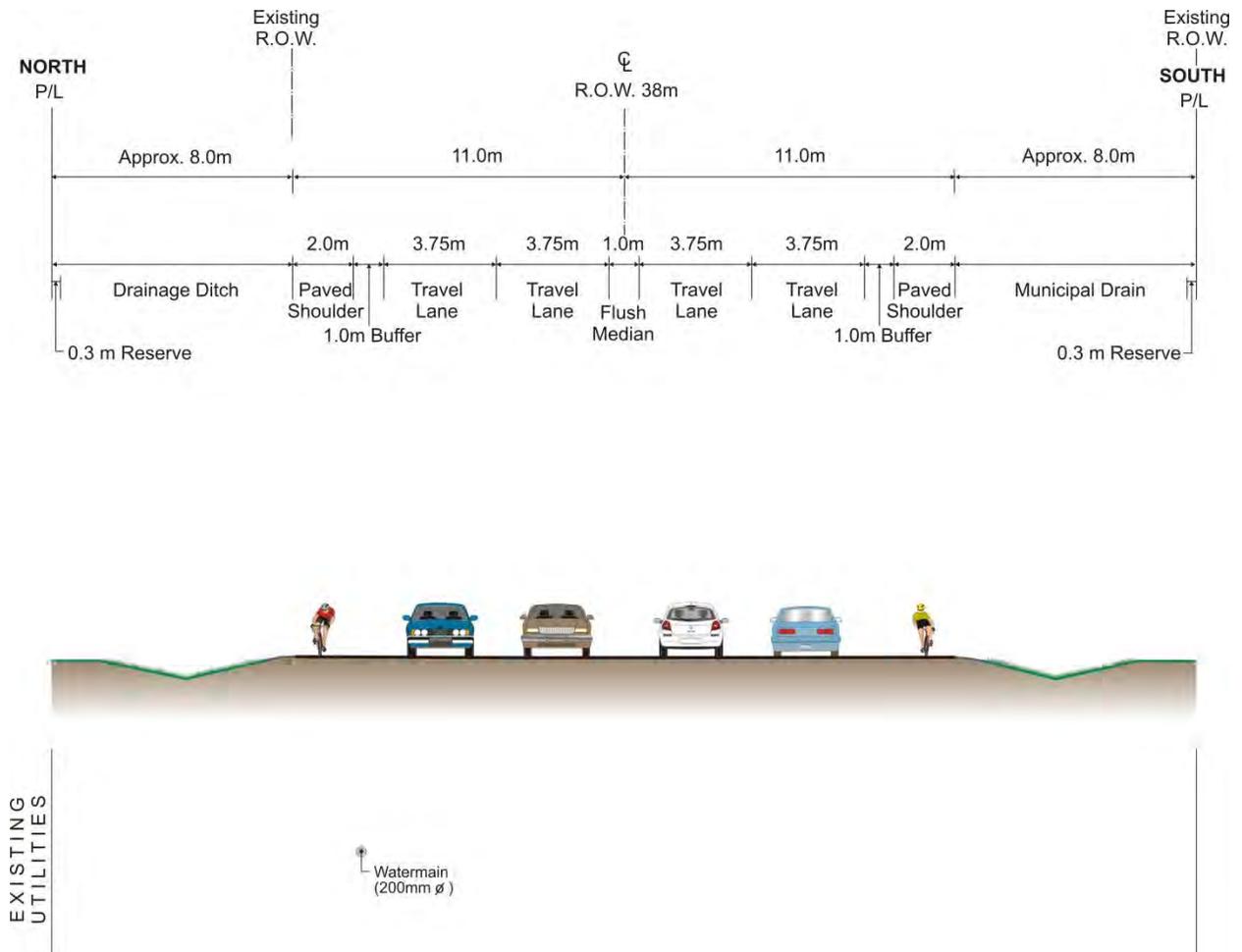
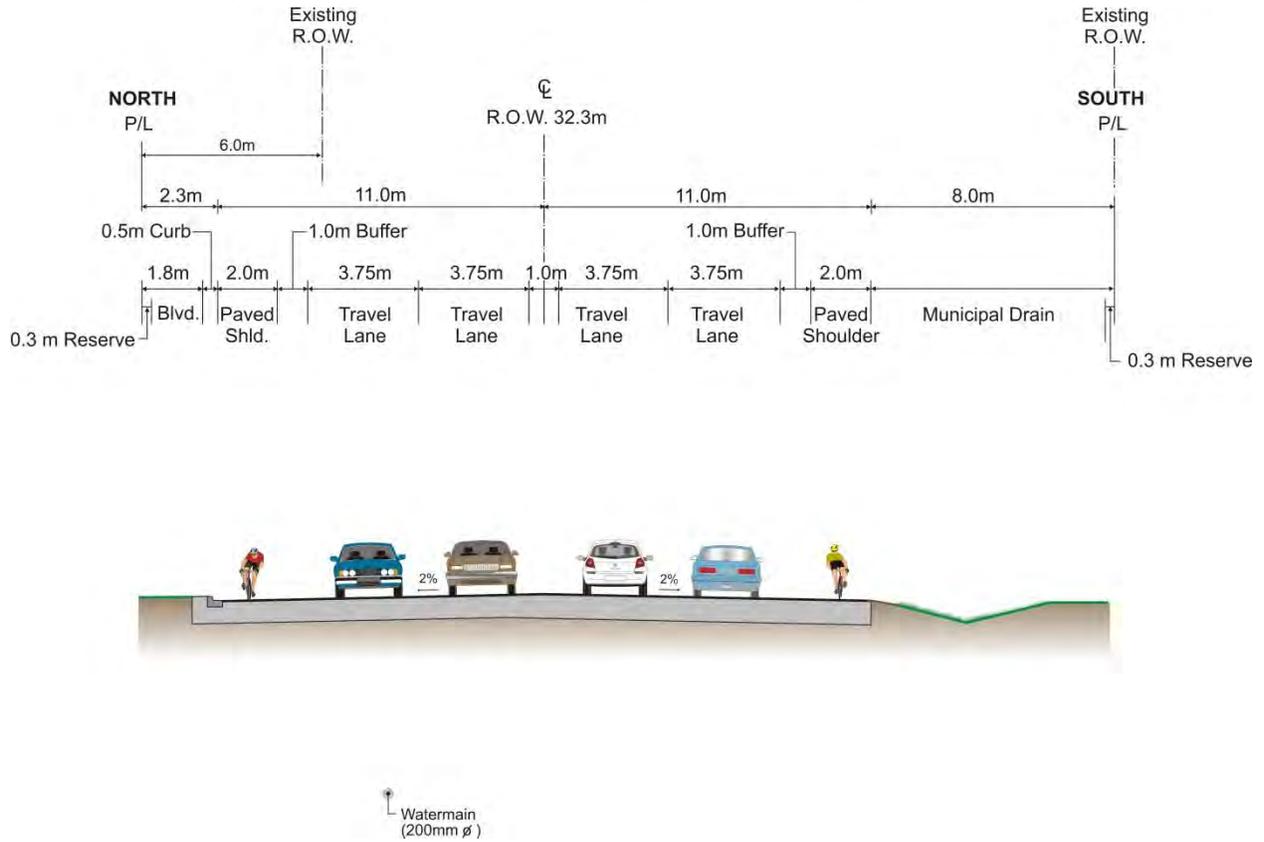
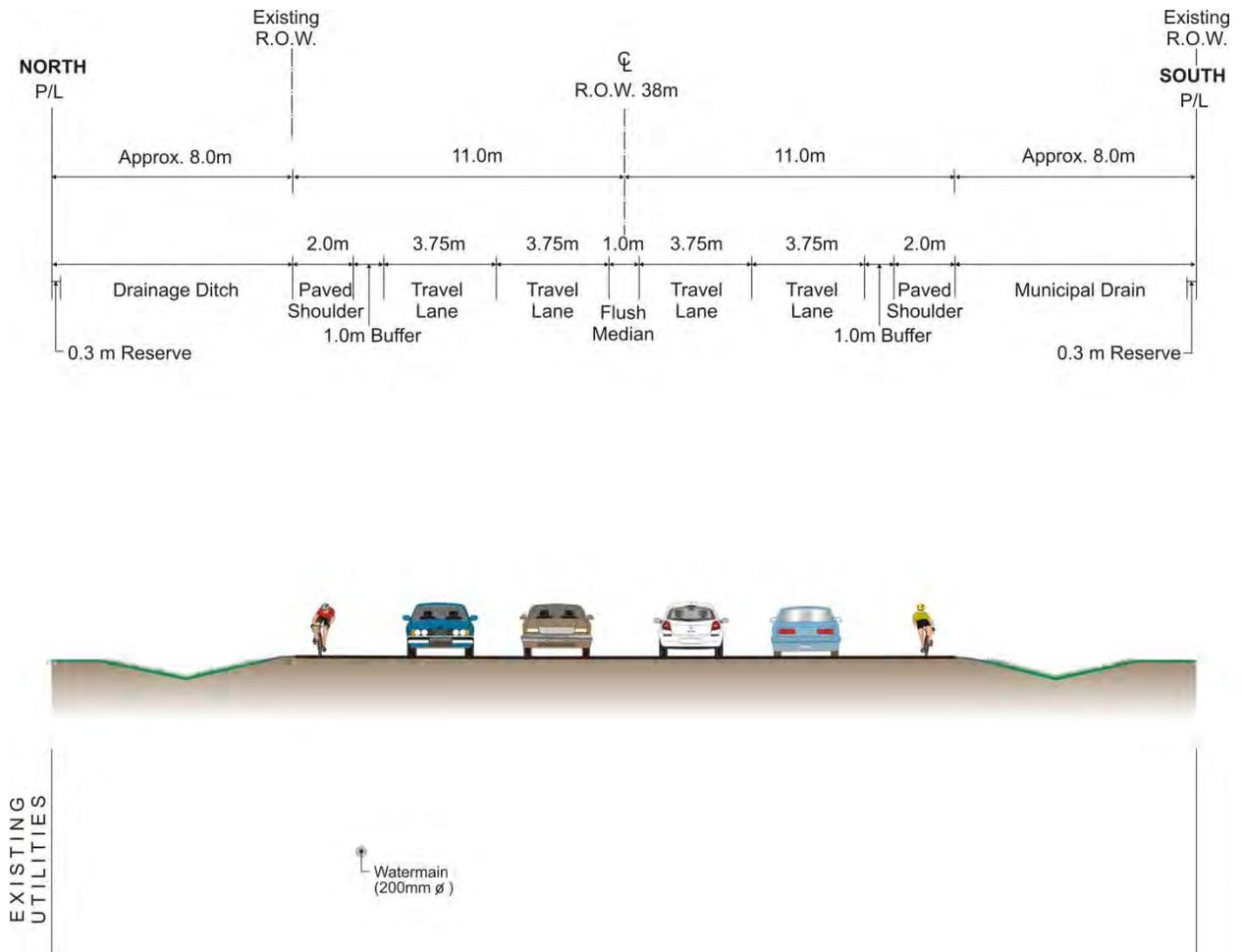


EXHIBIT B.6-16: TYPICAL CROSS-SECTION COUNTY ROAD 42
STA: 20+000 (JUST WEST OF THE 9TH CONCESSION DRAIN CULVERT) TO 20+500
(JUST EAST OF COUNTY ROAD 21 (ELMSTEAD ROAD))

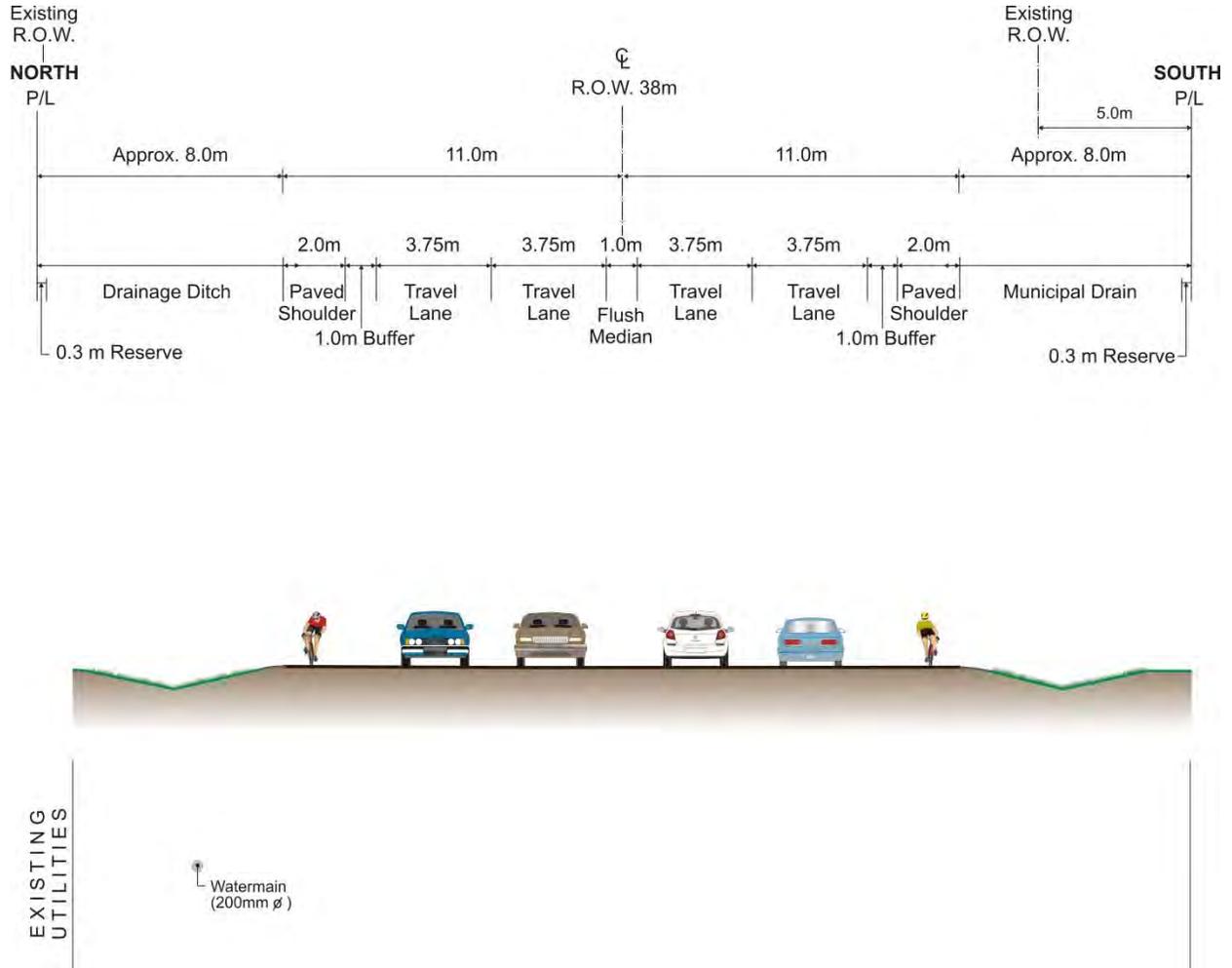


**EXHIBIT B.6-17: TYPICAL CROSS-SECTION COUNTY ROAD 42
20+500 (JUST EAST OF COUNTY ROAD 21 (ELMSTEAD ROAD)) TO W. PUCE RIVER
ROAD**

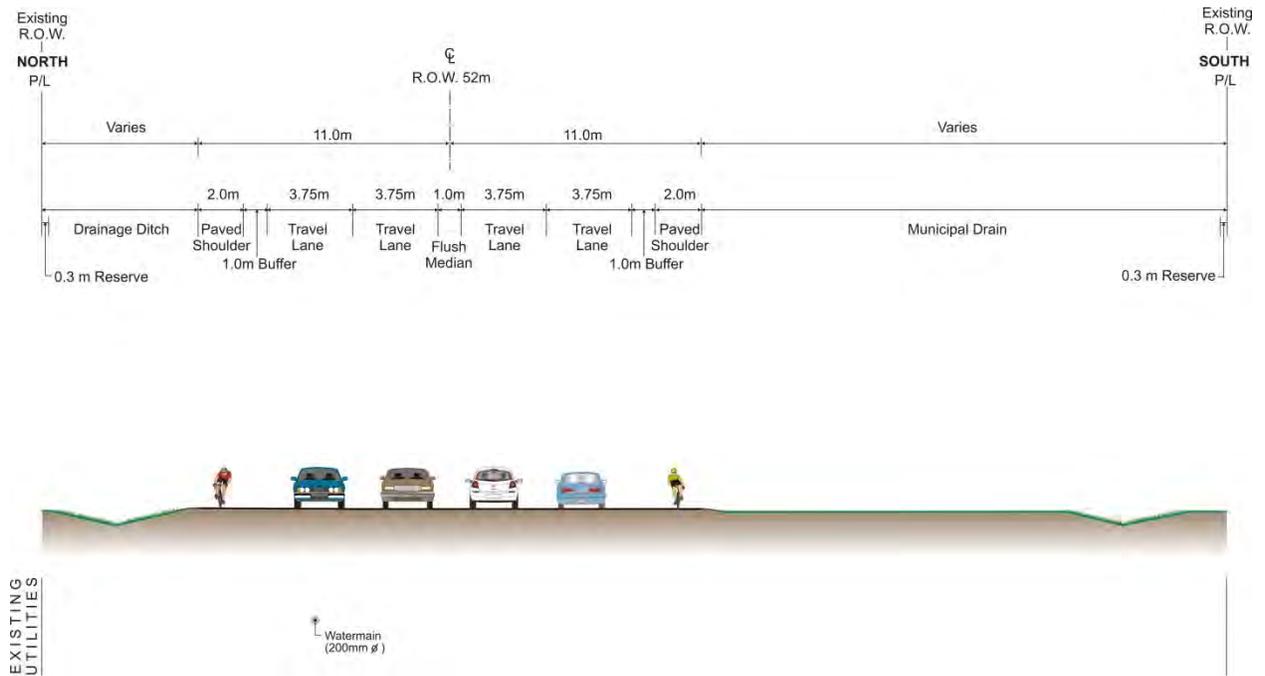


The preferred alignment alternative for County Road 42 between W. Puce Road to Puce River Bridge is widening south.

**EXHIBIT B.6-18: TYPICAL CROSS-SECTION COUNTY ROAD 42
 W. PUCE RIVER ROAD TO PUCE RIVER BRIDGE**



**EXHIBIT B.6-19: TYPICAL CROSS-SECTION COUNTY ROAD 42
PUCE RIVER BRIDGE TO COUNTY ROAD 25 (E. PUCE ROAD)**



B.6.1.3 Intersections

County Road 42 includes twenty-nine intersections; as listed (from west to east) in Exhibit B.6-20 with the existing and future intersection type. Detailed descriptions of key intersections are noted in this section below. All intersections were evaluated for signalization, and where a need for signalization was warranted, an analysis for a roundabout was considered. 10 of the 29 intersections warranted signals as follows:

EXHIBIT B.6-20: SUMMARY OF COUNTY ROAD 42 INTERSECTIONS

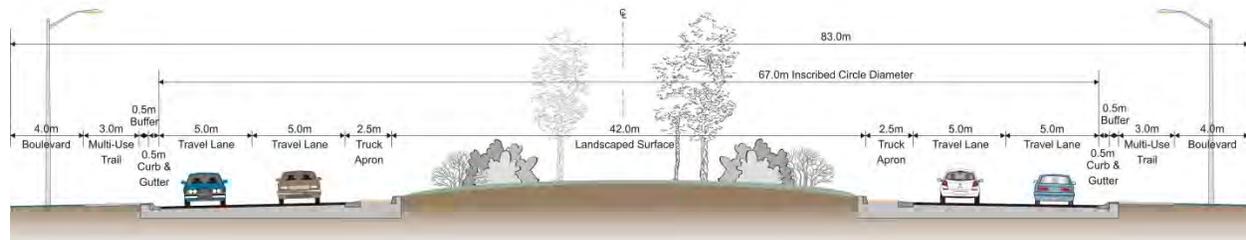
Intersecting Road	Existing Intersection	Future Intersection
City of Windsor		
Walker Road	Signalized	Signalized
Riberdy Road	Unsignalized	Unsignalized ¹
Baseline Road	Unsignalized	Roundabout ²
7 th Concession Road	Unsignalized	
8 th Concession Road	Unsignalized	Roundabout
9 th Concession Road	Unsignalized	Roundabout
Lauzon Parkway	Signalized	Signalized – Realigned
10th Concession Road / County Road 17	Signalized	Unsignalized – RIRO ³
Lauzon Road	Unsignalized	Signalized – re-aligned
County of Essex		
County Road 43 (Banwell Road)/ 11 th Concession Road	Signalized	Roundabout ⁴
Proposed Future Road (By Others)	N/A	Unsignalized
Odessa Drive	Unsignalized	Unsignalized
Shiff Drive	Unsignalized	Unsignalized
Le Boeuf Avenue	Unsignalized	Unsignalized
St Alphonse Avenue	Unsignalized	Unsignalized
Lesperance Road	Signalized	Signalized
Strawberry Drive	Unsignalized	Unsignalized
County Road 19 (Manning Road)	Signalized	Roundabout
Lakeshore Road 101	Unsignalized	Unsignalized
Suncrest Court	Unsignalized	Unsignalized
Suncrest Drive	Unsignalized	Unsignalized
County Road 21 (Elmstead Road)	Unsignalized	Unsignalized
Lakeshore Road 103	Unsignalized	Unsignalized
Patillo Road	Signalized	Roundabout
Lakeshore Road 105	Unsignalized	Unsignalized
Wallace Road	Unsignalized	Unsignalized
Lakeshore Road 107	Unsignalized	Unsignalized
W. Puce Road	Unsignalized	Unsignalized
County Road 25 (E. Puce Road)	Signalized	Roundabout

1. Due to a centre median on County Road 42, this T-intersection will essentially be a right-in-right-out.
2. 2 intersections closely spaced are proposed to be rationalized to 1 roundabout.
3. Right-In-Right-Out (RIRO); includes future median protection, extended from Lauzon Parkway intersection.
4. Based on re-alignment of County Road 43 (Banwell Road) and 11th Concession Road from County's *County Road 43 (Banwell Road) EA* (2009).

Left and right turn lanes will be provided at signalized intersections where warranted. All roundabouts on County Road 42 have been planned with two lanes and a 67 m inscribed circle diameter, based on a WB-20 design vehicle.

Details of each intersection are provided in the following sections and are illustrated in the Design Plates at the back of this report. The proposed typical cross-sections for the 2-lane roundabouts is illustrated in Exhibit B.6-21.

EXHIBIT B.6-21: TYPICAL CROSS-SECTION FOR 2-LANE ROUNDABOUT



CITY OF WINDSOR

Walker Road

The Walker Road intersection will remain signalized; an analysis of a roundabout at this intersection indicated that it would not accommodate the future traffic volumes. A double left-turn-lane is proposed for westbound County Road 42, and in the eastbound direction a single left turn lane will be provided. Additional right-turn lanes are provided north and southbound on Walker Road. A raised median is provided between the east and westbound lanes on the east side of Walker Road, from the signals to east of Riberdy Road to prevent eastbound left-turns within the intersection area. Also, at the east approach, a raised curb is provided between the westbound left-turn and through lanes, from the signals to east of the access to the property on the northeast corner, due to potential weaving movements from traffic generated from the property located on the northeast corner of the intersection. In the north-south direction, two through lanes and exclusive right and left turn lanes will be provided. The County Road 42 and Walker Road intersection is illustrated on Plate 1a of the County Road 42 Design Plates.

Baseline Road and 7th Concession Road

A 2-lane roundabout is proposed for the intersection of County Road 42, 7th Concession Road and Baseline Road. Two approach and exit lanes are provided on Baseline Road for 100 m leading to the roundabout. The County Road 42, 7th Concession Road, and Baseline Road intersection is illustrated on Plate 2 of the County Road 42 Design Plates.

8th and 9th Concession Roads

2-lane roundabouts are proposed for the intersections of County Road 42, and 8th and 9th Concession Roads. Two approach and exit lanes are provided on 8th Concession Road and 9th Concession Road, for 100 m leading to the roundabouts. The County Road 42, 8th Concession

Road, and 9th Concession Road intersections are illustrated on Plates 3 and 5, respectively, of the County Road 42 Design Plates.

Lauzon Parkway

The existing Lauzon Parkway intersection will be closed, and the new intersection will be located just west of the existing intersection. A double left-turn lane and a right-turn lane are proposed in both east and west directions. In the north-south direction the proposed intersection will include 3-through lanes (2-through lanes for interim design) with exclusive left and right turn lanes. The County Road 42 and Lauzon Parkway intersection is illustrated on Plate 7 of the County Road 42 Design Plates.

10th Concession Road / County Road 17

Once the new intersection of Lauzon Parkway is constructed, the traffic signals at 10th Concession Road / County Road 17 intersection will be removed, and the intersection will be unsignalized; the intersection will be converted to a right-in-right-out (RIRO), and a median will be inserted in order to ensure safe turning movements. The triggers for this conversion have been identified as follows:

- the westbound left-turn traffic volume at Lauzon Parkway reaches 200 vph; or
- the traffic volume on County Road 42 reaches 650-700 vph in both directions and northbound left turn volume on 10th Concession Road / County Road 17 is about 50 vph.

The County Road 42 and 10th Concession Road / County Road 17 intersection is illustrated on Plate 7 of the County Road 42 Design Plates.

Lauzon Road

The intersection with Lauzon Road was planned to be re-aligned in order to provide a perpendicular alignment at the fully signalized intersection. Signal coordination between the Lauzon Parkway and Lauzon Road intersections is recommended, and is to be further developed in the next phase of design. A future road is planned in the draft Sandwich South Secondary Plan to extend Lauzon Road south of County Road 42. The County Road 42 and Lauzon Road intersection is illustrated on Plate 8 of the County Road 42 Design Plates.

COUNTY OF ESSEX

County Road 43 (Banwell Road) and County Road 19 (Manning Road)

The intersections for County Road 43 (Banwell Road) and County Road 19 (Manning Road) have both been proposed as roundabouts. These intersections have had recent EA Studies completed which recommend signalized intersections. However, based on the proposed road network improvement work-programs (provided by City of Windsor and County of Essex and MTO), and updated land use (population and employment) assumptions, the intersection capacity analysis undertaken for this EA confirmed that the County Road 43 (Banwell Road) and

County Road 19 (Manning Road) intersections would provide for acceptable level-of-service with multi-lane (2-lane) roundabouts.

The roundabouts were preferred because they provide a better level of service, have a safer design, and create a gateway between the City of Windsor and the County of Essex/Town of Tecumseh and the Towns of Tecumseh and Lakeshore. The designs of the approach legs for these intersections are based on the Recommended Plans in their respective EA's.

It is anticipated that the proposed improvements outlined in the County's County Road 43 (Banwell Road) EA (2009), including re-alignment of County Road 43 (Banwell Road) and 11th Concession Road at County Road 42, will have been, or will be planned to be constructed in concert with the County Road 42 improvements outlined in this EA.

The County Road 42 and County Road 43 (Banwell Road), and County Road 19 (Manning Road) intersections are illustrated on Plates 9 and 12, respectively, of the County Road 42 Design Plates.

Lesperance Road

An improved signalized intersection is recommended at Lesperance Road/12th Concession Road. A roundabout alternative was considered and it could accommodate the future traffic volume; however, the significant cost of property acquisition for roundabout construction and the negative effect on the surrounding area outweighed the minor improvement in LOS. The gas station in the northwest quadrant would have to be removed as well as the structure in the southwest quadrant to make way for the roundabout. The County Road 42 and Lesperance Road intersection is illustrated on Plate 12 of the County Road 42 Design Plates.

County Road 21 (Elmstead Road)

The traffic analysis for the intersection of County Road 42 and County Road 21 (Elmstead Road) indicated that signalization of the intersection would not be required. An exclusive eastbound left-turn lane with 140 m of storage and 160 m taper is recommended for 2031 traffic volumes. Additionally, an exclusive westbound right-turn lane with 80 m taper is recommended for 2031 traffic volumes. The County Road 42 and County Road 21 (Elmstead Road) intersection is illustrated on Plate 15 of the County Road 42 Design Plates.

Patillo Road

A 2-lane roundabout is proposed for the intersections of Patillo Road. The intersection is currently designed as a three-leg roundabout. The roundabout has been shifted slightly west and south in order to increase the entry angle of the roundabout, forcing users to reduce their speed. The County Road 42 and Patillo Road intersection is illustrated on Plate 18 of the County Road 42 Design Plates.

Wallace Line Road

The traffic analysis for the intersection of County Road 42 and Wallace Line Road indicated that signalization of the intersection would not be required. An exclusive eastbound left-turn lane with 110 m of storage and 160 m taper is recommended for 2031 traffic volumes. Additionally,

an exclusive westbound right-turn lane with 85 m of storage and a 80 m taper is recommended for 2031 traffic volumes. The County Road 42 and Wallace Line Road intersection is illustrated on Plates 20 and 21 of the County Road 42 Design Plates.

West Puce River Road

The traffic analysis for the intersection of County Road 42 and West Puce River Road indicated that signalization of the intersection would not be required. An exclusive eastbound left-turn lane with 85 m of storage and 160 m taper is recommended for 2031 traffic volumes. Additionally, an exclusive westbound right-turn lane with 80 m taper is recommended for 2031 traffic volumes. The County Road 42 and West Puce River Road intersection is illustrated on Plate 22 of the County Road 42 Design Plates.

County Road 25 (E. Puce Road)

A 2-lane roundabout is proposed for the intersection of County Road 42 and County Road 25 (E. Puce Road). The roundabout has been shifted slightly east and south in order to increase the entry angle of the roundabout, forcing users to reduce their speed. The County Road 42 and County Road 25 (E. Puce Road) intersection is illustrated on Plate 23 of the County Road 42 Design Plates.

B.6.2 ACTIVE TRANSPORTATION

Within the City of Windsor, the recommended plan for County Road 42, from Walker Road to the City/County Boundary, includes: buffer-separated bike lanes, a sidewalk, and a multi-use trail. These facilities also extend into the Town of Tecumseh from the Boundary to County Road 43 (Banwell Road).

For the section of County Road 42 within the Windsor International Airport's Operations Area, it is noted that the Airport advised of the potential hazard of jet blast in relation to the proposed active transportation facilities (multi-use trail, bike lanes, and sidewalk), citing that where low-flying or taxiing aircraft are likely to be hazardous to pedestrians or vehicular traffic, and where the public way is not owned or controlled by the airport, they shall inform the authorities responsible for posting notices on the public way that there is a hazard. It is noted that this Lauzon Parkway Class EA recommends continued monitoring of the issue with the Airport, and that at the next phase of design, further investigation is required to review the potential hazards (i.e., jet blast) of airport operations, and possible mitigation measures necessary for areas with public active transportation facilities.

Within the County of Essex, the recommended plan for County Road 42, from County Road 43 (Banwell Road) to County Road 19 (Manning Road), includes: buffer-separated bike lanes and sidewalks on both sides. From County Road 19 (Manning Road) to County Road 25 (E. Puce Road), the recommended plan includes buffer-separated paved shoulders.

Through the Town of Tecumseh, the improved cross-section provides provision for pedestrians with the sidewalks on both sides of the roadway and to cross at the signalized intersection with Lesperance Road. However, it is recognized that there are future development plans for the Town of Tecumseh, including a proposed new roadway intersecting with County Road 42. Therefore, as part of the development of this new roadway, it is recommended that a future analysis be undertaken to assess pedestrian crossing warrants and locations on County Road 42.

The location of the active transportation facilities within the right-of-ways are illustrated in the cross-sections of Section B.6.1.2.

The active transportation facilities proposed for the County Road 42 corridor are to be integrated into the City's Official Plan Schedule F and County's CWATS. Proposed revisions to the BUMP and CWATS networks, based on the active transportation facilities recommended in this EA, are illustrated in Section 7.2.3.

B.6.3 ACCESS MANAGEMENT

County Road 42, between Walker Road and the City/County Boundary, will be designed as a Class II Arterial as described in the *Official Plan: Volume I, Section 7.2.6.5*. The Class II Arterial may be designated as a Controlled Access Highway, and is to be designed to carry a high volume of traffic. New intersections with local roads should be discouraged.

County Road 42, between the City/County Boundary and County Road 25 (E. Puce Road), will be designed as a Regional Road based on the guidelines and recommendations outlined in the *County Road 42 – Corridor Protection Strategy*, summarized in Section B.4.1.1. Private accesses should be provided along the local municipal roads and through the local internal road network. In general, a single property owner of a low density use, such as a farm or single family home should be permitted only one access to County Road 42, and through re-development and reconstruction activities, existing multiple accesses should be eliminated. The Strategy also notes that intersection spacing and control have a major effect on the flow of traffic through the corridor. The design of new intersections, or improvements to existing intersections, should be based on the recommendations described in the Strategy, and require a separate intersection traffic impact study.

Mitigating measures for existing and proposed accesses are noted in Section B.6.10.2 - Access.

B.6.4 STRUCTURES

The recommended widening of County Road 42 from County Road 19 (Manning Road) to County Road 25 (E. Puce Road), entails the widening of two structures: the Pike Creek Bridge and Puce River Bridge. The bridges each currently accommodate 2 lanes, with shoulders and one sidewalk on the north side.

The existing Pike Creek Bridge structure is summarized as follows:

- Span: approximately 19.6 m
- Overall Structure Width: 11.9 m
- Lane Width: 7.0 m
- Deck Type: Concrete Rigid Frame, Vertical Legs
- Year Built: 1931
- Legal Speed Limit: 60 km/h
- Last Inspected: 2012
- Last Rehab: Rehabilitation/reconstruction of deck in July 2006

The existing Puce River Bridge structure is summarized as follows:

- Span: 18.45 m
- Overall Structure Width: 11.8 m
- Lane Width: 7.0 m
- Deck Type: Concrete Rigid Frame, Vertical Legs
- Year Built: 1931
- Legal Speed Limit: 60 km/h
- Last Inspected: 2012
- Last Rehab: Rehabilitation/reconstruction of deck in July 2002

The Pike Creek and Puce River Bridges need to be modified to accommodate the widening of County Road 42 from 2 to 4 lanes as well as the paved shoulders. The proposed 4-lane County Road 42 cross-section at these bridges will be 22 m. The roadway configurations at these bridges are illustrated on Plates 13 and 22, respectively, of the County Road 42 Design Plates.

B.6.5 DRAINAGE AND STORMWATER MANAGEMENT

The existing conditions and proposed stormwater management measures for the study area are documented in the *Drainage and Stormwater Management Report*, provided in Appendix M.

As part of the *Upper Little River (ULR) Watershed Master Drainage Plan and Stormwater Management Plan (2013)*, now being prepared concurrently with this Lauzon Parkway Class EA, conceptual drainage and stormwater management measures will be proposed for the study area. The drainage and stormwater management components available to date have been incorporated in this report. The ULR Class EA is recommending a stormwater management corridor, including a system of drainage ponds, along the existing and partially re-aligned Upper Little River (ULR). The corridor will also follow the Lauzon Parkway and E-W Arterial alignments proposed in this Lauzon Parkway Class EA, and along Baseline Road. The County Road 42 road drainage is to outlet to the proposed drainage and SWM system identified in the ULR Class EA.

The widening of County Road 42 is proposed to have an urban cross-section with roadway drainage provided by storm sewers, from Walker Road to County Road 19 (Manning Road). It will be required to design the storm sewers with regular outlet locations to minimize the overall slope of the roadway, due to the flat topography of the area, and the limits of achievable cover and drop, due to the existing road and surface water elevations. There are numerous locations which will allow for discharge of the treated storm sewer flows. Preliminary outlet locations are shown on the future conditions drainage mosaic in Exhibits 16 to 20 of Appendix M.

A storm sewer running from 9th Concession Road to County Road 19 (Manning Road) will capture road runoff and discharge it to a proposed SWM pond located just east of County Road 19 (Manning Road). An alternative location for treatment of this road runoff is a future community pond at County Road 19 (Manning Road) south of County Road 42. Final pond locations will be selected during the next phase of design.

County Road 42 east of County Road 19 (Manning Road) is proposed to have a rural cross section with no storm sewers. The road will be widened to the north, allowing for the relocation and redesign of portions of the drainage swales running along the north side of the road. The

overland flow will be designed to outlet at various locations along County Road 42 to the redesigned north grassed swale. A small portion of the road runoff will discharge to a proposed ditch along the south of County Road 42 in the vicinity of Elmstead Road, due to constraints resulting from the existing development to the north of County Road 42. There are numerous locations which will allow for discharge of the road runoff. Treatment options will include grassed swales where feasible, depending on the final width of the north right of way and resulting area available for the swale. Rock check dams are also proposed within the grassed swales as feasible to provide additional water quality treatment. Due to the limited available swales and the flat topography, treatment in the form of oil/grit separators may be required in some areas. Preliminary swale and outlet locations are shown on the future conditions drainage mosaic Exhibits 16 to 20 of Appendix M.

The proposed storm sewers on County Road 42 from Walker Road to Pike Creek (just east of County Road 19 (Manning Road)) as follows:

- A 900 mm dia. storm sewer from Sta. 10+000 to Sta. 12+220;
- 2-1000 mm dia. storm sewers from Sta. 12+220 to Sta. 13+000;
- 3-1000 mm dia. storm sewers from Sta. 13+000 to Sta. 14+520;
- A 450 mm dia. storm sewer from Sta. 14+520 to Sta. 14+880;
- A 450 mm dia. storm sewer from Sta. 14+980 to Sta. 15+320;
- A 675 mm dia. storm sewer from Sta. 16+250 to Sta. 16+620;
- A 900 mm dia. storm sewer from Sta. 16+620 to Pike Creek.

Parameters for the stormwater management plan will be provided in the ULR Class EA. A detailed stormwater management plan will be developed as part of the next phase of design.

B.6.6 ILLUMINATION

Currently there is no illumination provided along County Road 42 east of the CN Rail Pelton Spur line, except at existing intersections; unsignalized intersections have a single street light, and the signalized intersections at Lauzon Parkway and 10th Concession Road / County Road 17 have multiple street lights.

Illumination will be provided on both sides of County Road 42 from Walker Road to County Road 19 (Manning Road); the height restrictions within the Airport Operations Area will require specialized illumination. The illumination will be provided in the boulevards of the cross-section and will provide lighting for the roadway as well for pedestrians.

Further details regarding illumination are provided in Appendix N.

B.6.7 UTILITIES

The utility companies contacted as part of this EA Study and their correspondence with the Project Team is listed in Section B.4.1.8, and below, including potential impacts and recommendations. As a general guideline, the relocation and placement of utilities is to be consistent with current policies and standards of the City of Windsor and the County of Essex. It is recommended that all utilities be contacted early in the next phase of design to confirm locates and establish relocation strategies.

Existing and future utilities within County Road 42 have been planned to be accommodated within the right-of-way. The key utility information has been illustrated on the cross-sections in Section B.6.1.2.

The following existing utilities are located within the City of Windsor on County Road 42 and potential impacts are identified in Exhibit B.6-22.

EXHIBIT B.6-22: EXISTING AND PROPOSED UTILITIES ALONG COUNTY ROAD 42 IN THE CITY

Utility	Description	Impacts/Recommendations
City of Windsor – Walker Road to City/County Boundary		
Cable (Bell and Cogeco)	Bell and Cogeco plants are located on both sides of County Road 42.	Actual location and depths will need to be confirmed during next phase of design to determine if relocation will be necessary.
Gas (Union Gas)	A 100 mm dia. PE gas main extends along the north side of County Road 42 from Riberdy Road to 4205 County Road 42. A 50 mm dia. C&W gas main extends from 7 th Concession Road to 8 th Concession and continues through the Town of Tecumseh.	Actual location and depths will need to be confirmed during next phase of design to determine if relocation will be necessary.
Hydro (ENWIN)	Between Walker Road and the CN Pelton Spur there are hydro poles located on both sides of the roadway.	Some hydro poles, may require relocation. The need for relocation will be determined in the next phase of design.
Hydro (Essex Power)	Essex Power confirmed they do not have any infrastructure within the Study Area.	

Utility	Description	Impacts/Recommendations
Hydro (Hydro One)	<p>Between the CN Pelton Spur and the City/County Boundary hydro lines are located, intermittently along the north and south side of the roadway, as follows:</p> <ul style="list-style-type: none"> - CN Pelton Spur to Baseline Road: above ground, north side; - Baseline Road to 3645 County Road 42: above ground, south side; - 3645 County Road 42 to 4205 County Road 42: underground; - 4205 County Road 42 to 5255 County Road 42: above ground, south side; - 5255 County Road 42 to 6424 County Road 42: underground; and - 6424 County Road 42 to the City/County Boundary: above ground, north side. 	<p>Some hydro poles, and underground lines may require relocation. The need for relocation will be determined in the next phase of design.</p>
Sanitary Sewer (City of Windsor)	<p>1200 mm dia. sanitary trunk sewer extends on County Road 42 from 8th Concession Road to 9th Concession Road, and changes to 1350 mm dia. to the Little River.</p>	<p>The sanitary sewer located from Riberdy Road to 7th Concession Road may be impacted and may require manhole elevation adjustments. The need for adjustments will be determined in the next phase of design.</p>
Storm Sewer (City of Windsor)	<p>From Walker Road, the existing storm sewer is located as follows:</p> <p>A 600 mm dia. CP storm sewer extends on the south side of the road from Walker road to Riberdy Road;</p> <p>A 600 mm dia. CP storm sewer extends from CN Rail Pelton Spur line to 3393 Country Road 42; and</p> <p>600 mm dia. CP storm sewer extends on the south side from 7th Concession Road to 3755 County Road 42.</p> <p>Proposed storm sewer information is provided in Section B.6.5.</p>	<p>The storm sewer may be impacted and may require relocation. The need for relocation will be determined in the next phase of design.</p>

Utility	Description	Impacts/Recommendations
Water (WUC)	<p>From Walker Road, the existing watermain is located as follows:</p> <ul style="list-style-type: none"> - A 150 mm dia. watermain extends from Riberdy Road to Baseline Road. - East of 7th Concession Road to 3575 County Road 42, residences are serviced from Baseline Road. - From 3575 to 3755 County Road 42 there is a 50 mm dia. watermain. - From 4051 to 4445 County Road 42 there is a 250 mm dia. watermain. - A 150 mm dia. watermain extends from 4445 County Road 42 to 9th Concession Road. - A 200 mm dia. watermain extends from 9th Concession Road to Lauzon Road. <p>A 900 mm dia. CPP feedermain is located on the north side of County Road 42, from Riberdy Road to 8th Concession Road. From 3325 County Road 42, the feedermain is located in an easement within the Airport property.</p> <p>The Windsor Utility Commission (WUC) is proposing to extend the feedermain along County Road 42, to Lauzon Parkway or Lauzon Road.</p> <p>The WUC is proposing to loop the existing feedermain on County Road 42 and County Road 43 (Banwell Road). This may include a future water feedermain on Lauzon Parkway or Lauzon Road.</p>	<p>The watermain may be impacted and may require relocation. The need for relocation will be determined in the next phase of design.</p>
<p>County of Essex – City/County Boundary to County Road 25 (Puce Road)</p>		
Cable (Bell and Cogeco)	<p>Bell and Cogeco plants are located on both sides of County Road 42.</p>	<p>Actual location and depths will need to be confirmed during next phase of design to determine if relocation will be necessary.</p>

Utility	Description	Impacts/Recommendations
Gas (Union Gas)	A 100 mm dia. gas main extends on the north side of County Road 42.	Actual location and depths will need to be confirmed during next phase of design to determine if relocation will be necessary.
Hydro (ENWIN)	ENWIN does not have infrastructure within the County of Essex.	
Hydro (Essex Power)	Essex Power confirmed they do not have any infrastructure within the Study Area.	
Hydro (Hydro One)	<p>There is a hydro corridor which crosses County Road 42 east of County Road 19/ Manning Road</p> <p>Hydro lines extend on the north side of the roadway from the City/County Boundary to County Road 25 (E. Puce Road).</p>	<p>No impact to the Hydro One transmission corridor is proposed.</p> <p>Some hydro poles may require relocation. The need for relocation will be determined in the next phase of design.</p>
Sanitary Sewer (Town of Tecumseh)	A 250 mm dia. sanitary sewer extends on the north side of County Road 42 from 11 th Concession Road to County Road 19 (Manning Road).	The sanitary sewer may be impacted and may require manhole elevation adjustments. The impacts and need for adjustments will be determined in the next phase of design.
Storm Sewer (Town of Tecumseh)	A 750 mm dia. storm sewer is located on the south side of County Road 42 from 12501-12575 County Road 42 to 13403 County Road 42.	The storm sewer may be impacted and may require relocation. The need for relocation will be determined in the next phase of design.

Utility	Description	Impacts/Recommendations
Water (Town of Tecumseh/Town of Lakeshore)	<p>A 600 mm dia. PVC water feedermain extends on the south side of County Road 42 from the City/County Boundary to Shiff Drive, where it is reduced to 400 mm dia. and continues to 12th Concession Road.</p> <p>A 250 mm dia. watermain extends on the north side of County Road 42 from west of the City/County Boundary to County Road 19 (Manning Road).</p> <p>A 200 mm dia. watermain extends on the north side of County Road 42 from County Road 19 (Manning Road) to County Road 25 (E. Puce Road).</p>	The watermain may be impacted and may require relocation. The need for relocation will be determined in the next phase of design.

B.6.8 PRELIMINARY COST ESTIMATE

The preliminary construction cost estimate summary for County Road 42 is presented in the following sections:

- Walker Road to City/County Boundary;
- City/County Boundary to County Road 19 (Manning Road); and
- County Road 19 (Manning Road) to County Road 25 (E. Puce Road).

Refer to the plan/profile plates attached at the back of this document for details of the County Road 42 Recommended Plan.

A summary of construction costs estimates is presented in the following section in 2013 dollars and the detailed breakdown is included in Appendix O. The costs include roadway construction costs, traffic signals, street lighting, and minor hydro distribution, storm sewers/stormwater management, landscaping and gateway features, and cut/fill, where applicable. The minor items included are: curb and gutter, subdrains, traffic staging, signing and line painting.

The construction costs do not include new municipal services (i.e., sanitary sewers, watermains); utility relocations (i.e., sanitary sewers, watermains, municipal drains, hydro, gas, etc); and property acquisition costs. Major hydro distribution along new roadways is also not included.

WALKER ROAD TO CITY/COUNTY BOUNDARY

For the purposes of this cost estimate, the widening between Walker Road and City/County Boundary was estimated as new roadway construction, due to the anticipated significant reconstruction of the existing rural to the proposed urban cross-section.

COUNTY ROAD 42 - WALKER ROAD TO CITY/COUNTY BOUNDARY (City of Windsor) - WIDEN FROM 2 TO 4 LANES (2021)	
Location	Estimated Cost
Walker Road Intersection Improvements	\$0.5
Walker Road to 7th Concession Road and Baseline Road - Build 4 Lanes	\$1.4
7th Concession Road and Baseline Road Roundabout	\$2.9
7th Concession Road to 8th Concession Road - Build 4 Lanes	\$3.6
8th Concession Road Roundabout	\$2.9
8th Concession Road to 9th Concession Road - Build 4 Lanes	\$4.8
9th Concession Road Roundabout	\$2.9
9th Concession Road to Lauzon Parkway - Build 4 Lanes	\$3.6
Lauzon Parkway Intersection (cost included in Lauzon Parkway total)	\$5.6*
Lauzon Parkway to City/County Boundary - Build 4 Lanes	\$3.1
Total (M)	\$25.7

CITY/COUNTY BOUNDARY TO COUNTY ROAD 19 (MANNING ROAD)

For the purposes of this cost estimate, the widening between City/County Boundary and County Road 19 was estimated as new roadway construction, due to the anticipated significant reconstruction of the existing rural to the proposed urban cross-section.

COUNTY ROAD 42 - CITY/COUNTY BOUNDARY to COUNTY ROAD 19 WIDEN FROM 2 TO 4 LANES (2021)	
Location	Estimated Cost
Town of Tecumseh (2021)	
City/County Boundary to County Road 43 (Banwell Road) - Build 4 Lanes	\$2.5
Build County Road 42 and County Road 43 (Banwell Road) Roundabout Including Re-alignment of County Road 43	\$9.9
County Road 43 (Banwell Road) to Lesperance Road - Build 4 Lanes	\$5.8
Lesperance Road to County Road 19 (Manning Road) - Build 4 Lanes	\$2.8
Reconstruction of County Road 42 and County Road 19 (Manning Road) Signalized Intersection to Roundabout	\$4.8
Total (M)	\$25.8

COUNTY ROAD 19 (MANNING ROAD) TO COUNTY ROAD 25 (E. PUCE ROAD)

For the purposes of this cost estimate, the widening between County Road 19 (Manning Road) to County Road 25 (E. Puce Road) was estimated as a road widening, as the existing rural cross-section is being maintained with widening to the north only. The cost-sharing strategies outlined in the previous section, are also applicable to this section of County Road 42.

COUNTY ROAD 42 – COUNTY ROAD 19 to COUNTY ROAD 25 (PUCE ROAD) WIDEN FROM 2 TO 4 LANES (2031)	
Location	Estimated Cost
Town of Lakeshore (2031)	
County Road 19 (Manning Road) to Patillo Road - Widen from 2 to 4 Lanes	\$7.0
Reconstruction of County Road 42 and Patillo Road Signalized Intersection to Roundabout	\$2.3
Patillo Road to County Road 25 (E. Puce Road) - Widen from 2 to 4 Lanes	\$5.1
Reconstruction of County Road 42 and County Road 25 (E. Puce Road) Signalized Intersection to Roundabout	\$2.3
Total (M)	\$16.7

COST-SHARING WITHIN THE COUNTY OF ESSEX

The County of Essex CWATS and EWRTMP both outline funding and partnership strategies. CWATS presents a proposed cost-sharing implementation strategy, which was developed and refined with input from the County and Local Municipalities, and is based on a principle that the cost to implement the CWATS Master Plan should be shared by the County and local municipalities. At the time of implementation of the improvements proposed in this ESR, the CWATS Master Plan should be referenced and the cost sharing strategy be used to develop the specific cost sharing-approach for the active transportation facilities proposed as part of this project.

In addition, it is noted that the improvements proposed as part of this project, including associated infrastructure (i.e., municipal services) may have both regional (County) and local benefits. At the time of implementation of these improvements, a specific cost-sharing approach for all associated infrastructure should be developed. The apportionment of cost should be based on a clear understanding of the local versus County benefits.

B.6.9 PLAN/PROFILE PLATES OF RECOMMENDED PLAN

The Recommended Plan and profile is shown on the Key Plan and Plates 1 – 23, in which are included at the back of this document.

B.6.10 ENVIRONMENTAL EFFECTS AND MITIGATING MEASURES

Mitigation of impacts is applied throughout the EA process, including development of alternatives to avoid constraints, and selection of the Technically Preferred Plan by identifying the alternative that has the least overall effects on the environment. Additional mitigation measures are identified in this report to minimize any adverse impacts that cannot be completely avoided through the selection of the Technically Preferred Plan. These measures will be further refined and finalized in the next phase of design, and will be included in the contract documents for implementation during construction.

This section describes the potential environmental effects, direct and indirect, associated with the Recommended Plan, as well as mitigating measures that will be implemented to minimize the effects and any necessary commitments to future work (design and construction). Mitigation includes planning decisions, design features, construction requirements and construction constraints.

The key to ensuring effective environmental quality control and risk management during the project is the development and proactive implementation of an approach that:

- identifies the environmental sensitivities;
- presents the environmental protection measures in a way that can be translated into contractual requirements and for which compliance can be verified; and
- includes a monitoring program that verifies that the environmental protection measures are being implemented and are effective.

It is important to ensure that the designers, contract administrator and contractor are made aware of, and are prepared to deal with, all environmental issues that may arise during construction.

B.6.10.1 Transportation and Infrastructure

The proposed undertaking as described in this ESR will address the identified problems and opportunities by addressing the existing congestion, supporting economic development and improving the accessibility for residents and businesses in East Windsor and neighbouring municipalities.

The associated transportation benefits are as follows:

- Addresses existing road network and intersection peak period congestion and deficiencies;
- Improved and new north-south and east-west linkages establishing a grid transportation system;
- Additional capacity to accommodate future projected growth in the City of Windsor and County of Essex; and
- Additional linkages and capacity to support the future development associated with the draft Sandwich South Secondary Plan area.

UTILITIES

The existing utilities located within the County Road 42 study area are noted in Section B.4.1.8 and potential impacts to these utilities are identified in Section B.6.7. The utilities information presented in this ESR is based on mark-ups/information received from the agencies. More specific details of all existing infrastructure and specific relocation strategies must be established during the next phase of design. Space for additional utilities has been accommodated in the planned right-of-way and utility easements. The placement of utilities and trees within the ROW should ensure the designated tree planting space requirements and proper separation from utilities.

B.6.10.2 Socio-Economic Environment

PROPERTY

The proposed improvements to County Road 42 will require private property beyond the existing City of Windsor and County of Essex right-of-way. The properties are a mix of urban residential/commercial and rural residential/agricultural lands in the City of Windsor and County of Essex. The existing City and County right-of-way limits and the additional private property required is shown on the plates of the Recommended Plan. The plates identify the civic address and extent of property requirements for each property that is affected by the Recommended Plan.

Property requirements are shown on the Design Plates at the back of this document, and a detailed list of individual property requirements is in Appendix P. A summary of the overall property requirements for County Road 42 is provided in Exhibit B.6-23.

EXHIBIT B.6-23: SUMMARY OF PROPERTY REQUIREMENTS

Roadway and Jurisdiction	Property Required (ha.)
County Road 42 in City of Windsor Walker Road to City/County Boundary	7.0
County Road 42 in County of Essex (Town of Tecumseh) City/County Boundary to County Road 19 (Manning Road)	4.3
County Road 42 in County of Essex (Town of Lakeshore) County Road 19 (Manning Road) to County Road 25 (E. Puce Road)	6.5

The proposed right-of-way was noted to be in proximity to a few residences on County Road 42 in the Town of Lakeshore. In order to minimize the property impacts, curb and gutter may be introduced at specific locations along the roadway in the next phase of design.

The decision to proceed with and/or fund the acquisition of property and subsequent phases of design and construction will be reviewed following completion and approval of this Environmental Assessment Study. During the next phase of design, individual property owners will be contacted to discuss and negotiate compensation for the property required for the Recommended Plan.

ACCESS

Potential impacts to existing property accesses, including residential and agricultural accesses, were reviewed and identified as part of developing the Recommended Plan. Along the proposed widening of County Road 42, most existing accesses will be maintained on County Road 42; however, all accesses in close proximity to major intersections were reviewed to ensure safe intersection operations. All proposed changes in existing access are indicated on the plates of the Recommended Plan.

County Road 42, between Walker Road and the City/County Boundary, will be designed as a Class II Arterial as described in the *Official Plan: Volume I, Section 7.2.6.5*. The Class II Arterial may be designated as a Controlled Access Highway, and is to be designed to carry a high volume of traffic. New intersections with local roads should be discouraged. Direct property access will be discouraged where other alternatives exist. Where direct property access is required, the use of shared driveways and interconnected on-site circulation systems with adjacent properties may be required to limit the number and spacing of driveways, and where appropriate the City may require support studies and additional information to demonstrate the need for additional access.

A 0.3 m reserve is proposed along County Road 42 from County Road 19 (Manning Road) to County Road 25 (E. Puce Road). The 0.3 m reserve is used by municipalities to prevent direct access from private property to the roadway. The 0.3 m reserve is a strip of land on either side of the right-of-way which separates the privately owned properties, from the roadway. The 0.3 m reserve will not be imposed across existing accesses. Reserves are commonly used by municipalities to prevent direct access from private property to public highway; if permission has been granted through either the land division or Site Plan Approval process, the reserve must be "lifted" in order to gain legal access to public highway. This is done by making a formal application to the municipality. In most cases the municipality "lifts" reserves by dedicating them as public highway after which they become part of the road right-of-way they abut.

The County of Essex has also developed the *County Road 42 – Corridor Protection Strategy* which outlines, as one of its principle strategies, to limit direct access to County Road 42; to preserve the through traffic function, frequent and direct property access must be limited through the application of shared accesses, site interconnection and the property development of a local/internal road network.

County Road 42 is a Class II Arterial in the City of Windsor and Regional Road in the County of Essex, and in general direct access is not permitted where other alternatives exist. Should any property, including currently vacant properties with, or without existing access make applications for development/re-development, all accesses will be subject to the standard municipal review and approval process.

Details for the removed/re-aligned accesses on County Road 42 are described in Exhibit B.6-24 and shown on the Design Plates at the back of this document.

EXHIBIT B.6-24: PROPERTY ACCESS IMPACTS

Property/Address	Potential Impact / Proposed Modifications
2955 County Road 42 ARN: 90010026000000	Recommended to close existing access to County Road 42, and move access on Baseline Road to eastern property limit.
4445 County Road 42 ARN: 90010052000000	Eastern access on County Road 42 to be closed. To be reviewed with property owner in subsequent phases of design.
5855 County Road 42 ARN: 90020092000000	Access to County Road 42 to be closed. To be reviewed with property owner in subsequent phases of design.
10588 County Road 42 ARN: 374458000000400	Access to County Road 42 to be relocated. To be reviewed with property owner in subsequent phases of design.
13356 County Road 42 ARN: 174457000000200	Recommended to relocate access on County Road 42 to western property limit.
2606 Manning Road ARN: 3751170000070000	Recommended to close north access to County Road 19 (Manning Road) and relocate south access to southern property limit.
552 County Road 42 ARN: 375120000005100	Recommended to close access to County Road 42.
County Road 42 ARN: 375120000005105	Future access to this property is recommended to be located at the eastern property limit.
County Road 42 ARN: 375120000005150	There are no access restrictions to this property from County Road 42.
County Road 42 ARN: 375116000003100	Access to the severed property on the southwest corner of County Road 42 and Lakeshore Road 105, should be provided from Lakeshore Road 105.

NOISE

A noise assessment was conducted to assess the potential increase in noise level to noise sensitive areas as a result of the proposed improvements to Lauzon Parkway and County Road 42, as well as the proposed construction of the Lauzon Parkway extension and the E-W Arterial. There were 33 residential houses selected to be included in the noise calculations to represent the noise sensitive areas in the overall study area. Of those, 23 were located along the County Road 42 study area. The Noise Assessment Report is contained in Appendix Q.

The conclusions of the noise assessment for the proposed improvements are as follows:

- The difference between the projected noise levels with and without the proposed improvements was determined to be less than 5 dBA at all 23 receiver locations; therefore, the consideration of noise mitigation is not warranted at these locations based on MTO/MOE Noise Protocol.

Based on the conclusions of the noise assessment, no noise mitigation is recommended.

CONTAMINATION OVERVIEW STUDY

A Contamination Overview Study of the Study Area in support of the Lauzon Parkway EA Study was conducted to identify and review actual or potential contaminated areas/properties and identify appropriate environmental future work and mitigation measures. The purpose of the study was to determine the potential for contamination on each property and if a Phase I and II Environmental Site Assessment is required during the next phase of design. The areas of potential environmental concern (APECs) were placed into one of the following categories:

High potential for contamination – areas where land uses consist of commercial/industrial operations that could impact soil and/or groundwater.

Moderate potential for contamination – areas which represent land uses that are agricultural operations, which may be directly affected by the project; or are small commercial/industrial properties suspected of using chemical compounds or performing activities that could impact soil and/or groundwater, but may not be directly impacted by road improvements.

Low potential for contamination – areas are generally classified as open space, residential, or agricultural areas that are not suspected of using chemical compounds harmful to the environment or human health. Another low contamination potential of concern includes road salt impacts along right-of-ways, roads, and parking lots.

The study concluded that in the County Road 42 Study Area in the City of Windsor:

- 11 properties which will be directly impacted by the proposed improvements has high potential for contamination and recommends carrying out a Phase I and/or Phase II Environmental Site Assessment for due diligence purposes.
- 6 property which will be directly impacted by the proposed improvements has moderate potential for contamination and recommends carrying our Phase I and/or Phase II Environmental Site Assessments for due diligence purposes.

The study concluded that in the County Road 42 Study Area in the County of Essex:

- 11 properties which will be directly impacted by the proposed improvements has a high potential for contamination and recommends carrying out a Phase I and/or Phase II Environmental Site Assessment for due diligence purposes.
- 11 properties which will be directly impacted by the proposed improvements have moderate potential for contamination and recommends carrying our Phase I and/or Phase II Environmental Site Assessments for due diligence purposes.

The study also recommended for other high and medium APECs where there are no property takings, carrying out a soil contaminant investigation in areas where excavation may be required, to assess soil quality and determine suitable soil management options during construction. The purpose of this investigation is to confirm presence of environmental impacts related to existing/historical land uses in the APECs described above.

All other areas, generally classified as open space, residential, or agricultural areas, are considered to have low potential for site contamination. Another low contamination potential of concern includes road salt impacts along right-of-ways, roads, and parking lots. No additional environmental investigations are recommended for these areas.

B.6.10.3 Cultural Environment

BUILT HERITAGE RESOURCES AND CULTURAL HERITAGE LANDSCAPES

A cultural heritage resource assessment was undertaken for built heritage and cultural landscapes in the study area. A windshield survey was completed in May 2011 to identify cultural heritage landscapes and built heritage resources within the study area. Descriptions of the identified built heritage and cultural landscape features located within the study area, direct and indirect effects, and the recommended mitigating measures associated with each of the heritage resources can be found in Appendix D.

Within the County Road 42 study area, at this time, the municipalities do not have any listed or designated properties on a municipal register.

The field survey identified 18 potential resources within the County Road 42 study area, categorized as Cultural Heritage Landscape (CHL) or Built Heritage Resources (BHR). The majority of resources were found to be residential or farm complexes dating back to the mid-20th century.

One potential direct impact in respect to cultural heritage resources was identified for the widening of County Road 42: Puce River Bridge, built in 1931 and rehabilitated in 2002 (Site #37, as noted in Appendix D). One property of note is the Puce Memorial Cemetery, located at 898 County Road 42 (Site #49, as noted in Appendix D). A plaque on the cemetery gates indicates that it was established in 1850. At this location the alignment of the proposed County Road 42 was shifted to the south to avoid impacting the Puce Memorial Cemetery.

Generally, road improvement projects such as the introduction of a new roadway or the widening of an existing roadway have the potential to adversely affect cultural heritage landscapes and built heritage resources by displacement and/or disruption during, as well as after construction. Cultural heritage landscapes and/or built heritage resources may experience displacement, or direct impacts, i.e., removal, if they are located within the right-of-way of the undertaking. There may also be potential for disruption, or indirect impacts, to cultural heritage resources by the introduction of physical, visual, audible or atmospheric elements that are not in keeping with their character and/or setting.

The potential direct impacts (displacement) and indirect impacts (disruption) of this project are principally associated with the construction of new road rights-of-way and the widening of existing roadways.

Direct Impacts

One potential direct impact in respect to cultural heritage resources was identified for the proposed improvements of County Road 42:

- Site #43: 390 County Road 42, Town of Lakeshore

Indirect Impacts

The principal impacts for the County Road 42 improvements are indirect. They can be grouped into the following categories: modifications to the existing transportation network, land acquisition and general construction and operational impacts relating to increased traffic and higher noise levels as a result of the road improvements.

Modifications to the existing transportation network

- Site #16¹⁸: County Road 42, City of Windsor, Town of Tecumseh and Town of Lakeshore
- Site #17: Lake Erie, Essex & Detroit River Railway, City of Windsor

Land acquisition

- Site #19: 5855 County Road 42, City of Windsor
- Site #39: 12510 County Road 42, Town of Tecumseh
- Site #41: 114 County Road 42, Town of Lakeshore
- Site #45: 552 County Road 42, Town of Lakeshore

General construction and operational impacts

- Site #18: 552 Windsor Airport, City of Windsor
- Site #20: 7405 County Road 42, City of Windsor
- Site #42: 175 County Road 42, Town of Lakeshore
- Site #44: 371 County Road 42, Town of Lakeshore
- Site #46: 735 County Road 42, Town of Lakeshore
- Site #49: Puce Memorial Cemetery, 898 County Road 42, Town of Lakeshore
- Site #50: 895, 897 & 899 County Road 42, Town of Lakeshore

Mitigation Measures

A proposed undertaking should not adversely affect cultural heritage resources and intervention should be managed in such a way that its impact is sympathetic with the value of the resources. When the nature of the undertaking is such that adverse impacts are unavoidable it may be necessary to implement management or mitigation strategies that alleviate the deleterious effects to cultural heritage resource. Mitigation is the process of causing lessening or negating anticipated adverse impacts to cultural heritage resources and may include, but are not limited to, such actions as avoidance, monitoring, protection, relocation, remedial landscaping,

¹⁸ Site # as noted in Appendix D: Cultural Heritage Assessment Report – Table 2.

documentation of the cultural heritage landscape and/or built heritage resource if to be demolished or relocated, salvage of building materials.

Mitigating measures and best management practices will be implemented to address potential impacts. Identified mitigation strategies will be carried through the next phase of design as applicable. Refinements and enhancements to the mitigations recommendations will be made as warranted throughout all phases of the project.

The following mitigation measures for the **direct impacts** are recommended:

Prepare a Cultural Heritage Evaluation Report (CHER) as part of detail design:

- Site #43: 390 County Road 42, Town of Lakeshore

The following mitigation measures for the **indirect impacts** are recommended:

Prepare a Cultural Heritage Evaluation Report (CHER) as part of detail design:

- Site #16: County Road 42, City of Windsor, Town of Tecumseh and Town of Lakeshore
- Site #19: 5855 County Road 42, City of Windsor
- Site #39: 12510 County Road 42, Town of Tecumseh
- Site #41: 114 County Road 42, Town of Lakeshore
- Site #45: 552 County Road 42, Town of Lakeshore

Ensure cemetery lands are not disturbed during construction including existing gate posts with signage:

- Site #49: Puce Memorial Cemetery, 898 County Road 42, Town of Lakeshore

No mitigation:

- Site #17: Lake Erie, Essex & Detroit River Railway, City of Windsor
- Site #18: 552 Windsor Airport, City of Windsor
- Site #20: 7405 County Road 42, City of Windsor
- Site #42: 175 County Road 42, Town of Lakeshore
- Site #44: 371 County Road 42, Town of Lakeshore
- Site #46: 735 County Road 42, Town of Lakeshore
- Site #50: 895, 897 & 899 County Road 42, Town of Lakeshore

ARCHAEOLOGICAL ASSESSMENT

A Stage 1 Archaeological Assessment was completed for the study area. A search of the Ministry of Tourism, Culture, and Sport's registered archaeological site database revealed that there are no registered archaeological sites within the existing roadway (i.e., Lauzon Parkway and County Road 42) corridors, nor are any sites located within a one kilometer of the subject corridors. This is likely not a reflection of lack of sites within the area, but a lack of archaeological investigation.

The existing County Road 42 right-of-way is completely disturbed from previous construction activities from the edge of pavement to the property line. However, the widening of County Road 42 requires additional property beyond the existing corridor which does not appear to be disturbed. The existing County Road 42 is identified on historic maps and therefore lands

required beyond the existing road right-of-way are considered to have archaeological potential based on provincial archaeological criteria. The following sections of road require property beyond the existing ROW:

- North side of County Road 42 from 8th Concession Road to Lauzon Road;
- North and south side of County Road 42 from Lauzon Road to County Road 19 (Manning Road); and
- North side of County Road 42 from County Road 19 (Manning Road) to County Road 25 (E. Puce Road).

A Stage 2 Archaeological Assessment will be required prior to construction for the proposed right-of-way, and should also be completed prior to any intrusive investigations (such as boreholes associated with foundations, pavements, contaminated properties) required during detailed design on lands required outside the existing County Road 42 right-of-way.

The assessment reports must conform to the Ministry of Tourism, Culture and Sport's *Standards and Guidelines for Consultant Archaeologists (2011)*. The licensed archaeologist will forward all completed archaeological assessment reports for to the Ministry of Tourism and Culture for review and clearance prior to construction.

B.6.10.4 Natural Environment

This impact and mitigation review has been developed with a focus on the protection of Species at Risk (SAR) and SAR habitat, as well as general vegetation and aquatic habitat.

The strategies described in the following section apply to County Road 42 from Walker Road to County Road 25 (E. Puce Road).

Two SAR snakes, Butler's Gartersnake and Eastern Foxsnake (both Endangered) have been documented in the study area. Habitat for Snapping Turtle (Special Concern) is also present. Some (limited) habitat for Bobolink (Threatened) and possibly other grassland birds has been recorded. Both Wood Thrush and Eastern Wood Peewee have also been recorded by Ecoplans. These are COSEWIC SAR that are being considered for uplisting to the Ontario Species at Risk list (COSSARO) In addition noteworthy flora (SC, S1 to S3) have also been documented.

Exhibit B.6-25 identifies the anticipated construction works, potential/anticipated impacts, and recommended mitigation strategies and monitoring activities associated with the Recommended Plan for County Road 42 from Walker Road to County Road 25 (E. Puce Road). These measures will be further refined and refined in future during the next phase of design and with further agency input. The measures identified reflect strategies that have been developed and discussed with agencies (including MNR) on other similar projects in this area.

It is important to note that these roadway undertakings are expected to be phased over a number of years. During that time, there may well be further changes in *Endangered Species Act*, R.S.O. 2007 (ESA) policies and regulations, land use policies, development priorities, and land uses themselves (agricultural practices, changes in crop types). As a result, ESA requirements may change. For this reason, during the next phase of design, further liaison is required with MNR staff to identify potential risks to SAR species, based on ESA protected species lists and

regulations and land use activities at the time, develop appropriate mitigation measures, and determine final permitting/approval requirements.

EXHIBIT B.6-25: COUNTY ROAD 42 NATURAL ENVIRONMENT POTENTIAL EFFECTS AND MITIGATING MEASURES

PROPOSED WORKS	POTENTIAL/ANTICIPATED IMPACTS	MITIGATING MEASURES AND MONITORING REQUIREMENTS
<p>County Road 42 widening from Walker Road (Airport) east to County Road 25 (E. Puce Road)</p> <ul style="list-style-type: none"> Widening (2 to 4 lanes) from Walker Road east to County Road 25 (E. Puce Road) Removal and piping of open drain section along south side of road from airport easterly to County Road 19 (Manning Road) to accommodate lane addition and urban cross-section in this zone. East of County Road 19 (Manning Road) rural cross section will be maintained Widened (or new) structures at crossing of Little River, Pike Creek, two additional drain crossings, and Puce River valley 	<p>Vegetation</p> <p>DIRECT IMPACTS</p> <ul style="list-style-type: none"> Removal of riparian vegetation associated with existing drain system (Walker Road to County Road 19 (Manning Road) to accommodate widening and piping. Localized removal of riparian vegetation at drain and watercourse crossings to accommodate road widening and structure widening or replacement. Removal or disturbance of local clusters of noteworthy flora (SC, S3) to accommodate above works. <p>INDIRECT IMPACTS</p> <ul style="list-style-type: none"> Potential for damage to vegetation outside the work zone; sedimentation; spills of contaminants/fuels; root pruning; damage to limbs; and soil compaction. <p>Wildlife</p> <p>DIRECT IMPACTS</p> <ul style="list-style-type: none"> Section of drain to be removed and piped has potential for use by SAR snakes (Butler’s Gartersnake, Eastern Foxsnake), as well as Snapping Turtle (SC). Any watercourse has the potential to support Snapping Turtle (SC), even irregularly, based on seasonal flow and awareness of this possibility is important. Riparian areas at drain and river crossings also have similar SAR snake and Snapping Turtle potential Possible disturbance to nesting migratory birds during construction. Potential wildlife encounters during construction. Possible disturbance to SAR snake hibernacula (overwintering sites). <p>INDIRECT IMPACTS</p> <ul style="list-style-type: none"> Potential for temporary disturbances to species occupying adjacent habitats during construction. Potential for damage to habitat outside the work zone (as noted above in relation to vegetation impacts) <p>For aquatic habitat, the issue is maintaining aquatic features and/or functions during Design and Construction.</p>	<p>Vegetation (and Wildlife)</p> <ul style="list-style-type: none"> Minimize the road widening and ultimate road ROW footprint during the next phase of design to the extent feasible, particularly at the Puce River valley crossing. Assess salvage feasibility for noteworthy flora directly affected by construction to available publicly owned lands in study area with compatible habitat conditions. Install temporary erosion control measures along the construction limits. If erosion control blankets are required, the MNR recommends Curlex® Net Free™ 100% biodegradable erosion control blankets to avoid snake entanglement. However an alternate product may be utilized upon approval by the MNR. Install sediment and erosion control measures prior to the commencement of construction and maintain until the site has been stabilized. Construction phasing should be scheduled to minimize the extent and period to which disturbed soils are exposed to weathering. <p>Wildlife</p> <p>In order to protect nesting migratory birds, in accordance with the Migratory Birds Convention Act (MBCA), the following guidance is provided:</p> <ul style="list-style-type: none"> Ensure that timing constraints are applied to avoid vegetation clearing (including grubbing) and/or structure works (construction, maintenance) during the breeding bird season (approximately May 1st to August 8th). Occasionally bird species will precede (e.g. mid-April nesting) or exceed (e.g. September) the approximate breeding bird season window. If clearing cannot be timed to avoid this window, the contractor is advised to contact John Fischer at Environment Canada for advice on appropriate / acceptable mitigation. This will be confirmed during construction. The Contractor shall not destroy active nests (nests with eggs or young birds) of protected migratory birds, including SAR protected under the Provincial Endangered Species Act (ESA 2007). If any such nests are encountered the Contractor Administrator must be contacted. If a nesting migratory bird (or SAR protected under ESA 2007) is identified within or adjacent to the construction site and the construction activities are such that continuing construction in that area would result in a contravention of the MBCA, or ESA (2007), all activities will stop and MNR and Environment Canada will be contacted to discuss mitigation options. <p>Wildlife Movements</p> <ul style="list-style-type: none"> Review feasibility of providing/enhancing wildlife passage at all drain and creek/river crossings (particularly Little River, Pike Creek, Puce River) through structure design and agency consultation (Detailed Design), and during construction. Where wildlife structure design mitigation is proposed, properly designed wildlife funnel fencing, suitable to target species, should also be implemented. Relative to the above, ensure that all structures are designed to accommodate hydraulics and aquatic passage wherever open drain conditions are maintained. <p>SAR Wildlife Management</p> <ul style="list-style-type: none"> Consult with MNR to determine SAR snake risk, and to develop appropriate mitigation strategies based on final design information and requirements, and other factors (ESA policy status, land use changes, etc.) as highlighted in Introduction. These consultations will clarify habitat presence, SAR risk, SAR snake hibernacula potential, and mitigation requirements during Detailed Design for implementation during construction. In situations where SAR snakes or high quality habitats are confirmed, and affected, ESA requirements (MNR LOA or permitting) may come into play. <p>In order to protect SAR snakes during construction (including Butler’s Gartersnake and Eastern Foxsnake) as well as Snapping Turtle (SC), the following measures are recommended:</p> <ul style="list-style-type: none"> Implement all conditions of Endangered Species Act Permit issued by MNR

PROPOSED WORKS	POTENTIAL/ANTICIPATED IMPACTS	MITIGATING MEASURES AND MONITORING REQUIREMENTS
		<ul style="list-style-type: none"> • In consultation with MNR, design and erect temporary reptile barrier fencing around the construction zone prior to the initiation of works, and maintain throughout construction. • Provide reptile encounter training to Contractor staff to deal with possible reptile encounters during construction and MNR liaison. A Biologist (familiar with SAR snake and turtle identification) should be on site at key times (such as drain and Little River crossing work, forest/meadow work) to monitor for reptile encounters and inspect the reptile barrier fencing. • The contractor should conduct daily external and internal inspections of all pieces of equipment on the active construction site prior to start up or operation to ensure that there are no snakes or turtles in or on the equipment. • Should individuals of any SAR snake species or Snapping Turtles (SC) be encountered within or on any equipment, or within the active construction site enclosed by the reptile barrier, the contractor shall maintain a minimum operating distance of 30 m from the individual until the following day in order to allow the individual to disperse out of the active construction site on its own ability. • Should the contractor be unable to allow an incidentally encountered individual of the above species to disperse from the active construction site under its own ability, the contractor shall immediately contact the MNR Aylmer District Species at Risk Biologist to seek direction. <p><u>Aquatic Habitat</u></p> <ul style="list-style-type: none"> • Develop and implement mitigation measures for Grass Pickerel. • During Detailed Design undertake agency consultation (CA) to confirm fish presence/use (direct/indirect). Based on these consultations, ensure that habitat functions are maintained (indirect use) and, if necessary, additional measures are implemented (such as compensation) during design and construction, if direct use is affected. • During Detailed Design, examine how drain flows across County Road 42 will be accommodated in future when a portion of the existing drain south of the roadway is piped.

PART C E-W ARTERIAL

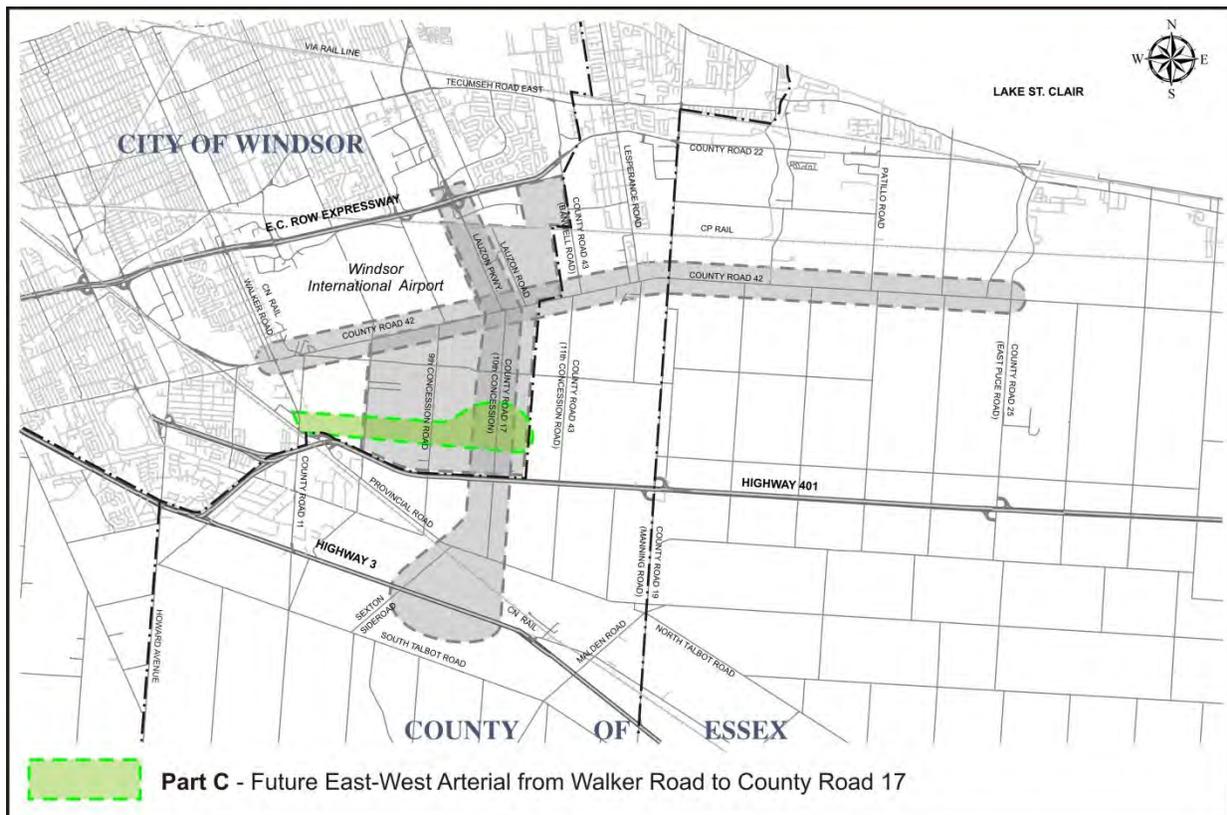
C.4 EXISTING CONDITIONS

The existing environmental conditions within the E-W Arterial study area are presented in the following Section C.4. This information was used to assist in the generation and evaluation of design alternatives. The existing conditions related to the natural environment, socio-economic environment, cultural environment, transportation and utilities were established through collection of background information from numerous sources, including:

- The review of pertinent background studies and reports;
- Investigations undertaken by the project team;
- Correspondence or meetings with the Project Team and participating technical/approval agencies; and
- Public consultation.

The four main components of the study, with Part C: E-W Arterial highlighted, are illustrated in Exhibit C.4-1.

EXHIBIT C.4-1: E-W ARTERIAL STUDY AREA



C.4.1 TRANSPORTATION AND INFRASTRUCTURE

C.4.1.1 Existing Road Network

The E-W Arterial is not an existing road; however, the main components of the existing road network within the E-W Arterial study area are described in this section.

An overview of the existing study area road network is presented in Section 2.3. The key components of the existing road network within the study area are described in Exhibit C.4-2, and illustrated in Exhibit C.4-3:

EXHIBIT C.4-2: EXISTING ROAD NETWORK COMPONENTS

North-South Roadways	Key Characteristics
Walker Road	<ul style="list-style-type: none"> - Currently, a 4-lane Class II Arterial Road, with a posted speed of 60 km/h, under the jurisdiction of the City of Windsor and County of Essex, north and south of Highway 401, respectively. - Existing interchange with E.C. Row Expressway and an indirect interchange with Highway 401 via County Road 46/Provincial Road. - Existing signalized intersection with County Road 42. - The City completed a Class EA Study for roadway widening and alignment improvements in March 2001.
7 th Concession Road	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Collector Road under the jurisdiction of the City of Windsor, with a posted speed of 50 km/h. - Existing signalized intersection with Walker Road and a stop controlled intersection with County Road 42. - Planned to be classified as an Arterial Road in the Sandwich South Secondary Plan.
8 th Concession Road	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Collector Road, with a posted speed of 60 km/h (40 km/h from Baseline Road to approximately 400 m south of Joy Road), under the jurisdiction of the City of Windsor and Town of Tecumseh, north and south of Highway 401, respectively. - Existing overpass at Highway 401. - Existing stop controlled intersection with County Road 42. - Planned to be classified as a Collector Road in the Sandwich South Secondary Plan.
9 th Concession Road	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Arterial Road, with a posted speed of 60 km/h, under the jurisdictions of the City of Windsor and Town of Tecumseh, north and south of Highway 401, respectively. - Existing overpass at Highway 401. - Existing stop controlled intersection with County Road 42. - Planned to be classified as an Arterial Road in the Sandwich South Secondary Plan.

Lauzon Parkway	<ul style="list-style-type: none"> - Currently, a 2-lane Class I Arterial Road, with a posted speed of 70 km/h and 80 km/h, under the jurisdiction of the City of Windsor. - Existing interchange with E.C. Row Expressway. - Existing signalized intersection with County Road 42.
County Road 17 (10 th Concession Road)	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 60 km/h, under the jurisdiction of the City of Windsor and the County of Essex, north and south of Highway 401, respectively. - Existing overpass at Highway 401. - Existing signalized intersection with County Road 42.
County Road 43 (Banwell Road)	<ul style="list-style-type: none"> - Currently, Banwell Road is a 2-lane Class II Arterial Road, with a posted speed of 50 km/h and 60 km/h, in the City of Windsor. - Currently, County Road 43 a 2-lane Arterial Road with a posted speed of 60 km/h in the County of Essex (Town of Tecumseh). - Existing signalized intersections with County Road 22/E.C. Row Expressway and County Road 42. - In 2009, the County completed a Class EA Study for roadway and alignment improvements. A similar study for the City is nearing finalization for the Banwell Road EA. - The jurisdictional boundary for County Road 43 (Banwell Road) is the CP Railway north of County Road 42.
County Road 19 (Manning Road)	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 80 km/h, under the jurisdiction of the County of Essex. - In 2006, the County completed a Class EA Study for roadway improvements. - Existing signalized intersections with County Road 22 and County Road 42, and an interchange with Highway 401. - The municipal boundary between the Towns of Tecumseh and Lakeshore is located in the middle of County Road 19 (Manning Road).
County Road 21 (Elmstead Road)	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 50 km/h, under the jurisdiction of the County of Essex.
Patillo Road	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 60 km/h, under the jurisdiction of the Town of Lakeshore. - At County Road 42 the roadway has been widened to 4 lanes, to approximately 300 m north of County Road 42. - There is a paved shoulder cycling route on the west side of the roadway. - Patillo Road will be a 4-lane road from County Road 42 to the CP Rail tracks, and a 5-lane road from the CP Rail tracks to County Road 22 in the future (Patillo Road EA).
County Road 25 (E. Puce Road)	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 80 km/h, under the jurisdiction of the County of Essex.

East-West Roadways	Key Characteristics
Forest Glade Drive	<ul style="list-style-type: none"> - Currently, a 5-lane Class I Collector Road, with a posted speed of 50 km/h, under the jurisdiction of the City of Windsor.
E.C. Row Expressway/ County Road 22	<ul style="list-style-type: none"> - Currently, a 4-lane east-west Expressway with a posted speed of 100 km/h from 250 m west of Banwell Road, westerly, in the jurisdiction of the City of Windsor, and a 4-lane Class I Arterial to the east of this point, in the jurisdiction of the County of Essex, with a posted speed 80 km/h. - This is the busiest route in the study area, where AADT volumes reach over 50,000 in some sections.
Twin Oaks Drive/South Service Road E.	<ul style="list-style-type: none"> - Currently, a 2-lane Class I Collector Road with a posted speed of 50 km/h, under the jurisdiction of the City of Windsor. - The City has completed a Class EA Study which recommended roadway re-alignment to accommodate the proposed rail spur extension.
Cabana Road/ Division Road/ County Road 42	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Arterial Road, with a posted speed of 50 km/h, 60 km/h and 80 km/h, under the jurisdictions of the City of Windsor and the County of Essex. Cabana Road is 50 km/h at Division Road. - Existing signalized intersection with Lauzon Parkway.
Baseline Road	<ul style="list-style-type: none"> - Currently, a 2-lane Class II Arterial Road west of 10th Concession Road / County Road 17, and a Collector Road east of 10th Concession Road / County Road 17, in the jurisdiction of the City of Windsor. It continues as a Collector Road in the jurisdiction of the County of Essex. - It has a posted speed of 40 km/h, 50 km/h and 60 km/h. - Intersects with 7th Concession Road and continues west of 7th Concession Road for eastbound traffic only from County Road 42. - The section between 9th Concession Road and 10th Concession Road / County Road 17 contains an S-bend as it crosses the Little River.
Highway 401	<ul style="list-style-type: none"> - Currently, a 6-lane divided provincial freeway, with a posted speed of 100 km/h, with a high proportion of truck traffic. - Existing interchanges at County Road 46, County Road 19 (Manning Road), and County Road 25 (E. Puce Road).
County Road 46/ Provincial Road	<ul style="list-style-type: none"> - Currently, a 2-lane Arterial Road, with a posted speed of 80 km/h, under the jurisdiction of the County of Essex. - Existing interchange with Highway 401.
Highway 3	<ul style="list-style-type: none"> - Currently, a 4-lane undivided provincial highway, with a posted speed of 80 km/h.

C.4.1.2 Existing Geometry

The E-W Arterial is a future roadway.

C.4.1.3 Traffic Signals and Illumination

There are existing traffic signals and illumination at Walker Road, where the western limit of the E-W Arterial is proposed to connect to Walker Road, per the East Pelton Secondary Plan.

C.4.1.4 Active Transportation

The City of Windsor's Official Plan requires sidewalks on both sides of Arterial Roadways. The City's Bicycle Use Master Plan (BUMP, 2001) calls for a cycling network of bike lanes, multi-use trails and signed bike routes, and provides design guidelines along with specific strategies for improving cycling awareness, the cycling-transit link and end-of-trip facilities. At the time when BUMP was being prepared, the lands south of E.C. Row Expressway along Lauzon Parkway were still part of the Town of Tecumseh and not part of the City, therefore active transportation facilities were not proposed for this section of Lauzon Parkway. Also, the County Wide Active Transportation Study (CWATS, 2012) was completed after the land transfer to the City of Windsor and CWATS also did not propose active transportation facilities for this area. Therefore, opportunities to incorporate new active transportation facilities within the Lauzon Parkway study area were reviewed as part of this EA Study and are discussed further in Section C.5.6.

The East Pelton Secondary Plan proposed a multi-use trail, referred to in the Secondary Plan as a Bikeway, adjacent to the E-W Arterial corridor.

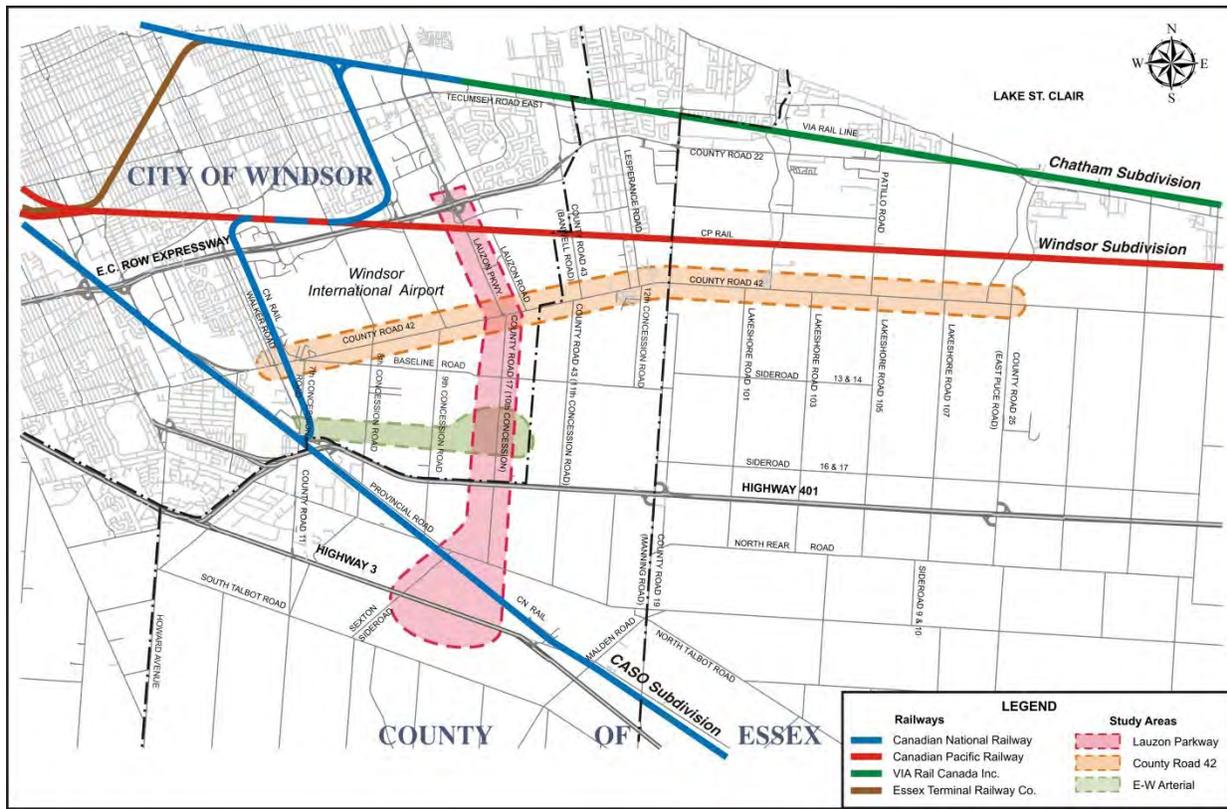
C.4.1.5 Rail

The existing rail network within the study area is illustrated in Exhibit C.4-4.

The proposed E-W Arterial corridor will cross the CN Rail Pelton Spur line near its western limits.

The Pelton Spur is a north-south connecting track between the CASO Subdivision and the CP Rail Windsor Subdivision and is used solely by CN. Train movements between Van de Water and Little yards use this track. CN has one train per day that moves traffic between the two yards. In 1999, the diamond crossing of the CP Rail mainline and the Pelton Spur was removed and a new crossover between CN's Little Yard and the CP Rail mainline was installed. The land north of the diamond was sold to Daimler Chrysler for plant expansion.

EXHIBIT C.4-4: EXISTING RAIL NETWORK WITHIN THE STUDY AREA



C.4.1.6 Bridges

There are no existing bridges within the E-W Arterial study area.

C.4.1.7 Drainage and Stormwater Management

The existing drainage conditions within the study area are documented in the *Drainage and Stormwater Management: Existing Conditions Report* (Appendix C) prepared as part of this study. The purpose of this report was to detail the existing drainage patterns, complete hydrologic assessments for existing conditions, and hydraulic assessments of existing roadway culverts and crossings within the project study area.

A site reconnaissance was carried out in May 2011 to confirm existing culvert locations and sizes, to assess the physical condition of each culvert, and to record characteristics of significant drainage features within the project study area.

All centreline and side-road culverts, as well as major entrance culverts within the study area were inspected. There are a total of 42 transverse and 14 entrance culverts, as well as three bridges (Little River, Pike Creek, and Puce River) within the entire study area. Of the 42 transverse culverts, five (5) are located within the E-W Arterial Study Area. The existing drainage conditions and plans of the culverts are illustrated in Exhibit 3 of Appendix C. Additional documentation on the findings of the site reconnaissance is described in the *Culvert*

Inspection Report, included in Appendix A of Appendix C. Of the 5 culverts assessed within the E-W Arterial Study Area during the site reconnaissance, 1 was found to be in poor condition.

Hydraulic modelling was carried out by MRC, as part of this study, for the relevant crossings of the Little River within the proposed study limits. In addition, hydraulic modelling of the Little River, and 8th Concession Drain, was provided by the Essex Region Conservation Authority. As presented in the *Existing Conditions Report*, there were no cases of road overtopping under existing conditions for the 100-year storm.

Limited information was available to assess the existing hydraulic conditions of the culverts within the Study Area. The available data was deemed insufficient to perform a hydraulic assessment for the culverts within the Study Area. During the next phase of design, a detailed survey will be required to obtain the required culvert information to perform a comprehensive hydraulic assessment.

In addition to the above, Stantec, on behalf of the City of Windsor and ERCA, is currently in the process of preparing the *Upper Little River Watershed Master Drainage Plan and Stormwater Management Plan*. The Master Plan is being prepared concurrently with this Class EA. Information provided within the Master Plan will be incorporated into this Class EA, including but not limited to drainage and stormwater management methods and locations.

The 7th Street Drain Outlet Diversion is located at the western end of the E-W Arterial Study Area. The drain is adjacent to the City properties designated for the E-W Arterial right-of-way.

C.4.1.8 Utilities

The following utility authorities were contacted as part of the consultation process to confirm the presence or not of utilities within the study area. A summary of the responses received is summarized in Exhibit C.4-5. All utility information is from within the City of Windsor jurisdiction. Some utility information has been extracted from other sources such as engineering drawings and City GIS mapping, to supplement information provided by utility authorities.

EXHIBIT C.4-5: EXISTING UTILITIES WITHIN E-W ARTERIAL CORRIDOR

Utility	Description
Cable (Bell)	Bell is provided to the residences along 8 th and 9 th Concession Road, and 10th Concession Road / County Road 17.
Gas (Union Gas)	Gas is provided to the residences along 8 th and 9 th Concession Road, and 10th Concession Road / County Road 17.
Hydro (ENWIN)	There are existing hydro poles and traffic signals and hydro poles at the intersection of Walker Road, 7 th Concession Road, and Legacy Park Drive.
Hydro (Essex Power)	Essex Power confirmed they do not have any infrastructure within the Study Area.

Utility	Description
Hydro (Hydro One)	There are hydro lines on the west side of 8 th Concession Road, 9 th Concession Road, and 10th Concession Road / County Road 17.
Sanitary Sewer (City of Windsor)	<p>Existing 450 mm dia. sanitary sewer which extends from Walker Road and Legacy Park, east across the CN Rail line. The sewer then extends along the southern limit of the drain, to the eastern edge of property. An existing 200 mm dia. sanitary sewer connects from the 450 mm dia. sanitary sewer to 4490 7th Concession Road.</p> <p>Existing 975 mm dia. CP sanitary trunk sewer (900 mm dia. south of Highway 401) on 8th Concession Road, from County Road 46 to Highway 401 and further to County Road 42.</p> <p>There are no municipal sewers on 9th Concession Road or 10th Concession Road / County Road 17.</p>
Storm Sewer (City of Windsor)	There is a 2100 mm dia. storm drain, near the eastern limit of the WCF, which crosses the proposed right-of-way, of the E-W Arterial.
Water (WUC)	<p>200 mm dia. watermain, which extends from the WCF to Walker Road.</p> <p>Water is provided to the residences along 8th and 9th Concession Road, and 10th Concession Road / County Road 17.</p>

C.4.2 SOCIO-ECONOMIC ENVIRONMENT

C.4.2.1 Existing Land Use

The Official Plan of the former Township of Sandwich South designated most of the lands south of County Road 42 as agricultural. Within the E-W Arterial study area, the existing lands are mainly agricultural farms. Residences are aligned along the north-south roadways of: 7th, 8th, and 9th Concession Roads, and 10th Concession Road / County Road 17. Small pockets of residential communities have sprung up adjacent to 8th Concession Road and Baseline Road.

The City of Windsor Official Plan – Land Use Plan (Exhibit C.4-6), which includes Official Plan Amendment (OPA) #74 (East Pelton Secondary Plan; Exhibit C.4-7) designated the areas adjacent to the E-W Arterial study area, between Walker Road and 8th Concession Road as Minor Institutional, Mixed Use, Commercial Centre, and a Green Open Space. Between 8th Concession Road and the City Limits the lands are designated as Future Urban Area, Future Employment Area, and Open Space.

C.4.2.2 Future Land Use

The Sandwich South Secondary Plan will establish detailed development guidelines and a future land use pattern for the remainder of lands transferred to the City of Windsor in 2003, and will be incorporated into the City of Windsor’s Official Plan. Currently, the formal review of the

draft Sandwich South Secondary Plan by the Planning and Economic Standing Committee has been deferred until the completion and final approval of the Lauzon Parkway Improvements EA. A preliminary draft of the Secondary Plan Land Use Plan designates the lands adjacent to the E-W Arterial study area as: Community Core, Neighbourhood, Employment, Prestige Employment, Open Space, and Natural Heritage. The draft Sandwich South Secondary Plan – Land Use Plan is provided in Exhibit C.4-8.

**CITY OF WINDSOR OFFICIAL PLAN
LAND USE PLAN**

**Lauzon Parkway Improvements
Class Environmental Assessment Study
Environmental Study Report**



City of Windsor Official Plan Volume I
Date of OMB Approval: September 25, 2000
Office Consolidation: September 7, 2012

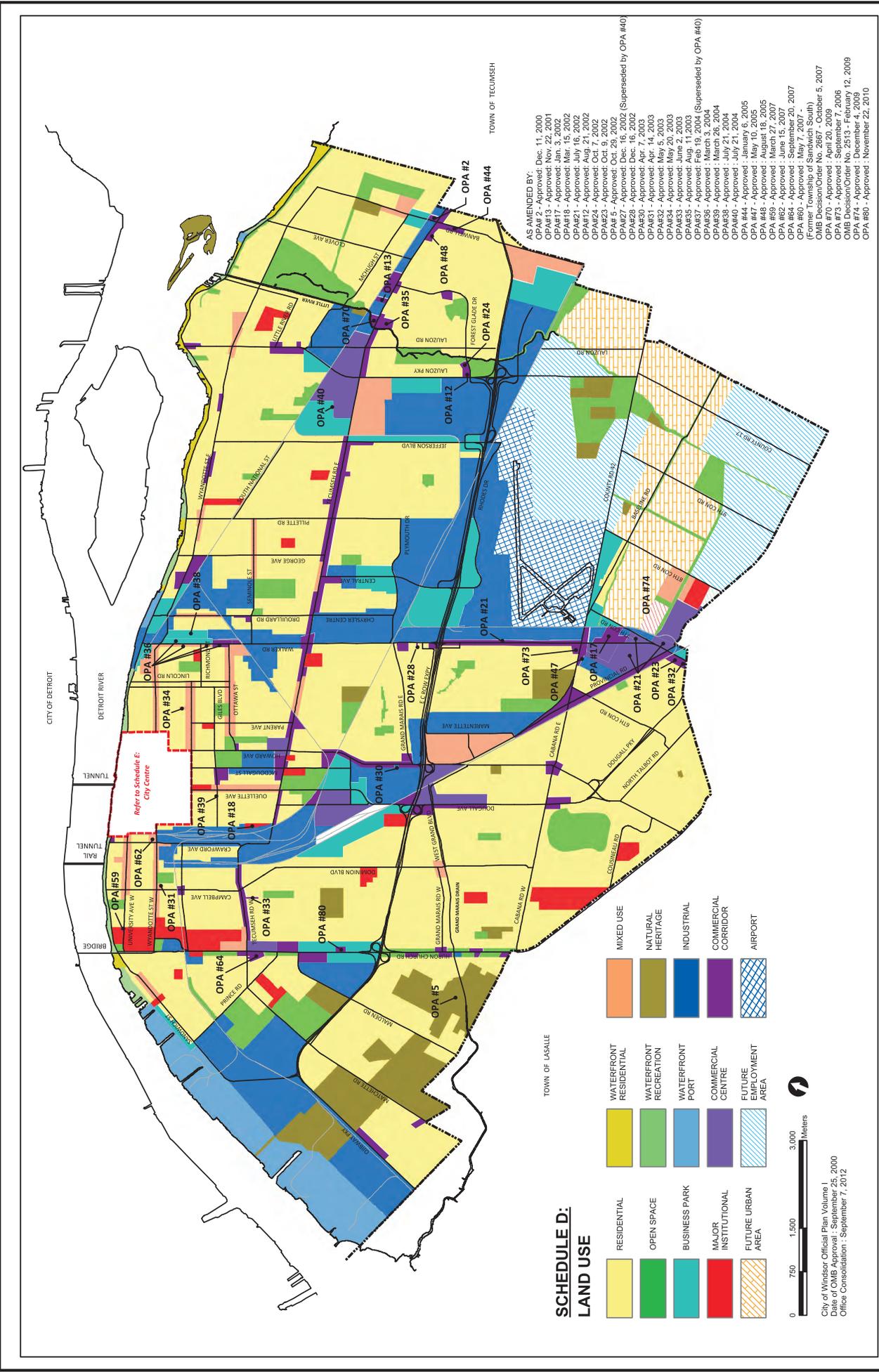
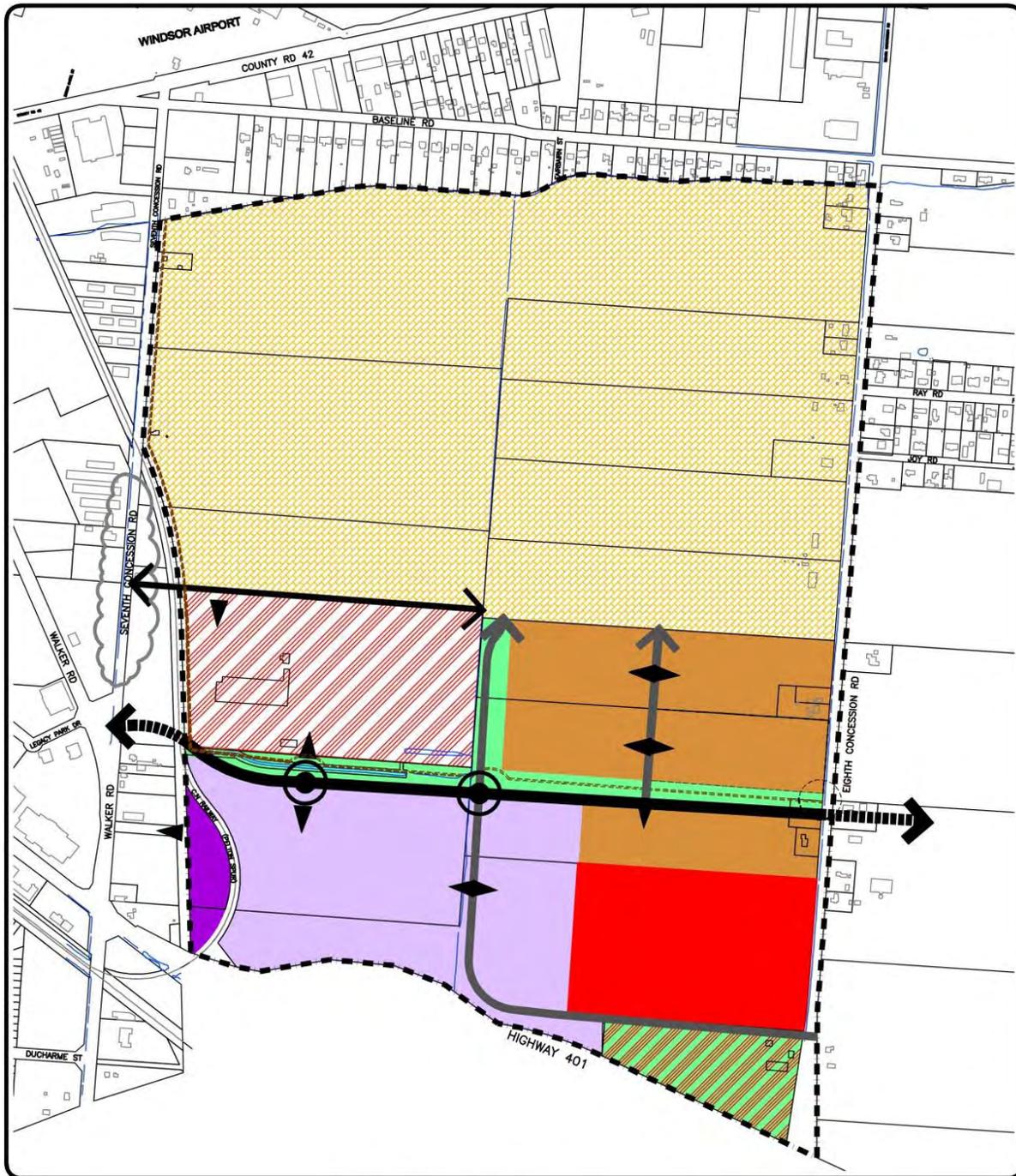


EXHIBIT C.4-7: EAST PELTON SECONDARY PLAN (2009) – LAND USE PLAN



**Schedule EP-2: Land Use
 East Pelton Planning Area**

LEGEND

SECONDARY PLAN BOUNDARY	COMMUNITY NODE
FUTURE URBAN AREA	MIXED USE
COMMERCIAL CENTRE	COMMERCIAL CORRIDOR
MINOR INSTITUTIONAL	MAJOR INSTITUTIONAL
PRIVATE RECREATION	OPEN SPACE

City of Windsor Official Plan : Volume II
 Date of Approval:

DRAFT Sandwich South Secondary Plan

SCHEDULE D Land Use

Legend

- | | |
|-----------------|--|
| Land Use |  Employment |
| |  Prestige Employment |
| |  Community Core |
| |  Neighbourhood - Low Density |
| |  Neighbourhood - Medium Density |
| |  Recreation & Open Space |
| |  Natural Heritage System |
| |  Railway |
| |  Interchange |
| |  Secondary Plan Boundary |
| |  City of Windsor Boundary |



December 5, 2012



Lauzon Parkway Improvements
Class Environmental Assessment Study
Environmental Study Report

DRAFT
SANDWICH SOUTH SECONDARY PLAN
SCHEDULE D - LAND USE

Exhibit
C.4-8

C.4.3 CULTURAL ENVIRONMENT

C.4.3.1 Built Heritage Resources and Cultural Heritage Landscapes

A cultural heritage resource assessment was undertaken for built heritage and cultural landscapes in the study area. A windshield survey was completed in May 2011 to identify cultural heritage landscapes and built heritage resources within the study area. For the most part, the analysis of cultural heritage resources in the study area addresses those above-ground, person-made heritage resources 40 years of age and older. The application of this rolling 40-year principle is an accepted federal and provincial practice for the preliminary identification of cultural heritage resources that may be of heritage interest or value. However, its application does not imply that all built heritage resources or cultural heritage landscapes that are over 40 years old are worthy of the same levels of protection or preservation.

Resources were identified by category:

- Cultural Heritage Landscape (CHL); or
- Built Heritage Resource (BHR); and
- by type;
 - roadscape,
 - residential subdivision,
 - cemetery,
 - bridge,
 - residence,
 - church, etc.

Within the E-W Arterial study area, there are three properties listed on the City of Windsor Municipal Heritage Register (2013);

- 4601 County Road 17: BHR, Residential, Dolphice St. Louis House dates to 1932;
- 4639 9th Concession Road: CHL, Agricultural Farm Complex, John Hayes House, Hayes Farmstead dates to 1914; and
- 4791 9th Concession Road: CHL, Agricultural Farm Complex, Patrick Hayes House, Hayes Farmstead dates to 1892.

At this time, there are no other listed or designated properties on the other municipal registers (i.e., County of Essex, Town of Tecumseh, and Town of Lakeshore).

The field survey identified 8 potential resources within the E-W Arterial study area, categorized as Cultural Heritage Landscape (CHL) or Built Heritage Resources (BHR). The majority of resources were found to be residential or farm complexes dating back to the mid-20th century.

Descriptions of the identified built heritage and cultural landscape features and further details of the built heritage and cultural landscape assessment can be found in Figure 2, Figure 3, and Table 1 of the *Cultural Heritage Assessment Report* (CHAR) in Appendix D.

C.4.3.2 Archaeology

A Stage 1 Archaeological Assessment was completed for the E-W Arterial study area. A search of the Ministry of Tourism, Culture, and Sport's registered archaeological site database revealed that there are no registered archaeological sites within the subject corridors, nor are any sites located within a one kilometer of the subject corridors. This is likely not a reflection of lack of sites within the area, but a lack of archaeological investigation.

A historical investigation of the study area revealed that the first European settlement in the Detroit-Windsor area took place in 1701. The settlement remained on the Detroit side of the river until 1748 when the Jesuit mission to the Huron was established on the south shore (Windsor area). Between 1748 and 1760, French agriculturalists settled along the south shore of the river, paralleling a similar settlement on the north side (Detroit). The street pattern on both sides of the river still reflects the French method of agricultural land division of long narrow farms fronting the river.

An 1881 map of the East and West Sandwich Township and Maidstone Township in Essex County (Appendix E – Figure 3) indicates that the study area corridors pass through rural farmlands. The corridors indicated on the map are transportation corridors. As well, a number of building markers are located within the study corridor, indicating that the possibility of locating historic cultural materials is quite high given the proximity to the historic roadway.

The major concerns for identifying archaeological potential and the recovery of archaeological material include all land within 100 metres of historic transportation routes, all property within 300 metres of water courses and within 300 metres of registered archaeological sites. Also, all areas of Euro-Canadian settlement require archaeological assessment.

According to the *Ministry of Tourism, Culture, and Sport Standards and Guidelines for Consultant Archaeologists (2011)*, areas that are previously disturbed by construction activities are identified as having no further archaeological concerns. Most of the existing roadway corridors within this study area are identified as disturbed.

The proposed corridor for the E-W Arterial is in the proximity of watercourses such as the Little River and also crosses historic transportation routes (8th Concession Road, 9th Concession Road, and 10th Concession Road / County Road 17). Given this, it is recommended that a Stage 2 Archaeological Assessment be required along this proposed corridor before construction commences.

C.4.4 NATURAL ENVIRONMENT

The study corridor for the E-W Arterial lies entirely within the Little River watershed. The dominant land use is agriculture. Commercial/industrial land uses border the east side of Walker Road at the western limit of the study corridor.

Field surveys of the corridor were conducted in the corridor by Ecoplans in 2011-2012 to characterize existing conditions and to identify species and habitats of conservation concern. The wildlife surveys focused on natural features, watercourses, drains, and anthropogenic lands with potential to provide habitat for SAR species and species of conservation concern. A description of field protocols and a field chronology, locations of the botanical survey units and wildlife survey units within the study corridor are presented in Appendix F.

C.4.4.1 Fish and Fish Habitat

Eight Municipal Drains are present in the E-W Arterial study corridor. These are presented in mapping provided in Appendix F. According to DFO's Draft Drain Classification mapping there is/are:

- 1 Class E Drain (permanent flow, with sensitive species and/or communities present): 9th Concession Drain;
- 2 Class C Drains (permanent flow): Little River and Watson Drain
- 4 Class F Drains (intermittent or ephemeral flow); and
- 1 unclassified Drain.

All drains have Low Sensitivity of fish and fish habitat. Relative to the other drains within the study area, the 9th Concession Drain supports a greater diversity of warmwater fish species.

All drains have been affected by dredging, channelization, realignment and tile drainage. The drains also appear to experience extreme fluctuations in water levels associated with precipitation events which has resulted in the transport and deposition of silt/sand, organic debris (woody and herbaceous) and refuse in the drains.

A dug irrigation pond is located adjacent (west side) to the Hayes D&W Drain in an active agricultural field. The pond receives inputs from surface run-off from the surrounding field with overflow from the pond discharging into the adjacent drain. The aquatic habitat in the pond has not been classified but likely functions as indirect fish habitat conveying seasonal flow downstream to direct fish habitat.

Based on MNR consultation (Amanda McCloskey, pers. comm., March 23, 2012), and a review DFO SAR mapping, no provincial or federal aquatic SAR were identified within the drains or pond present in the study corridor.

C.4.4.2 Terrestrial Ecosystems

Background environmental information for the corridor was compiled from all available sources, including: topography; soils; aerial photographs; MNR's NRVIS and district office databases;

ERCA watershed monitoring database; and published and unpublished reports including the *Windsor Annexed Lands Master Plan Study* (Stantec 2006), the City of Windsor Update to the CNHS Inventory (ERCA 2008) (herein referred to as the CNHS).

VEGETATION, WILDLIFE AND HABITAT – KEY FEATURES AND SENSITIVITY

Lands within the E-W Arterial corridor are almost exclusively agricultural with very few natural vegetation features remaining. Natural vegetation is confined to isolated regenerating hedgerows and riparian tree cover on the margins of the Little River.

The sensitive natural heritage features in the study corridor are the following:

- There are no Significant Natural Heritage features (ERCA 2008) within the study corridor.
- Seven Species at Risk, three provincially rare species and one area sensitive bird species were documented within the study corridor, including one SAR insect, three SAR birds, and two SAR plants.
- The Little River riparian corridor, which may provide habitat for Eastern Foxsnake (Endangered);
- The discontinuous hedgerow located east of the Little River (Vegetation Survey Unit 12 as depicted on mapping in Appendix F) provides habitat for Climbing Prairie Rose (SC), Illinois Greenbrier (S2), Big Shellbark Hickory (S3) and Missouri Ironweed (S3);

C.5 ALTERNATIVES AND EVALUATION

The E-W Arterial alternative concept plans, evaluation of alternatives, and selection of the preferred, is presented in this section.

Phase 3 of the Municipal Class EA process involves the development and review of alternative concept plans. Having established the need for a future east-west arterial, this phase involved the following activities:

- review of the problems and opportunities being addressed (Section C.5.1);
- inviting the public and participating agencies to attend PIC 1 to review and provide input on the study scope, existing conditions, need and justification, analysis of planning alternatives and preliminary generation of alternatives (Section C.5.2);
- developing alternative alignments and determining the preferred corridor routes (Sections C.5.3);
- developing and assessing cross-section elements (Section C.5.4);
- developing and assessing intersection design concepts to determine the preferred design (Section C.5.5);
 - West-End Connection (E-W Arterial/Walker Road/7th Concession Road/Legacy Park Drive) (Section C.5.5.1);
 - Lauzon Parkway Intersection (Section C.5.5.2);
 - Other intersections (Section C.5.5.3);
- developing and assessing active transportation alternatives to determine the preferred design (Section C.5.6);
- inviting the public and participating agencies to attend PIC 2 to review and provide comments on the assessment and evaluation of the refined alternatives, and the preliminary preferred design (Section C.5.7);

C.5.1 PROBLEMS AND OPPORTUNITIES BEING ADDRESSED

A new east-west linkage is needed within the future Sandwich South community, which will provide a spine within the transportation network and support the future development capacity demands of the community. The development and identification of transportation needs, and the assessment of transportation alternatives is described in Chapters 2 and 3 respectively.

The future East-West Arterial link from Walker Road to 10th Concession Road / County Road 17 was identified in the *Windsor Annexed Area Master Plan Study* (2006). The *East Pelton Secondary Plan* (2009) also included a future east-west arterial road connecting to Walker Road; this formed the basis for the East-West Arterial roadway component of this Lauzon Parkway EA Study.

The future East-West Arterial, which will be a key east-west corridor in the Sandwich South community and support the grid transportation system for the area, will include provisions for

active transportation along the corridor and will provide connectivity to facilities along Lauzon Parkway.

C.5.2 REVIEW DURING FIRST ROUND OF CONSULTATION

The first Public Information Centre (PIC 1) was held on July 14, 2011. The second Public Workshop for the Sandwich South Secondary Plan was held concurrently with PIC 1.

The purpose of PIC 1 was to provide the public and stakeholders with an opportunity review the study scope, existing conditions, transportation needs and justifications, transportation planning alternatives, preliminary generation of corridor alternatives for the Lauzon Parkway Extension, preliminary generation of County Road 42 cross-sections, E-W Arterial corridor routes and connections, a description of the EA evaluation criteria, and next steps in the study.

The notice for PIC 1 and Workshop 2 was placed in The Windsor Star (June 28 and July 2), Tecumseh Tribune (July 7), Lakeshore News (July 7), Shoreline Weekly (July 8), and Le Rempart (July 6). Notices were distributed by direct mail to local residents, government agencies, local emergency services, utility companies and interest groups. A separate notice for Workshop 2 for the Sandwich South Secondary Plan was prepared for the direct mailing; both notices were included in one envelope.

The PIC was a “drop-in centre” format. Approximately 80 members of the public attended. They were informed of the availability of comment sheets, which they were encouraged to complete. They were then directed to follow the displays around the room. Staff members were available to answer questions and provide information on the study. In addition, the Workshop 2 was held concurrently with offset participation times, which allowed attendees the opportunity to attend both the PIC presentation and Workshop session.

Attendees were encouraged to provide their comments on the comment sheets at the PIC. If individuals wished to take comment sheets home, they were requested to provide their responses via mail, email or fax by August 5, 2011.

The following is a summary of the key written and verbal comments related to E-W Arterial that were received at or after PIC 1:

- Timing of the transportation improvements
- Timing of the development of the Sandwich South lands
- Inquired about construction costs
- Inquired about the completion date of study
- Inquired about property impacts and access

There were 10 comment sheets submitted at PIC 1, and 2 received following the PIC. In addition, 9 comments were received prior to the PIC. The Project Team reviewed all public input received and responded to each comment accordingly.

Copies of the display boards at the PIC and Workshop, as well as comments sheets and responses, are included in the *Summary Report on Public Information Centre 1* in Appendix A.

C.5.3 ALIGNMENT ALTERNATIVES

Having identified the need for the future E-W Arterial, alternative alignments for the roadway were developed and assessed. In developing the alignment concept alternatives, certain considerations were taken from the East Pelton Secondary Plan which identified the west-end connection to be at the Walker Road and 7th Concession Road intersection. The roadway is planned to extend east to the City/County Boundary; however, due to the fact that the most easterly road within the study area is 10th Concession Road / County Road 17, the design plans extend to this road, while illustrating a further extension to the City/County Boundary.

C.5.3.1 West-End Alignment Options

An initial screening of how to connect at the existing intersection of Walker Road and 7th Concession Road, two alignment options for the E-W Arterial were developed. Option 1 was developed based on the East Pelton Secondary Plan, which ties into the existing alignment of the intersection. Option 2 re-aligns Legacy Park Drive, and shifts the intersection south, in order to create a straight alignment on the E-W Arterial leading to the intersection. Options 1 and 2 are illustrated in Exhibit C.5-1.

EXHIBIT C.5-1: WEST END ALIGNMENT OPTIONS



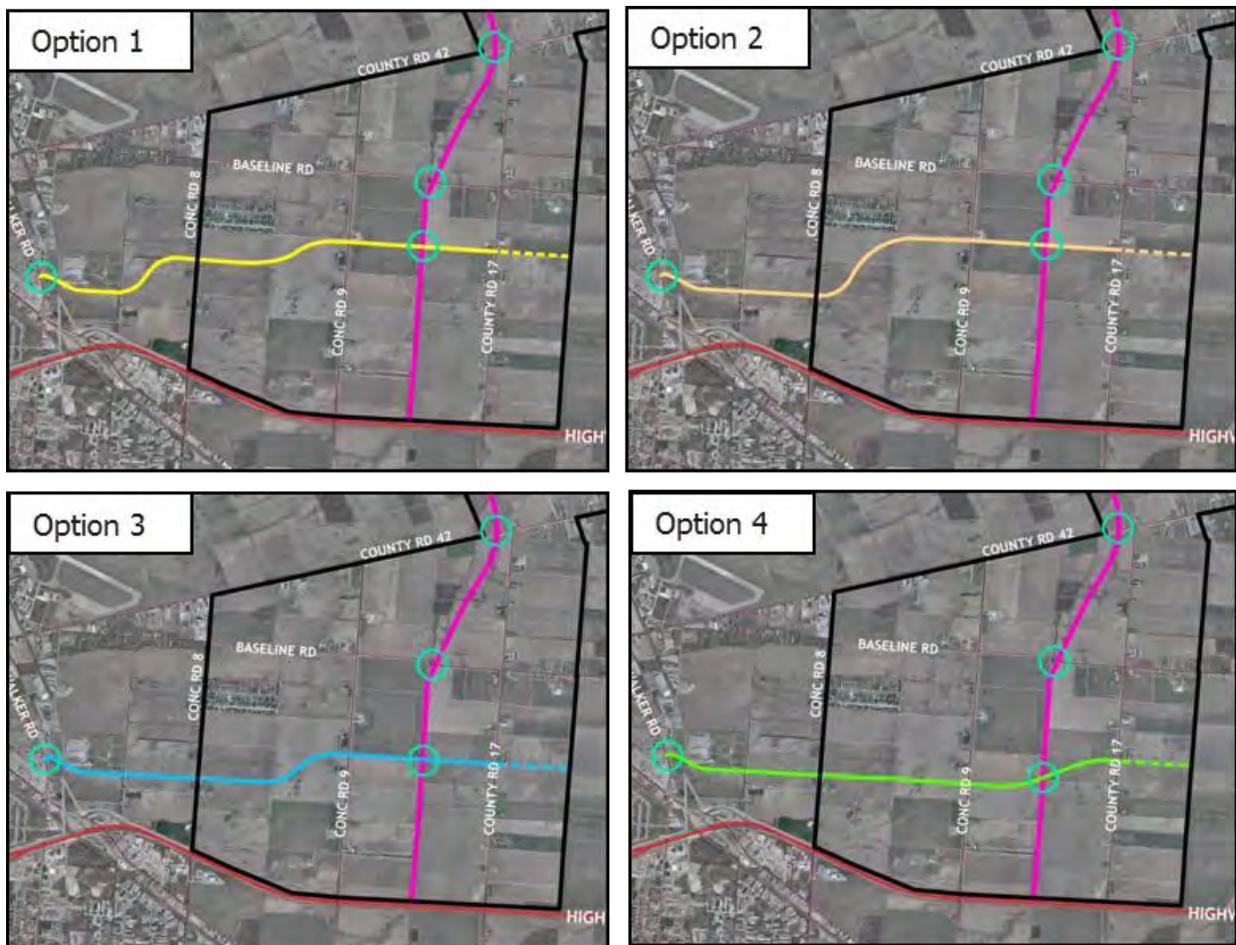
Although Option 1 requires the introduction of curves into the alignment approaching the intersection, the curvature is significantly large that safe operations at the intersection can be

maintained. Option 2 results in significant property impacts, displacing 2 businesses. Therefore Option 1 is preferred.

C.5.3.2 East-End Alignment Options

MTO Controlled Access Highway regulations stipulated a minimum 800 m distance from the interchange right-of-way to the nearest intersection. Thus, the intersection of Lauzon Parkway and E-W Arterial was required to be at least that distance from the proposed Highway 401 Interchange. These issues were taken into account in order to develop alignment alternatives for the future roadway. The alignment of the E-W Arterial was assessed in conjunction with the development of the Sandwich South Secondary Plan. Four options were considered and are illustrated in Exhibit C.5-2.

EXHIBIT C.5-2: E-W ARTERIAL ALIGNMENT ALTERNATIVES



- Option 1:**
- The intersection at the Proposed Preferred Lauzon Parkway Extension would be centrally located within the Sandwich South community.
 - There is sufficient intersection spacing to the Proposed Highway 401 Lauzon Parkway Extension Interchange.
 - Option 1 bisects 3 properties.
 - There is direct impact to the building on 1 property.
 - It is in close proximity to the existing Ray Road / Joy Road residential area.
- Option 2:**
- The intersection at the Proposed Preferred Lauzon Parkway Extension would be centrally located within the Sandwich South community.
 - There is sufficient intersection spacing to the Proposed Highway 401 Lauzon Parkway Extension Interchange.
 - Option 2 bisects 2 properties.
 - There is direct impact to the building on 1 property.
 - It is in close proximity to the existing Ray Road / Joy Road residential area.
- Option 3:**
- The intersection at the Proposed Preferred Lauzon Parkway Extension would be located further south within the Sandwich South community.
 - There is sufficient intersection spacing to the Proposed Highway 401 Lauzon Parkway Extension Interchange.
 - This may limit the potential of an additional service road access, to the proposed future employment lands along Highway 401.
 - Option 3 bisects 1 property.
- Option 4:**
- The intersection at the Proposed Preferred Lauzon Parkway Extension would be located further south within the Sandwich South community.
 - The alignment of the East-West arterial results in a skewed intersection.
 - There is sufficient intersection spacing to the Proposed Highway 401 Lauzon Parkway Extension Interchange.
 - This may limit the potential of an additional service road access, to the proposed future employment lands along Highway 401.
 - Option 4 bisects 2 properties.

PREFERRED ALIGNMENT ALTERNATIVE

A comparative assessment of alignment alternatives for the E-W Arterial was carried out considering the socio-economic, cultural, natural environments, as well as technical considerations. All four of these alternatives intersect with Walker Road at the existing intersection with 7th Concession Road and Legacy Park Drive, and extend easterly intersecting with 8th Concession Road, 9th Concession Road, Lauzon Parkway, and 10th Concession Road / County Road 17 to the City of Windsor limits.

An analysis of the four alternatives was completed and Option 3 was the preferred corridor alternative due to the location of the Lauzon Parkway intersection, intersection spacing with the Highway 401 interchange, and the minimal property impacts.

C.5.4 CROSS-SECTION

Having identified the preferred alignment for E-W Arterial, specific cross-section elements were then considered, including: right-of-way, lane width, active transportation facilities, median, illumination, and landscaping.

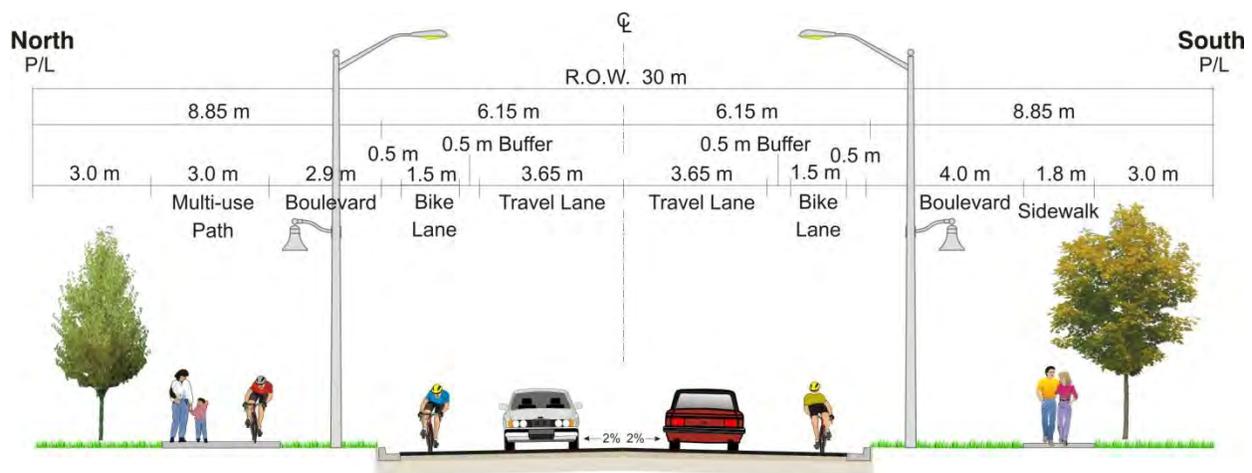
The roadway was planned with a 2-lane cross-section and designed with a 30 m right-of-way (ROW). Within the City of Windsor, the standard lane width is 3.65 m. Based on the City of Windsor’s Official Plan, active transportation facilities (sidewalk, bike lanes, and multi-use trail) were located on both sides of the roadway. The cross-section would also consist of curb and gutter for the outside shoulders to be consistent with the land development vision for the Sandwich South.

The typical proposed cross-section for E-W Arterial between Walker Road and 10th Concession Road / County Road 17, as presented at PIC 2, is illustrated in Exhibit C.5-3. The following summarizes the basic features of the cross-sections within the study area:

- 30 m right-of-way (ROW) urban cross-section
- 2 lanes at 3.65 m each
- 1.5 m bike lanes and 0.5 m buffers
- 3.0 m multi-use trail (MUT) on west side and 1.8 m sidewalk on east side

The preferred cross-sections, including refinements following PIC 2, with proposed utility information are illustrated in Section C.6.1.2.

**EXHIBIT C.5-3: PIC 2 TYPICAL CROSS-SECTION E-W ARTERIAL
 WALKER ROAD TO 10TH CONCESSION ROAD / COUNTY ROAD 17**



C.5.5 INTERSECTION ANALYSIS

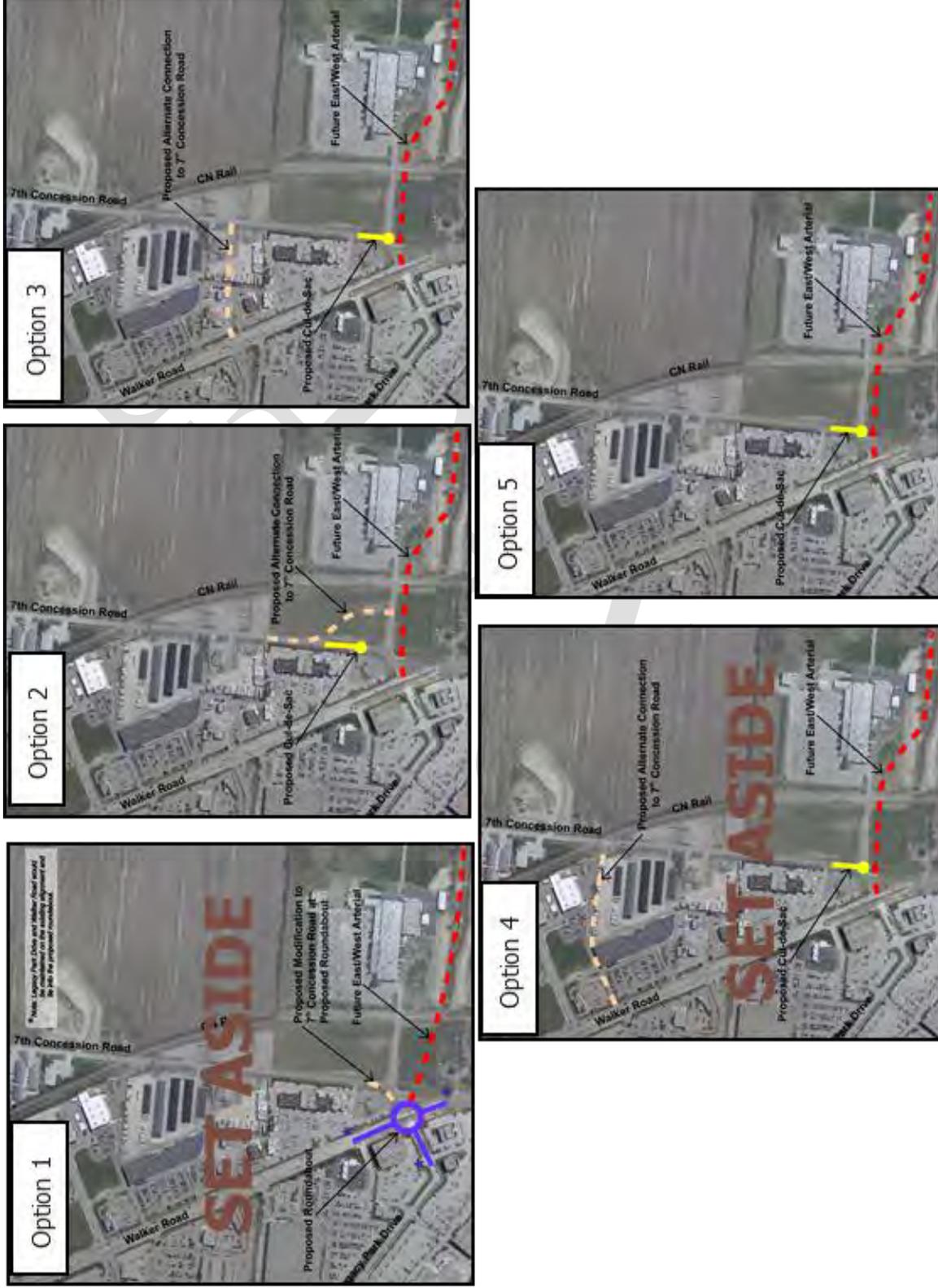
The following sections outline the development of the preferred intersection alternatives, based on the preferred E-W Arterial alignment and cross-section.

All proposed intersections along E-W Arterial were analyzed in order to determine the required lane configurations for the interim (2021), ultimate (2031), and full-build out of the Sandwich South area (beyond 2031), scenarios. Left and right turn lanes were provided at signalized intersections where required. All intersections, where a need for traffic signals was identified, were also considered for a roundabout. If the traffic analysis for the roundabout design indicated an acceptable level-of-service (LOS), then the feasibility of a roundabout was further assessed. In certain situations, although a roundabout was technically feasible, it was not preferred due to other factors such as pedestrian safety. The *Traffic Analysis Report: Future Traffic Conditions*, in Appendix I, contains the analyses for all intersection in the Study Area.

C.5.5.1 West End Connection

The connection to the existing Walker Road/7th Concession Road/Legacy Park Drive intersection is complex. The alignment of the south end of 7th Concession Road converges with Walker Road and makes a bend to the intersection with Legacy Park Drive. This is further complicated by the presence of the CN Rail Pelton Spur line approximately 160 m east of the intersection. Several alternatives were developed to address the safety, access, and operational needs of this future intersection. These alternatives were presented at the Public Information Centre (PIC) 1, and are illustrated in Exhibit C.5-4 and are described below.

EXHIBIT C.5-4: WEST-END CONNECTION ALTERNATIVES



Alternative 1: Keep 7th Concession Road, Legacy Park Drive, and the E-W Arterial at the existing Walker Road intersection with a roundabout.

The analysis for Alternative 1, keeping 7th Concession Road, Legacy Park Drive, and E-W Arterial at the existing Walker Road intersection, involved the design of a 5-leg roundabout for the proposed intersection.

An intersection capacity analysis was carried out using three traffic engineering software: Arcady, SimTraffic/Synchro, and VISSIM. These are industry standard software which consider the traffic demand and network geometry for the capacity analysis. The capacity analysis results indicate that the roundabout configuration at this intersection would result in high delay and very congested conditions (level-of-service ‘F’).

In addition to capacity constraints on approaches, the proposed roundabout would result in other traffic operational issues with respect to:

- 5-leg roundabout configuration with high total volume;
- Imbalanced traffic demand at this intersection causing significant delays on minor roads - high-volume at major arterials (Walker Road) with lower volume on minor collectors/local streets (Legacy Park Drive, 7th Concession Road, E-W Arterial). Roundabout tends to treat all movements at an intersection equally, with no priority provided based on the traffic demand;
- Disruption of the existing signal progression on Walker Road reducing the efficiency of downstream intersections both north and southbound;
- The roundabout configuration could not be accommodated within the existing intersection footprint which would impact major commercial retailers; and
- The E-W Arterial would have to be re-aligned, from the City of Windsor’s already protected property for the E-W Arterial alignment, in order to accommodate sufficient spacing from the 7th Concession Road leg.

The roundabout resulted in an overall level-of-service ‘F’ resulting in high delay and congestion, unbalanced traffic demand at the intersection, significant property impacts, and the need to re-align the E-W Arterial. On this basis, Alternative 1 was not carried forward. The Walker Road Roundabout Technical Memo, Appendix III of the Traffic Analysis Report: Future Traffic Conditions, in Appendix I.

Alternative 2: 7th Concession Road accesses E-W Arterial east of its existing alignment and just west of the CN Pelton Spur line. The access is limited to a right-in-right-out (RIRO).

This alternative addresses the proximity of the 7th Concession Road access to E-W Arterial and the Walker Road/Legacy Park Drive/E-W Arterial intersection.

Alternative 3: Cul-de-sac the southern limit of 7th Concession Road and establish a new connection to Walker Road north of its existing intersection.

This alternative maintains a connection between 7th Concession Road and Walker Road but removes the connection to E-W Arterial.

Alternative 4: Cul-de-sac the southern limit of 7th Concession Road and establish a new connection to Walker Road north of its existing intersection, and further north from Alternative 3.

This alternative was not carried forward due to potential safety concerns regarding the proximity of the proposed intersection to the existing at-grade crossing of the CN Rail Pelton Spur line and 7th Concession Road.

Alternative 5: Cul-de-sac 7th Concession Road and remove its existing access to Walker Road.

This alternative removes the access from 7th Concession Road to Walker Road and E-W Arterial.

WEST END CONNECTION ALTERNATIVES CARRIED FORWARD

Alternatives 2, 3, and 5 were carried forward for assessment after PIC 1. An additional Alternative 2A, was developed for inclusion in the assessment of alternatives; it provides 7th Concession Road with a restricted right-in-right-out (RIRO) access to E-W Arterial. This is similar to Alternative 2, in that it provides an alternate mitigation for the total closure of 7th Concession Road.

The East Pelton Secondary Plan identified a future transportation network that included a Class II and Class I Collector Road north and east of 4500 Walker Road and 4490 7th Concession Road, respectively. These future network alternatives were considered in evaluating the alternatives as they create a potential detour, of approximately 1 km, to connect from 7th Concession Road to E-W Arterial.

The alternatives carried forward for the West-End Connection are illustrated in Exhibit C.5-5.

EXHIBIT C.5-5: WEST-END CONNECTION ALTERNATIVES CARRIED FORWARD



ASSESSMENT AND EVALUATION OF ALTERNATIVES

A comparative assessment and evaluation of alternatives was carried out for the West-End Connection, based on a comprehensive list of factors considering impacts to the socio-economic, cultural, natural environments, as well as technical considerations, including traffic operations, geometrics, safety, and intersection spacing. The impact of each of the alternatives was based on the existing environmental conditions compiled through field visits and secondary source information, and is summarized in Section A.4. Then a comparative evaluation of the alternatives was undertaken within four major groupings: Socio-Economic, Cultural, Natural Environment, and Technical Considerations.

A summary of the assessment and evaluation of the West-End Connection alternatives is illustrated in Exhibit C.5-6. The detailed assessment of the environmental effects associated with each of the alternatives and the corresponding comparative evaluation was documented and is included in Appendix G.

EXHIBIT C.5-6: ASSESSMENT AND EVALUATION OF WEST-END CONNECTION ALTERNATIVES

Factor/Criteria	Alternative 2 RIRO with Re-alignment	Alternative 2A RIRO without Re-alignment	Alternative 3 Alternative Connection to Walker Road	Alternative 5 Cul-de-sac
SOCIO-ECONOMIC ENVIRONMENT <ul style="list-style-type: none"> Impacts to property and access Community effects Agricultural Properties 	●	●●●	●	●
CULTURAL ENVIRONMENT <ul style="list-style-type: none"> Archaeology and Heritage Features 	●●	●	●	●
NATURAL ENVIRONMENT <ul style="list-style-type: none"> Impacts to stormwater management Impact on vegetation, wildlife, landscape, and aquatic resources 	●●	●	●	●
TECHNICAL CONSIDERATIONS <ul style="list-style-type: none"> Traffic Operations (level-of-service) Geometrics and Safety Compatibility / Connectivity Emergency Response Utilities Cost 	●	●	●	●●●
OVERALL SUMMARY	●	●●●	●	●
<p>Alternative 2 results in the most direct/property impacts compared to the other alternatives with only slightly improved traffic operations on E-W Arterial.</p> <p>Alternative 2A does not require property acquisition, maintains partial road network connectivity, and accommodates the future traffic demand. To address the close proximity of the intersections along the E-W Arterial at Walker Road and 7th Concession Road, the following measure are required to eliminate unsafe traffic operations:</p> <ul style="list-style-type: none"> A median island separating eastbound traffic from westbound traffic will prevent eastbound left-turns onto 7th Concession Road. Raised curb separating westbound left-turn traffic will prohibit southbound access from 7th Concession Road to Walker Road. <p>Alternative 3 would require significant property acquisitions for the alternative connection to Walker Road.</p> <p>Alternative 5 results in good traffic operations compared to the other alternatives with good intersection spacing from Walker Road to CN Rail; however, may result in a less direct connection to the E-W Arterial through the East Pelton lands, and less direct emergency routing.</p> <p>Alternative 2A is the preferred overall.</p>				



WEST END CONNECTION PREFERRED ALTERNATIVE

Overall, Alternative 2A, a RIRO access to 7th Concession Road without realignment, is the preferred alternative. This alternative does not directly impact property or accesses, it maintains the road network connectivity, and accommodates the future traffic demand; however, the close spacing of the intersection results in potential conflicts with the turning movements on the E-W Arterial at the intersection with Walker Road.

To address the close proximity of the intersection along the E-W Arterial at Walker Road and 7th Concession Road the following measures are required to eliminate unsafe traffic operations:

- A median island separating eastbound traffic from westbound traffic will prevent eastbound left-turns onto 7th Concession Road.
- Raised curb separating westbound left-turn traffic will prohibit southbound access from 7th Concession Road to Walker Road. These will eliminate unsafe traffic operations.

C.5.5.2 Lauzon Parkway Intersection

A new intersection is proposed for Lauzon Parkway and E-W Arterial, as part of the draft Sandwich South Secondary Plan primary road network. The traffic analysis for the Lauzon Parkway/E-W Arterial intersection indicated that a 2-lane roundabout would provide an acceptable level-of-service (LOS) for the interim 4-lane Lauzon Parkway, but would not meet the ultimate 6-lane Lauzon Parkway traffic demand, approximately 1600 vph in peak direction, which corresponds to 50% of the full Sandwich South “build-out” development traffic forecast. Therefore, the Project Team assessed two options for this intersection:

- Option 1:** Build a signalized intersection on ‘Day 1’, and widen the intersection for the ultimate 6-lane Lauzon Parkway.
- Option 2:** Build a roundabout on ‘Day 1’, and reconstruct as a signalized intersection for the ultimate 6-lane Lauzon Parkway.

A present day cost analysis was conducted in order to determine the economic benefits for each option. Although initial estimates of the EA anticipated that 50% of the full Sandwich South “build-out” area would be developed by 2031, the cost analysis assessed three different scenarios of when the conversion from a roundabout to a signalized intersection would be required; 2031, 2041, and 2051. The present day value cost was determined for each alternative for each scenario. The cost analysis indicated that, in order to be economically feasible, the roundabout would need to be in operation for at least 30 years.

It is expected, however, that while the initial capital cost to construct a 2-lane roundabout is relatively high compared to a signalized intersection, the total life cycle costs (i.e., ongoing maintenance costs) of a roundabout are typically lower than a signalized intersection, as summarized in Exhibit C.5-7.

EXHIBIT C.5-7: COST-BENEFIT ASSESSMENT OF SIGNALS AND ROUNDABOUTS

Cost-Benefit Item	Signals	Roundabout
Roadway Construction Cost	High	High
Maintenance Cost	Low	Low
Frequency of Safety Conflicts	High	Low
Signals/Illumination & Maintenance	High	Medium
Total Present Value	High	Medium/High
2031 Traffic Operations	Good	Good
Beyond 2031 Traffic Operations	Good	Poor
Overall Assessment		Preferred

Therefore, the preferred design for the Lauzon Parkway/E-W Arterial intersection is a roundabout, which could be converted to a signalized intersection when Lauzon Parkway needs to be widened to 6-lanes.

C.5.5.3 Other Intersections

Along the proposed E-W Arterial, in addition to the major intersections discussed in the previous sections (i.e., Walker Road and Lauzon Parkway), all intersections were reviewed and analyzed for future needs and are listed in Exhibit C.5-8. As noted previously, all intersections where traffic signals were warranted for the existing and future condition were also assessed for a roundabout option.

A single lane roundabout was proposed for the other intersections along E-W Arterial at: the East Pelton North-South Collector, 8th and 9th Concession Road, and County Road 17.

C.5.5.4 Summary of Intersections Along E-W Arterial

Additional intersections along E-W Arterial, at existing and proposed cross-roads, were analyzed. Exhibit C.5-8 identifies each of the intersections along County Road 42 including: their existing condition; which one was identified as potential roundabout; and if the operational analysis showed an acceptable level-of-service for a roundabout. All intersections, where a need for traffic signals was identified, were also considered for a roundabout. If the traffic analysis for the roundabout design indicated an acceptable level-of-service (LOS), then the feasibility of a roundabout was further assessed. In certain situations, although a roundabout was technically feasible, it was not preferred due to other factors such as property impacts, pedestrian safety, etc. Further details of the analysis at key intersections are described in the following sections.

EXHIBIT C.5-8: SUMMARY OF E-W ARTERIAL INTERSECTION ROUNDABOUT ANALYSIS

Intersecting Road	Existing Intersection	Future Intersection Required	Potential for Roundabout	Acceptable LOS for Roundabout
Walker Road/ 7 th Concession Road/ Legacy Park	Signalized	Signalized	✓	x
East Pelton North-South Collector	N/A	Unsignalized	✓	✓
8 th Concession Road	N/A	Unsignalized	✓	✓
9 th Concession Road	N/A	Unsignalized	✓	✓
Lauzon Parkway	N/A	Signalized	✓	x ¹
County Road 17	N/A	Roundabout	✓	x

1. The LOS for a 2-lane roundabout is acceptable up to 2021, does not meet 2031 demands (approximately 1600 vph in peak direction)

C.5.6 ACTIVE TRANSPORTATION

To develop the active transportation needs within the study area, the active transportation master plan studies for the City of Windsor (BUMP) and County of Essex (CWATS) were considered together on the project study area, and potential connections to the networks identified in BUMP and CWATS were developed and evaluated in conjunction with the Sandwich South Secondary Plan.

The City of Windsor’s Official Plan requires sidewalks on both sides of Arterial Roadways. The City’s Bicycle Use Master Plan (BUMP, 2001) calls for a cycling network of bike lanes, multi-use trails and signed bike routes, and provides design guidelines along with specific strategies for improving cycling awareness, the cycling-transit link and end-of-trip facilities.

It was proposed that the E-W Arterial would include on-road bike lanes in each direction, a multi-use trail (3.0 m), and sidewalk (1.8 m). These facilities will connect to the existing active transportation network west of Walker Road and those proposed on 8th and 9th Concession Road, Lauzon Parkway, and County Road 17.

C.5.7 REVIEW DURING SECOND ROUND OF CONSULTATION

The second Public Information Centre (PIC 2) was held on October 22, 2012. The third Public Workshop for the Sandwich South Secondary Plan was held concurrently with PIC 2. The Upper Little River Watershed Master Drainage Plan & Stormwater Management Plan PIC 2 was also held concurrently at the same time and venue.

The purpose of PIC 2 was to provide stakeholders with an opportunity to review the assessment and evaluation of alternatives, present the Technically Preferred Alternative and the associated potential impacts and mitigating measures, including property impact, key intersection analyses, overall stormwater management plan, noise analysis, active transportation plan, and next steps.

The notice for PIC 2 and Workshop 3 was placed in The Windsor Star (October 10 and 13), Lakeshore News (October 11), Shoreline Weekly (October 12), and Le Rempart (October 17). Notices were distributed by direct mail to government agencies, local emergency services, utility

companies and interest groups. Stakeholders whose property was being directly impacted by the Technically Preferred Alternative, were also sent notices by direct mail.

The PIC was a “drop-in centre” format. Approximately 160 members of the public attended. They were informed of the availability of comment sheets, which they were encouraged to complete. They were then directed to follow the displays around the room. Duplicate design plans were provided on tables for the public and staff to mark-up with comments during the PIC. Staff members were available to answer questions and provide information on the study. In addition, the Workshop 3 was held concurrently, which allowed attendees the opportunity to attend both the PIC and Workshop sessions.

Attendees were encouraged to provide their comments on the comment sheets at the PIC. If individuals wished to take comment sheets home, they were requested to provide their responses via mail, email or fax by November 16, 2012.

The following is a summary of the key written and verbal comments that were received at or after PIC 2:

- Timing of transportation improvements
- Timing of the development of the Sandwich South lands
- Inquired about construction costs
- Inquired about the completion date of the study
- Concerns regarding noise impacts to properties in proximity to roadway
- Concerns regarding property impacts
- Concerns regarding the access to the Windsor Christian Federation (WCF)
- Concerns regarding the intersection of 7th Concession Road/E-W Arterial/Walker Road

There were 19 comment sheets submitted at PIC 2, and 7 received following the PIC. The Project Team reviewed all public input received and responded to each comment accordingly.

Copies of the display boards at the PIC and Workshop, as well as comments sheets and responses, are included in the *Summary Report on Public Information Centre 2* in Appendix A.

C.5.7.1 Consultation with Individual Stakeholders

Further consultation with individual stakeholders was conducted as required, or requested. The following is a list of the key stakeholders for which additional consultation was held.

- 882885 Ontario Limited (Lauzon Parkway, Section A.5.8.1)
- 386823 Ontario Limited (County Road 42, Section B.5.6.1)
- Tecumseh Town Council (County Road 42, Section B.5.6.1)
- Windsor International Airport (County Road 42, Section B.5.2)
- The Windsor Christian Fellowship & Rosati Group (E-W Arterial, Section C.5.7.1)

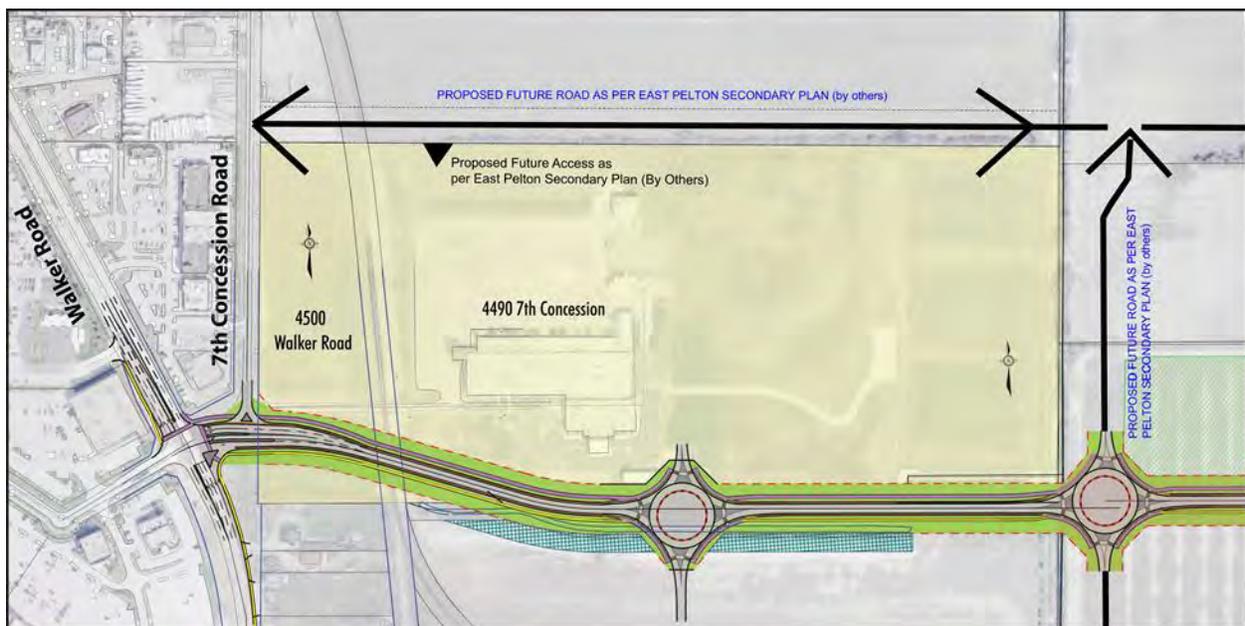
Given that each stakeholders’ concerns are related to specific elements of the Study (i.e., Lauzon Parkway, County Road 42, or E-W Arterial), details regarding the specific concerns and

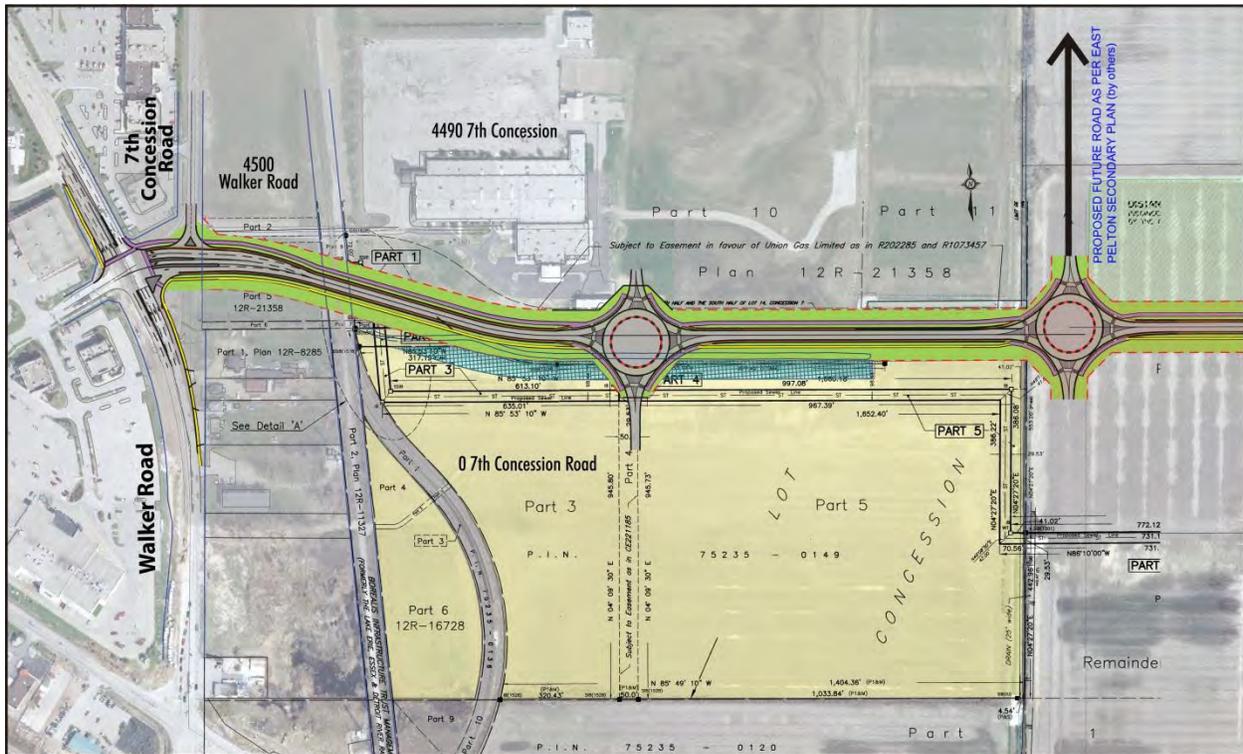
responses are provided in the appropriate sections of this report (Part A: Lauzon Parkway, Part B: County Road 42, or Part C: E-W Arterial).

THE WINDSOR CHRISTIAN FELLOWSHIP (WCF) & ROSATI GROUP

The WCF owns the property along the E-W Arterial at 4490 7th Concession Road and 4500 Walker Road. The Rosati Group is interested in buying a portion of the WCF property. These properties are located near the western limit of the proposed roadway. The East Pelton Secondary Plan recommended two access points to the WCF property; one from the E-W Arterial and a second from a future proposed Collector Road, north of the property. The East Pelton Secondary Plan: Land Use Plan, which identified the WCF property as Minor Institutional, and also illustrates the proposed roadways and accesses to the WCF and to the property to the south. This is illustrated in Exhibit C.5-9.

EXHIBIT C.5-9: E-W ARTERIAL PLAN AT 4490 7TH CONCESSION ROAD AND 4500 WALKER ROAD & 0 7TH CONCESSION ROAD (PROPERTY ROLL #90010018000000)





A brief informal discussion was held with WCF and Rosati at the WCF offices during PIC 2 to discuss WCF’s concerns about their future accesses. It was agreed that a meeting be held at a later date for further discussion.

A meeting with the WCF & Rosati was held on November 27, 2012. The purpose of the meeting was to discuss the access issues associated with the proposed E-W Arterial. At the meeting WCF & Rosati submitted a report to the Project Team entitled “*Required Changes to the Plans for the Lauzon Parkway Improvements Environmental Assessment*”, included in Appendix A. The report detailed concerns regarding:

- the current access as agreed to in the East Pelton Secondary Plan,
- additional future accesses to 4490 7th Concession Road and 4500 Walker Road,
- limited access to 7th Concession Road at the proposed intersection of E-W Arterial/Walker Road/7th Concession Road/Legacy Park Drive,
- proposed lane configuration and geometry of the E-W Arterial, and
- the proposed intersections at Lauzon Parkway and County Road 42, E-W Arterial, and Baseline Road.

Stantec was retained by WCF and Rosati Group to investigate the roundabout alternative further for the Walker Road/Legacy Park Drive/7th Concession Road/E-W Arterial intersection. Stantec submitted a report to the Project Team entitled *Walker Road/Legacy Park Drive/7th Concession Road/East-West Arterial Intersection Roundabout Feasibility Review*, on July 4, 2013, on behalf of Rosati Group and WCF. Starting with the original 5-leg roundabout configuration, Stantec modified the geometry in consideration of current design practice, accommodation of the traffic forecasts, and property constraints.

The report confirmed this EA's initial analysis that the conventional roundabout configuration would not provide acceptable level-of-service for this intersection, and traffic approaching from 7th Concession Road and Legacy Park Drive would experience heavy delays and would not find sufficient gaps to enter the roundabout. The report suggested to resolve the imbalanced approach leg volumes and create gaps within the roundabout would require either ensuring that the coordination of signals along Walker Road produced distinct vehicle platoons, or metering the Walker Road approach.

The Project Team reviewed Stantec's proposed roundabout with metering on Walker Road. The following were the key comments provided by the Project Team:

- The Walker Road corridor is frequently used by emergency vehicles, and signal pre-emption is in place at the nearby intersection of Provincial Road and Walker Road for the railway level crossing. Due to the signal pre-emption, the signals upstream and downstream would frequently be forced out of coordination. Therefore, the suggested approach to produce distinct vehicle platoons by signal coordination would not work.
- Based on the HCM suggested level-of-service criteria, the recommended configuration does not provide an acceptable level-of-service for the planned future facility.
- The report acknowledged that metering a roundabout is a non-standard approach, and adds additional complexity to the intersection operations. Furthermore, signalization and metering are against the nature of a true roundabout's purpose and would introduce other operational and safety issues, which were not addressed.

Based on the Project Team's review of the intersection and Stantec's proposed roundabout, it was recommended that the EA's original signalized intersection remain as the preferred design.

Stantec submitted an additional report, *Windsor Christian Fellowship Future Access Solution*, on September 24, 2013. The report contends that the E-W Arterial access to the WCF property as depicted at PIC 2 would not be conducive to the operations of the institution, as it would be located at the back of their facilities, and in an area where there is high pedestrian traffic and recreational activities. Stantec proposed a roundabout intersection on the E-W Arterial at a location that approximately aligns with the facility's main entrance, and a secondary right-in-right-out access to the east of the primary access. The proposed access scheme also identified a different alignment for the E-W Arterial. The key findings of the report were as follows:

- The roundabout would operate at a good level of service in all peak periods;
- The maximum eastbound queue length was found to be 55 m, which would not extend over the CN Rail spur line;
- Even the longest queue of 185 m, on the WCF southbound approach, would be considered conservative, occasional and temporary, as they clear relatively quickly;
- The remainder of the queue lengths for any of the peak hour period and for any of the other intersection approaches can be considered to be unremarkable; and
- In the event that additional access to the WCF facility is provided via the future east-west collector along the north side of the subject property, the operational

performance of the roundabout would improve due to the diversion of some WCF traffic to the east-west collector.

The Project Team provided a response to Stantec's report on December 19, 2013. The proposed intersections and roundabout access to WCF was recommended consistent with the proposed Major Road Plan in the East Pelton Secondary Plan, which provides additional north-south and east-west collector roads bordering the east and north sides of the WCF property, and also provides access to all lands within the Secondary Plan. The roundabout access to WCF on E-W Arterial is located approximately midway between the 7th Concession Road and the future proposed north-south collector road in order to provide access to lands to the north and the south.

An illustration of the E-W Arterial plan at these properties is in Plate 1 of Section C.6.9.

C.5.7.2 Revisions to Technically Preferred Plan

Following the Public Information Centre (PIC) 2, and consultations with individual stakeholders, the Project Team reviewed the proposed alignment of E-W Arterial.

The Project Team agreed to show the proposed East Pelton Secondary Plan approved access to the WCF property on E-W Arterial as a roundabout. This proposed roundabout provides additional operational access to northbound 7th Concession Road. Additionally, the intersection of E-W Arterial and the future north-south collector road, located east of the WCF property, which was also approved in the East Pelton Secondary Plan, was also included in the plans. This is illustrated on Plate 1 in Section C.6.9.

REVISIONS TO THE PREFERRED CROSS-SECTIONS

Based on comments received at PIC 2, and a further review of the preferred cross-sections presented at PIC 2, the following changes were made to the cross-sections:

- An additional traffic analysis was undertaken for the E-W Arterial to determine if the corridor required four lanes for the ultimate (beyond 2031) planning horizon. It was determined that certain sections of the corridor required four lanes beyond the EA's planning horizon. Therefore, a two lane cross-section remained as the recommendation; however, a wider 42 m ROW, consistent with the City of Windsor's Official Plan recommendations for a Class II Arterial Road is recommended for this EA, in order to protect for a future four lane cross-section.
- A 0.3 m reserve was added inside ROW in the City of Windsor, to protect from future accesses and maintain the E-W Arterial designation as a Controlled Access Highway. This is further discussed in Section C.6.10.2;

A description of the recommended alternative plan is presented in Chapter C.6.

C.6 DESCRIPTION OF RECOMMENDED PLAN

Having identified the preferred alternatives, and revising the Technically Preferred Plan based on public input in Chapter C.5, Phase 3 of the Municipal Class EA process further involves the preliminary finalization of the Technically Preferred Plan into the Recommended Plan, which is described in this section.

The Recommended Plan for E-W Arterial between Walker Road and 10th Concession Road / County Road 17 includes the following:

- a new 2-lane urban cross-section;
- planning of proposed intersections;
- active transportation facilities incorporated within the transportation corridor – sidewalk, multi-use path, and buffer-separated bike lanes;
- illumination and landscaping; and
- protection for ultimate 4-lane urban cross-section beyond the project horizon (2031).

The major features of the Recommended Plan for E-W Arterial are described in Section C.6.1, and illustrated in the plan/profile plates in Section C.6.9. A description of the active transportation improvements are described in Section C.6.2.

This information should be reviewed in conjunction with Chapter C.5 of the ESR which describes the alternative concept plans. While refinements may occur in the future, during the next phase of design, any changes should not alter the intent of the recommended undertaking or its components. During the next phase of design, there will be further consultation with technical/approval agencies, utilities, and affected property owners.

C.6.1 ROAD GEOMETRY

The timing of construction of the E-W Arterial will be driven by development within the Sandwich South area; it is expected that the E-W Arterial will be required sometime before the year 2031, dependent of the pace of development. Approximately 50% of the full Sandwich South “build-out” development is expected by 2031. Beyond the year 2031, the E-W Arterial will require to be widened from 2 to 4 lanes when the peak hour traffic volumes reach approximately 700 vph in the peak direction. The plan and profile of the Recommended Plan, as well as the adjacent road improvements are shown in Section C.6.9.

C.6.1.1 Design Criteria

The future E-W Arterial is classified as a Class II Arterial roadway. Details of the E-W Arterial roadway geometrics are presented in Exhibit C.6-1. The roadway and intersections were planned to accommodate a WB-20 design vehicle (i.e., standard tractor-trailer).

EXHIBIT C.6-1: DESIGN CRITERIA E-W ARTERIAL – WALKER ROAD TO 10TH CONCESSION ROAD / COUNTY ROAD 17

	Present Conditions	Design Standards	Proposed Standards
Design Speed	N/A	70 km/h	70 km/h
Posted Speed	N/A	50 km/h	50 km/h
No. of Lanes and Width	N/A	2 lanes - 3.65 m ¹	2 lanes - 3.65 m ¹
Total Lane Width	N/A	7.3 m	7.3 m
Median Width	N/A	No median - undivided	No median - undivided
Provisions for Pedestrians and Cyclists	N/A	1.5 m bike lanes with 0.5 m buffers; 1.8 m sidewalk (north side); and 3.0 m MUT (south side)	1.5 m bike lanes with 0.5 m buffers; 1.8 m sidewalk (north side); and 3.0 m MUT (south side)
Minimum Grade (%)	N/A	0.4 %	0.5 %
Maximum Grade (%)	N/A	6 – 12 %	1.2 %
Minimum Curve Radius	N/A	120 m	120 m
Minimum Stopping Sight Distance	N/A	110 m	>110 m
Equivalent Minimum 'K' Factor	N/A	Crest 25 Sag 25	Crest 120 Sag 45
Basic Right-of-Way	N/A	42 m	42 m

1. Additional turning lanes provided at identified intersections

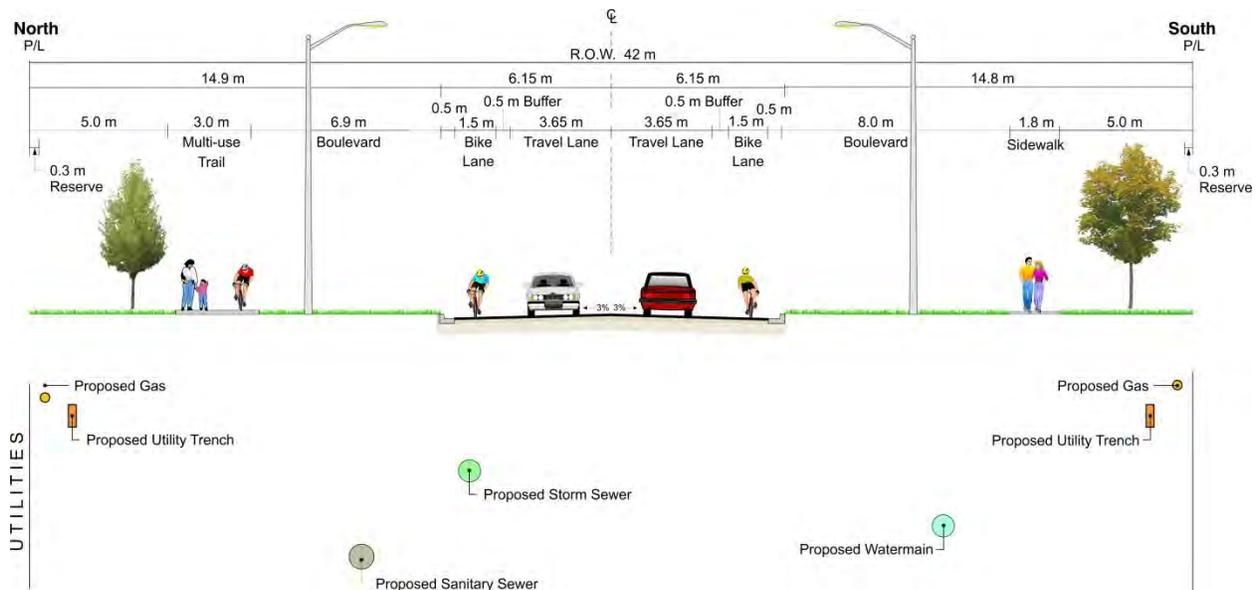
C.6.1.2 Typical Cross-Sections

The typical proposed cross-section for E-W Arterial between Walker Road and 10th Concession Road / County Road 17 is illustrated in Exhibit C.6-2. The following summarizes the basic features of the cross-section:

- 42 m right-of-way (ROW) urban cross section
- 2 lanes at 3.65 m each
- 1.5 m bike lanes with 0.5 m buffers, a 1.8 m sidewalk on the south side and a 3.0 m multi-use-trail on the north side
- All municipal utilities to be accommodated within ROW
- Landscaped boulevards
- Illumination on both sides
- 0.3 m reserve inside the ROW

The 42 m ROW was designated based on the City of Windsor’s Official Plan and the classification of the roadway. The cross-section will protect the necessary ROW for when the E-W Arterial requires widening to four lanes. Illumination, landscaping, sidewalk, and multi-use trail will be positioned so that they will not have to be re-located when the widening from 2 to 4 lanes is required.

**EXHIBIT C.6-2: TYPICAL CROSS-SECTION E-W ARTERIAL
 WALKER ROAD TO 10TH CONCESSION ROAD / COUNTY ROAD 17**



C.6.1.3 Intersections

The proposed E-W Arterial includes six intersections; as listed (from west to east) in Exhibit C.6-3 with the future intersection types. Left and right turn lanes will be provided at signalized intersections where warranted. All roundabouts on E-W Arterial have been planned with one lane and a 55 m inscribed circle diameter, based on a WB-20 design vehicle. All intersections, where a need for traffic signals was identified, were also considered for a roundabout.

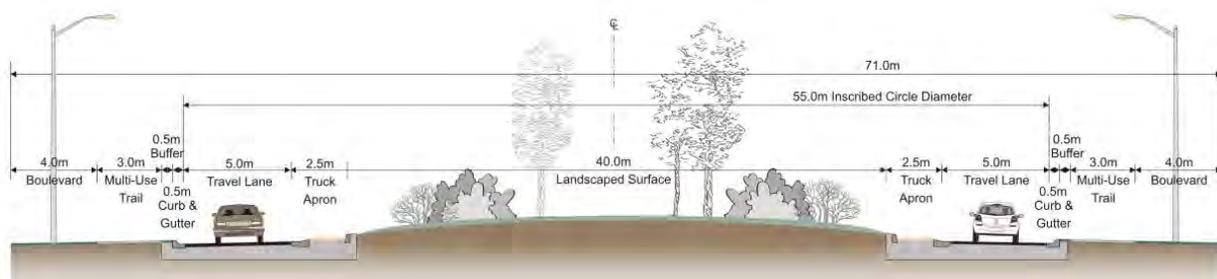
EXHIBIT C.6-3: SUMMARY OF E-W ARTERIAL INTERSECTIONS

Intersecting Road	Existing Intersection	Future Intersection
Walker Road/Legacy Park	Signalized	Signalized ¹
7 th Concession Road	N/A	Unsignalized/RIRO
Concession 7 Lot 14 Mid-block Property Access	N/A	Roundabout ²
Proposed Future Road	N/A	Roundabout
8 th Concession Road	N/A	Roundabout
9 th Concession Road	N/A	Roundabout
Lauzon Parkway	N/A	Roundabout ³
10th Concession Road / County Road 17	N/A	Roundabout

1. A median will be placed on E-W Arterial between the westbound left-turn and through lanes, to prevent unsafe operations from 7th Concession to southbound Walker Road.
2. A roundabout will be provided as an access to 4490 7th Concession Road; by providing U-turn movements the roundabout also maintains access to 7th Concession Road from Walker Road.
3. The LOS for a 2-lane roundabout is acceptable for 2021, but is unacceptable for 2031. Therefore a roundabout is recommended for the interim 4-lane Lauzon Parkway, and will be converted to a signalized intersection for the ultimate 6-lane Lauzon Parkway.

Details of each intersection are provided in the following sections and are illustrated in the Design Plates at the back of this report. The proposed typical cross-sections for the 2-lane roundabouts is illustrated in Exhibit C.6-4.

EXHIBIT C.6-4: TYPICAL CROSS-SECTION FOR 1-LANE ROUNDABOUT



WALKER ROAD/LEGACY PARK DRIVE

The existing Walker Road intersection will remain signalized. A single through lane will be provided for the westbound E-W Arterial, as well as exclusive left and right turn lanes. A raised median is provided on E-W Arterial, between east and westbound traffic. Also, at the east approach, a raised curb is provided between the westbound left turn lanes and through lanes to ensure safe traffic movements, and prevent turning movements from 7th Concession Road to southbound Walker Road. The E-W Arterial and Walker Road/Legacy Park Drive intersection is illustrated on Plate 1 in of the E-W Arterial Design Plates.

7th CONCESSION ROAD

The 7th Concession Road intersection is proposed to be right-it-right-out only. When the volume westbound volume on E-W Arterial reaches approximately 100 vph, the key features of the intersection will include;

- a median separating the eastbound and westbound traffic will be placed to prevent left-turns onto northbound 7th Concession Road; and
- a median will be placed on E-W Arterial between the westbound left-turn and through lanes, to prevent unsafe operations from 7th Concession to southbound Walker Road.

Access to 7th Concession Road from the west is additionally facilitated by a roundabout east of the rail crossing.

The E-W Arterial and 7th Concession Road intersection is illustrated on Plate 1 of the E-W Arterial Design Plates.

PROPOSED FUTURE ROAD

The East Pelton Secondary Plan identified a Class I and II Collector Road, east and north of 4490 7th Concession Road. The intersection of the E-W Arterial and the future north-south Class I Collector Road is illustrated on Plate 2 of the E-W Arterial Design Plates.

8th AND 9th CONCESSION ROADS

Two single-lane roundabouts are proposed for the intersections of E-W Arterial at 8th and 9th Concession Roads. The roundabouts have 55 m inscribed circle diameters. The E-W Arterial, 8th Concession Road and 9th Concession Road intersections are illustrated on Plates 3 and 5, respectively, of the E-W Arterial Design Plates.

LAUZON PARKWAY INTERSECTION

The interim design for this intersection, where Lauzon Parkway has a 4-lane cross-section, will be a 2-lane roundabout, with a 67 m inscribed circle diameter. Additional lanes will be developed on E-W Arterial approaching the roundabout.

When Lauzon Parkway is widened to 6-lanes (i.e. once it reaches approximately 1600 vph in peak direction), the roundabout will be converted to a signalized intersection. The intersection will include 3-through lanes on Lauzon Parkway in each direction with exclusive left and right

turn lanes. On E-W Arterial, the intersection will include 1-through lane in each direction with exclusive left and right turn lanes. The Lauzon Parkway and E-W Arterial intersection is illustrated on Plate 6 of the E-W Arterial Design Plates.

COUNTY ROAD 17/10th CONCESSION ROAD

A 3-leg single-lane roundabout is proposed for the intersection of E-W Arterial and 10th Concession Road / County Road 17. The roundabout will have 55 m inscribed circle diameter. There will be opportunity for a future easterly extension of the E-W Arterial past 10th Concession Road / County Road 17. The E-W Arterial and 10th Concession Road / County Road 17 intersection is illustrated on Plate 6 of the E-W Arterial Design Plates.

C.6.2 ACTIVE TRANSPORTATION

The City's Official Plan requires active transportation facilities on both sides of Class I Arterial roadways. The City of Windsor has developed a Bicycle Use Master Plan (BUMP) which is the City's commitment to develop a visible and connected cycling network that is easily accessible, safe and actively used by all types of cyclists. Opportunities to connect to the BUMP cycling network are located near the western limit of E-W Arterial at Walker Road, and Legacy Park Drive, to Provincial Road.

The active transportation facilities within the E-W Arterial corridor are planned to extend the entire length of the roadway, from Walker Road to 10th Concession Road / County Road 17. The location of the active transportation facilities within the right-of-way are illustrated in Exhibit C.6-2. The active transportation facilities proposed for the E-W Arterial corridor are to be integrated into the City's Official Plan Schedule F. Proposed revisions to the BUMP and CWATS networks, based on the active transportation facilities recommended in this EA, are illustrated in Section 7.2.3.

C.6.3 ACCESS MANAGEMENT

E-W Arterial, between Walker Road 10th Concession Road / County Road 17, will be designed as a Class II Arterial as described in the *Official Plan: Volume I, Section 7.2.6.5*. The Class II Arterial may be designated as a Controlled Access Highway, and is to be designed to carry a high volume of traffic. New intersections with local roads should be discouraged.

Mitigating measures for existing and proposed accesses are noted in Section C.6.10.2 - Access.

C.6.4 STRUCTURES

A structural culvert is proposed for the E-W Arterial crossing of the Little River.

C.6.5 DRAINAGE AND STORMWATER MANAGEMENT

The existing conditions and proposed stormwater management measures for the study area are documented in the *Drainage and Stormwater Management Report*, provided in Appendix M.

As part of the *Upper Little River (ULR) Watershed Master Drainage Plan and Stormwater Management Plan (2013)*, now being prepared concurrently with this Lauzon Parkway Class EA, conceptual drainage and stormwater management measures will be proposed for the study area. The drainage and stormwater management components available to date have been incorporated in this report. The ULR Class EA is recommending a stormwater management corridor, including a system of drainage ponds, along the existing and partially re-aligned Upper Little River (ULR). The corridor will also follow the Lauzon Parkway and E-W Arterial alignments proposed in this Lauzon Parkway Class EA, and along Baseline Road. The County Road 42 road drainage is to outlet to the proposed drainage and SWM system identified in the ULR Class EA.

The E-W Arterial is proposed to have an urban cross section with storm sewers. Based on the existing flat topography of the area, it will be required to design storm sewers with several outlet locations to minimize the overall slope of the roadway. There are numerous locations which will allow for discharge of the treated storm sewer flows. Preliminary outlet locations are shown on the future conditions drainage mosaic Exhibits 22 and 23 of Appendix M.

The proposed storm sewers on E-W Arterial from Sta. 10+360 to 10th Concession Road / County Road 17 as follows:

- A 450 mm dia. storm sewer from Sta. 10+360 to Sta. 10+740;
- A 680 mm dia. storm sewer from Sta. 10+740 to Sta. 11+420;
- A 525 mm dia. storm sewer from Sta. 11+440 to Sta. 12+020;
- A 450 mm dia. storm sewer from Sta. 12+020 to Sta. 12+900;
- A 450 mm dia. storm sewer from Sta. 12+900 to Sta. 13+250;
- A 450 mm dia. storm sewer from Sta. 13+250 to Sta. 13+500;
- A 600 mm dia. storm sewer from Sta. 13+580 to Sta. 14+160.

The 7th Street Drain Outlet Diversion is located south of, and adjacent to, the City property previously designated for the E-W Arterial in the City's agreement with the Windsor Christian Fellowships. The proposed right-of-way of the E-W Arterial at the time of this agreement was 30 m; however, as this EA is protecting for a 4-lane roadway, the right-of-way was increased to 42 m, and will impact drain. Additional property will be required for the drain relocation south of the recommended right-of-way.

Parameters for the stormwater management plan will be provided in the ULR Class EA. A detailed stormwater management plan will be developed as part of the next phase of design.

C.6.6 ILLUMINATION

The continuous illumination along EW Arterial from Walker Road to County Road 17 is warranted as per City of Windsor guidelines for construction of new or improved roadways. Illumination is proposed on both sides of the future E-W Arterial roadway, as well as at the intersections. The illumination will be provided in accordance with City standards in the boulevards of the cross-section, and will provide lighting for the roadways as well for pedestrians.

There are also three (5) roundabouts along the proposed E-W Arterial at the entrance to the Windsor Christian Fellowships property (4490 7th Concession Road), Future Road, 8th Concession Road, 9th Concession Road and 10th Concession Road / County Road 17, where full illumination is warranted.

Further details regarding illumination are provided in Appendix N.

C.6.7 UTILITIES

The utility companies contacted as part of this EA Study and their presence (or not) within the study area is listed in Section C.4.1.8, and below, including potential impacts and recommendations. As a general guideline, the relocation and placement of utilities is to be consistent with current policies and standards of the City of Windsor. It is recommended that all utilities be contacted early in the next phase of design to confirm locates and establish relocation strategies.

The E-W Arterial is a new municipal corridor and will require full municipal services. Future utilities along E-W Arterial have been planned to be accommodated within the right-of-way. The utility information has been illustrated on the cross-sections in Section C.6.1.2.

The following existing utilities are located within the City of Windsor on E-W Arterial and potential impacts are described in Exhibit C.6-5.

EXHIBIT C.6-5: EXISTING AND FUTURE UTILITIES WITHIN E-W ARTERIAL CORRIDOR

Utility	Description	Impacts/Recommendations
Cable (Bell)	Bell is provided to the residences along 8 th and 9 th Concession Road, and 10th Concession Road / County Road 17.	Actual location and depths will need to be confirmed during next phase of design to determine if relocation will be necessary.
Gas (Union Gas)	Gas is provided to the residences along 8 th and 9 th Concession Road, and 10th Concession Road / County Road 17.	Actual location and depths will need to be confirmed during next phase of design to determine if relocation will be necessary.

Utility	Description	Impacts/Recommendations
Hydro (ENWIN)	There are existing hydro poles and traffic signals at the intersection of Walker Road, 7 th Concession Road, and Legacy Park Drive.	Some hydro poles may require relocation. The need for relocation will be determined in the next phase of design.
Hydro (Hydro One)	There are hydro lines on the west side of 8 th Concession Road, 9 th Concession Road, and 10 th Concession Road / County Road 17.	Some hydro poles may require relocation. The need for relocation will be determined in the next phase of design.
Sanitary Sewer (City of Windsor)	<p>There is a 450 mm dia. sanitary sewer which extends from Walker Road and Legacy Park, east across the CN Rail line. The sewer then extends south under the 7th Street Drain Diversion Outlet, and east along the southern limit of the drain, to the eastern edge of property. The sewer then extends south and east to connect to the South West Detention Centre.</p> <p>On 8th Concession Road, from County Road 46 to Highway 401 and further to County Road 42, there is an existing 900 mm and 975 mm dia. CP sanitary trunk sewer, respectively.</p> <p>There are no municipal sewers on 9th Concession Road or 10th Concession Road / County Road 17.</p>	<p>The sanitary sewer manhole elevations may be impacted. The need for adjustment will be determined in the next phase of design.</p> <p>The sanitary trunk sewer may be impacted. The need for adjustments will be determined in the next phase of design.</p>
Storm Sewer (City of Windsor)	<p>There is a 2100 mm dia. storm drain, near the eastern limit of the WCF, which crosses the proposed right-of-way, of the E-W Arterial.</p> <p>The proposed storm sewer information is provided in Section C.6.5.</p>	The storm sewer may need to be extended or may require relocation with the 7 th Street Drain. The need for relocation of the entire drain, or altering the existing SWM facility, will be determined in the next phase of design.
Water (WUC)	<p>200 mm dia. watermain, which extends from the WCF to Walker Road.</p> <p>Water is provided to the residences along 8th and 9th Concession Road, and 10th Concession Road / County Road 17.</p>	The watermain may be impacted and may require relocation. The need for relocation will be determined in the next phase of design.

C.6.8 PRELIMINARY COST ESTIMATE

The preliminary construction cost estimate for the E-W Arterial, from Walker Road to 10th Concession Road / County Road 17, is presented in the following section.

Refer to the plan/profile plates attached at the back of this document, for details of the E-W Arterial Recommended Plan.

A summary of construction costs estimates is presented in the following section in 2013 dollars and the detailed breakdown is included in Appendix O. The costs include roadway construction costs, traffic signals, street lighting, and minor hydro distribution, storm sewers/stormwater management, landscaping and gateway features, and cut/fill, where applicable. The minor items included are: curb and gutter, subdrains, traffic staging, signing and line painting.

The construction costs do not include new municipal services (i.e., sanitary sewers, watermains); utility relocations (i.e., sanitary sewers, watermains, municipal drains, hydro, gas, etc); and property acquisition costs. Major hydro distribution along new roadways is also not included.

E-W ARTERIAL - WALKER ROAD TO 10TH CONCESSION ROAD / COUNTY ROAD 17 (City of Windsor) - BUILD NEW 2-LANE ROAD (2031)	
Location	Estimated Cost
Walker Road Intersection Improvements	\$0.4
Walker Road to 4490 7 th Concession Road Roundabout Access - Build 2 Lanes	\$0.8
4490 7 th Concession Road Roundabout Access	\$2.2
Future Collector Road Roundabout	\$2.2
Future Collector Road to 8th Concession Road - Build 2 Lanes	\$0.9
8 th Concession Road Roundabout	\$2.2
8 th Concession Road to 9th Concession Road - Build 2 Lanes	\$2.9
9 th Concession Road Roundabout	\$2.2
9 th Concession Road to Lauzon Parkway - Build 2 Lanes	\$1.0
E-W Arterial and Lauzon Parkway Intersection (cost included in Lauzon Parkway total)	\$4.6*
Lauzon Parkway to 10th Concession Road / County Road 17 - Build 2 Lanes	\$1.1
10th Concession Road / County Road 17 Roundabout	\$2.2
Total (M)	\$18.1

C.6.9 PLAN/PROFILE PLATES OF RECOMMENDED PLAN

The Recommended Plan and profile is shown on the Key Plan and Plates 1 – 6, in which are included at the back of this document.

C.6.10 ENVIRONMENTAL EFFECTS AND MITIGATING MEASURES

Mitigation of impacts is applied throughout the EA process, including development of alternatives to avoid constraints, and selection of the Technically Preferred Plan by identifying the alternative that has the least overall effects on the environment. Additional mitigation measures are identified in this report to minimize any adverse impacts that cannot be completely avoided through the selection of the Technically Preferred Plan. These measures will be further refined and finalized in the next phase of design, and will be included in the contract documents for implementation during construction.

This section describes the potential environmental effects, direct and indirect, associated with the Recommended Plan, as well as mitigating measures that will be implemented to minimize the effects and any necessary commitments to future work (design and construction). Mitigation includes planning decisions, design features, construction requirements and construction constraints.

The key to ensuring effective environmental quality control and risk management during the project is the development and proactive implementation of an approach that:

- identifies the environmental sensitivities;
- presents the environmental protection measures in a way that can be translated into contractual requirements and for which compliance can be verified; and
- includes a monitoring program that verifies that the environmental protection measures are being implemented and are effective.

It is important to ensure that the designers, contract administrator and contractor are made aware of, and are prepared to deal with, all environmental issues that may arise during construction.

C.6.10.1 Transportation and Infrastructure

The proposed undertaking as described in this ESR will address the identified problems and opportunities by addressing the existing congestion, supporting economic development and improving the accessibility for residents and businesses in East Windsor and neighbouring municipalities.

The associated transportation benefits are as follows:

- Addresses existing road network and intersection peak period congestion and deficiencies;
- Improved and new north-south and east-west linkages establishing a grid transportation system;
- Additional capacity to accommodate future projected growth in the City of Windsor and County of Essex; and
- Additional linkages and capacity to support the future development associated with the draft Sandwich South Secondary Plan area.

UTILITIES

The existing and utilities located within the E-W Arterial study area and potential impacts to these utilities are identified in Section C.6.7. There are no existing utilities identified along the proposed E-W Arterial, with the exception of locations tying into existing right-of-ways. The utilities information presented in this ESR is based on mark-ups/information received from the agencies. More specific details of all existing infrastructure and specific relocation strategies must be established during the next phase of design. The placement of utilities and trees within the ROW should ensure the designated tree planting space requirements and proper separation from utilities.

The E-W Arterial is a new municipal corridor and will require full municipal services as illustrated on the cross-section.

C.6.10.2 Socio-Economic Environment

PROPERTY

The proposed E-W Arterial is a new roadway and will require the acquisition of private property. The properties from which land will be acquired are a mix of rural residential and agricultural lands.

Property requirements are shown on the Design Plates at the back of this document, and a detailed list of individual property requirements is in Appendix P. A summary of the overall property requirements for E-W Arterial is provided in Exhibit C.6-6.

EXHIBIT C.6-6: SUMMARY OF PROPERTY REQUIREMENTS

Roadway and Jurisdiction	Property Required (ha.)
E-W Arterial in City of Windsor Walker Road to 10th Concession Road / County Road 17	14.8

The future road allowance was previously negotiated along the south limit of the Windsor Christian Fellowship (4490 7th Concession Road, Roll No. 90010019000000), and north limit of 0 7th Concession Road (Roll No. 90010018000000). The road allowance provided for a 30 m right-of-way, and it is recommended to widen the right-of-way to 42 m south, to accommodate the future 4-lane cross-section.

ACCESS

The E-W Arterial will be designed as a Class II Arterial as described in the Official Plan: Volume I, Section 7.2.6.5. In general direct access is not permitted where other alternatives exist. Where direct property access is required, the use of shared driveways and interconnected on-site circulation systems with adjacent properties may be required to limit the number and spacing of driveways, and where appropriate the City may require support studies and additional information to demonstrate the need for additional access. Should any property, including currently vacant properties with, or without existing access make applications for development/re-development, all accesses will be subject to the standard municipal review and approval process.

A 0.3 m reserve is proposed along E-W Arterial. The 0.3 m reserve is used by municipalities to prevent direct access from private property to the roadway. The 0.3 m reserve is a strip of land on either side of the right-of-way which separates the privately owned properties, from the roadway. The 0.3 m reserve will not be imposed across existing accesses. Reserves are commonly used by municipalities to prevent direct access from private property to public highway; if permission has been granted through either the land division or Site Plan Approval process, the reserve must be "lifted" in order to gain legal access to public highway. This is done by making a formal application to the municipality. In most cases the municipality "lifts" reserves by dedicating them as public highway after which they become part of the road right-of-way they abut.

Timing of construction of the E-W Arterial will be based on development within the Sandwich South area. All existing property accesses located on 8th and 9th Concession Road, and 10th Concession Road / County Road 17 in proximity to proposed E-W Arterial intersections, should be reviewed at that time, based on the existing and proposed land uses.

NOISE

A noise assessment was conducted to assess the potential increase in noise level to noise sensitive areas as a result of the proposed improvements to Lauzon Parkway and County Road 42, as well as the proposed construction of the Lauzon Parkway extension and the E-W Arterial. There were 33 residential houses selected to be included in the noise calculations to represent the noise sensitive areas in the overall study area. Of those, 2 were located along the E-W Arterial study area. The full Noise Assessment Report is in Appendix Q.

The conclusions of the noise assessment for the proposed improvements are as follows:

- The difference between the projected noise levels with and without the proposed improvements was determined to be greater than 5 dBA at the 2 receiver locations; therefore, the these locations were considered for noise mitigation based on MTO/MOE Noise Protocol.
- A 3 meter high noise wall is predicted to lower noise levels at the 2 receiver locations by 0.3 dBA to 3.8 dBA.
- A 3 meter noise wall is not considered to be technically feasible as it would not achieve the minimum 5 dBA reduction per MTO/MOE Noise Protocol; therefore, a noise wall at the six receiver locations is not recommended.

Based on the conclusions of the noise assessment, no noise mitigation is recommended.

CONTAMINATION OVERVIEW STUDY

A Contamination Overview Study of the Study Area in support of the Lauzon Parkway EA Study was conducted to identify and review actual or potential contaminated areas/properties and identify appropriate environmental future work and mitigation measures. The purpose of the study was to determine the potential for contamination on each property and if a Phase I and II Environmental Site Assessment is required during the next phase of design. The areas of potential environmental concern (APECs) were placed into one of the following categories:

High potential for contamination – areas where land uses consist of commercial/industrial operations that could impact soil and/or groundwater.

Moderate potential for contamination – areas which represent land uses that are agricultural operations, which may be directly affected by the project; or are small commercial/industrial properties suspected of using chemical compounds or performing activities that could impact soil and/or groundwater, but may not be directly impacted by road improvements.

Low potential for contamination – areas are generally classified as open space, residential, or agricultural areas that are not suspected of using chemical compounds harmful to the environment or human health. Another low contamination potential of concern includes road salt impacts along right-of-ways, roads, and parking lots.

The study concluded that in the E-W Arterial Study Area in the City of Windsor:

- 2 properties which will be directly impacted by the proposed improvements has high potential for contamination and recommends carrying out a Phase I and/or Phase II Environmental Site Assessment for due diligence purposes.

The study concluded that in the Lauzon Parkway Study Area in the County of Essex:

- 2 properties which will be directly impacted by the proposed improvements have moderate potential for contamination and recommends carrying our Phase I and/or Phase II Environmental Site Assessments for due diligence purposes.

The study also recommended for other high and medium APECs where there are no property takings, carrying out a soil contaminant investigation in areas where excavation may be required, to assess soil quality and determine suitable soil management options during construction. The purpose of this investigation is to confirm presence of environmental impacts related to existing/historical land uses in the APECs described above.

All other areas, generally classified as open space, residential, or agricultural areas, are considered to have low potential for site contamination. Another low contamination potential of concern includes road salt impacts along right-of-ways, roads, and parking lots. No additional environmental investigations are recommended for these areas.

C.6.10.3 Cultural Environment

BUILT HERITAGE RESOURCES AND CULTURAL HERITAGE LANDSCAPES

A cultural heritage resource assessment was undertaken for built heritage and cultural landscapes in the study area. A windshield survey was completed in May 2011 to identify cultural heritage landscapes and built heritage resources within the study area. Descriptions of the identified built heritage and cultural landscape features located within the study area, direct and indirect effects, and the recommended mitigating measures associated with each of the heritage resources can be found in Appendix D.

Within the E-W Arterial study area, there are three properties listed on the City of Windsor Municipal Heritage Register (2012). These properties include;

- 4601 County Road 17: BHR, Residential, Dolphice St. Louis House dates to 1932;
- 4639 & 4108 9th Concession Road: CHL, Agricultural Farm Complex, John Hayes House, Hayes Farmstead dates to 1914;
- 4791 & 4799 9th Concession Road: CHL, Agricultural Farm Complex, Patrick Hayes House, Hayes Farmstead dates to 1892; and

At this time, the other municipalities do not have any listed or designated properties on a municipal register.

The survey identified 8 resources in total, categorized as Cultural Heritage Landscape (CHL) or Built Heritage Resources (BHR). The majority of resources were found to be residential or farm complexes dating back to the mid-20th century.

Generally, road improvement projects such as the introduction of a new roadway or the widening of an existing roadway have the potential to adversely affect cultural heritage landscapes and built heritage resources by displacement and/or disruption during, as well as after construction. Cultural heritage landscapes and/or built heritage resources may experience displacement, or direct impacts, i.e., removal, if they are located within the right-of-way of the undertaking. There may also be potential for disruption, or indirect impacts, to cultural heritage resources by the introduction of physical, visual, audible or atmospheric elements that are not in keeping with their character and/or setting.

The potential direct impacts (displacement) and indirect impacts (disruption) of this project are principally associated with the construction of new road rights-of-way and the widening of existing roadways.

Direct Impacts

No potential direct impacts in respect to cultural heritage resources were identified for the proposed E-W Arterial.

Indirect Impacts

The principal impacts for the E-W Arterial improvements are indirect. They can be grouped into the following categories: modifications to the existing transportation network, land acquisition and general construction and operational impacts relating to increased traffic and higher noise levels as a result of the road improvements.

Land acquisition

- Site #22¹⁹: 4639 9th Concession Road, City of Windsor

¹⁹ Site # as noted in Appendix D: Cultural Heritage Assessment Report – Table 2.

Mitigation Measures

A proposed undertaking should not adversely affect cultural heritage resources and intervention should be managed in such a way that its impact is sympathetic with the value of the resources. When the nature of the undertaking is such that adverse impacts are unavoidable it may be necessary to implement management or mitigation strategies that alleviate the deleterious effects to cultural heritage resource. Mitigation is the process of causing lessening or negating anticipated adverse impacts to cultural heritage resources and may include, but are not limited to, such actions as avoidance, monitoring, protection, relocation, remedial landscaping, documentation of the cultural heritage landscape and/or built heritage resource if to be demolished or relocated, salvage of building materials.

Mitigating measures and best management practices will be implemented to address potential impacts. Identified mitigation strategies will be carried through the next phase of design as applicable. Refinements and enhancements to the mitigations recommendations will be made as warranted throughout all phases of the project.

The following mitigation measures for the **indirect impacts** are recommended:

- Prepare a Cultural Heritage Evaluation Report (CHER) as part of detail design:
 - Site #22: 4639 9th Concession Road, City of Windsor

ARCHAEOLOGICAL ASSESSMENT

A Stage 1 Archaeological Assessment was completed for the study area. A search of the Ministry of Tourism, Culture, and Sport's registered archaeological site database revealed that there are no registered archaeological sites within the existing roadway (i.e., Lauzon Parkway and County Road 42) corridors, nor are any sites located within a one kilometer of the subject corridors. This is likely not a reflection of lack of sites within the area, but a lack of archaeological investigation.

The proposed E-W Arterial right-of-way lies within 100 m of historic transportation routes (8th, 9th and 10th Concession Roads) and crosses modern watercourses, and therefore the lands required for the proposed right-of-way are considered to have archaeological potential based on provincial archaeological criteria.

A Stage 2 Archaeological Assessment will be required prior to construction for the proposed right-of-way, and should also be completed prior to any intrusive investigations (such as boreholes associated with foundations, pavements, contaminated properties) required during detailed design on lands required outside the existing Lauzon Parkway right-of-way.

The assessment reports must conform to the Ministry of Tourism, Culture and Sport's *Standards and Guidelines for Consultant Archaeologists (2011)*. The licensed archaeologist will forward all completed archaeological assessment reports for to the Ministry of Tourism and Culture for review and clearance prior to construction.

C.6.10.4 Natural Environment

This impact and mitigation review has been developed with a focus on the protection of Species at Risk (SAR) and SAR habitat, as well as general vegetation and aquatic habitat.

The strategies described in the following section apply to the proposed E-W Arterial from 7th Concession Road easterly to 10th Concession Road / County Road 17.

Two SAR snakes, Butler's Gartersnake and Eastern Foxsnake (both Endangered) have been documented in the study area. Habitat for Snapping Turtle (Special Concern) is also present. Some (limited) habitat for Bobolink (Threatened) and possibly other grassland birds has been recorded. Both Wood Thrush and Eastern Wood Peewee have also been recorded by Ecoplans. These are COSEWIC SAR that are being considered for uplisting to the Ontario Species at Risk list (COSSARO) In addition noteworthy flora (SC, S1 to S3) have also been documented.

Exhibit C.6-7 identifies the anticipated construction works, potential/anticipated impacts, and recommended mitigation strategies and monitoring activities associated with the Recommended Plan for E-W Arterial. These measures will be further refined and refined in future during the next phase of design and with further agency input. The measures identified reflect strategies that have been developed and discussed with agencies (including MNR) on other similar projects in this area.

It is important to note that these roadway undertakings are expected to be phased over a number of years. During that time, there may well be further changes in Endangered Species Act (ESA 2007) policies and regulations, land use policies, development priorities, and land uses themselves (agricultural practices, changes in crop types). As a result, ESA requirements relative to SAR snakes and grassland birds may change. For this reason, during the next phase of design, further liaison is recommended with MNR staff to identify potential risks to SAR species, based on ESA requirements and land use activities at the time, to resolve mitigation requirements (such as none, Letter of Advice [LOA] or permitting). Further MNR (and CA) consultation may also be required at the time of project commencement.

EXHIBIT C.6-7: E-W ARTERIAL NATURAL ENVIRONMENT POTENTIAL EFFECTS AND MITIGATING MEASURES

PROPOSED WORKS	POTENTIAL/ANTICIPATED IMPACTS	MITIGATING MEASURES AND MONITORING REQUIREMENTS
<p>New East-West Arterial Roadway from 7th Concession Easterly to 10th Concession</p> <ul style="list-style-type: none"> New arterial roadway through open agricultural setting New crossings of 7th Concession Drain, 8th Concession Drain, Hayes D&W drain, 9th Concession Drain, and Little River 	<p>Vegetation</p> <p>DIRECT IMPACTS</p> <ul style="list-style-type: none"> Some noteworthy flora species (SC, S2, S3) were recorded in the zone between the Little River and 10th Concession (section where access was permitted). <p>INDIRECT IMPACTS</p> <ul style="list-style-type: none"> Potential for damage to vegetation outside the work zone; sedimentation; spills of contaminants/fuels; root pruning; damage to limbs; and soil compaction. <p>Wildlife</p> <p>DIRECT IMPACTS</p> <ul style="list-style-type: none"> Typical of this setting, any drain feature and moist grassy meadow area has potential to be utilized by SAR snakes (Butler’s Gartersnake and Eastern Foxsnake). Any watercourse has the potential to support Snapping Turtle (SC), even irregularly, based on seasonal flow and awareness of this possibility is important. Possible disturbance to nesting migratory birds during construction. Potential wildlife encounters during construction. Possible disturbance to SAR snake hibernacula (overwintering sites). <p>INDIRECT IMPACTS</p> <ul style="list-style-type: none"> Potential for temporary disturbances to species occupying adjacent habitats during construction. Potential for damage to habitat outside the work zone (as noted above in relation to vegetation impacts) For aquatic habitat, the issue is maintaining aquatic features and/or functions during Design and Construction. 	<p>Vegetation (and Wildlife)</p> <ul style="list-style-type: none"> Minimize the road widening and ultimate road ROW footprint during the next phase of design to the extent feasible, particularly at the watercourse crossings. Note: the fenceline vegetation beyond future ROW to north in the section between Lauzon Parkway and 10th Concession does support SC, S2, S3 flora species. Disturbance of this area should be avoided for equipment access (confine access to ROW zone or area immediately to south of future ROW). Install temporary erosion control measures along the construction limits. If erosion control blankets are required, the MNR recommends Curlex® Net Free™ 100% biodegradable erosion control blankets to avoid snake entanglement. However an alternate product may be utilized upon approval by the MNR. Install sediment and erosion control measures prior to the commencement of construction and maintain until the site has been stabilized. Construction phasing should be scheduled to minimize the extent and period to which disturbed soils are exposed to weathering. <p>Wildlife</p> <p>In order to protect nesting migratory birds, in accordance with the Migratory Birds Convention Act (MBCA), the following guidance is provided:</p> <ul style="list-style-type: none"> Ensure that timing constraints are applied to avoid vegetation clearing (including grubbing) and/or structure works (construction, maintenance) during the breeding bird season (approximately May 1st to August 8th). Occasionally bird species will precede (e.g. mid-April nesting) or exceed (e.g. September) the approximate breeding bird season window. If clearing cannot be timed to avoid this window, the contractor is advised to contact John Fischer at Environment Canada (Burlington – Phone: 905-336-4961) for advice on appropriate / acceptable mitigation. This will be confirmed during construction. The Contractor shall not destroy active nests (nests with eggs or young birds) of protected migratory birds, including SAR protected under the Provincial Endangered Species Act (ESA 2007). If any such nests are encountered the Contractor Administrator must be contacted. If a nesting migratory bird (or SAR protected under ESA 2007) is identified within or adjacent to the construction site and the construction activities are such that continuing construction in that area would result in a contravention of the MBCA, or ESA (2007), all activities will stop and MNR and Environment Canada will be contacted to discuss mitigation options. <p>Wildlife Movements</p> <ul style="list-style-type: none"> Review feasibility of providing/enhancing wildlife passage at all drain crossings through structure design and agency consultation (Detailed Design), and during construction. Ensure that wildlife passage (including potential SAR snake passage) is provided at the new Little River crossing. Where wildlife structure design mitigation is proposed, properly designed wildlife funnel fencing, suitable to target species, should also be implemented. Relative to the above, ensure that all structures are designed to accommodate hydraulics and aquatic passage wherever open drain conditions are maintained. <p>SAR Wildlife Management</p> <ul style="list-style-type: none"> Consult with MNR to determine SAR snake risk, and to develop appropriate mitigation strategies based on final design information and requirements, and other factors (ESA policy status, land use changes, etc.) as highlighted in Introduction. These consultations will clarify habitat presence, SAR risk, SAR snake hibernacula potential, and mitigation requirements during Detailed Design for implementation during construction. In situations where SAR snakes or high quality habitats are confirmed, and affected, ESA requirements (MNR LOA or permitting) may come into play. <p>In order to protect SAR snakes during construction (including Butler’s Gartersnake and Eastern Foxsnake) as well as Snapping Turtle (SC), the following measures are recommended:</p>

PROPOSED WORKS	POTENTIAL/ANTICIPATED IMPACTS	MITIGATING MEASURES AND MONITORING REQUIREMENTS
		<ul style="list-style-type: none"> • Implement all conditions of Endangered Species Act Permit issued by MNR • In consultation with MNR, design and erect temporary reptile barrier fencing around the construction zone prior to the initiation of works, and maintain throughout construction. • Provide reptile encounter training to Contractor staff to deal with possible reptile encounters during construction and MNR liaison. A Biologist (familiar with SAR snake and turtle identification) should be on site at key times (such as drain and Little River crossing work, forest/meadow work) to monitor for reptile encounters and inspect the reptile barrier fencing. • The contractor should conduct daily external and internal inspections of all pieces of equipment on the active construction site prior to start up or operation to ensure that there are no snakes or turtles in or on the equipment. • Should individuals of any SAR snake species or Snapping Turtles (SC) be encountered within or on any equipment, or within the active construction site enclosed by the reptile barrier, the contractor shall maintain a minimum operating distance of 30 m from the individual until the following day in order to allow the individual to disperse out of the active construction site on its own ability. • Should the contractor be unable to allow an incidentally encountered individual of the above species to disperse from the active construction site under its own ability, the contractor shall immediately contact the MNR Aylmer District Species at Risk Biologist to seek direction. <p><u>Aquatic Habitat</u></p> <ul style="list-style-type: none"> • During Detailed Design undertake agency consultation (CA) to confirm fish presence/use (direct/indirect). Based on these consultations, ensure that habitat functions are maintained (indirect use) and, if necessary, additional measures are implemented (such as compensation) during design and construction, if direct use is affected.

7.0 FUTURE CONSIDERATIONS AND COMMITMENTS TO FUTURE WORKS

7.1 PERMITS AND APPROVALS

Following EA approval/ESR clearance, the project may proceed to the next phase of design. Design related approvals and permits may be required prior to construction; requirements specific to each study component are outlined in Sections A.6.10, B.6.10, C.6.10 Environmental Effects and Mitigating Measures. In general, the following design related approvals and permits may be required in order to proceed to construction:

Regulatory Agency	Permit/Approval/Comments
Federal Government	
Transport Canada	<p>Prior to construction of improvements proposed and all associated obstacles, i.e., illumination, that will be erected as part of the project within 6 km of the Windsor International Airport, complete and submit the Transport Canada Aeronautical Assessment Form (AAF).</p> <p><i>Navigable Waters Protection Act (NWPA)</i> Navigability and permit requirements to be reviewed during detail design for Pike Creek Bridge and Puce River Bridge widening's, and reconstruction of the Little River Bridge - these bridges/waterways are not considered 'navigable' under Schedule 1 of the new Act, however, Schedule 1 is still not yet in force.</p>
NAV CANADA	<p>Prior to construction of improvements proposed in proximity to the Windsor Airport, ensure a Land Use Submission form is filed with NAV CANADA. Transport Canada document, TP 1246 Aviation – Land Use in the Vicinity of Airports provide additional information in regards to developing near airports.</p>
Provincial Government	
Ministry of the Environment	<p><i>Permit to Take Water</i> Required if >50,000 L/d of surface or groundwater taken, includes temporary dewatering during construction.</p> <p>Certificates of Approval from MOE for stormwater management facilities.</p>
Ministry of Tourism, Culture and Sport (MTCS)	<p>A Stage 2 Archaeological Assessment will be required prior to construction in accordance with the Ministry of Tourism, Culture and Sport's <i>Standards and Guidelines for Consultant Archaeologists (2011)</i>. The licensed archaeologist will forward all completed archaeological assessment reports for to the Ministry of Tourism and Culture for review and clearance prior to construction.</p>
Ministry of Natural Resources (MNR)	<p><i>Endangered Species Act (ESA, 2007)</i> During detail design consult with MNR and ERCA to assess potential risks to SAR species and mitigation measures based on ESA requirements (i.e., Permit to Authorize works with potential to affected listed species or Letter of Advice).</p> <p>A License to Collect Fish for Scientific Purposes - The presence of fish and need for removal of fish during installation of cofferdams will be determined during</p>

Regulatory Agency	Permit/Approval/Comments
	detail design.
Essex Region Conservation Authority (ERCA)	<i>Fisheries Act</i> During Detailed Design undertake agency consultation (ERCA) to confirm fish presence/use (direct/indirect). Based on these consultations, ensure that habitat functions are maintained (indirect use) and, if necessary, additional measures are implemented (such as compensation) during design and construction, if direct use is affected.
	<i>Drainage Act</i> Approval from City of Windsor/County of Essex for modifications to Municipal Drains. ERCA approvals may also be required.
Ministry of Transportation (MTO)	<i>Highway Traffic Act</i> MTO Encroachment Permit required for any installation within the limits of the provincial highway right-of-way, being placed by someone other than MTO.
Municipal	
City of Windsor/ County of Essex	<i>Drainage Act</i> Approval from City of Windsor/County of Essex for modifications to Municipal Drains. ERCA approvals may also be required.
City of Windsor/ Towns of Tecumseh and Lakeshore	Noise Control By-law Exemptions from municipal noise by-laws for construction, if required.

7.2 DESIGN AND CONSTRUCTION CONSIDERATIONS

7.2.1 Municipal Class EA

A time lapse may occur between the filing of the ESR and the implementation of the project. In such cases, the proposed project and the environmental mitigation measures proposed may no longer be valid.

If the period of time from (i) filing of the Notice of Completion of ESR in the public record or (ii) the MOE’s denial of a Part II Order request(s), to the proposed commencement of construction for the project exceeds ten (10) years, the proponent shall review the planning and design process and the current environmental setting to ensure that the project and the mitigation measures are still valid given the current planning context. The review shall be recorded in an addendum to the ESR which shall be placed on the public record.

Projects that consist of several separate components (such as this EA), the 10-year Lapse of Time applies. If one component of the project has started construction within 10 years of EA Approval or Part II Order Denial, an EA Addendum or a new EA will not be required for any (other) component of the project even if construction of such components will not commence until after

10 years, provided that the environmental setting/conditions have not changed significantly and the mitigating measures are still valid at that time.

In this respect, this ESR has:

- defined the ‘project’ that includes the three components (Lauzon, County Road 42 and E-W Arterial)
- described the potential environmental effects of the project, e.g. all components
- included a conceptual implementation plan that identifies the possible phased implementation of the various components
- send copy of the ESR to the MOE Regional EA Co-ordinator

The Municipal Class Environmental Assessment process includes an addendum process for proponents to make changes to a project after completion of the Environmental Study Report review stage (Phase 4). Modifications to the design and implementation of the Lauzon Parkway Extension proposed in this ESR may occur due to unforeseen circumstances, including: changes in environmental conditions in the corridor that may affect anticipated project impacts and means of mitigating adverse effects; technological advancements; and funding availability. This may result in the project being inconsistent or non-compliant with commitments made in the ESR. Significant modifications to the project proposals or changes in the environmental setting that occur after the filing of the ESR will require preparation of an addendum to the ESR. Changes to the project may also be required if there is a significant lapse of time between the filing of the ESR and the start of construction, since the proposed project and related environmental mitigation measures may no longer be valid or appropriate. If the period of time from the end of the public review period following filing of the ESR in the public record, or MOE’s denial of a Part II Order request, to the proposed commencement of construction exceeds ten (10) years, the City/County will be required to review the planning and design process and current environmental setting to ensure that the project and mitigation measures are still valid/appropriate. The review will also be documented in an addendum to the ESR. The ESR Addendum will document the circumstances necessitating the changes to the project proposals, the environmental implications of the changes, and proposals to mitigate any associated negative effects. The Addendum will be filed with the ESR in the public record, and the same notification and review process and public right to request a Part II Order as described in this ESR will apply. Where an ESR Addendum is issued, only the project elements in the Addendum (the proposed changes to the recommended undertaking) are open for review.

7.2.2 Implementation and Design Considerations

The following items were brought into consideration during the Lauzon Parkway EA planning process; however, the nature and timing of these items are outside of the scope of this EA process. It will therefore be incumbent upon the proponent to proceed with the implementation of these items, as deemed necessary, through separate processes outside of this EA.

- Appropriate policies and recommendations from this EA Study should be integrated into the Official Plans of the involved municipalities, as outlined in Section 7.2.3.
- Speed limit adjustment on County Road 42 between Walker Road and the City/County Boundary from 80 km/h to 60 km/h.

- Name change of County Road 42 to Cabana Road, between Provincial Road and the City/County Boundary to reflect jurisdiction and maintain consistency.
- Name change of 10th Concession Road/County Road 17, which in the future will be realigned between County Road 42 and Baseline Road, as part of the Sandwich South Secondary Plan.
- Apply a 0.3 m reserve to existing City road right-of-ways on Lauzon Parkway from its re-alignment at approximately the Little River corridor to County Road 42.
- Apply a 0.3 m reserve to future City road right-of-ways proposed as part of this EA Study (i.e., Lauzon Parkway, E-W Arterial)
- Apply a 0.3 m reserve to all future right-of-ways in the County of Essex proposed as part of this EA Study (i.e., Lauzon Parkway, County Road 42)
- Prepare property plans and designate the roadway right-of-ways for the City, County and MTO for the proposed Lauzon Parkway, E-W Arterial, and County Road 42.
- Continue monitoring of the Jet Blast issue on County Road 42 within the Airport Operational Area; to determine a defined event of jet blast, in terms of occurrences, frequency, and affects to pedestrians.
- Assess the warrant and location of a pedestrian crossing on County Road 42 in the vicinity of Shiff Drive.
- When County Road 42 is built to urban design from City/County Boundary to County Road 19 (Manning Road), consideration to classify this portion of road as a County Connecting Link.

7.2.3 Official Plan Integration

Appropriate policies and recommendations from this EA Study should be integrated into the Official Plans of the involved municipalities. As noted previously, this EA Study was prepared concurrently with the draft Sandwich South Secondary Plan and the Upper Little River Watershed Master Plan. This EA Study also reviewed within the study area the existing cycling Master Plans: BUMP and CWATS, and where there were gaps, examined opportunities and recommended new pedestrian and cycling facilities as part of the roadway EA's (i.e., Lauzon Parkway, E-W Arterial, and County Road 42) and also within the broader study area. All municipalities, including the local municipalities within the County, should determine where and how to incorporate this information into their Official Plans, where required.

Specific policies recommended for inclusion in amended Official Plans are:

- To update the City of Windsor Official Plan Schedule F: Roads and Bikeways and BUMP, based on the roadway improvements and active transportation recommendations of this EA.
- To update the County of Essex Official Plan and CWATS based on the active transportation recommendations of this EA.

The road network and road classifications presented in this document and based on the draft Sandwich South Secondary Plan Schedule F will be incorporated into the City's Official Plan.

The active transportation networks from BUMP, CWATS, and the draft Sandwich South Secondary Plan Schedule F, as well as the recommended active transportation facilities from this

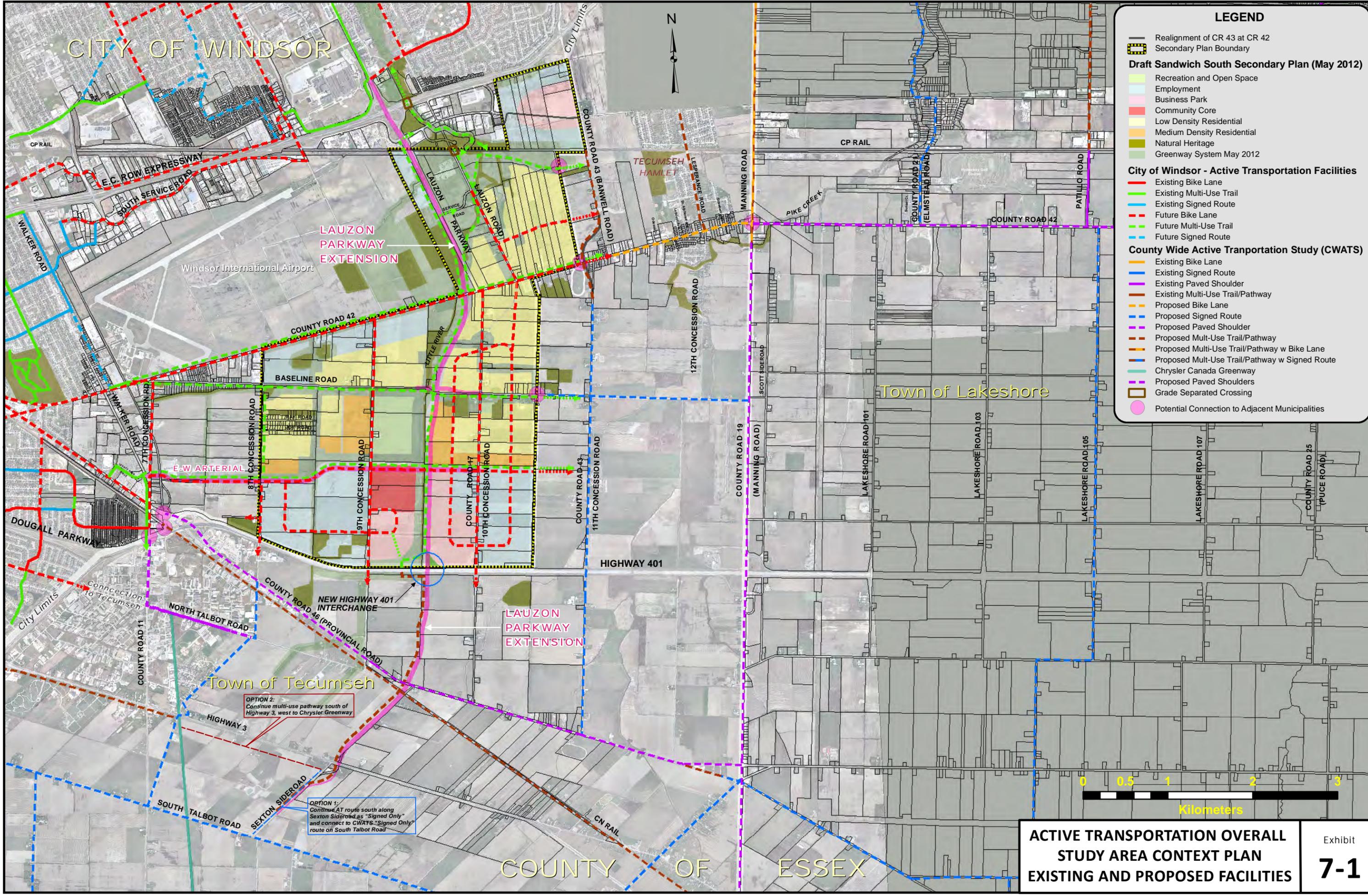
EA are presented in one illustration in Exhibit 7-1. The following describes the changes to BUMP and CWATS recommended by the draft Sandwich South Secondary Plan and this EA Study:

BUMP

- A multi-use trail on west side of Lauzon Parkway between Twin Oaks Drive and Highway 401;
- A multi-use trail on east side of Lauzon Parkway between County Road 42 and Little River, along the Little River to Lauzon Road;
- A grade separated active transportation crossing over Highway 401;
- A multi-use trail on the north side of County Road 42, and bike lanes, between Walker Road and County Road 43 (Banwell Road);
- Bike lanes on 7th and 9th Concession Road, and 10th Concession Road / County Road 17 between County Road 42 and Highway 401;
- A multi-use trail on Baseline Road between County Road 42 and City/County Boundary;
- A multi-use trail on the north side of the future E-W Arterial, and bike lanes, between Walker Road and City/County Boundary; and
- A multi-use trail on 8th Concession Road between Baseline Road and E-W Arterial, and a bike lane between E-W Arterial and Highway 401.

CWATS

- A multi-use trail on west side of Lauzon Parkway between Highway 401 and Highway 3;
- A grade separated active transportation crossing over Highway 401;
- A proposed link from the multi-use trail on Lauzon Parkway to the Chrysler Canada Greenway, via a safe pedestrian crossing at Highway 3 and Lauzon Parkway, and a multi-use trail on North Talbot Road, instead of paved shoulders;
- Bike lanes on County Road 42 between City/County Boundary and County Road 19 (Manning Road);
- Paved shoulders on County Road 42 between County Road 19 (Manning Road) and County Road 25 (E. Puce Road); and
- Introduction of a 0.5 m – 1.0 m buffer strip for cycling facilities.



LEGEND

- Realignment of CR 43 at CR 42
- ▭ Secondary Plan Boundary

Draft Sandwich South Secondary Plan (May 2012)

- Recreation and Open Space
- Employment
- Business Park
- Community Core
- Low Density Residential
- Medium Density Residential
- Natural Heritage
- Greenway System May 2012

City of Windsor - Active Transportation Facilities

- Existing Bike Lane
- Existing Multi-Use Trail
- Existing Signed Route
- Future Bike Lane
- Future Multi-Use Trail
- Future Signed Route

County Wide Active Transportation Study (CWATS)

- Existing Bike Lane
- Existing Signed Route
- Existing Paved Shoulder
- Existing Multi-Use Trail/Pathway
- Proposed Bike Lane
- Proposed Signed Route
- Proposed Paved Shoulder
- Proposed Multi-Use Trail/Pathway
- Proposed Multi-Use Trail/Pathway w Bike Lane
- Proposed Multi-Use Trail/Pathway w Signed Route
- Chrysler Canada Greenway
- Proposed Paved Shoulders
- Grade Separated Crossing
- Potential Connection to Adjacent Municipalities

**ACTIVE TRANSPORTATION OVERALL
STUDY AREA CONTEXT PLAN
EXISTING AND PROPOSED FACILITIES**

Exhibit
7-1



OPTION 2:
Continue multi-use pathway south of Highway 3, west to Chrysler Greenway

OPTION 1:
Continue AT route south along Sexton Sideroad as "Signed Only" and connect to CWATS "Signed Only" route on South Talbot Road

CITY OF WINDSOR

Town of Lakeshore

Town of Tecumseh

COUNTY OF ESSEX



7.2.4 Implementation Phasing and Staging

Standard construction and environmental protection practices will be applied to this project. The environmental protection and mitigating measures and provisions described in Sections A.6.10, B.6.10, and C.6.10 will be developed fully during the subsequent phases of design of this project.

The detailed construction staging will also be confirmed in the next phase of design. The timing and phasing of the subsequent phases of design for this Lauzon Parkway Class EA, will likely be split into different smaller projects, for each road segment and jurisdiction. Elements of the plan may be accelerated at specific locations, based on road safety or operational concerns (i.e., intersections, accesses, etc.)

Although the phases listed below are interconnected based on future traffic conditions as well as at connecting intersections, the timing of continuation of the next phase of design and construction of each phase will be determined independently, by the appropriate proponents, based on future growth conditions, availability of funds, and other such concerns.

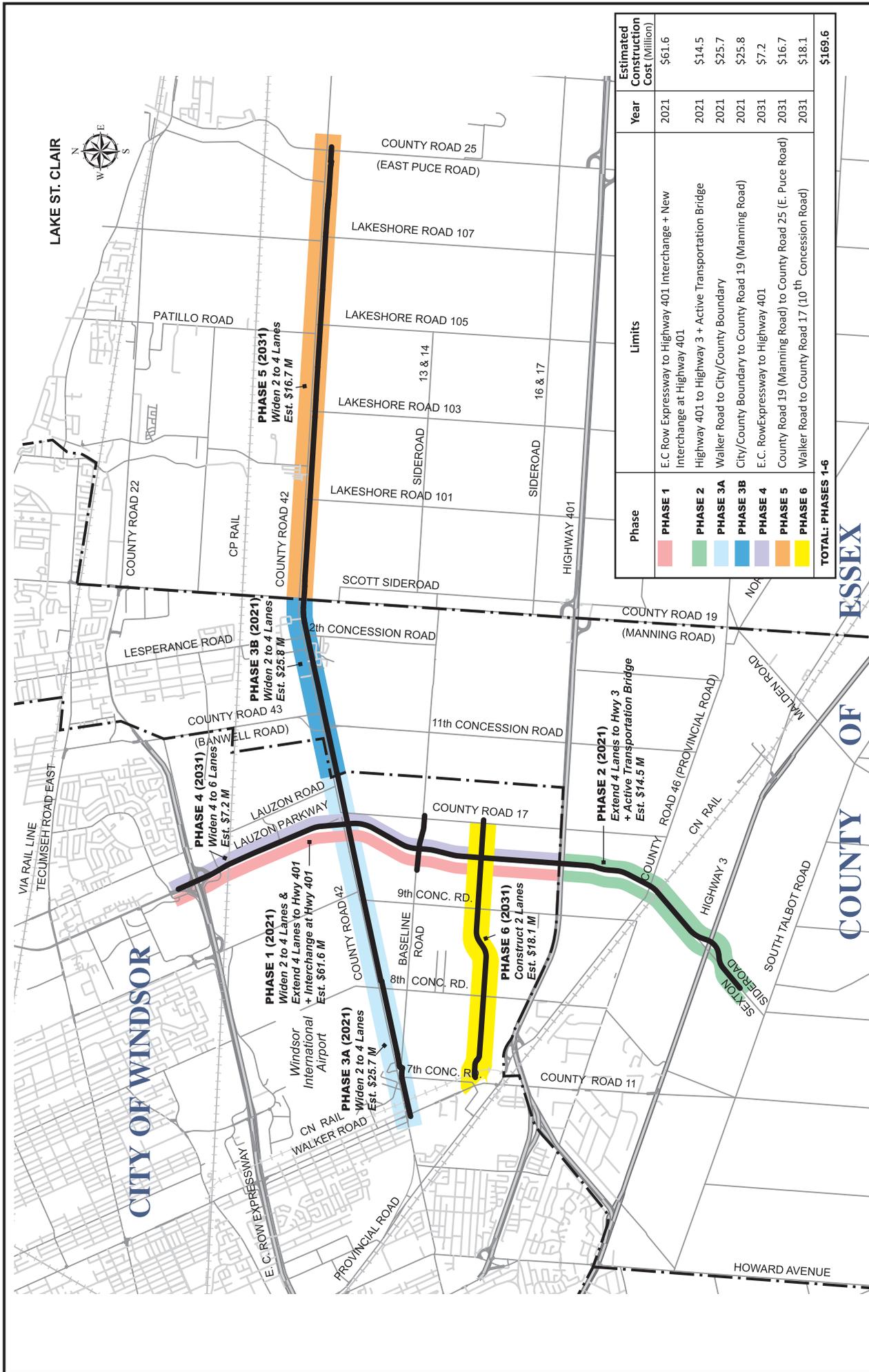
The study team recommends the improvements be constructed, generally consistent with the timing of the identified transportation needs, in the following phases, also illustrated in Exhibit 7-2. Where applicable, required coordination with other planned improvements is noted:

- **Phase 1** – Widening of Lauzon Parkway from 2 to 4 lanes from E. C. Row Expressway to County Road 42, and extension of the 4-lane Lauzon Parkway from County Road 42 to Highway 401, including new interchange at Highway 401.
- **Phase 2** – Further extension of the 4-lane Lauzon Parkway from Highway 401 to Highway 3, including the Active Transportation Bridge over Highway 401.
- **Phase 3A** – Widening County Road 42 from 2 to 4 lanes with intersection improvements between Walker Road and County Road 43 (Banwell Road) will be required when the volume in the peak direction reaches approximately 700 vph. It is recommended that if the widening of County Road 42 proceeds, prior to the widening of County Road 43, that it includes the construction of the proposed intersection improvements (2-lane roundabout) and associated realignment of County Road 43 (Banwell Road).
- **Phase 3B** – Widening County Road 42 from 2 to 4 lanes with intersection improvements between County Road 43 (Banwell Road) and County Road 19 (Manning Road) will be required when the volume in the peak direction reaches approximately 700 vph. It is recommended that if the widening of County Road 42 proceeds, prior to the widening of County Road 19, that it includes the construction of the proposed intersection improvements (2-lane roundabout).
- **Phase 4** – Widening of Lauzon Parkway between E. C. Row Expressway and Highway 401 from 4 to 6 lanes. Widening from 4 lanes to 6 lanes will be required when the volume in the peak direction reaches approximately 1600 vph.
- **Phase 5** – Widening County Road 42 from 2 to 4 lanes with intersection improvements between County Road 19 (Manning Road) and County Road 25 (E.

Puce Road). Widening will be required when volume in the peak direction reaches approximately 700 vph.

- **Phase 6** – Construction of the new 2-lane E-W Arterial between Walker Road and County Road 17. Timing of construction of the E-W Arterial will be driven by development within the Sandwich South area, and can be initiated from Lauzon Parkway or Walker Road.

At this time, no commitment has been made to fund the next phases of design. As a result, construction timing cannot be confirmed. The timing for construction will be considered in the context of other regional projects.



IMPLEMENTATION PHASES



7.3 MONITORING AND MAINTENANCE

The required level of site construction supervision for a project of this type will ensure that the environmental measures outlined in this report and the detail design package will be carried out.

7.3.1 Monitoring During Construction

During construction, the on-site Contract Administrator will ensure that implementation of mitigating measures and key design features are consistent with the contract and with external commitments. In addition, the effectiveness of the environmental mitigating measures will be assessed to ensure that:

- individual mitigating measures are providing the level of control and/or protection anticipated and planned for; and,
- additional mitigating measures are provided, as required, for any unanticipated environmental problems that may develop during construction.

On-site construction administration staff will ensure that the environment measures outlined in this report and further developed during the next phase of design are carried out. In the event that problems arise, appropriate agencies will be contacted to provide further input.

If the impacts of construction are different than anticipated, or if the method of construction is such that there are greater than anticipated impacts, the Contractor's methods of operation will be improved or upgraded immediately to deal with any deficiencies encountered and reduce these impacts during all phases of construction.

7.3.2 Detailed Design Commitments

Environmental concerns, anticipated impacts, and proposed mitigation measures as they relate to the project, have been described in Sections A.6.10, B.6.10, C.6.10 Environmental Effects and Mitigating Measures. Many of the environmental concerns have been mitigated through the process by which the recommended design was selected, as described in the ESR. This section provides an additional list of standard commitments to be carried forward into Phase 5 of the Municipal Class EA process—Implementation Phase. These commitments have been developed through consultation with various agencies throughout the study process. It is recognized that certain decisions require specific agency input. Therefore, a key component of detailed design is refining and detailing the impact assessment and mitigation measures as the design is developed and refined, in consultation with the agency staff.

Specific mitigation measures have been recommended to address potential impacts as discussed throughout Chapter 6. It is recommended that these commitments, as presented in the ESR, become part of the contract package so that Contractors are aware of the requirements prior to tendering. Monitoring of construction activities must ensure that all environmental standards and commitments for construction are met. City of Windsor and County of Essex will work with Essex Region Conservation Authority and other authorities, during detailed design and prior to the start of construction to ensure that the proposed works are acceptable and to obtain required permits.