County of Essex

Transit Assessment Report, Phase 2

Project No. 29-46B

FINAL

August 2011

Final Report

GENIVAR

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GENIVAR

29-46B

August 8, 2011

Mr. T. Bateman
County Engineer
County of Essex
360 Fairview Avenue West
Essex, ON N8M 1Y6

Re: Transit Assessment Report Phase 2
Final Report

Dear Mr. Bateman:

GENIVAR Inc. is pleased to present this final report on the implementation of transit services for the County of Essex.

This report builds on the Phase 1 Feasibility Study submitted in April 2010, and identifies a detailed implementation plan for the short-term to operate inter-municipal transit services in the County. A brief summary of the major conclusions relevant to Phase 2 of the study are outlined in Section 1.

This document refines the details in the Phase 2 Interim Report submitted in August 2010, and addresses the comments made by stakeholders, provides additional governance considerations, identifies an initial marketing strategy, and provides Transportation Demand Management mechanisms to encourage transit use.

We hope this report provides a helpful source when you proceed with the next stage of work, and we hope to have the opportunity to work together soon.

Yours truly,

GENIVAR Inc.

Dennis J. Fletcher, M.E.S.
Director, Transit Solutions

DJF/ml

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Appendices

List of Exhibits

1. Introduction

The County of Essex Inter-municipal Transit Assessment Study comprises two phases. Phase 1 assesses the needs for inter-municipal transit services for County residents and employees, and Phase 2 defines an implementation strategy to supply services to meet those defined needs.

This Phase 2 report applies the findings from Phase 1 and identifies a detailed implementation strategy for cost-effective transit services in the County in the short-term. The objectives of this report are to:

- establish service standards to ensure continuous monitoring of services
- develop a detailed service design for short-term implementation of transit services identified
- estimate the capital costs, operating costs, expected ridership and expected revenues based on the proposed services
- establish fare policies and structures for the inter-municipal transit system and its relationship to other transit agencies
- develop the governance implementation plan for the short- and long-term

To provide greater context about this Phase 2 report, Section 1.1 provides a summary of the relevant findings from Phase 1.

1.1 Phase 1 Summary Findings

Phase 1 of the Transit Assessment Report was completed in April 2010 and its major objectives are to:

- identify transportation needs and opportunities in the County
- develop short- and long-term inter-municipal service concepts and financial requirements to realize these concepts
- identify guidelines, standards and policies for planning and implementing transit services in the County

Refer to Appendix A for the complete Phase 1 report.

1.1.1 Needs and Opportunities

Background research, online survey results, stakeholder and public consultations as well as a market analysis revealed that that there are limited transportation alternatives for travel in the County.

Specifically, analysis data show an unmet need in the County for transit services to and from major employment areas and educational facilities. Providing transit services to major employment areas lifts the inherent barriers faced by businesses to retain employees and promotes greater flexibility for where businesses choose to locate in the County. Transit services for student commuters living in the County of Essex and attending the University of Windsor and St. Clair College will also fulfill an unmet transportation need and will be a major potential transit service market.

1.1.2 Performance Standards

Phase 1 of the study recommended guidelines for developing, implementing, and monitoring transit services in the County of Essex and establishing performance standards. This is important because it provides a clear and consistent framework for (1) justifying the provision of new or revised transit services and (2) assessing the effectiveness of services in operation. Exhibit 1 summarizes the types of performance standards outlined in the Phase 1 report.

Exhibit 1 – Performance Standard Measures

Standard	Unit of Measure	Description
Amount of Service	Annual vehicle-hours / capita	Indicates the extent of service provided in the system
Service Utilization	Passengers per vehicle-hour	Indicates the effectiveness of the system in attracting passengers
Financial Monitoring	Cost recovery ratio (Revenue / cost)	Indicates the economic performance of the system
	Net cost / passenger	Indicates the efficiency of the system
	Cost / hour	Indicates the overall efficiency of the operations

The Phase 2 report incorporates the service standards recommendations in Phase 1 and expands on them to include standards related to transit service design, including service coverage, hours of service and service frequency, route performance, vehicle loading, and on-time performance. These standards and measures are outlined in Section 2.

1.1.3 Service Concepts

Based on the County's unique demographic conditions and travel behaviour, service concepts were developed to present a long-term look of what the County of Essex might expect upon full system implementation (beyond 2021).

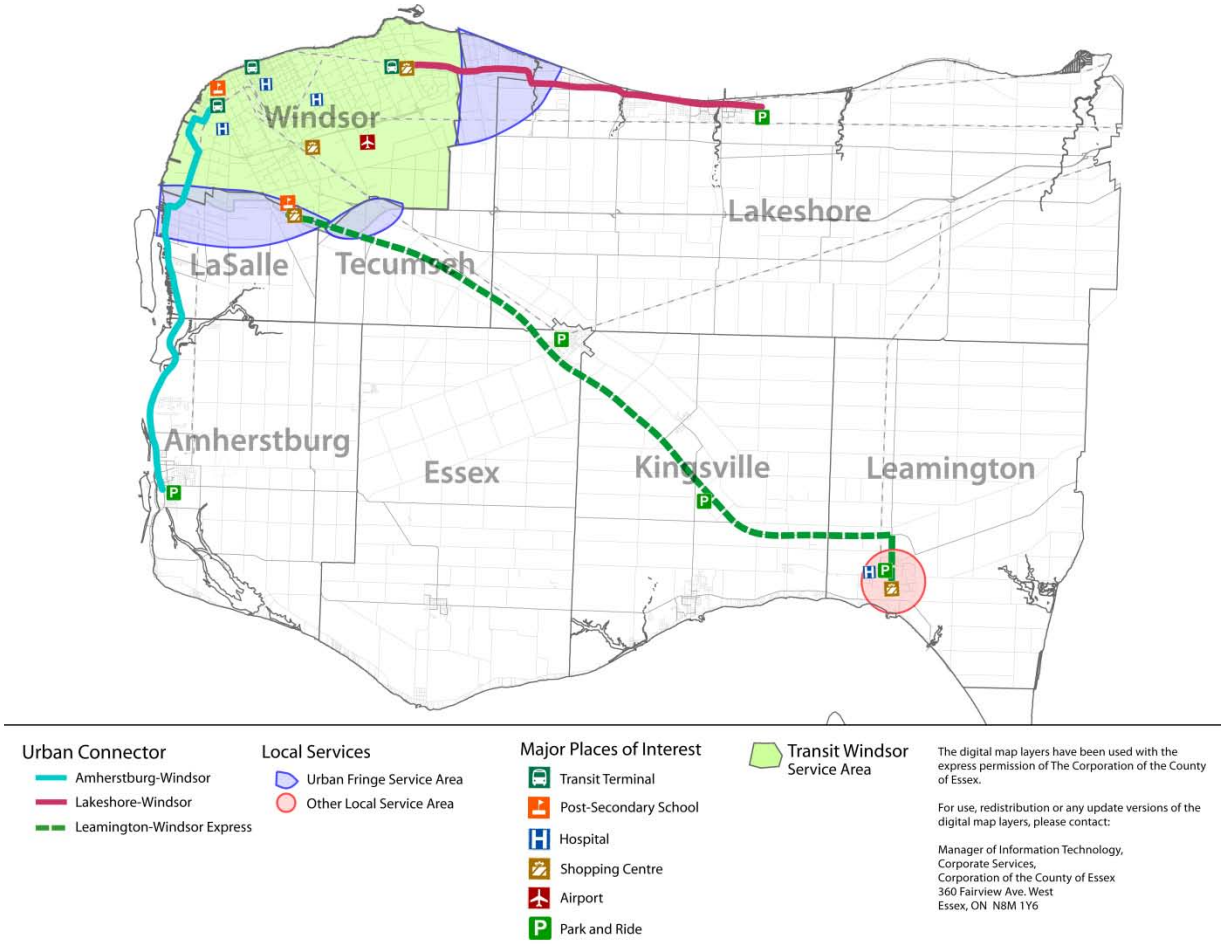
Four distinct types of service, including Urban Connectors, County Connectors, Local Services and Rural Services, were identified to fulfill the diverse needs within the County. Exhibit 2 summarizes the four types of transit services that could be offered upon full system implementation. Refer to the Phase 1 report for a more detailed description of the four identified service types.

The report included a potential initial implementation concept ,which includes primarily Urban Connectors linking all seven municipalities in Essex County to the City of Windsor. These services were observed to have the greatest travel demand relative to other routes and connections and primarily focus on post-secondary school student and commuter markets. Select Local Services in the Urban Fringe of the Windsor urban area were also identified for short-term implementation. Exhibit 3 illustrates the short-term concept plan for inter-municipal transit in the County as described in Phase 1.

Exhibit 2 – Types of Services Identified

Type of Service	Description/Objective
Urban Connectors	Connect between urban communities in the County and the City of Windsor and its urban fringe Fulfill the needs of work and student commuters
County Connectors	Provide warranted connections to and between urban communities in the County
Local Service	Maximize coverage in the urban area and connect to County and Urban Connectors
Rural Services	Provide connections between rural areas and the urban communities in the County, focused on providing access to necessary amenities and services

Exhibit 3 – Short-Term Concept Plan



These short-term service concepts were brought forward and refined as part of the development of detailed service designs in Phase 2 of the study. Section 3 outlines the proposed detailed designs, associated fare policies, and financial plan.

1.1.4 Governance Options

A strong governance structure is required to help guide strategic planning, ensure accountability, and develop standards and policies. The Phase 1 report explored six governance models that could be applied by the County: Transit Windsor Service Extension, municipal service, inter-municipal partnership, county-controlled agency, regional transit authority and non-profit corporation. See the Phase 1 report for a detailed assessment of each model.

The findings from the assessment of governance models were carried forward in Phase 2 to develop a potential governance structure for consideration by the County of Essex in the short term. Refer to Section 4.2 for details.

1.2 Phase 2 Outline

To satisfy the objectives outlined for Phase 2 of the study, the report is organized into four sections. The contents of this report are summarized below.

Section 2: Service Standards

- → expands on the recommendations outlined in Phase 1 to develop service design and performance standards to measure and assess the effectiveness of existing services
- → identifies guidelines related to the introduction of new services and accessibility of services
- → identifies other system improvement considerations, including marketing strategies and Transportation Demand Management

Section 3: Proposed Services

- → refines the short-term service concept developed in Phase 1 to develop a detailed service plan for:
  - Urban Connectors – Identifies potential service plans for three routes:
    - Amherstburg–LaSalle–Windsor
    - Lakeshore–Tecumseh–Windsor
    - Leamington–Essex–Windsor
  - Urban Fringe Local Services – Identified detailed service plans for two routes:
    - Urban Fringe – East Local: Covers the urban area of Tecumseh and part of Lakeshore
    - Urban Fringe – South Local: Covers the urban area of LaSalle
    - Note: The service plan details for these two routes are provided for consideration purposes only. It is at the discretion of the local municipalities to determine the appropriate service designs that best accommodate the local mobility needs of their respective communities.

- identifies the fare policies and financial plan related to the proposed short-term service plan

Section 4: Governance Structure

- examines the possible governance options identified in Phase 1
- reviews best practices from other transit properties
- identifies a short- and long-term governance model for consideration

Section 5: Cost Allocation

- identifies to which jurisdiction capital and operating costs could be allocated based on the type of service being operated

2. Service Standards

Service standards define the role of transit within the community and often define the transit system itself. Based on community driven objectives, they can provide a traceable assessment tool to determine the effectiveness of new and existing resources and allow for continuous quality improvement and the best use of available resources.

Service standards are intended to bring clarity and consistency to the process of continually adjusting and improving transit services to meet varied and changing customer needs.

Service standards also define the conditions that require action when standards are not met, but allow flexibility to respond to varied customer needs and community expectations in an accountable, equitable and efficient manner.

The idea of continuous quality improvement is also important. Transit systems and decision makers are becoming increasingly aware that comparisons of one system to another are not particularly useful, since each system is different in terms of its operating environment, demographics, geography, political climate and a variety of other factors. What is important today for performance monitoring is to understand the range of performance of relevant systems and benchmark performance in that range, but then restrict monitoring of the system to year-over-year performance. This is more effective in promoting continuous quality improvement. For the same reason, more and more systems are abandoning specific performance targets in favour of continuous improvement. In this way, targets can still be set, but they are set in terms of a percentage increase in performance over previous performance.

In the County of Essex, service standards create a framework to provide transit services. The proposed transit services in the County of Essex should strive to achieve the proposed performance targets in a mature system, however, lower performance levels are to be expected in the short-term.

This section elaborates on the recommended guidelines in Phase 1 for monitoring and planning for transit services in the County of Essex. Proposed service standards include:

- service standards to assess transit services provided and system design
- performance standards used to determine overall performance and identify areas for improvement
- guidelines for the introduction of the new service and accessibility of service

Service standards for Local services are included to define the conditions under which the regional objectives are met and to qualify for the County share of funding as described in Section 5.

2.1 Service Design Standards

The following service standards deal with service coverage, service hours, service levels (frequencies), vehicle loading and route performance, and will be used to design the services, evaluate transit routes and set the basis for making decisions about introducing new services.

2.1.1 Service Coverage

Given that the County has a large geographic area and the proposed transit services primarily focus on inter-municipal connections within the County and to and from the City of Windsor, the traditional service coverage standard is not suitable for service design of the County's transit system. The following guidelines are identified to ensure appropriate service coverage:

- All Urban and County Connectors should be designed to maximize connections to local services and Park 'n Ride facilities where they are available. This will ensure easy transit access to major destinations that may not be directly served by Urban and County Connectors.
- To reduce transfer requirements, direct service connections to major activity centres in the City of Windsor should be considered where a large portion of riders are expected on an Urban Connector. Interlining or Transit Windsor route extensions should be considered wherever possible for direct connections to reduce service duplications and improve efficiency.
- Local services should be designed to cover most urban areas within local municipalities and maximize service connections to Urban and County Connectors.
- In smaller communities where local transit service is not available, Urban and County Connectors should be considered to cover major residential areas and activity centres, particularly at the end of the reach route, to maximize service coverage and ridership.
- Connections to Transit Windsor routes and transfer facilities should be considered for service design of Urban Connectors and Local services where applicable.

2.1.2 Hours of Service and Service Frequency

Core service hours are important to designate so that customers have a clear understanding of the commitment to the provision of service. This commitment is key in the decision to use transit in the long-term. If service levels vary too much from demand-based schedule changes, customers will have less faith in the system and have less propensity to choose transit. Conversely, it is important not to set hours of service too wide in the creation of the standard, in an effort to maximize effectiveness and efficiency.

Service frequency is also an important standard and must be considered in conjunction with the hours of service. Frequency of service is often ranked inversely with service reliability in terms of customer service. That is, service reliability is a critical factor where service frequencies are low, but less important where service frequencies are high.

It is also important to recognize that service frequencies are critical to attracting ridership and, that in lower demand areas or periods, service must be provided at a level that exceeds the minimum capacity requirements to be considered attractive to passengers.

Proposed Standard

Exhibit 4 shows the proposed combination of service hours and frequency for Urban Connectors and Local Services. County Connectors would be provided at a service level based on performance. Given the demand-responsive nature of Rural Services, the service frequency standard does not apply and Rural Service should be designed to be accommodated by

designated transit vehicles or taxis with a goal of minimizing passenger waiting time at an affordable cost.

The span of service standard applies only to Urban Connectors and Local – Fringe service and the decision to operate a service other than an Urban Connector or Local – Fringe in any period is subject to achieving minimum performance requirements.

Exhibit 4 – Hours of Service and Service Frequency Standards

Period	Start	Finish	Service Frequency (minutes)		
			Urban Connectors	Local – Urban Fringe	Local – Other Area
Weekdays					
AM Peak	6:00 am	9:00 am	30/60*	30/60*	60
Midday	9:00 am	3:00 pm	60	30/60*	60
PM Peak	3:00 pm	6:00 pm	30/60*	30/60*	60
Evenings	6:00 pm	9:00 pm	Demand-Based		
Weekends	Demand-Based				

*Note: * 60-minute service for initial service introduction and 30-minute for a mature system*

2.1.3 Route Performance Standards

Route performance standards are required to determine when and at what level service should be provided.

Establishing thresholds for the performance of routes requires an acknowledgement that routes will vary in their performance, with some achieving superior performance and others exhibiting lower performance levels. To meet a variety of system objectives, top-performing routes must be allowed to support lower performing routes, ensuring that:

- the average performance of all routes meets system objectives
- a minimum performance level is established and met by each type of service

For this purpose, route performance should be assessed on the basis of total boardings per vehicle hour, as this statistic will credit routes that perform a significant transfer role in the system. Total boardings per vehicle hour identifies the effectiveness of the system in attracting passengers to the service with a higher value indicating superior performance.

Proposed Standard

It is proposed that all transit services should generate at least the number of boardings per vehicle-hour outlined in Exhibit 5.

Exhibit 5 – Ridership Performance Standards

	Passengers per Vehicle Hour		
	Peak Periods[1]	Off-Peak Periods[2]	Average
Urban Connectors	20	10	15
County Connectors	15	10	12
Local Service	10	5	8
Rural Service	8	5	6

Notes:

(1) Peak Periods include AM peak and PM peak

(2) Off-Peak Periods include weekday midday, weekday evening, Saturday and Sunday

All transit services should strive to achieve the proposed performance targets in a mature system, however, lower performance levels are to be expected in the short-term, especially during the service introductory stage.

2.1.4 Vehicle Loading Standards

The proposed transit service, particularly for Urban Connectors, is fast and direct in nature, with relatively longer travel distance for most passengers. It usually operates at a relatively higher speed, sometimes on highways. The typical 150 percent threshold may be problematic with the nature of the service operated.

Consideration should be given to matching capacity of the vehicles to ridership levels on the route in an effort to ensure convenience and safety for passengers while avoiding unnecessary increases in service levels.

Proposed Standard

With an objective to provide high quality of service to most passengers and ensure passenger safety, fixed passenger limits (measured at the peak point of the route over the peak 60-minute period) are established as follows:

- services operated on highways with average passenger on-board travel time more than 30 minutes: 100 percent of seating capacity
- services operated on highways with average passenger on-board travel time less than 30 minutes: 125 percent of seating capacity
- other services: 150 percent of the seating capacity

The County should monitor ongoing development in revisions to the Highway Traffic Act (HTA), particularly the seat belt requirement, and change vehicle loading standards accordingly.

2.1.5 On-Time Performance

Due to the limited service coverage area, on-time performance is very important to ensure reliable service connections to other transit services including Transit Windsor services.

Proposed Standard

On-time departures from a stop are defined as departure from zero minutes before to three minutes after the scheduled departure time. The minimum performance threshold for on-time

performance is 90 percent of all trips operating on-time. No vehicle shall leave a time point early.

2.2 Performance Measures

This section outlines the guidelines for the development and monitoring of County transit services. Establishing performance standards is a pivotal element to transit planning and decision-making, as they provide a clear and consistent framework for justifying the provision of new or revised transit services and examining the effectiveness of services in operation.

The identified values in each of these areas reflect a desire to improve service levels and promote ridership growth. The objective of establishing guidelines and monitoring performance in these areas is to improve year-over-year performance, recognizing the short-term impact of service increases.

2.2.1 Service Utilization

Revenue passengers per vehicle-hour is calculated by dividing the total number of passengers by the number of vehicle-hours of service. In this statistic, a higher value indicates superior performance.

It is proposed that a minimum target of 12 passengers per vehicle-hour should be established to monitor the service performance, with a long-term goal of increasing to 15 passengers per vehicle-hour.

2.2.2 Amount of Service

Vehicle-hours per capita is an important measure of the amount of service provided. Vehicle-hours provided in different systems tend to increase exponentially with population size, so that vehicle-hours per capita increases with population in a linear fashion. In practice, this means that small systems tend to provide service in the range of 0.5 to 0.75 annual vehicle-hours per capita, while large systems typically provide in excess of 2.0 vehicle-hours per capita. For communities similar to the County of Essex the typical range is 0.5 to 1.0 annual vehicle-hours per capita.

It is proposed that a minimum target of 0.5 annual vehicle-hours per capita should be established to guide the provision of services within a defined service area, with a goal of 0.75 vehicle-hours per capita as the system matures.

2.2.3 Financial Monitoring

Financial performance measures are all affected by inflation, particularly the changing cost of fuel. Since inflationary effects on costs cannot be precisely predicted and will significantly reduce or eliminate evidence of progress in this measure, financial measures are addressed in this document as an effective monitoring tool, but not recommended as a standard. The County of Essex should carefully monitor the following financial measures with consideration of the price index:

→ Cost recovery ratio (R/C) is a principal indicator of economic performance in the transit industry. In this indicator, higher values indicate superior performance.

- typical range in similar communities: 30 to 40 percent

→ Net cost per passenger assesses the efficiency of the system, taking passenger revenue into account. In this indicator, lower values indicate superior performance.

- typical range in similar communities: $2.00 to $3.00

→ Cost per hour is a principal measure of the overall efficiency of the operations and lower values represent superior performance.

- average in similar communities: approximately $80

2.3 Other Guidelines

This section outlines guidelines dealing with the introduction of new services and accessibility of services.

2.3.1 New Services Guidelines

Transit services introduced in new areas not previously served should be guaranteed for a minimum 12 months of operation to ensure adequate time for travel patterns to adjust and for four-season ridership patterns to be accounted. At the end of 12 months, the service must meet the minimum performance thresholds required for its class of service.

Within this trial period, interim targets are set to ensure that a service that is clearly not capable of meeting the ultimate targets is identified as early as possible. Monitoring at three, six and nine months will be completed to ensure that the new service is trending towards the appropriate standard. Targets for these interim periods are set at 25 percent, 50 percent and 75 percent of the ultimate target, respectively. If the performance at the end of each period has not reached at least 75 percent of the target value, the route should be re-examined to identify potential changes to improve its performance. If the same standard is not met in the next period, the identified changes should be recommended.

Changes that introduce service in new operating periods on an existing route or modify the existing service are subject to a similar evaluation as new routes, but over a shorter six-month period. If the service change is substantial, staff may recommend a longer trial period. For a six-month trial, interim targets are established at two months and four months with target levels of 33 percent and 66 percent of the ultimate target.

2.3.2 System Accessibility Guidelines

During the introductory period of the transit services, particularly if all transit vehicles are supplied by contract operator(s), it may not possible for the contract operator(s) to operate all services with accessible vehicles. However, the County should consider maximizing system accessibility and, as the system matures, should strive to ensure all transit services are accessible, including vehicles and stops. All transit vehicles purchased by the County should be wheelchair accessible and all new bus stops and facilities should be fully accessible.

The County of Essex should monitor ongoing developments in accessibility standards as part of the Accessibility for Ontarians with Disabilities Act (AODA-2005) and periodically review its system accessibility, including vehicles and stops, to ensure that access issues are not barriers to ridership growth.

2.4 Other System Improvement Considerations

In addition to the development of service standards and guidelines, other components such as the development of a marketing strategy framework and Transportation Demand Management (TDM) measures should be considered to ensure the success of the proposed transit services in the County.

Initial marketing strategies relevant to the County of Essex include establishing superior customer service and fostering community and institutional partnerships. Some TDM measures to be considered include encouraging more intensified and mixed-use urban form, increasing roadway and pedestrian connectivity, and providing expanded infrastructure for non-motorized travel modes.

For more detailed considerations for marketing strategies and TDM measures to be applied in the County of Essex, refer to Appendix C and D respectively.

3. Proposed Services

3.1 Short-Term Service Concept

The short-term concept plan, as shown in Exhibit 3, included three Urban Connectors and Local Services in Urban Fringe and Leamington. For the initial implementation, Urban Connectors and Urban Fringe local services are identified as candidates for initial implementation, as they focus on post-secondary school student and commuter markets connecting to major activity centres in the City of Windsor and observed to have the greatest travel demand relative to other routes and connections.

3.2 Option Development

GENIVAR developed detailed service options for each of five routes, including three Urban Connectors identified for short-term implementation and two potential Urban Fringe local services. The detailed service options were based on the results of our travel analysis and stakeholder input.

These service options were presented in stakeholder meetings and Public Information Centres in July 2010. Comments received from these meetings were incorporated along with our additional analysis to revise the service design and develop a preferred option for each route.

3.2.1 Public and Stakeholder Consultation

Based on the public and stakeholder input, there was strong support for providing transit services within the County.

In Phase 1, a survey involving the public, stakeholders, and employers was conducted to understand (1) current transportation issues and needs, (2) existing travel patterns and characteristics throughout the County of Essex, and (3) perspectives on potential County transit services.

As part of Phase 2, the County project team met with the Project Steering Committee (which includes planning staff from lower-tier municipalities) in June 2010 to discuss and solicit feedback related to the identified detailed service plan options.

In addition to stakeholder consultations, Public Open Houses were held to provide an opportunity for input in the development of the transit routes identified in the implementation plan. It also allowed the public to understand and examine the proposed public transit routes that may provide service in their community and around the County. Exhibit 6 lists the venues and dates of the Public Open Houses held in the County.

Exhibit 6 – Public Open Houses Held

Date	Time	Location
Tuesday, July 13, 2010	3:30 to 5:30 pm	Town of LaSalle Town Hall
Tuesday, July 13, 2010	7:00 to 9:00 pm	Town of Amherstburg Town Hall
Wednesday, July 14, 2010	1:00 to 4:00 pm	Town of Lakeshore Puce Sport and Leisure Centre
Wednesday, July 14, 2010	7:00 to 9:00 pm	Town of Tecumseh Town Hall
Thursday, July 15, 2010	3:30 to 5:30 pm	Town of Essex Essex County Civic and Education Centre
Thursday, July 15, 2010	7:00 to 9:00 pm	Town of Kingsville Town Hall

In July 2010, stakeholder meetings were also held with Transit Windsor staff to discuss the possibility for Transit Windsor to be recognized as a “Preferred Service Provider” for the delivery of County transit services in the short-term. This potential arrangement was considered in the short-term plan, as directed by County Council, because Transit Windsor has the local expertise and capital resources available to deliver the proposed services in a timely manner. Based on preliminary discussions, both the County and Transit Windsor held a favourable position to continue to work together to support this possible service delivery relationship.

The following are recommendations presented by stakeholders and the public that were considered and assessed when developing the proposed detailed short-term service plan:

- expand service to the planned growth in the airport employment lands in Windsor
- provide service to the planned growth in the Patillo employment area in Lakeshore
- provide service to the new retail land uses near the St. Clair Shores Shopping Centre and along Lakeshore Boulevard
- provide service to the Vollmer Recreation Centre in LaSalle and the Larry Bauer Memorial Sports Complex in Amherstburg
- expand route coverage of routes by introducing larger on-street loops at the termini of Urban Connectors
- provide direct services to residents in the Texas Road, Knobb Hill and River Canard communities
- provide transit connections in Cottam and the Park ‘n Ride facility in northeast Leamington
- move the Leamington stop on the Leamington-Kingsville-Essex-Windsor Urban Connector to the County Fair Mall at Pulford Avenue and Erie Street
- add an additional stop on the Leamington-Kingsville-Essex-Windsor Urban Connector in the Uptown Core area (Erie Street at Talbot Street) in Leamington
- ensure strong working relations with stakeholders at Tecumseh Mall and Devonshire Mall to ensure optimal customer service at existing transit terminals
- work with post-secondary students to promote the use of proposed County services

- ensure services consider the needs of people with disabilities and comply to the Accessibility for Ontarians with Disabilities Act (AODA)
- inter-municipal transit services in the County would provide persons with disabilities greater independence and will improve their ability to reach desired destinations
- keep fares reasonable as an encouragement to attract riders and offer daily, weekly and monthly transit passes at a reduced rate
- ensure scheduling is consistent throughout the system and coordinated with existing Transit Windsor and proposed County routes wherever possible to promote ease of transfer

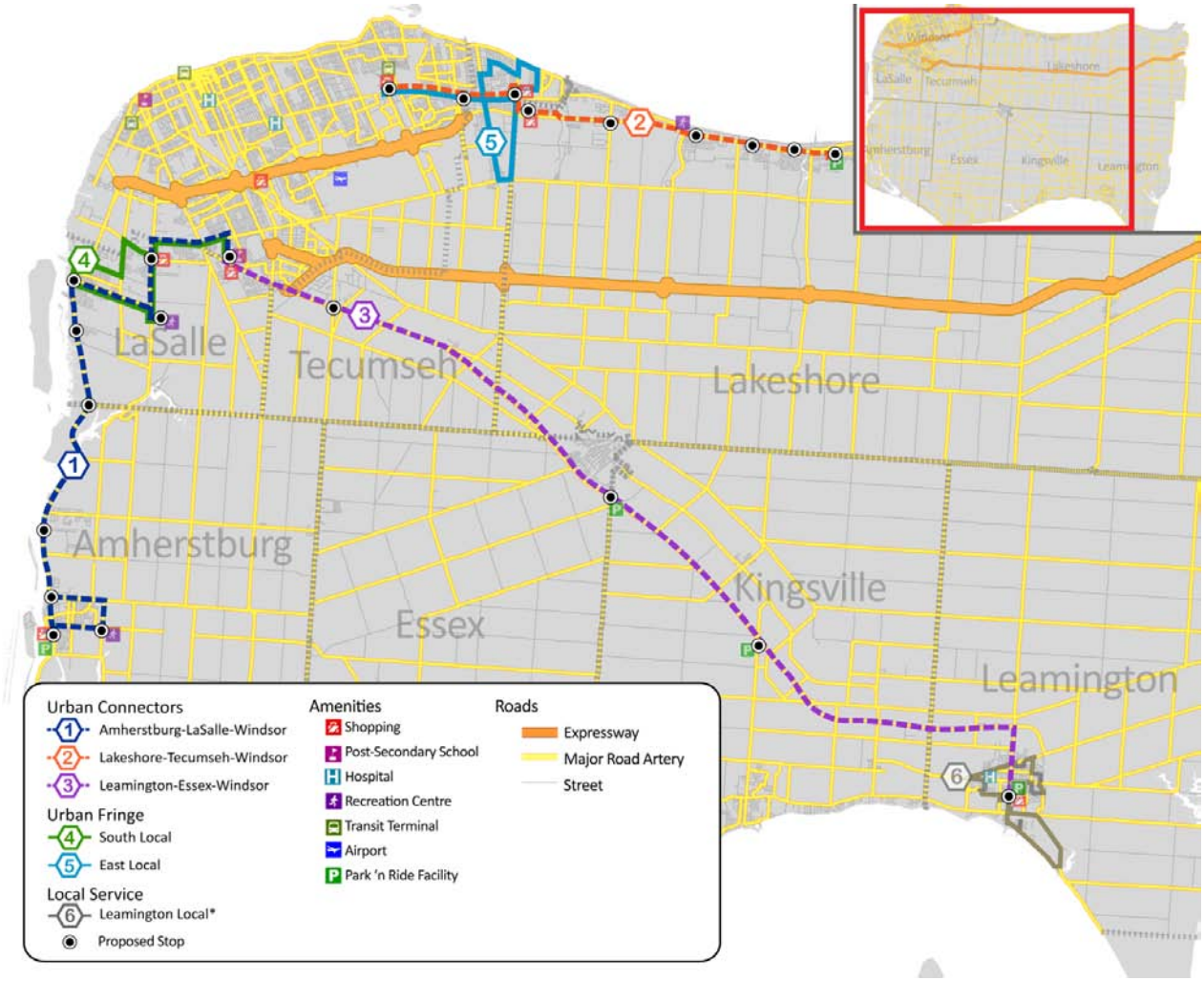
The following are recommendations presented by stakeholders that are acknowledged but not incorporated because they are outside of scope of this assessment study.

- concerns over the breadth of data and analysis to adequately evaluate and rationalize the proposed services particularly as it relates to the proposed Urban Fringe Local Services
  - as part of this study's next steps, additional analysis may need to be conducted in collaboration with local municipalities
- concerns over the insufficient supporting rationale regarding aspects of the proposed cost allocation considerations
  - as part of a subsequent implementation action plan, cost allocation recommendations may need to be refined to develop a formula that is mutually beneficial to all stakeholders

3.3 Detailed Service Plan

Exhibit 7 provides an overview of the detailed transit service network in the short-term. The network comprises three Urban Connector routes (Route 1 – Amherstburg–LaSalle–Windsor, Route 2 – Lakeshore–Tecumseh–Windsor and Route 3 – Leamington–Essex–Windsor) and two Urban Fringe routes (Route 4 – Urban Fringe – East Local and Route 5 – Urban Fringe – South Local) and provides transit connectivity to all municipalities in Essex County.

Exhibit 7 – Overall Transit Network



Note:
Leamington Local Service is shown for information purposes only and is not part of this proposal.
Urban Fringe Local Routes (Routes 4 and 5) are illustrated for consideration purposes only. Respective local municipalities have discretion over the appropriate route alignments and service levels operating in their community.

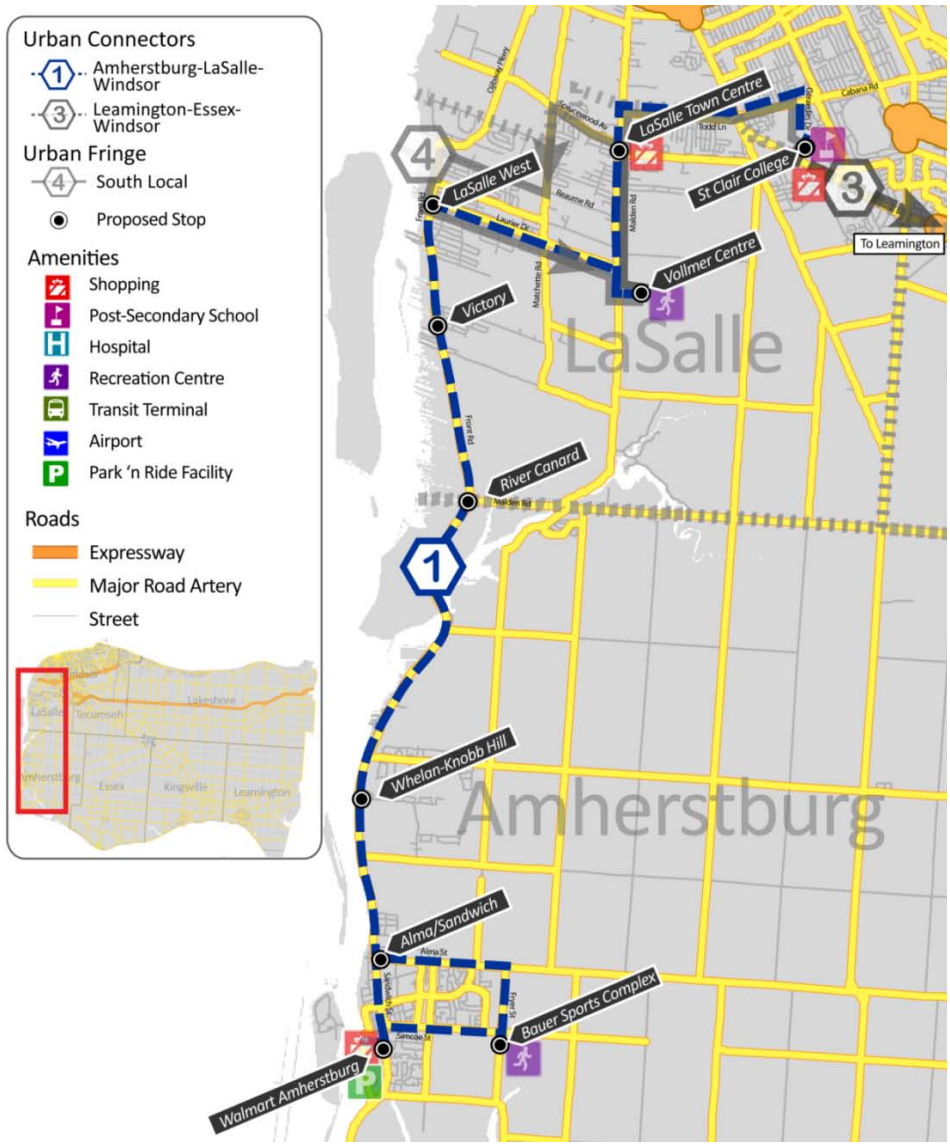
3.3.1 Urban Connectors

Route 1 – Amherstburg–LaSalle–Windsor

Route 1 is an Urban Connector that provides transit service for residents of Amherstburg, LaSalle and Windsor, including connections from Walmart Supercentre and the Larry Bauer Memorial Sports Complex in Amherstburg to St. Clair College. The route makes stops at Alma Street and Sandwich Street; the Whelan and Knobb Hill, River Canard, Victory Street, western LaSalle residential communities; the Vollmer Culture and Recreation Complex; and LaSalle Town Centre. This routing is a refinement of Option B from the assessment of identified options (see Appendix B). This refined routing has the ability to expand service coverage in the Amherstburg area with the same level of resources as if it operated to Amherstburg Walmart only. Route 1 is shown in Exhibit 8.

This route would operate hourly from 6:00 am to 7:00 pm on weekdays only.

Exhibit 8 – Route 1 – Amherstburg–LaSalle–Windsor



Note:
Urban Fringe South Local (Route 4) is illustrated for consideration purposes only. The local municipality has discretion over the appropriate route alignment and service levels for the community.

Route 2 – Lakeshore–Tecumseh–Windsor

Route 2 is an Urban Connector that provides transit service for residents of Lakeshore, Tecumseh and Windsor, including connections from Belle River (Lakeshore) to Tecumseh Mall in Windsor with service to the Willowwood, Grandview and IC Roy residential communities; the Patillo employment area; St. Clair Shores Shopping Centre; St. Clair Beach Shopping Centre; and higher-density residential areas at Southfield Road. Route 2 is shown in Exhibit 9.

Similar to Route 1, Route 2 would operate hourly from 6:00 am to 7:00 pm on weekdays only.

Route 3 – Leamington–Essex–Windsor

Route 3 is an Urban Connector that provides service for residents of Leamington, Essex and Windsor, including connections from RioCan Centre (Walmart) in Leamington to St. Clair

College in Windsor. The proposed service operates only in the peak period and stops at the potential Kingsville Park 'n Ride facility along Highway 3; the Park 'n Ride facility in Essex at Amer Townline and Malden Road; and the Oldcastle industrial area.

A limited-stop express service along Highway 3 is proposed to provide fast service between the long distance from Leamington to Windsor. The consequence of the proposed alignment is that it does not operate to the Kingsville urban area. However, in the longer-term, it is anticipated that a new accompanying route would operate from urban Kingsville to Leamington and to Essex and Windsor, subject to ridership performance.

Route 3 is shown in Exhibit 10. Note that local service for Leamington included in this exhibit is for information purposes only and is not part of this proposal.

Route 3 would operate as a peak-only express service and provide three round trips from 6:00 am to 9:00 am in the morning and four round trips from 3:00 pm to 7:00 pm in the afternoon and evening on weekdays only.

3.3.2 Urban Fringe Local

Based on the market analysis and stakeholder consultations, Urban Fringe local services east and south of Windsor would provide an appropriate ridership base for the transit system in the short-term. These Urban Fringe local services (Routes 4 and 5) were identified to understand how Urban Connector and Urban Fringe services could operate together. However, the routes described in the sections below are provided for consideration by the Towns of LaSalle, Lakeshore, and Tecumseh. It is at the discretion of the local municipalities to determine the appropriate service designs that best accommodate the local mobility needs of their respective communities.

Transit service currently operates in these two Urban Fringe areas. Transit Windsor services provide some transit coverage to the Town of LaSalle, while the Town of Tecumseh introduced a transit service in 2009 connecting the town's northern communities to Tecumseh Mall in the City of Windsor. These services will need to be coordinated or harmonized if they wish to introduce the identified services outlined in this section.

Route 4 – Urban Fringe – South Local

Route 4 is an Urban Fringe service that connects St. Clair College to major destinations in LaSalle. The route starts at St. Clair College and operates north on Geraedits Drive, west on Cabana Road, west on Todd Lane, south on Malden Road, west on Sprucewood Avenue, south on Machette Road, west on Reaume Road, south on Front Road, west on Laurier Drive, south on Malden Road, connects to the Vollmer Culture and Recreation Complex, north on Malden Road, east on Todd Lane, east on Cabana Road and south on Geraedits Drive. This routing is a refinement of Option C from the assessment of identified options (see Appendix B). This refined routing will expand service coverage to residential areas in northern LaSalle while still maintaining coverage in LaSalle's contiguous urban area along Laurier Drive. Route 4 is shown in Exhibit 11.

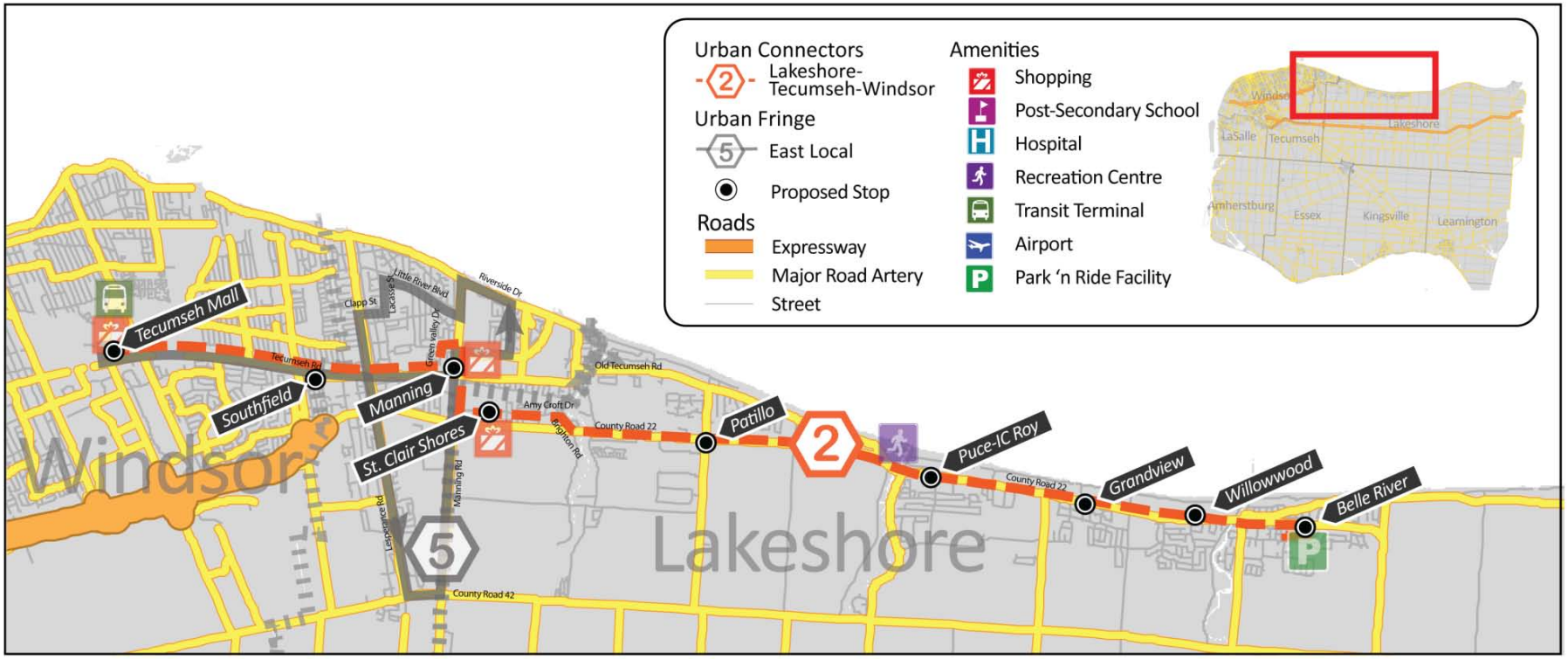
This Urban Fringe Local would operate hourly from 6:00 am to 7:00 pm on weekdays and 7:00 am to 7:00 pm on Saturdays.

Route 5 – Urban Fringe – East Local

Route 5 is an Urban Fringe local service that calls for operation of a simplified circuitous route starting at Manning Road at Tecumseh Road that operates south on Manning Road, west on Division Road, north on Lesperance Road, east on Clapp Street, north on Lacasse Boulevard, east on Little River Boulevard, south on Manning Road, east on Riverside Drive, south on Edgewater Boulevard, west on St. Gregory's Road and south on Manning Road. Once a complete circuit is complete, the route operates along Tecumseh Road and connects to Tecumseh Mall. This routing is a refinement of Option C from the assessment of identified options (see Appendix B). This refined routing will provide necessary and more convenient connections to the Transit Windsor network at Tecumseh Mall. Route 5 is shown in Exhibit 12.

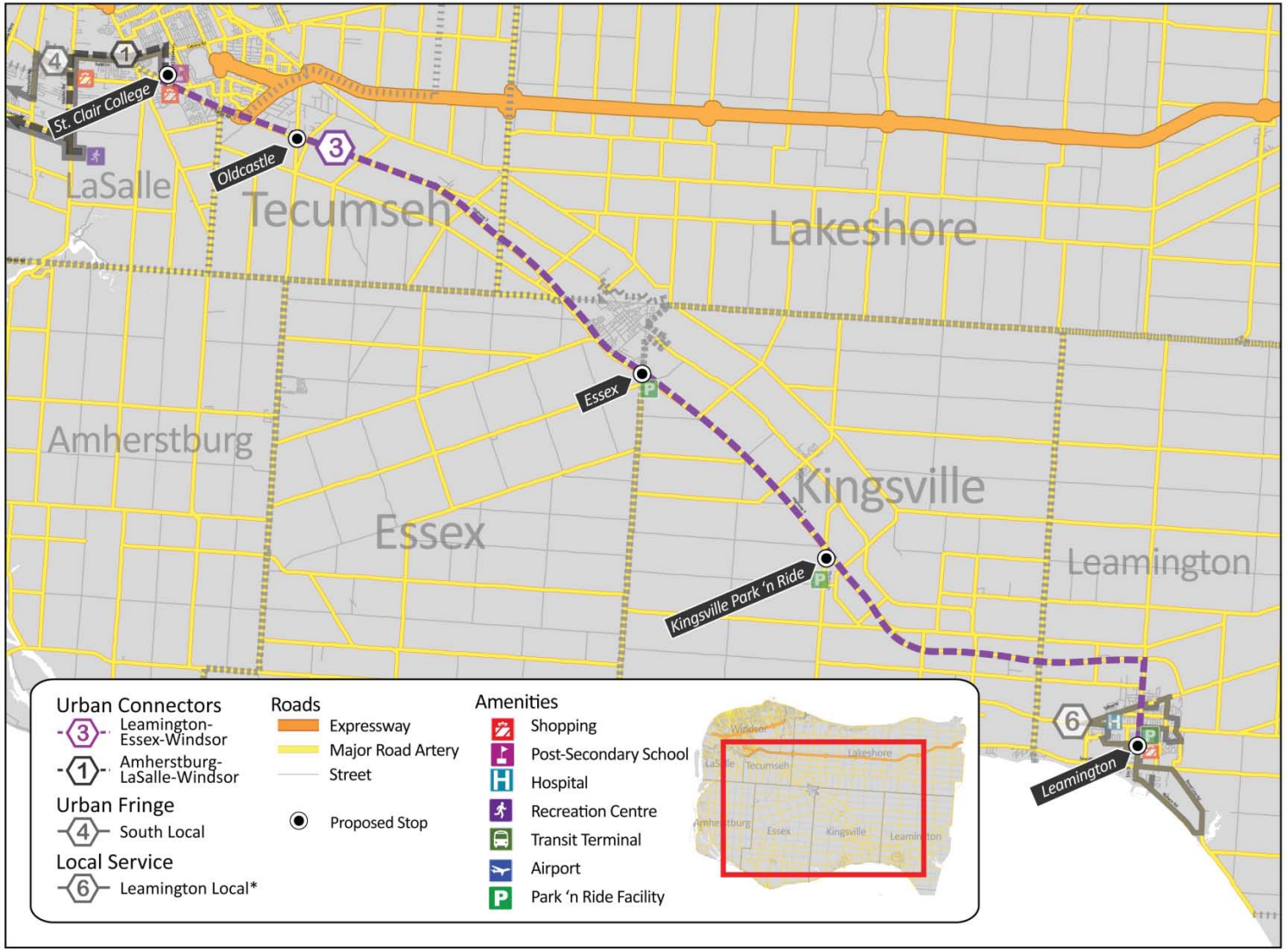
Route 5 would operate the same hours and level of service as Route 4.

Exhibit 9 – Route 2 – Lakeshore–Tecumseh–Windsor



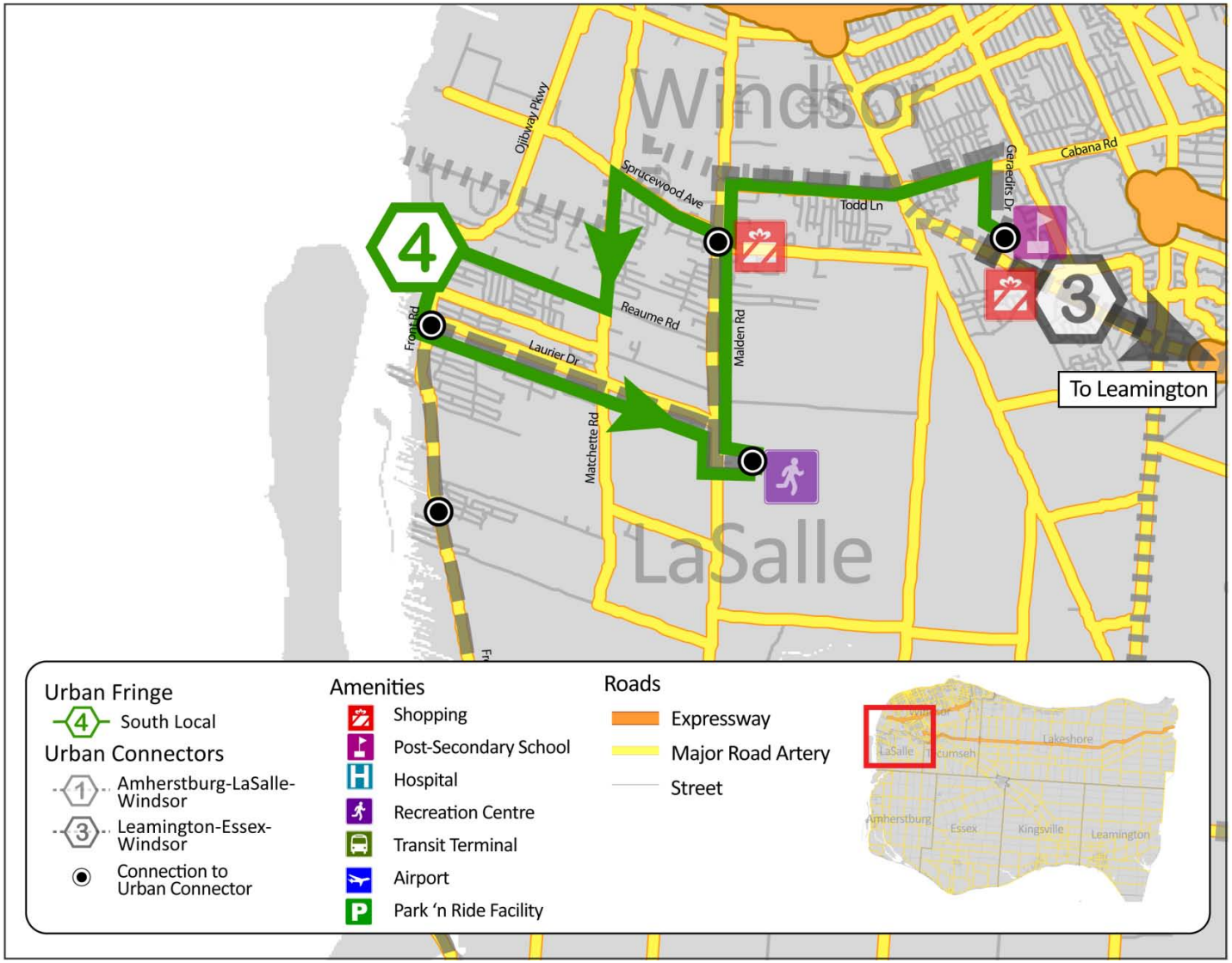
Note:
Urban Fringe East Local (Route 5) is illustrated for consideration purposes only. The local municipality has discretion over the appropriate route alignment and service levels for the community.

Exhibit 10 – Route 3 – Leamington–Essex–Windsor



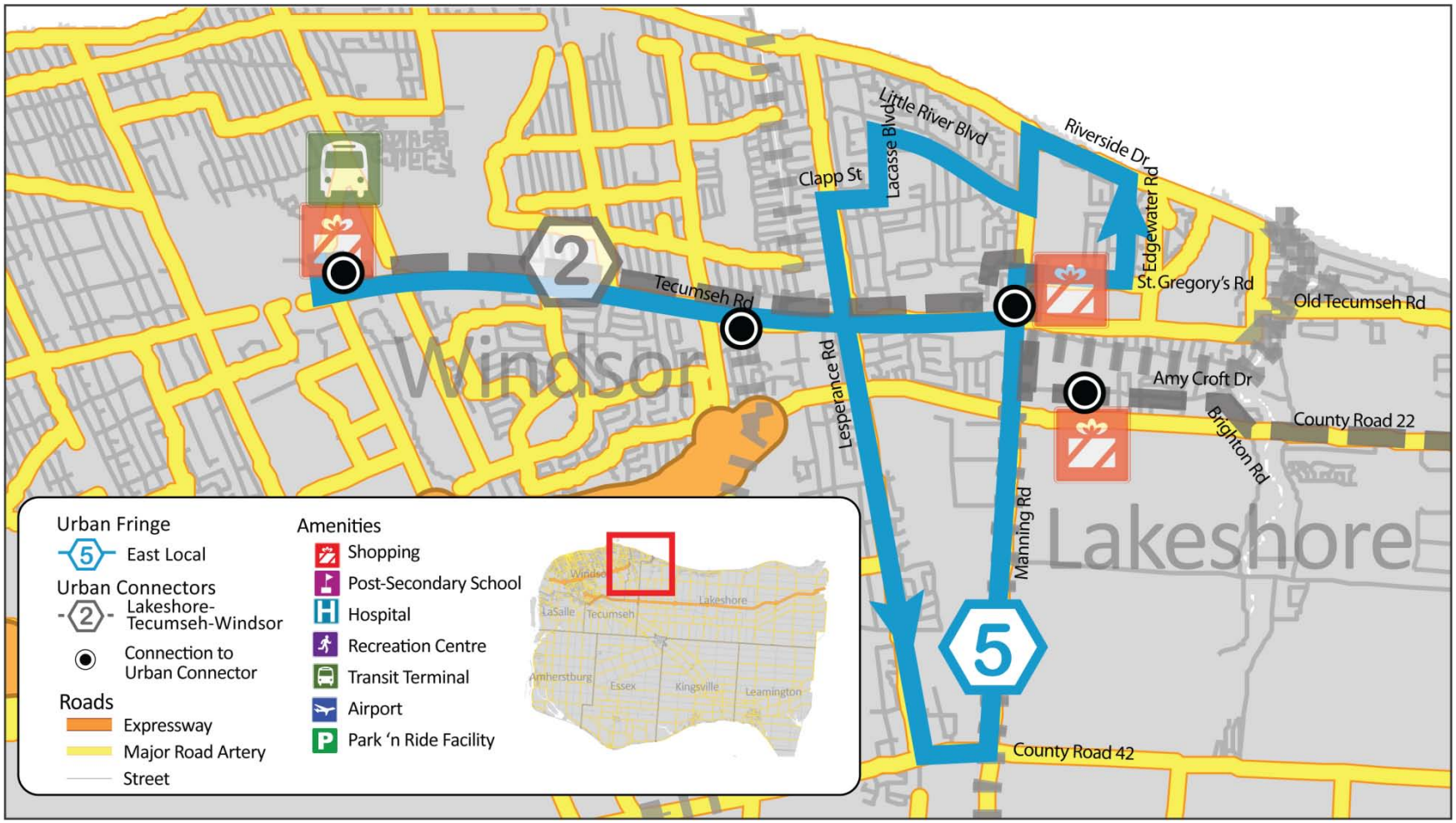
Note:
Leamington Local Service is illustrated for information purposes only and is not part of this proposal.
Urban Fringe South Local (Route 4) is illustrated for consideration purposes only. The local municipality has discretion over the appropriate route alignment and service levels for the community.

Exhibit 11 – Route 4 – Urban Fringe – South Local



Note:
Urban Fringe South Local (Route 4) is illustrated for consideration purposes only. The local municipality has discretion over the appropriate route alignment and service levels for the community.

Exhibit 12 – Route 5 – Urban Fringe – East Local



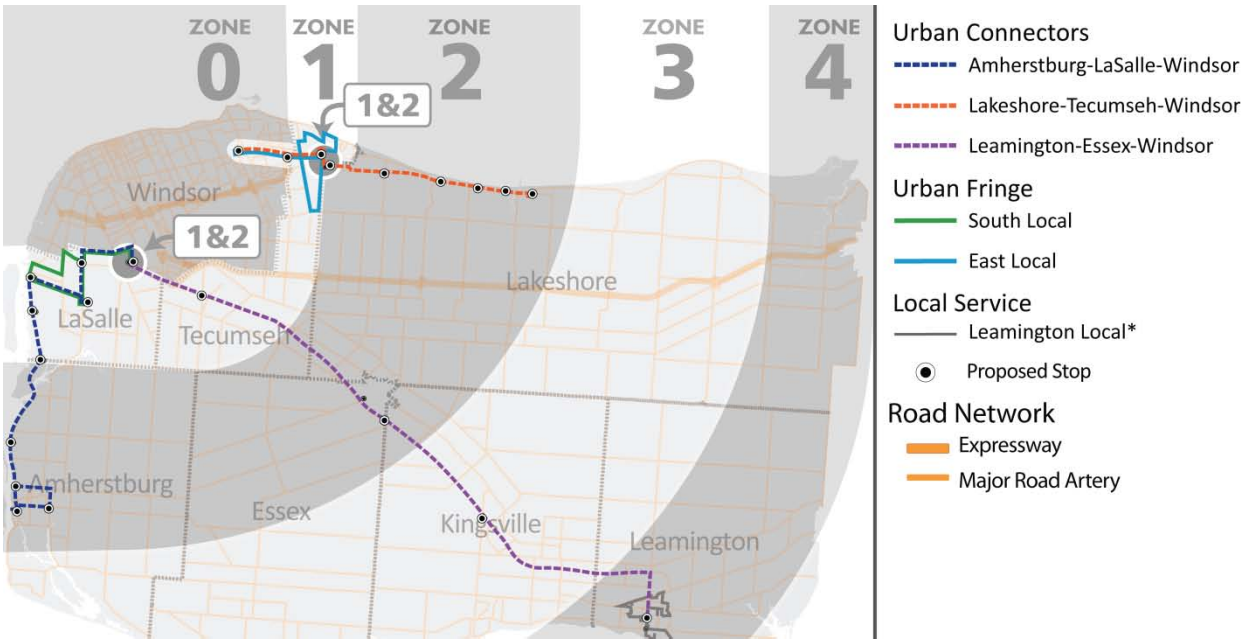
Note:
Urban Fringe East Local (Route 5) is illustrated for consideration purposes only. The local municipality has discretion over the appropriate route alignment and service levels for the community.

3.4 Fare Policies

3.4.1 Fare Zone Map

It is proposed that the County be organized into five fare zones depicted in the fare zone map illustrated in Exhibit 13.

Exhibit 13 – Proposed Fare Zone Map



Note:
Leamington Local Service is shown for information purposes only and is not part of this proposal.
Urban Fringe Local Routes (Route 4 and 5) are illustrated for consideration purposes only. Respective local municipalities have discretion over the appropriate route alignments and service levels operating in their community.

3.4.2 Fare Table

Fares for travel within and between fare zones are summarized in Exhibit 14.

Exhibit 14 – Proposed Fare Table

	To Zone				
From Zone	**0**	**1**	**2**	**3**	**4**
0	$2.45*	$3.00	$3.00	$4.00	$5.00
1	$3.00	$2.00	$3.00	$3.00	$4.00
2	$3.00	$3.00	$2.00	$3.00	$4.00
3	$4.00	$3.00	$3.00	$2.00	$3.00
4	$5.00	$4.00	$4.00	$3.00	$1.75**

* Transit Windsor current local fare
** Leamington Transit current local fare

3.4.3 Corridor Service Fare Structures

Amherstburg–LaSalle–Windsor Corridor (Routes 1 and 4)

Urban Connector Route 1 is divided into three fare zones that parallel the municipal jurisdictions of Windsor (Zone 0), LaSalle (Zone 1) and Amherstburg (Zone 2), with the exception that St. Clair College is deemed to be in both the Windsor Zone 0 and LaSalle Zone 1.

The Urban Fringe East local service Route 4 operates in LaSalle Zone 1.

The base Urban Connector fare is $2.00 for travel in one zone in either LaSalle Zone 1 or Amherstburg Zone 2. A fare supplement of $1.00 is charged for travel in a continuous journey across one fare zone boundary into the adjacent fare zone. No additional fare supplement is charged for travel in a continuous journey across the second fare zone boundary.

Inbound passengers travelling to Windsor who board either the Urban Connector Route 1 or Urban Fringe South local service Route 4 in Tecumseh are required to pay the base Urban Connector or Urban Fringe fare of $2.00 for the travel within LaSalle Zone 1 and the fare supplement of $1.00 when travelling across the LaSalle-Windsor fare zone boundary. Inbound passengers will receive a free transfer to Transit Windsor.

Outbound passengers travelling on Transit Windsor service will pay the full Transit Windsor $2.45 fare and on presentation of the Transit Windsor transfer can board the Urban Connector Route 1 service or the Urban Fringe South local service Route 4 by paying a $0.55 fare zone supplement.

Lakeshore–Tecumseh–Windsor Corridor (Routes 2 and 5)

Urban Connector Route 2 is divided into three fare zones that parallel the municipal jurisdictions of Windsor (Zone 0), Tecumseh (Zone 1) and Lakeshore (Zone 2) and with the following exceptions:

- the route from Tecumseh to the Tecumseh Mall plus the Tecumseh Mall are in both the Windsor Zone 0 and the Tecumseh Zone 1
- St. Clair Shores and St. Clair Beach are in both the Tecumseh Zone 1 and Lakeshore Zone 2.

The Urban Fringe East Local service Route 5 operates in Tecumseh Zone 1.

Similar to the fare structure and transfer policies of the Amherstburg-LaSalle-Windsor Corridor, the base Urban Connector fare is $2.00 for travel in one zone in either Tecumseh Zone 1 or Lakeshore Zone 2. A fare supplement of $1.00 is charged for travel in a continuous journey across one fare zone boundary into the adjacent fare zone. No additional fare supplement is charged for travel in a continuous journey across the second fare zone boundary.

Inbound passengers travelling to Windsor that board either the Urban Connector Route 2 or Urban Fringe East local service Route 5 in Tecumseh are required to pay the base Urban Connector or Urban Fringe fare of $2.00 for the travel within Tecumseh Zone 1 and the fare supplement of $1.00 when travelling across the Tecumseh-Windsor fare zone boundary. Inbound passengers will receive a free transfer to Transit Windsor.

Outbound passengers travelling on Transit Windsor service will pay the full Transit Windsor $2.45 fare and on presentation of the Transit Windsor transfer can board the Urban Connector Route 2 service or the Urban Fringe East local service Route 5 by paying a $0.55 fare zone supplement.

Leamington – Essex – Windsor Corridor (Route 3)

Urban Connector Route 3 is divided into five fare zones that parallel the municipal jurisdictions of Windsor (Zone 0), Tecumseh (Zone 1), Essex (Zone 2), Kingsville (Zone 3) and Leamington (Zone 4).

The base Urban Connector fare for Route 3 is $2.00. A fare supplement of $1.00 is charged for travel across each fare zone boundary to stops located in the next adjacent fare zone.

Inbound passengers on the Urban Connector Route 3 service to Windsor will receive a free transfer to Transit Windsor.

Outbound passengers on Transit Windsor service will pay the full Transit Windsor $2.45 fare and, on presentation of the Transit Windsor transfer, can board the Urban Connector Route 3 service by paying a $0.55 fare supplement for travel to Zones 1 or 2. A $1.00 fare supplement is required for travel across each subsequent zone boundary to Leamington.

Passengers who travel to the Leamington Urban Connector Route 3 stop using Leamington Transit local service will receive a full credit for their Leamington Transit $1.75 local fare towards their Urban Connector fare. Passengers arriving in Leamington on the Urban Connector Route 3 service can transfer to Leamington Transit for free.

3.4.4 Transfer Policies

A transfer from an Urban Connector route to a Transit Windsor route or to a local route operated by a member municipality will not require the payment of a fare supplement.

A transfer from a Transit Windsor route to an Urban Connector or Urban Fringe local route will require the payment of a fare zone supplement that will be the difference between the Transit Windsor fare and the Urban Connector base fare.

A transfer from an Urban Fringe local route to an Urban Connector route will require the payment of a fare zone supplement if travelling across a fare zone boundary.

Passengers transferring from a local service (Leamington Transit) to Urban Connector Route 3 will receive a full credit for their Leamington transit local fare towards the cost of their Urban Connector fare. Passengers transferring from the Urban Connector Route 3 service to Leamington Transit local service will not be required to pay a transfer supplement.

3.5 Financial Plan

Exhibit 15 outlines the capital and operating costs required for the first three years of the transit operations. It should be noted that assumptions used in the financial plan were developed in consultation with Transit Windsor, but not formal quotes.

As shown in the financial plan, the annual operating cost would be approximately $1.7 million for three Urban Connectors and approximately $777,000 for two Urban Fringe Locals. With

estimated passenger revenue, the annual net operating cost would be approximately $1.26 million, $1.17 million and $1.09 million for Urban Connectors in the first three years respectively. While the annual net operating cost for Urban Fringe Locals is estimated at approximately $600,000.

The proposed Urban Connectors would require an estimated capital cost of approximately $1.6 million, $0.7 million and 0.8 million for the first three years respectively. Approximately $805,000, $10,000 and $10,000 would be required for Urban Fringe Locals in the first three years respectively.

Capital reserves are also included in the financial plan for future vehicle replacement.

County overhead costs are estimated based on the assumption of one part-time transit manager and one full-time support staff.

It should be noted that the existing transit terminal facilities at St. Clair college and Tecumseh Mall are operating at their capacity and additional capital costs would be required for improvements to accommodate County buses. The cost was estimated at approximately $150,000 to $200,000 for each terminal location.

Given that cutaway-style buses are relatively inexpensive and are capable to accommodate projected ridership on all proposed services, GENIVAR assumes all cutaway-style buses for the initial implementation stage. However, if a route is eventually integrated with a Transit Windsor route, the type of vehicle used for that particular route needs to be same type of vehicle used on the integrated Transit Windsor route.

In the initial years of implementation, a large bump in capital costs could be avoided if vehicles are provided by the contract operator as part of the operating agreement until capital reserves are established. However, operating costs would be higher in this scenario by approximately $10 to $15 per vehicle hour.

Exhibit 15 – Financial Plan

Urban Connectors	Year 1	Year 2	Year 3
Total Ridership	176,000	214,000	252,000
Vehicle Hours	16,566	16,566	16,566
Operating Cost	**$1,657,000**	**$1,657,000**	**$1,657,000**
Passenger revenue	$401,000	$486,000	$572,000
Net operating cost	**$1,256,000**	**$1,171,000**	**$1,085,000**
Vehicles			
Peak Vehicles (Cutaway)	6	6	6
Spares (Cutaway)	1	1	1
New Vehicles (Cutaway)	7	0	0
Total Vehicle Cost (Incremental)	$1,225,000	$0	$0
Facilities			
Stop & Shelter Cost	$255,000	$10,000	$15,000
Park and Ride Expansion	$150,000	$60,000	$60,000
Total Capital Cost	**$1,630,000**	**$70,000**	**$75,000**
Capital Reserve	**$200,000**	**$200,000**	**$200,000**
Marketing & Promotion	$50,000	$25,000	$25,000
Administration Cost	$144,000	$136,500	$136,500
Total Overhead Cost	**$194,000**	**$161,500**	**$161,500**
Urban Fringe Locals	**Year 1**	**Year 2**	**Year 3**
Total Ridership	76,000	93,000	109,000
Vehicle Hours	7,774	7,774	7,774
Operating Cost	**$777,000**	**$777,000**	**$777,000**
Passenger revenue	$138,000	$167,000	$197,000
Net operating cost	**$639,000**	**$610,000**	**$580,000**
Vehicles			
Peak Vehicles (Cutaway)	2	2	2
Spares (Cutaway)	1	1	1
New Vehicles (Cutaway)	3	0	0
Total Vehicle Cost (Incremental)	$525,000	$0	$0
Facilities			
Stop & Shelter Cost	$280,000	$10,000	$10,000
Park and Ride Expansion			
Total Capital Cost	**$805,000**	**$10,000**	**$10,000**
Capital Reserve	**$90,000**	**$90,000**	**$90,000**

Assumptions:

- Average cost per revenue hour – cutaway-style bus: $100.00
- Cost per cutaway-style bus with farebox and radio (6 years life span): $175,000
- Spare Ratio: 15%
- Cost per stop: $5,000
- Cost per shelter: $5,000

Notes:

- Estimated financial figures for Urban Fringe Local services are based on the service designs identified in Section 3.3.2. Respective local municipalities have discretion over the appropriate route alignments and service levels operating in their community.
- Passenger revenue was estimated based on the proposed fare table and projected ridership
- All costs and revenues are in constant 2010 Canadian dollars
- Administration costs are based on one part-time transit manager and one full-time support

4. Governance Structure

As discussed in Phase 1 report of the study, several governance options are available for the County to consider, including Transit Windsor service extension, municipal service, inter-municipal partnership, County controlled agency or department, regional transit authority and non-profit corporation.

Based on the proposed service plans, as well as experiences of similar transit systems in other municipalities, this section identifies potential governance models that could be considered for short-term and long-term transit service development in the County. Additional work may be required to refine the identified governance models for consideration and to address emerging conditions in a future implementation action plan.

4.1 Best Practice Review

GENIVAR identified ten examples of contracted services for comparison, including the cities of Barrie and Yellowknife; the towns of Thorold, Port Colborne and Milton; the municipality of Port Hope; Loyalist Township and the regions of Waterloo, York and Durham. This section provides a summary of each example and details are shown in Exhibit 16.

4.1.1 Contract Administration

All transit contract agreements have terms that range from three to seven years, with the exception of Thorold, which has an ongoing annual review agreement with St. Catharines Transit. All are administered through municipal departments and, for the most part, are either “set fee” or “variable fee” service contracts. York Region Transit contracts are, however, “performance based” and, in the case of Barrie and Milton, the “performance based” option will be reviewed when preparing future contract service agreements.

In Thorold, Port Colborne and Loyalist Township, local transit service is purchased from adjacent municipalities (St. Catharines, Welland and Kingston respectively) who provide buses and operators and oversee the contracted services as part of their own operation.

In the Regions of York, Durham and Waterloo, transit staff oversee all aspects of the operation (including on-street, equipment inspections and other elements of transit operation) to ensure contract compliance. In Barrie, Yellowknife, Milton and Port Hope, private sector contractors are tasked with the responsibility of ensuring contract compliance, as these municipalities have smaller staff complements assigned to transit operations.

4.1.2 Service Planning

In an effort to promote transit use locally and to eliminate confusion for riders who regularly access transit in adjacent municipalities, transit services in Thorold, Port Colborne and Loyalist Township have all chosen to adopt the fare structures of their contracted service provider and, to a large extent, provide similar hours of service, headways and service planning (although in Thorold and Port Colborne the latter functions are reviewed annually with municipal transit operators). In the remaining systems, service standards are determined by the individual municipalities and agreed to by the private sector service provider as part of the operating agreement.

Local municipal staff generally carry out service planning and, while it is not a significant issue for systems contracting service from adjacent municipalities (such as Thorold and Port Colborne), transit planning requirements are reviewed annually with the service provider and adjustments made as required. In some municipalities, the lack of staff assigned to oversee transit operations often results in significant gaps in contract control and system development. This is particularly evident in municipalities that are experiencing rapid growth, such as Barrie.

4.1.3 Customer Service and Marketing

Customer service, advertising and marketing issues are generally assumed by the service provider as part of the service agreement in municipalities contracting service from adjacent municipal systems. However, in Barrie, Milton, Port Hope and Yellowknife, these tasks are addressed either directly by transit staff or as part of the services provided by administrative staff in the particular section transit services are assigned to, such as Engineering, Public Works or Social Services.

4.1.4 Farebox Revenue

For transit services that are contracted from private sector operators, the municipality collects all revenues and pays the contractor for the hours of service provided. In the case of services contracted from adjacent municipalities, the service provider collects all fares, credits the municipality for revenues received and invoices the difference. This can be done via either actual farebox tallies or through an averaging method where ridership counts are conducted at certain times of the year and an average fare is identified and applied as a credit against operating costs. This type of system is applied in Thorold, Port Colborne and for York Region services contracted with the TTC.

Exhibit 16 – Contract Service Examples

	Barrie	Thorold	Port Colborne	Loyalist Township	Port Hope	Waterloo Region	Yellow-knife	Milton	York Region	Durham Region
Service Provider	Private Contractor	St. Catharines Transit	Welland Transit	Kingston Transit	Private contractor	Private contractor	Private contractor	Private contractor	Private contractors	Private contractor
Contract Type	Set fee for service	Variable fee for service	Variable fee for service	Set fee for service	Set fee for service	Set fee for service	Set fee for service	Set fee for service	Performanc e based	Set fee for service
Contract Term	5 years	Annually adjusted	3 years	6 years	5 years		5 years	6 years	Multi-year	5-7 years
Administered By	Municipal Dept	Municipal Dept	Municipal Dept	Municipal Dept	Municipal Dept	Municipal Dept	Municipal Dept	Municipal Dept	Municipal Dept	Municipal Dept
Current Staff Allocation	Two full-time	One part-time	One part-time	One part-time	One part-time	Grand River Transit staff	One part-time	One full-time	York Region Transit staff	Durham Region Transit staff
Service Standards	Barrie	St. Catharines Transit	Welland Transit	Kingston Transit	Port Hope	Grand River Transit	Yellowknife	Milton	York Region Transit	Durham Region Transit
Service Planning	Barrie	Thorold & St. Catharines Transit	Port Colborne & Welland Transit	Loyalist Township & Kingston Transit	Port Hope	Grand River Transit	Yellowknife	Milton	York Region Transit	Durham Region Transit
On-Street Supervision	Barrie	St. Catharines Transit	Welland Transit	Kingston Transit	Port Hope	Grand River Transit	Yellowknife	Milton	York Region Transit	Private contractor
Customer Service	Barrie	St. Catharines Transit	Welland Transit	Kingston Transit	Port Hope	Grand River Transit	Yellowknife	Milton	York Region Transit	Durham Region Transit
Marketing	Barrie	St. Catharines Transit	Welland Transit	Kingston Transit	Port Hope	Grand River Transit	Yellowknife	Milton	York Region Transit	Durham Region Transit

Exhibit 16 – Contract Service Examples (Continued)

	Barrie	Thorold	Port Colborne	Loyalist Township	Port Hope	Waterloo Region	Yellow-knife	Milton	York Region	Durham Region
Equipment Required	40+ buses	Two buses in town, one St. Catharines Transit route extension	One bus in town, one collector link	Kingston Transit route extension, one bus and one PK	Two buses	Three spare buses, four community buses	Eight buses	11 buses	400+ buses	35+ buses
Bus Ownership & Equipment Inspection	Barrie	St. Catharines Transit	Welland Transit	Kingston Transit	Port Hope	Private contractor	Private contractor	Milton	York Region Transit	Durham Region Transit
Bus Maintenance	Private contractor	St. Catharines Transit	Welland Transit	Kingston Transit	Private contractor	Private contractor	Private contractor	Private contractor	Private contractor	Private contractor
Revenue Allocation	Barrie collects all revenues	St. Catharines Transit collects all revenues; credits Thorold annually based on ridership	Welland Transit collects all revenues, invoices Port Colborne for the difference	Kingston Transit collects all revenues, invoices Loyalist Township for the difference	Port Hope collects all revenues	Grand River Transit collects all revenues	Yellowknife collects all revenues	Milton collects all revenues	York Region Transit collects all revenues; TTC service collects revenues, credits YRT for services in York Region	Durham Region collects all revenues

4.2 Short-Term Governance Model

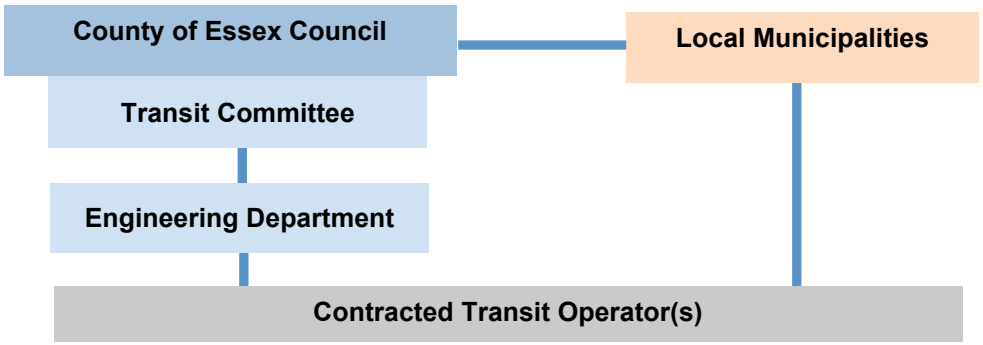
Exhibit 17 illustrates a short-term governance model that could be considered by the County. This governance model would require the formation of a transit committee made up of County councillors. The committee would be the main decision-making body and report to the County Council. A County department would be responsible for managing the County transit services, which would be contracted out to a transit operator.

Under this model, the County would fund the proposed County transit services and develop and apply standards, plans and policies (e.g. service plans, performance standards, fare policies, marketing and funding strategies). The selected operator would be responsible for scheduling, implementing, maintaining and operating the transit service based on County specifications. Detailed operational plans and schedules would be the responsibility of the operator.

The advantages of this model is that it would allow the County to use the assets and skills of the existing transit operator while building up a capital reserve and experience for the future. It is expected that the Committee would mainly rely on the vehicle and non-vehicle assets that are currently owned by the transit operator. Any additional non-vehicle capital infrastructure that is required would be owned by the County and be paid for through a capital reserve. These facilities could be managed by the contracted operator. Capital grants would also be pursued to purchase non-vehicle assets and vehicles to lower operating costs.

Similar to the existing structure, local municipalities will be responsible for local services including urban fringe services.

Exhibit 17 – Short-Term Governance Model Structure



4.2.1 Short-Term Governance Model Implementation

The initial start-up phase would be focused on developing the Essex County Transit Committee, which would oversee the planning and provision of the Urban Connectors. The Committee would consist initially of members of the County council. All financial and strategic plans would need to be approved with at least a 50 percent majority vote (each representative's vote could weighted according the population size they represent), and a voting resolution process would be developed at the first meeting of the Committee to resolve conflicts where there is equal

support for and against a decision. Before this decision, in any tie vote a motion would not be passed.

The Transit Committee would be responsible for developing clear strategic objectives, as well as the necessary policies and annual and five-year plans required to achieve these objectives. The following is a list of tasks that the Committee would be responsible for during the initial implementation stage:

- Develop a five-year strategic plan that includes the vision, mission statement, and strategic goals and objectives of the Committee.
- Request that the County Council formally adopt service standards, fare and funding strategy, cost-sharing formulas, and marketing strategies proposed in this study.
- Develop draft short-term service and financial plans for the transit services that would be managed by the Committee.
- Work with local municipalities on the planning and implementation of local services.
- Draft the necessary policies and legislation that would be required to establish the necessary taxes or funding sources to help fund a portion of the transit services.
- Conduct consultations with private and public sector stakeholders, as well as the public, to present and get feedback on the strategic plan, service plans, cost-sharing formulas, fare strategy, and any new funding/taxation policies.
- Adopt the short-term service and financial plans.
- Request that the County Council adopt the necessary policies/legislation.
- Develop and adopt a performance monitoring program and customer satisfaction measures.
- Develop service contracts to deliver the services.

After the initial implementation phase, the Committee would undertake the following actions:

- Set up contractual agreements for additional services.
- Enhance the level of service of the Urban Connectors and other transit services managed by the Committee.
- Work collectively with the local communities to further improve the existing transit network and promote ridership.
- Start identifying and protecting key lands required for a potential maintenance facility.
- Update strategic, capital and service plans for the subsequent five years.

Existing staff from the County could be responsible for coordinating and facilitating the public consultation activities, developing and revising the necessary policies and plans, administering the service contracts, and completing any other administrative requirements. Alternatively, as the workload might be too heavy for existing staff to take on or might be outside their level of comfort and expertise, a possible option would be to hire a transit manager and a technician to be responsible for the completion of these tasks. The transit manager would report directly to the Transit Committee.

As for the actual delivery of the services, existing transit operators would again be contracted. The contractor would have to meet County's performance standards and guidelines and the length of the contracts would be three to five years.

The operator would be responsible for scheduling, implementing, maintaining and operating the Committee's transit services. As part of their responsibilities, the contracted service operator would also be expected to develop three-year to five-year scheduling and operating plans that outline the specific transit goals, objectives, and tactical plans that will be used to meet the strategic plans of the Transit Committee. These plans should include detailed operating plans, and methods for evaluating performance and performance targets.

During the initial two years, the Transit Committee would focus on monitoring the performance and customer satisfaction of the services, and providing a high quality service on Urban Connectors. The Committee would also encourage the member municipalities and organizations to support transit through the implementation of various programs, policies and plans (land-use, transit-oriented development, transportation, and transportation demand management) to serve County planning and environmental objectives. As such, the Transit Committee would ensure the following actions are undertaken by the transit manager and associated staff:

- Conduct ridership counts and passenger surveys.
- Develop and launch a branding scheme to identify County transit services and an image synonymous with reliable and convenient transportation. Uniform colors and slogans should be used throughout stops, advertisements and on fleet vehicles.
- Identify future additional services.
- Keep track of operating statistics such as the scheduling adherence, passenger loads and cost recovery.
- Look for opportunities to create partnerships with institutions to establish transit incentive programs such as U-Pass and employer sponsored transit passes and with private sector organizations to share in the development and funding of new transportation facilities.
- Help guide and shape the local municipalities so as to encourage transit-oriented development (TOD) initiatives with more mixed-use intensive development. TOD initiatives should be pursued in cooperation with the local municipalities, and public-private partnerships around key transportation nodes. The County's role would be to provide education and guidance, while the local municipalities would be responsible for actually implementing TOD initiatives.
- Support the improvement of transit facilities such as bus stops to include shelters, seating, bicycle racks, bicycle lockers, lighting, and newspapers. All stops should be well connected to key origin/destination centres via sidewalks, bridges, and bike paths to allow for excellent access by pedestrians.
- Develop a marketing strategy and coordinate their marketing activities with the other transit services as much as possible.
- Apply for federal and provincial grants.

- Purchase additional vehicle assets, reduce direct operating costs and non-vehicle capital assets using capital grants whenever possible, and ensure these assets are appropriately managed by the operators.
- Continue to consult with public and private stakeholders on the inter-municipal transit services.

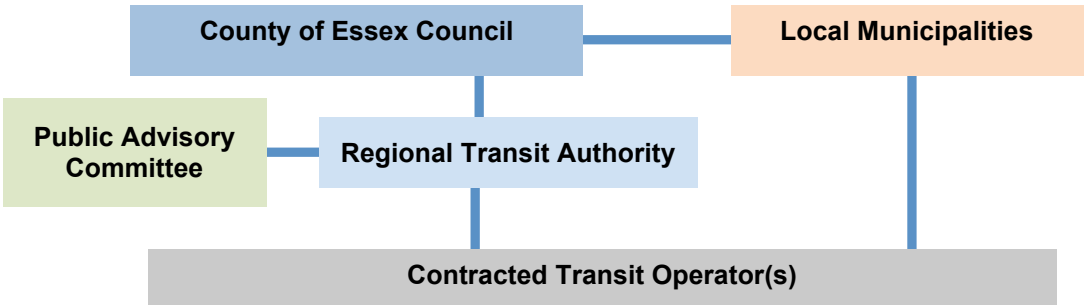
4.2.2 Limitations of the Short-Term Governance Model

With the addition of more County Connectors and Rural Services, and as the Urban Connectors expand and mature, more partnerships are developed, the urban and rural communities grow and density, and travel demands increase, the management of the various inter-municipal services may become too cumbersome without a Regional Transit Authority being established. Important opportunities for increasing operational and cost efficiencies may be lost due to a lack of full integration with local services.

4.3 Long-Term Governance Model

In the long-term, a Regional Transit Authority may be a considerable governance model for the County. However, to further improve the efficiency and effectiveness of the County's transit services, the County and its member municipalities may choose to include the local transit services under the Authority's management. Staff and assets, including buses, maintenance facilities, and transit terminals would have to be acquired to plan, operate, and maintain the system, but this would lead to lower operating costs, increased autonomy, and a more seamless transit system. Exhibit 18 illustrates the regional transit authority governance model.

Exhibit 18 – Regional Transit Authority Governance Model



This new Transit Authority would have more direct access to the political decision-makers than a County department. At the same time, they would still enjoy some of the advantages that County departments have, such as administrative support by County staff, in-house training opportunities, and access to software programs. As a result, the Transit Authority would be able to address issues in a timelier manner. Additionally, the Regional Transit Authority would be able to have HST exemptions to further alleviate the strain of financing the system.

It is important to note, however, that the adoption of this model should only be pursued if there are concrete benefits that can be achieved and if there is the need for significant expenditure to

be made on renewing existing public transit facilities and equipment or new public transit infrastructure for County, local and specialized transit services.

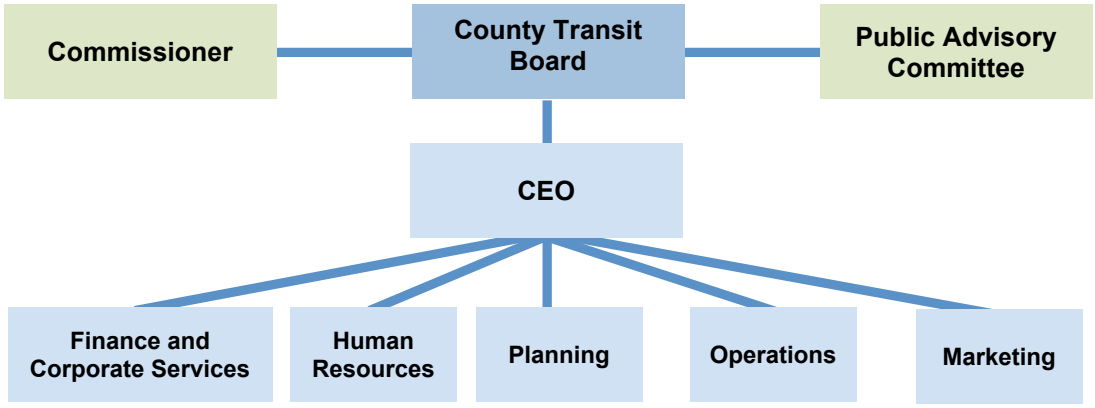
4.3.1 Organizational Structure of the Authority

If it is decided that such a model is appropriate, then the following organizational structure is recommended, which features:

- County Council in the role of providing final approval for plans and budget and appointing board members.
- An appointed County Transit Board in the role of overseeing planning, construction, and operation of the system.
- A CEO and a set of staff to manage and administer the daily operations of the Authority and to develop the plans and policies to be approved by the Board and County Council.
- An independent commissioner to conduct annual reviews of the transit board and its financial activities. The commissioner should present its findings to the County Transit Board, the County Council, and the general public.

Exhibit 19 illustrates the organizational structure of the Regional Transit Authority.

Exhibit 19 – Organizational Structure of the Regional Transit Authority



This structure would provide the most efficient expansion of the County transit system, as there is a board dedicated to governing the new regional transit authority. This board could be made up of mostly elected officials or non-elected individuals who have business, transportation or community stakeholder expertise, or a mixture of the two, and these individuals can be appointed by their respective organizations. Public accountability would be maintained through the elected officials who are members of the County, as they would represent the interests of each of the municipalities in the County.

The CEO would be hired and compensated by the County Transit Board, which would periodically evaluate his or her performance and, if necessary, seek a replacement. The CEO would manage the day-to-day activities of the Transit Authority. In contrast, the County Transit

Board would maintain a strategic role and avoid involving itself in the day-to-day operation of the system. The CEO would ultimately be responsible for the development of the organization's long-term strategic plan and would need to draw on the board for guidance and support in determining future direction and priorities.

Meanwhile, the Transit Authority staff would be knowledgeable and experienced individuals initially hired by the County with input from the CEO and the County Transit Board. To ensure they are primarily committed to the success of the County transit system and to avoid conflicts of interest, staff would not be a member of any affiliated union or an employee of any jurisdiction who is a member of the County, and they would not hold any elected public office. Staff would be responsible for their assigned areas of authority and for identifying new policy requirements and initiatives to improve the overall effectiveness of the transit system. They would also be accountable for the decisions and recommendations they provide.

In addition, a public advisory committee would also be established to obtain on-going public input on major projects and plans.

The delivery of the services would continue to be provided by contracted transit operator(s), but some of the assets, specifically those that would be purchased by the Authority, would be owned by the agency. If maintenance facilities are built by the Authority, they would also be managed by the contractor(s). Other types of facilities such as transit terminals would be managed by the Authority.

4.3.2 Responsibilities and Functions of the Authority

The actions that would need to be taken by members of the Authority include the following:

- Establish a Public Advisory Committee.
- Expand the branding scheme and continue to update the marketing program.
- Continue enhancing the level of service of the County transit services.
- Purchase or build the necessary vehicle and non-vehicle assets.
- Review and update long-term strategic plans.
- Update the County's decision-making process to include the newly formed transit board and to define its decision-making role.
- As the area served by the Authority grows, review and update policies to address fare schemes, ridership goals, service performance, human resources, and public accountability.
- Develop, approve and implement annual three-year capital and operating plan options for the transit facilities and services that would be used to achieve the strategic goals of the organization.
- Pursue a diverse range of funding sources.
- Establish and monitor annual service performance standards.
- Educate the public about future services and programs to be offered and gauge which would be the most appreciated by the public in order to prioritize potential initiatives.

- Hold regularly scheduled meetings to ensure members of the public have regular opportunities to voice their opinions.
- Continue working with local municipalities to encourage transit-oriented development and implement transit priority measures.

5. Cost Allocation

Cost allocation options for the capital and operating costs may differ depending on the stage of implementation. Variations in the models would include different shares of the costs borne by the County through County tax levies and shares allocated to the municipalities based on service received. Also, the calculation of service received can vary and be based on different factors such as vehicle hours of service, ridership, population and combinations of these.

5.1 County Levy versus Municipal Tax

Distributing some portion of the capital and operating costs to all taxpayers in the County, including those not directly receiving service, is found to be a more equitable way of sharing these costs. The funds collected would help develop a County transit system that would eventually serve these communities in the future. It would also allow the County to maintain a coordinating role in local services until those services are assumed by the County.

Since the current County tax system does not allow an area rating based levy, allocating costs to individual areas on the basis of level of service received would require the County to distribute the cost to local municipalities, which would then pass this amount to local taxpayers.

In a mature system, the portion of net operating costs allocated to local municipalities could be calculated on the basis of vehicle hours of service, which is a simple, transparent measure that is easy to administer. Initially, when ridership is still primarily oriented from one community to another, the costs should be distributed according to ridership. It would be up to the municipalities to decide on what sources they would use to cover their portion of the costs.

Ultimately, when all areas of the County are served by the County transit system, it may be appropriate and possible to simply allocate all costs to County taxpayers on the basis of a assessed value or a per household charge.

5.2 Cost Allocation and Implications

This section discusses the cost allocation mode for the short-term implementation only.

5.2.1 Urban Connectors

Capital Costs, Operating Costs and Overheads

GENIVAR recommends a capital cost allocation scheme with 100 percent of the capital costs, operating costs and overhead contributions borne by all County taxpayers, combined with a plan to acquire initial vehicle requirements through existing capital reserves or though the operating agreements with the service provider.

5.2.2 Urban Fringe Locals

Capital Costs and Overheads

GENIVAR recommends a capital cost allocation scheme with 100 percent of the capital cost contributions borne by the local municipality. Based on the suggested routes in Section 3, this would result in approximately $402,000 of capital investment in Year 1 each for LaSalle and Tecumseh.

Operating Costs

GENIVAR recommends that the County shares 10 percent of the net operating costs for each Urban Fringe Local route that conforms to the approved service standards, with the balance covered by the local municipalities. Local municipalities are free to operate local services that do not conform to the approved service standards, without the County's 10 percent share.

Based on the suggested routes in Section 3, in Year 1, the County would share approximately $64,000. If vehicle provision is included as part of the operating agreements, this amount would increase by approximately $10,000. This small share for the County will allow it to have some input into route coordination issues.

Appendices

A. Transit Assessment Report Phase 1

B. Service Design Options

C. Marketing Strategies

D. Transportation Demand Management

Appendix A

Transit Assessment Report Phase 1

ENTRA CONSULTANTS

County of Essex

Transit Assessment Report

Final Report

March 2010

Excellence in
Transportation
Planning

County of Essex

Transit Assessment Report

Executive Summary

Study Objectives

This study investigates the feasibility of introducing a wider range of transportation options in the County of Essex. The key objectives of this study are 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.

Public transit is an important component of public services in the community, benefiting not only the user, but the entire community, and fills a void for those citizens who need or want to access reliable alternative modes of transportation and will support more sustainable development for the local economy and environment. The opportunities provided by choice, access and mobility will enable everyone in the community to accomplish what is important to them, making the community stronger and more vibrant.

Needs and Opportunities

Through the completion of background research, online survey results, stakeholder and public consultations as well as a market analysis, it was recognized that there are limited transit services available to County residents and most County of Essex rely on their automobile for travel. Analysis of data from post-secondary and secondary school institutions and place of work information reveals an unmet need in the County for transit services to and from major educational facilities and employment areas. Lack of alternative transportation options also creates a barrier for businesses to retain employees and limits their flexibility in where they choose to locate in the region.

An effective transit system will provide alternative transportation to County of Essex residents, reduce traffic congestion and capital investments on road infrastructure as well as greenhouse gas emissions and therefore support more sustainable development for the local economy and environment.

Vision and Goals

Recognizing the County of Essex's regional transportation needs and the objectives of the Transportation Master Plan, this vision, developed for the purpose of this report, was identified to help focus efforts to develop a proposed future transportation system for the

County and used as the basis for the development of routes and services in the County. The proposed vision is:

> *To provide sustainable mobility options for all rural and urban residents, contributing to quality of life, economic and environmental sustainability, economic development and a healthy natural environment.*

The proposed goals, related to the vision, are as follows:

- to provide multi-tiered accessible transit services connecting regional urban areas to employment, education, recreation, social and health facilities
- to support the County's transportation system by providing a transit alternative to complement the road network and active transportation systems
- to provide customer-focused services that meet the transportation needs of all our communities
- to provide supporting rural services connecting to urban communities and services in the County

Service Concept

Based on the County's unique demographic conditions and travel behaviour, four distinct types of service including Urban Connectors, County Connectors, Local Services and Rural Services were identified to fulfill the diverse needs within the County. Each service type supports different objectives and thus yields different degrees of transit service delivery.

- **Urban Connectors:** services designed to connect between urban communities in the County and the City of Windsor and its urban fringe with a primary focus to fulfill the needs of work and student commuters.
- **County Connectors:** services designed to provide warranted connections to and between urban communities in the County.
- **Local Service:** services designed to maximize coverage in the urban area and connect to County and Urban Connectors.
- **Rural Services:** services designed to provide connections between rural areas and the urban communities in the County, focused on providing access to necessary amenities and services.

Based on projected transit demand and feedback from the public and an array of stakeholders, ENTRA developed a system concept that is consistent with the context of the County and its transportation objectives. The overall system concept presents a long-term look of what the County of Essex might expect upon full system implementation (beyond 2021). In total, the service concept includes three proposed Urban Connectors, two proposed County Connectors, and seven areas proposed for Local Service. Rural Services would operate through a system of demand responsive

services based on a defined geographic area connecting the rural communities to urban areas and other transit services in the County.

Urban Connectors are the likely candidates for initial implementation, as they are focusing on post-secondary school student and commuter markets and observed to have the greatest travel demand, relative to other routes and connections. Nevertheless, these routes along with the remaining service types would be implemented only as projected ridership warrants.

Development of transit services throughout the County should proceed incrementally, based on observed demand, with expansion of routes or levels of service only when ridership projections and service costs demonstrate that the performance standards will likely be met.

Financial and Implementation Plan

Transit services included in the system concept were prioritized based on the identified travel needs of each community, estimated performance levels, and input from the community. The proposed services could be developed in three phases.

- The initial phase of the implementation plan (2011 to 2016) proposes the introduction of three Urban Connectors from Amherstburg, Lakeshore and Leamington to Windsor and the improved operation of Local Service in urban fridge areas and Leamington.
- The second phase of the implementation (2016 to 2021) calls for improved levels of service on some Phase 1 routes and an expansion of service to new areas including two County Connectors from Amherstburg to Kingsville and from Leamington to Windsor and one additional local route in Lakeshore.
- Upon the fulfillment of a matured ridership base, it is anticipated that all services proposed in the system concept could be operated in Phase 3 (beyond 2021). Rural Services and the remaining Local Services identified in the system concept will be introduced in this phase.

The proposed transit services require significant investment to fund the required equipment and infrastructure as well as ongoing operations. Based on the current financial projection, an estimated capital cost of approximately $4 million, $5.4 million and $7 million would be required for the three phases, respectively. The annual operating cost would be approximately $1.8 million, $3.4 million and $4.4 million for the periods of 2011 to 2016, 2016 to 2021 and beyond 2021, respectively.

Key Strategies and Next Steps

Three key strategies designed to capture key markets, provide long-term financial support and build a system incrementally are developed to bring success to the development of a transit service in the County of Essex. They are developed through an extensive public participation process and represent input from public, key stakeholders and the project steering committee.

Commitment to Service

Success will depend on customers' ability to rely on the transit service as a viable choice for transportation. This means that the County will need to commit to providing the service for a sustained period, and provide a minimum level of service designed to meet key market needs. This commitment will require investment, and will rely on key funding partners, including customers and local municipalities, as well as provincial and federal funding.

Key next steps:

- identify the appropriate governance structure for the service
- determine resource requirements for this organization
- determine appropriate cost allocation and funding sources

Incremental Implementation

A comprehensive County-wide system in the County of Essex is a long-term initiative. To be sustainable, and permit the commitment to service required for success, services should grow incrementally, based on demonstrated success. Initial implementation stages must focus on key markets such as students and commuters to ensure early success. Phase 1 services identified in the report, comprising service in the urban fringe and three key corridors are the most feasible first step.

Key next steps:

- consult with key market groups, especially post-secondary students and commuters for input into specific service requirements
- develop specific service plans for initial service implementation, including specific routes, schedules, destination points
- develop specific fare structures and a revenue management plan

Marketing and Promotion

Building support for the service is critical to its success, both during service development and following implementation.

Key next steps:

- develop partnerships with customer markets, funding partners and agencies
- identify and promote specific benefits of the proposed service among potential partners, including the broad spectrum of public policy elements supported by the plan, including economic, environmental, health and mobility benefits
- build understanding and support for the required funding, based on this broad spectrum of benefits

County of Essex

Transit Assessment Report

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1. Introduction

Located in southwestern Ontario, the County of Essex comprises seven local municipalities including Amherstburg, Essex, Kingsville, Lakeshore, LaSalle, Leamington and Tecumseh. The County of Essex is the second most populated County in Ontario with a population of more than 176,000. According to the County's Official Plan, the County of Essex will reach a population of 196,305 by the year 2016.

The Statistics Canada 2006 Census data indicates that most people living in the County rely on their private vehicles for mobility. Approximately 46 percent of work trips were made to Windsor and 25 percent were made to other areas (outside of their own areas) both within and outside of the County.

Public transit services are currently limited for the County of Essex residents, and as a result, those without access to private vehicles have to rely on their family, friends or private taxi services to get around the community for employment, medical, education and other services. The lack of transportation is a barrier that affects everyone in the community, particularly those who need the services including the elderly, children, people with disabilities and low-income families.

The County has recognized the need and the importance of having public transit services within the County and connecting to Windsor to meet transportation needs as well as to reduce the use of private vehicles. The Essex-Windsor Regional Transportation Master Plan (2005) has established principles and objectives to increase the availability and use of alternative transportation modes, by making the public transit, cycling and walking more attractive for residents.

This study investigates the feasibility of introducing a wider range of transportation options in the community. The key objectives of this study are 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.

Public transit is an important component of public services in the community, benefiting not only the user, but the entire community, and fills a void for those citizens who need or want to access reliable alternative modes of transportation and will support more sustainable development for the local economy and environment. The opportunities

provided by choice, access and mobility will enable everyone in the community to accomplish what is important to them, making the community stronger and more vibrant.

This report includes background review, summary of consultations, needs assessment, vision, goals and objectives, service concept and guidelines, an implementation and financial plan and other components related to the implementation of a successful public transit system including governance and funding, fare options, marketing strategies, and transit supportive policies.

2. Online Surveys

Surveys were developed and posted online in an effort to understand current transportation issues and needs, existing travel patterns and characteristics throughout the County of Essex, as well as to understand resident perspectives on potential transit services. Separate surveys were created for the public, major employers and key stakeholders. A total of 191 responses were received from the public, 54 from employers and 17 from stakeholders. The following sections summarize key questions of the public, employer and stakeholder survey results. It should be noted that these survey results were only used to assist the team with further understanding of issues, needs and expectations, and were not used for demand analysis.

2.1 County of Essex Public Survey

The public survey was developed to obtain community input on transit needs throughout the County and was available on County and local websites. A paper version of the survey was also made available at locations throughout the region including the County of Essex Library and at a Public Information Centre held on September 30, 2009, in the Town of Essex.

Survey responses were received from all municipalities of the County. The Town of Essex provided proportionally more survey responses than its population while the Municipality of Leamington provided proportionally fewer survey responses than its population.

The majority of respondents indicated that they travel to Windsor at least one to two times per week with more than one-third of the respondents travelling daily on weekdays. Other frequent inter-municipal/regional destinations of respondents include Tecumseh, Leamington and the Town of Essex.

Shopping and work were selected as the most frequent trip purposes for both travel within own municipalities and for inter-municipal travel.

Nearly 90 percent of respondent trips within their own municipalities are made by car as a driver or passenger, while more than 96 percent of inter-municipal/regional respondent trips are made by car as a driver or passenger.

Schedule reliability, frequency of trips in peak hours, environmental benefits and overall trip time were identified as important service features or factors that influence the decision whether or not to use transit.

2.2 County of Essex Stakeholder Survey

The stakeholder survey was developed to obtain input regarding transit needs of the region from stakeholders. Stakeholders were contacted and invited to participate in the survey online.

Nearly 90 percent of stakeholder respondents feel that transportation is a barrier for their community, organization, clients or program participants and that existing transit service does not meet the transportation needs of their community, organization, clients or program participants. In addition, the majority of stakeholder respondents believe transit needs and markets will be growing in the next five years.

Regional travel (to and from the City of Windsor) was identified as the most important type of transit service by the majority of stakeholder respondents followed by local (within each municipality) and inter-municipal (between municipalities of the County of Essex.

Faster and more direct service to and from main destinations, more service early in day/late in evening and more frequent service during A.M/P.M peak hours were identified as key ways to improve transit service.

2.3 County of Essex Employer Survey

The employer survey was developed to obtain input regarding transit needs from major regional employers. Employers were contacted and invited to participate in the survey online.

The majority of employer respondents were located in Windsor or Tecumseh with an average of approximately 80 employees. Nearly all respondents provide free parking for their employees. Nearly all employer respondents do not provide transportation services or support for their employees (such as a ride-home service, transit subsidies or an employee shuttle) while some employers (approximately 13 percent) indicated that the lack of transportation alternatives is a factor in staff retention.

3. Stakeholder and Public Consultation

Stakeholder meetings with transportation service providers including school transportation, health and social agencies, representatives from economic development and Chambers of Commerce were held on September 29 and 30, 2009. Several participants provided useful data and information, along with their input.

The main comments received through the stakeholder consultation include:

- Many residents in the County are travelling to and from Windsor, particularly in LaSalle, Lakeshore, Tecumseh and Amherstburg. Most residents currently rely on driving for their transportation, including post-secondary students.
- Existing bus/van services are very limited in the County and mostly provided by social agencies for seniors and the disabled with limited capacity.
- The lack of alternative transportation affects residents in all municipalities of the County, particularly those who need the services such as the elderly, children and low-income families. Some people have to turn down job opportunities because alternative transportation is not available. Transit services are therefore needed for accessing employment for low-income families and students who don't have access to vehicles.
- Secondary school students living within 3.2 kilometres of their schools are not eligible for transportation services provided by the school board and need transit services, especially during the winter time.
- Lack of transportation limits post-secondary opportunities and employment for County of Essex residents.
- Some businesses such as call centres, health and child care cannot be located within the County due to the lack of the transit access.
- Many families with students are currently spending a lot of time providing transportation to their children for after-school activities.
- All participants support transit services connecting County residents to employment, schools and other services and most are anxious for action on transit services in the County.

A Public Information Centre (PIC) was held on September 30, 2009. Approximately 20 people attended the afternoon and evening sessions. Comments received from the PIC further confirmed the need for transit services for the County residents. Comments related to the possible service options were also received and will be considered for the next phase of the study.

4. Background Review

4.1 Review of Relevant Studies

There are no recent studies directly related to transit needs and plans in the County. However, a number of recent transportation studies pertaining to the County of Essex and the City of Windsor provide information relevant to this study.

4.1.1 Essex-Windsor Regional Transportation Master Plan

The County of Essex and the City of Windsor completed the Essex-Windsor Regional Transportation Master Plan (EWRTMP) in 2005. The EWRTMP identified significant capacity deficiencies on the Windsor-Essex roadway network due to increasing demand projected for 2021 and established principles and objectives to increase the availability and use of alternative transportation modes by making public transit, cycling and walking more attractive for residents. This study also identified the need to improve transit services in the Windsor-Essex region to meet the growing demand due to the changing demographics.

4.1.2 City of Windsor Transit Master Plan

The City of Windsor Transit Master Plan completed in 2006 also identified the need for transit services in neighbouring municipalities outside the boundaries of the City of Windsor due to significant population and employment growth in these areas as well as changing travel patterns in the region. The Plan proposes new routes into the neighbouring municipalities of Tecumseh, LaSalle, Lakeshore and Amherstburg, although the extent that these routes can be implemented will depend on the funding that will be received from the four municipalities.

As an extension of the Transit Master Plan study, a telephone transit survey was completed for Amherstburg, LaSalle, Tecumseh and Lakeshore in 2005. A total of 160 household surveys were collected from each municipality, respectively, to understand the transportation needs and attitudes toward the possibility of providing transit services. While feelings about the introduction of transit service are mixed, residents in these communities see benefits of providing transit service and perceive a need for some service into Windsor and Tecumseh for commuters and students, as well as local service for seniors and high school students.

4.1.3 Other Relevant Studies

Some local municipalities such as Lakeshore and Leamington also identified transit needs and importance to their communities and included transit policies in their transportation plans and/or Official Plan. For example, the Town of Lakeshore has included specific policies for transit such as encouraging connections with a regional public transit system, supporting County Road 22 as a mixed use transit supportive corridor and working with the neighbouring municipalities, the County, and transit providers to provide a viable transit service for the Town.

The Municipality of Leamington emphasized the importance of transit services for the mobility of Leamington residents and indicates in its long-term transportation plan that a public transit link to Windsor could be considered to connect residents to amenities such as medical services, entertainment and air and rail travel.

In addition, other studies completed by social and health service agencies have indicated that the lack of transportation alternatives has become a barrier to seniors and youth to access services, education and employment, especially for rural communities.

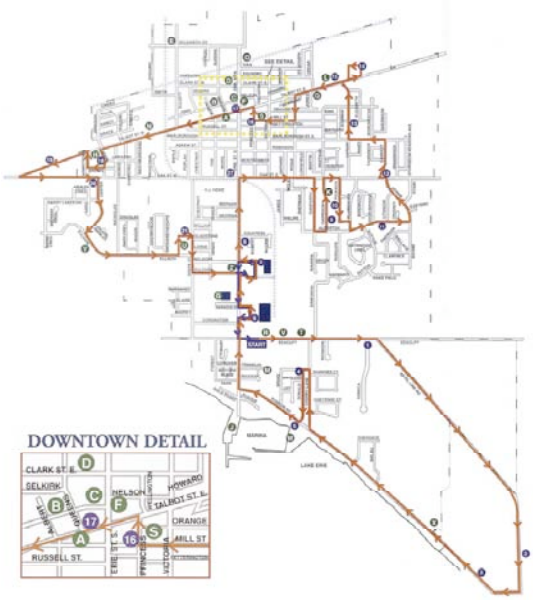
4.2 Existing Transit Services

There is currently very limited public transit service in the County of Essex. Leamington and Tecumseh are the only municipalities providing fixed-route transit services to its residents in the urban area while specialized service is available in LaSalle to persons with disabilities, and is provided by Handi-Transit Windsor. In addition, there are several Transit Windsor routes covering a small portion of LaSalle and Tecumseh while social service agencies such as community services provide bus and van services across the County and to the City of Windsor with focus on seniors and persons with disabilities.

4.2.1 Fixed-route Services

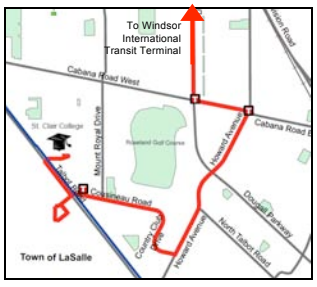
Municipality of Leamington

The Municipality of Leamington operates a bus system providing fixed-route services at hourly headways Monday to Saturday (eight hours per day with additional service on Friday and Saturday in July and August). During July and August, two seasonal routes are added to the system with similar service hours and operating headways. The service covers the urban areas in the municipality and provides an important transportation alternative to those who cannot or choose not to drive.



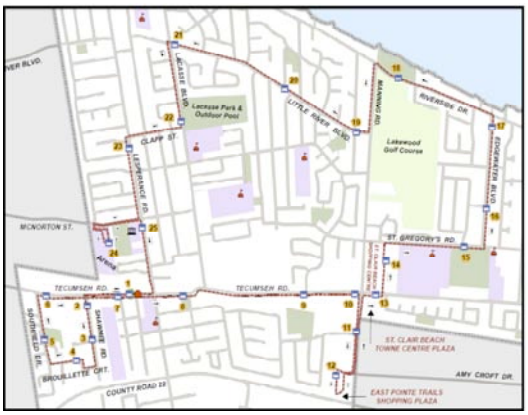
Town of LaSalle

An extension of Windsor Transit Route #6 (Dougall) operates into the Town of LaSalle as far as the Windsor Crossing Mall. The service operates approximately 17 hours per weekday at 40-minute headways with reduced service on Saturday, Sunday and holidays.



In addition, Transit Windsor Route #7 (South Windsor) operates through the northern boundary of LaSalle along Todd Lane and Sprucewood Avenue between 7:00am and 11:00pm, Monday to Saturday, at a base headway of 40 minutes.

Town of Tecumseh



In December 2009, the Town of Tecumseh introduced transit service to the northern portion of the municipality. Currently one route 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. Service operates every 30 minutes on Monday to Friday from 6:00am to 6:00pm.

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). This route operates at 30-minute headways in the weekday peak periods and 40-minute headways in other service periods on weekdays and Saturdays with reduced service on Sundays and holidays.

As these services in LaSalle and Tecumseh are provided by Transit Windsor as part of their existing route network for better service connections, all costs incurred in operating the services are absorbed by the City of Windsor.

4.2.2 Other Services

Handi-Transit Windsor also operates into the Town of LaSalle providing service to approximately 100 LaSalle residents with disabilities. There were approximately 3,000 trips made by registered users in 2007 according to the 2007 CUTA Specialized Transit Fact Book, and the Town pays the net operating cost of the service.

Limited specialized transit services are available in other municipalities across the County, and provided by non-profit organizations such as community services and South Essex Community Council. These services are provided within local municipalities as well as to the City of Windsor and focus on transportation needs of seniors (55 or older) and persons with disabilities. The services are primarily funded by social agencies, contributions and government grants.

4.2.3 Summary

Public transit services are currently very limited for Essex residents. As a result, in most areas within the County, those without access to private vehicles have to rely on their family, friends or private taxi services to get around the community for employment, medical, education and other services. The lack of transportation is a barrier that affects everyone in the community, particularly those who need the services such as the elderly, children, people with disabilities and low-income families.

4.3 The Experience of Others

To create a service that best meets the needs for travel for County of Essex residents, elements from different service designs have been examined based on similarity of demographic and geographic characteristics compared to the County of Essex.

4.3.1 Potential Service Designs

There are a number of fixed and flexible service design options that may be appropriate to present transit in the County of Essex as a viable transportation option, and meet the needs of various communities. These services options are further detailed in Exhibit 1.

Fixed-route Services

Fixed-route services are generally conventional transit services that follow a set timetable and stop only at designated locations or at flag stops along routes. In fixed schedule service, vehicles are scheduled into runs according to a timetable. This service design may be applicable for sections of routes in densely populated centres. Express service is typically a fixed schedule service, and community connectors may operate a combination of fixed schedule and demand responsive services.

Demand Responsive Services

Demand responsive services allow flexibility for vehicles to be routed according to passenger origin and destination requests and can be adapted to the needs of different areas and different seasons. Trips can be scheduled as subscription (regularly occurring trips), advance notice (typically two to 14 days in advance), or through real time booking (typically on the day of service). Day of service booking allows for immediate needs.

Flexible routes have a defined degree of flexibility that allows for demand responsive operation. There may be a segment of a fixed route with a fixed schedule that operates as demand responsive for a portion of the route. Flexible routes can be designed to offer deviation zones around established routes or points. Connectors may operate as demand responsive within a defined area and provide transfers to fixed schedule service.

In flexible schedule service, vehicles are dispatched according to requested passenger pick-up and drop-off times.

Service may be limited to defined zones by time of day or day of week, with boundaries, major origins and destinations based upon historical or predicted trip making. Zone service is best used for short trip distances to a common destination and may be transformed to a fixed route service if demand and trip patterns warrant.

A summary comparison of fixed-route and demand responsive services as well as their applications is provided in Exhibit 1.

Exhibit 1 – Fixed and Flexible Transit Services

	Settlement	Trip Patterns	Origins and Destinations
Fixed Route, Fixed Schedule	Dense	Predictable	Predictable
Fixed Route, Flexible Schedule	Dense	Predictable	Variable
Flexible Route, Fixed Schedule (Route Deviation)	Sparse	Variable	Predictable
Flexible Route, Fixed Schedule (Point Deviation)	Sparse	Predictable	Variable
Demand Responsive (Subscription)	Sparse	Predictable	Predictable
Demand Responsive (Advanced Reservation)	Sparse	Variable	Variable
Demand Responsive (Real Time Scheduling)	Sparse	Variable	Variable
Demand Responsive (Connector)	Dense	Predictable	Predictable
Demand Responsive (Flexible Route Segments)	Sparse	Predictable	Variable
Demand Responsive (Route Deviation)	Sparse	Predictable	Variable
Demand Responsive (Zone)	Dense	Predictable	Predictable

4.3.2 Case Studies

Several case studies of transit providers who incorporate elements of transit services that may be appropriate for implementation in the County of Essex were examined. These elements are divided into three categories:

- service design
- fares
- governance

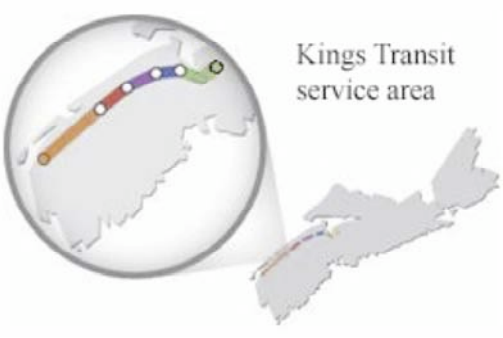
While transit services may be located in areas with settlement and geographical difference, the same elements may be applied on a scale that is effective for the County of Essex.

Kings Transit Authority – King's County NS

Service Design

The Kings Transit Authority (KTA) operates service primarily in the Highway 101 corridor throughout the Annapolis Valley in Nova Scotia. The service is designed to serve the towns of Berwick, Kentville and Wolfville, as well as the other communities in the Municipality of the County of Kings.

Service began in 1981, serving the towns of Wolfville and Kentville. Routes passing through the Town areas connected the two communities with hourly service, Monday to Saturday.



Service is also provided in the Highway 101 corridor throughout the County, with a local loop in Berwick, also with hourly service, Monday to Friday.

Following this initial service a route was added in Annapolis County, serving Middleton, Bridgetown, and intermediate communities along the highway corridor. Connections at Greenwood to the Kentville Route allow passengers to travel into Kings County.

More recently, a route was added, extending the network westerly to Digby County, serving Weymouth and Digby with connections to the Annapolis route at Bridgetown.

On September 4, 2007, service was expanded again, with a new eastern route added to serve the communities of West Hants, including Windsor and Brooklyn, with connections to communities in between, and a connection to the Wolfville-Kentville service at Hortonville.

With this last extension, routes now extend almost 200 kilometres along the Highway 101 corridor.

KTA Transit has been historically heralded as a very successful service, uncharacteristic of its small size. In the 2004 Strategic Plan prepared by ENTRA Consultants, this success was attributed to the demographic and demand pattern in the corridor, where a significant portion of the population and employment is located within typical walking distances of the highway corridor. The success and growth of the KTA service over the years points to the significant potential of a corridor service to attract ridership, and provide a convenient, attractive service to passengers over a variety of distances.

Fares

Cash fares for all services are $3.50. While it is possible to travel the full length of the network for this price, most travel is local, or extends over two routes at most. Cash discounts are extended to children only (age five through 11), and monthly passes are available with discounts for both seniors and children. No student discount is available.

KTA provides services outside the towns and the Municipality of the County of Kings at 100 percent cost recovery. These services are supported by fares and funded by the relevant local municipalities. Services within Kings County recovered more than 50 percent of the operating costs from fares – a cost-recovery level typical of much larger systems.

Governance

The KTA is designed to provide service to the towns of Berwick, Kentville and Wolfville and the Municipality of the County of Kings. The structure of the Authority is governed by

an agreement that sets out the various roles and responsibilities, membership and voting structure, cost sharing agreement and legal matters. The agreement has been in place since April 1999.

In addition to the services governed by the KTA, the Authority also operates service outside of Kings County, under contract to the Municipality of the County of Annapolis, Digby County, and the Municipality of West Hants. Services provided to the adjacent communities are fully funded by the communities on a 100 percent cost recovery basis. Representatives of Annapolis County are invited to participate in the regular meetings of the KTA, but do not vote.

Rural Transit, Bloomington, Indiana

Service Design

Rural Transit offers various transportation services. Express services provide residents opportunities to travel within Spencer, Ellettsville, and Bloomington, connecting to downtown Bloomington and Bloomington Transit on weekdays.

County Routes offer round-trip service between specific points in the counties one to five times weekly. County Routes link rural areas with towns, connecting to shopping centres, medical facilities and other services as well as Express Services, Bloomington Transit, Bedford & Mitchell Transit, and Indiana University buses.

County Sweeps provides round-trip transportation services Monday through Friday 6:00 – 8:00am and 4:00 - 6:00pm throughout Monroe, Owen and Lawrence counties.

These services are on a pre-schedule basis, with bookings required at least 24 hours in advance of a trip. Same day service is provided if time is available and accessible trips can be provided upon request.

Fares

To travel within one County, the adult cash fare is $0.75 and two County trips are $1.50. Transfers to Bloomington Transit and Indiana University buses are free. Reduced fares are available for children, and seniors are asked to donate the full fare amount. The low fare reflects the substantial funding support received by the Indiana Agency on Aging from the federal government.

Governance

The Rural Transit service is operated by the Area 10 Agency on Aging (AOA). In the United States, AOAs are established in each region as part of a national network of organizations established under the 1971 Older Americans Act (OAA) to respond to the needs of older adults. Funded by the federal government, most agencies are private,

non-profit corporations with a Board of Directors drawn from local agencies and public members, and provide a variety of program and funding support to seniors.

Rural Express – Metro Transit, Halifax, Nova Scotia

Service Design

The Halifax Regional Municipality (HRM) is introducing MetroX service and designed with the weekday commuter in mind, brings express transit to Park & Ride lots along 100-series highways within Halifax Regional Municipality. MetroX began with service to Tantallon in September 2009. The MetroX is proposed in three corridors including the Highway 103 corridor from Halifax to Upper Tantallon, the Highway 107 corridor from Halifax/Dartmouth to Musquodoboit Harbour, and the Highway 118/102 corridor from Halifax/Dartmouth to the airport and Enfield.

Once express bus service has been established on all three corridors, HRM will begin introducing local transportation services within the communities along the express routes, providing some level of transportation in and around those communities and connecting to the express bus service for travel into the downtown. Neighbouring East Hants is also considering local service serving Elmsdale and Enfield, with connections to the airport and the HRM service.

The service is proposed as a premium service with provisions for extra comfort, convenience and passenger amenities. The buses used for this type of service are different than standard city buses; specifically built and designed with comfortable seats and air conditioning. One wheelchair can be accommodated by a lift at the rear of the bus. A free designated Park & Ride lot at the Hubley Center can accommodate up to 185 vehicles. Each MetroX station will feature bike racks, with bike lanes available near each station, and every MetroX bus will also be equipped with a bike rack.

Fares

The cash fares for the service is $3.25 for adult and student and $2.50 for senior and child, reflecting the premium service, with direct, limited-stop service to the downtown core.

Governance

The Rural Express service is operated as a service of Metro Transit, a department of the Halifax Regional Municipality. Metro Transit is fully accountable to HRM council for operating and capital budget approval, major project initiatives and significant operating changes and improvements.

Downeast Transportation, Inc. (DTI) – Hancock County, Maine

Service Design

DTI is private, non-profit agency that operates flexible and fixed routes in Hancock County, Maine. The services include: a commuter service that is provided five days per week; contract services to workshops and employment centres; midday inter-city services between three Hancock County cities - Bar Harbor, Ellsworth and Bangor; and a seasonal fixed-route service servicing Acadia Park and the Schoodic Peninsula.

The weekday commuter service connects a variety of communities to Bangor, and is currently under review for service revisions.

Intercity services are scheduled on varying days, depending on the geographical area. For instance, the Bar Harbor-Ellsworth-Bangor service, and the Bar Harbor-Southwest Harbor-Ellsworth service operates on Mondays, while the Bar Harbor-Ellsworth service operates on Fridays. Each of these intercity routes operate one trip in each direction, from Bar Harbor in the morning and to Bar Harbor in the afternoon.

DTI also operates a seasonal fixed-route service, called the Island Explorer, which operates from mid-June to Labor Day using propane-powered 28-passenger vehicles. Service was extended to mid-October for 2007, with a grant from retailer LL Bean. Eight routes comprise this service, providing access to hiking routes, inns, beaches and campgrounds on Acadia National Park Island and providing connections to the Bar Harbor Airport and the Bay Ferry terminal (to Yarmouth, Nova Scotia) as well as to neighbouring villages.

A web-based automatic vehicle location system allows users to see the buses' location at any time.

The service began in 1999 with approximately 140,000 trips and has more than doubled today. Rider surveys show that out-of-state visitors comprise approximately 80 percent of the ridership.

Fares

The cash fares for the full year route are $1.00 within one Town, and $2.50 to $5.00 between neighbouring towns. Rides to Bangor are $9.00 from Bar Harbor and $7.00 from Ellsworth. The seasonal Island Explorer fixed route service is free, with funding support from the National Park Service and LL Bean. The propane fuel option is part of this funding arrangement, helping to secure the participation of LL Bean.

Governance

A Board of Directors was appointed when constituents in Hancock County, Maine established the service in 1979. This Board was formed to govern the organization and focus on policy issues. The issues include providing direction and setting policies for Downeast Transportation Inc., promoting a comprehensive transportation system within Hancock County; monitoring and supervising operations; planning services, overseeing the General Manager; fundraising and budget approval.

The Board comprises a Chair, nine members and two alternates, serving three year staggered terms (which may be consecutive). Board meetings are semi-monthly, and are attended by two standing committees in addition to the Board and the General Manager. An agenda, relevant reports and financial statements are sent to Board members in advance keeping meetings short and informal. The General Manager leads the Board members through these meetings. The Board receives minimal training and no administrative support. Board members are not compensated for expenses.

The Board reflects the demographics of the area, and is comprised of seven males and three females. Membership is comprised of residents who are interested in transportation. The current board members are the Operations Manager for the Bay Ferry, the National Park Superintendent, representatives from the “friends of Acadia”, transit planners, a housewife and retirees.

5. Demand Analysis

5.1 Demographic Information

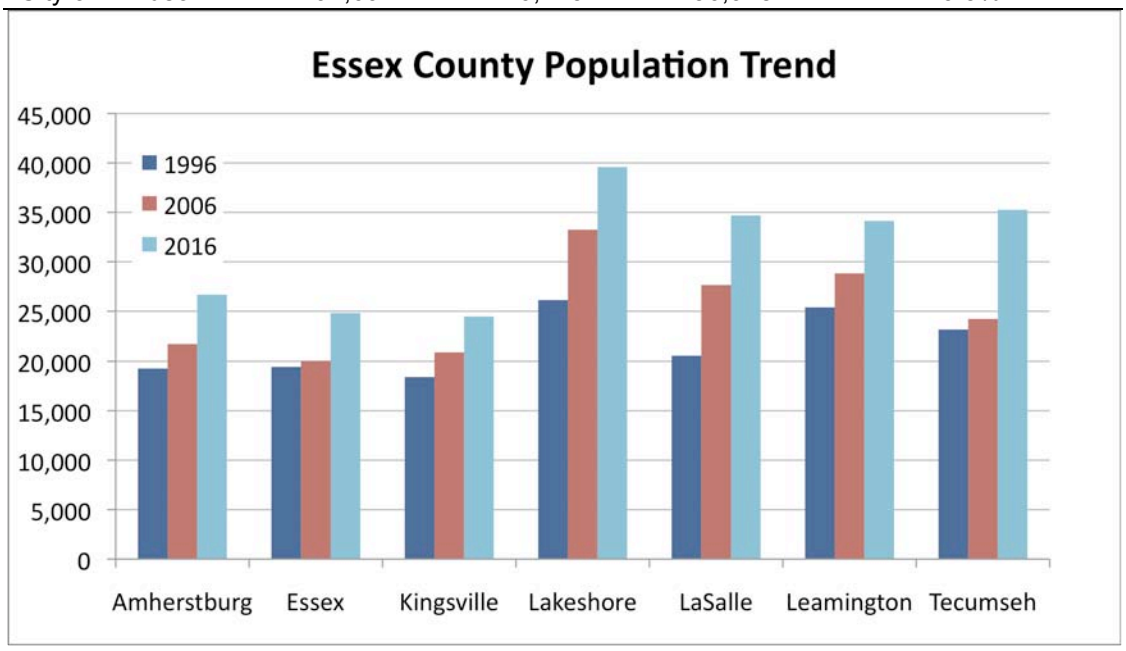
As shown in Exhibit 2, population in the County of Essex increased at a rate of 15.9 percent, from 152,352 to 176,642 during the time period from 1996 to 2006. Lakeshore and LaSalle grew at rates higher than the County at 27.2 percent and 34.5 percent respectively. Tecumseh and the Town of Essex experienced much slower growth than the County, at 4.6 percent and 3.1 percent respectively. As of 2006 Statistics Canada data, the Town of Lakeshore had the largest population in the County with 33,245 residents and the Town of Essex has the smallest population, with 20,043 residents.

A high growth scenario from 2006 to 2016 predicts continued population growth in all municipalities and overall County growth of 24.3 percent, from 176,642 to 219,612 residents. The County of Essex population in 1996, 2006 and projected growth for 2016 (high growth scenario) as per the County's Official Plan are shown in Exhibit 2. It should be noted that the County is in the process of updating its population projections and these figures may change.

As shown in Exhibit 3, in 1996 approximately 68 percent of County residents were under the age of 45, 13 percent between 45 and 54 years and 19 percent 55 years or older. In 2006 approximately 60 percent of County residents were under the age of 45, 16 percent between 45 and 54 years and 24 percent 55 years or older. This increase in population older than the age of 55 from 19 percent in 1996 to 24 percent in 2006, combined with a decrease in people under the age of 45 from 68 percent in 1996 to 60 percent in 2006 shows a general aging trend in the County. This suggests a potential transit need as senior citizens often rely on public transportation for mobility.

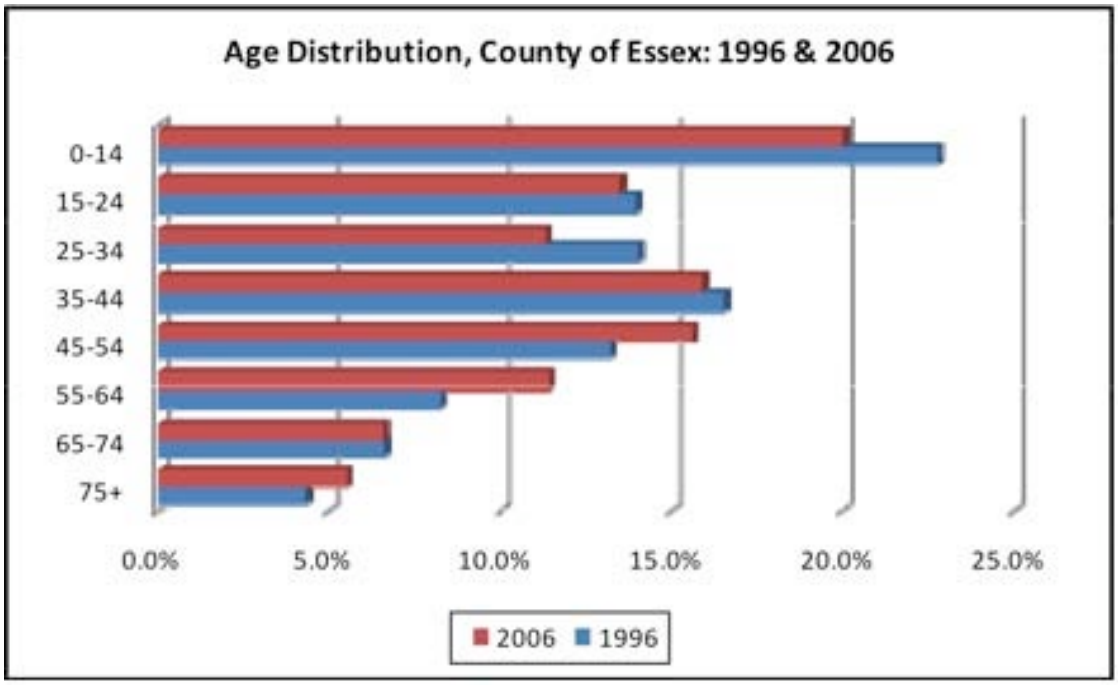
Exhibit 2 – County of Essex Population

Municipality	Population			Population Change
	1996	2006	2016	1996 - 2006
Amherstburg	19,273	21,748	26,671	12.8%
Essex	19,437	20,032	24,818	3.1%
Kingsville	18,409	20,908	24,461	13.6%
Lakeshore	26,127	33,245	39,579	27.2%
LaSalle	20,566	27,652	34,691	34.5%
Leamington	25,389	28,833	34,133	13.6%
Tecumseh	23,151	24,224	35,259	4.6%
County of Essex	152,352	176,642	219,612	15.9%
City of Windsor	197,694	216,473	236,948	9.5%



Source: Statistics Canada 1996 and 2006, County of Essex and City of Windsor Official Plan

Exhibit 3 – County of Essex Population Age Distribution



Source: Statistics Canada, 1996 and 2006

As population in the County grows, so do the transportation needs. As the population continues to age, an increasing number of people will become dependant on public transit as they are no longer able to drive.

5.2 Employment-based Commuters

5.2.1 Commuting Patterns

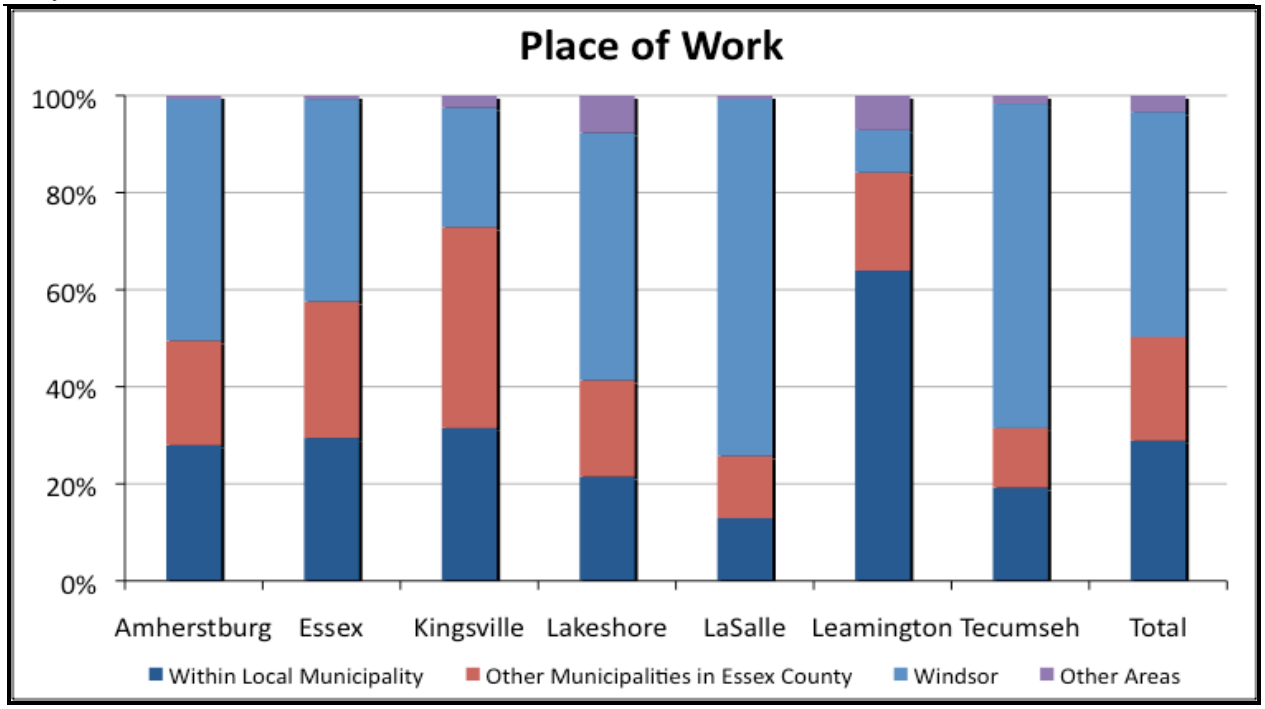
As shown in Exhibit 4, the City of Windsor is the most popular work place in the region, especially for residents in LaSalle (74 percent), Tecumseh (67 percent), Lakeshore (51 percent) and Amherstburg (50 percent). Residents in all County of Essex towns except Leamington and Kingsville make more external work trips to Windsor than all other municipalities in the region. Leamington residents make the fewest daily work trips to Windsor, at only 9 percent (935 trips).

Inter-municipal work trips between towns in the County of Essex are also worth noting, as approximately 21 percent (1,855 trips) of Kingsville work trips are made to Leamington, nearly as many as the 25 percent (2,130 trips) made to Windsor. Work trips from Leamington to Kingsville and from Lakeshore to Tecumseh also show significant daily inter-municipal travel at approximately 14 percent (1,450 trips) and 11 percent (1,610 trips) respectively.

There are also a notable proportion of travellers making reverse commutes from Windsor to access employment in the County of Essex. Nearly 20 percent (13,170 trips) of all Windsor residents work in County of Essex municipalities, namely in Tecumseh (9 percent), LaSalle (5 percent), and LaSalle (2 percent).

Exhibit 4 – Place of Work Data (2006)

	Residents Employed in								
Residence	Amherstburg	Essex	Kingsville	Lakeshore	LaSalle	Leamington	Tecumseh	Windsor	Other
Amherstburg	2,510	310	55	185	540	75	770	4,475	60
Essex	295	2,475	500	315	160	355	735	3,505	60
Kingsville	55	780	2,730	360	95	1,855	445	2,130	220
Lakeshore	70	565	195	3,030	125	230	1,610	7,175	1,085
LaSalle	265	175	40	240	1,510	45	735	8,595	80
Leamington	0	170	1,450	245	35	6,860	270	935	765
Tecumseh	50	175	50	870	145	20	2,060	7,155	180
County of Essex	3,245	4,650	5,020	5,245	2,610	9,440	6,625	33,970	2,450
City of Windsor	630	745	290	3,535	1,550	430	5,990	67,630	815



Source: Community Profiles, 2009

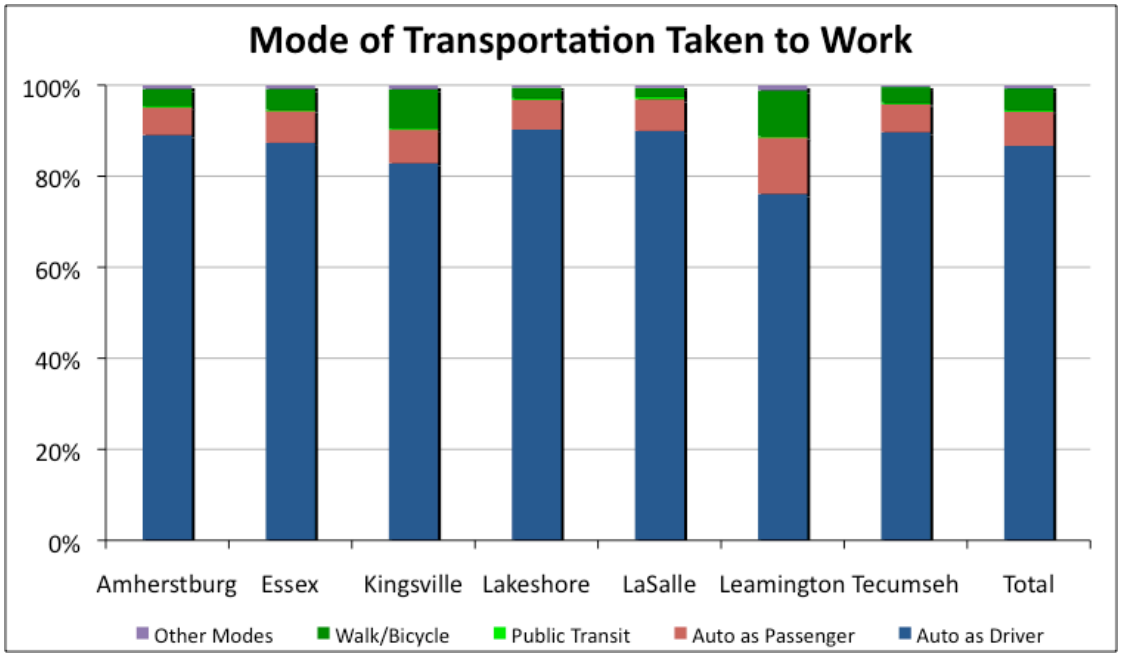
Leamington residents are the most likely to find employment within their own municipality as approximately 64 percent of daily work trips are made internally while LaSalle residents make the fewest internal daily work trips, at only 13 percent. Residents in other towns including Amherstburg, Essex, Kingsville, Lakeshore and Tecumseh all make between 19 percent and 32 percent of daily work trips internally.

Overall, more than 46 percent of County residents work in Windsor while fewer than 29 percent are employed within their home municipality and approximately 21 percent work within the County of Essex, but outside of their home municipality.

5.2.2 Commuting Mode

Due to the lack of alternative transportation modes, more than 94 percent of County of Essex work trips are made either as a driver or passenger of a private vehicle according to 2006 Statistics Canada data (see Exhibit 5). This is higher than provincial and Windsor averages of 79.2 and 87.5 percent respectively. Public transit use for work trips has a provincial modal split of 13 percent, yet account for less than 0.5 percent in the County of Essex. Walking and biking to work have a modal share of 4.7 percent in the County, slightly more than 4.3 percent in Windsor but less than the province-wide 6.8 percent average.

Exhibit 5 – Mode of Transportation Taken to Work



Source: Statistics Canada, 2006

5.2.3 Summary

The review of place of work data indicates that there is a significant demand for transportation services between all municipalities in the County of Essex and the City of Windsor, particularly those municipalities adjacent or close to the City of Windsor. Significant demand is also found between some municipalities in the County such as Kingsville – Leamington, Tecumseh – Lakeshore and Essex – Kingsville. Internal demand is also high in some municipalities such as Leamington.

Apart from full-time employees who require regular transportation services for their commuting trips, businesses that rely heavily on seasonal employment and lower-skilled workers are dependant on younger workers and other employees that tend to more dependant on public transit travel.

There is also likely a latent demand for transportation services, as some people have to turn down job opportunities because transportation is not available. Approximately 15 percent of employers who responded the online survey indicated that lack of alternative transportation options creates a barrier for retaining employees. Representatives from economic development also recognized that transit not only allows employee access to jobs, but gives employers more flexibility in where they choose to locate in the region.

5.3 Post-secondary Students

Post-secondary students often rely on public transportation to travel from home to their schools. Transit needs may exist from student commuters living in the County of Essex and attending the University of Windsor and St. Clair College.

Exhibit 6 shows that more than 5,300 County of Essex residents are currently enrolled in full time studies at major Windsor post-secondary institutions**.** Approximately 3,500 students from the County of Essex are attending school at the University of Windsor. More than 1,800 students from the County of Essex attend St. Clair College. Transit service from the County to the post-secondary schools in Windsor could alleviate an existing transit need and provide post-secondary education opportunities to those who cannot afford their own transportation as well as contribute to increased enrollment from County residents.

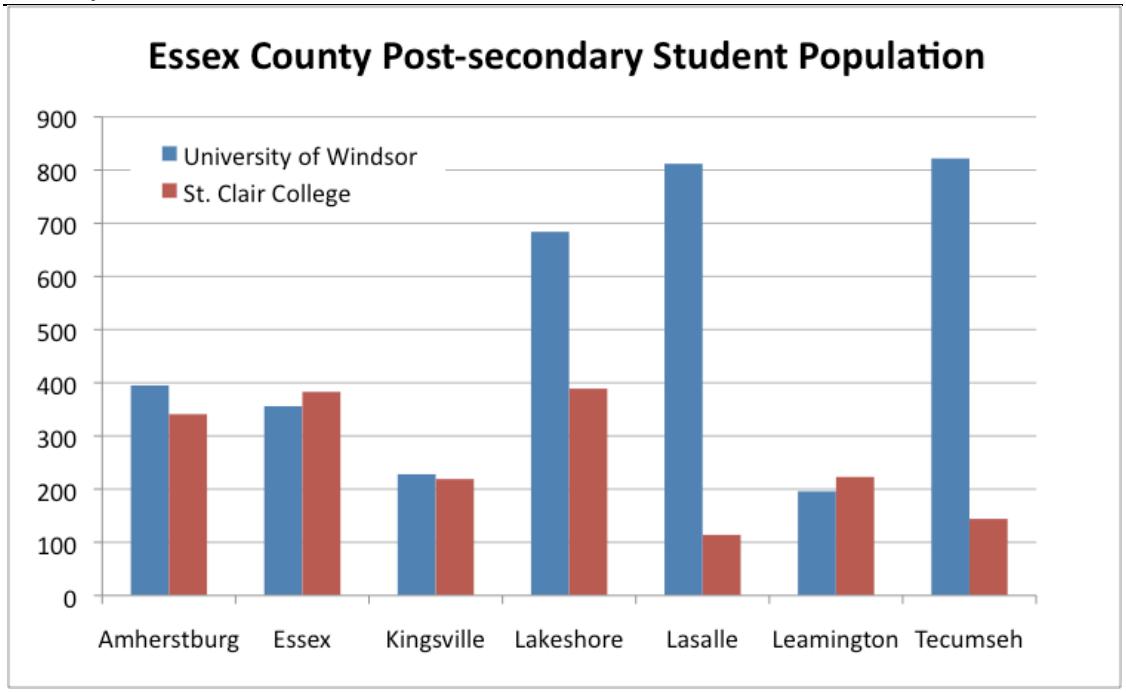
As shown in Exhibit 6, both Tecumseh and LaSalle have more than 800 students currently attending the University of Windsor. Kingsville and Leamington are the towns with the fewest students enrolled, with 228 and 196 respectively, likely due to the lack of transportation alternatives and relatively long distance. The University of Windsor has a total student population from the Windsor-Essex region of 11,119. Approximately 69 percent (7,625 students) come from Windsor and 31 percent (3,493 students) from the County of Essex. Student population at the university from the County of Essex is proportionally lower than the overall Windsor-Essex population proportion of 55 percent (216,473 residents) in Windsor and 45 percent (176,642 residents) in the County of Essex.

Both the towns of Essex and Lakeshore have approximately 400 full time students attending St. Clair College. Tecumseh and LaSalle are the towns with the fewest

students enrolled, with 144 and 114 respectively. The Windsor campus of St. Clair College has a total full time student population of 6,865 and more than 26 percent (1,813 students) come from the County of Essex. An additional 5,383 continuing education and part time post-secondary students are enrolled, and more than 21 percent (1,140 students) are from the County of Essex.

Exhibit 6 – Post-secondary Student Population

	Student Population			
Municipality	University of Windsor	St. Clair College	Total	Percentage of Population
Amherstburg	395	341	736	3.4%
Essex	356	383	739	3.7%
Kingsville	228	219	447	2.1%
Lakeshore	684	389	1,073	3.2%
LaSalle	812	114	926	3.3%
Leamington	196	223	419	1.5%
Tecumseh	822	144	966	4.0%
County of Essex Total	3,493	1,813	5,306	3.0%



Source: University of Windsor and St. Clair College, 2009

5.4 Other Potential Markets

In addition to commuters and post-secondary students, there are also significant needs for other purposes such as medical, shopping, education (secondary schools) and social based on the results of the surveys and consultation as well as other studies.

The County of Essex school boards provide student transportation for secondary students living beyond 3.2 kilometres of their schools. However, as shown in Exhibit 7, many students are living within 3.2 kilometres of their schools in all municipalities of the County of Essex. These students would have to walk for a great distance or get a ride from their family.

In addition to trips to and from school, their after-school activities such as recreation, shopping, entertainment and visiting friends heavily rely on the location of the activity centres or their parents' schedule. Parents of secondary students indicated how the lack of transportation options either restricted access to after-school activities, or detracted from overall quality of family life and added significant travel costs in transporting students to and from evening programs.

Secondary students are often potential transit users and most likely would use the service for their school trips as well as after-school activities if the service were available in their communities.

Exhibit 7 – Secondary Student Walkers

Secondary School	Location	Walkers
Belle River District High School	Lakeshore	196
Essex District High School	Essex	308
General Amherst	Amherstburg	402
Harrow District High School	Essex	108
Kingsville District High School	Kingsville	230
Leamington District High School	Leamington	438
Sandwich Secondary School	LaSalle	202
Western Secondary School	Amherstburg	-
Cardinal Carter	Leamington	91
St. Anne High School	Lakeshore	68
St. Thomas of Villanova	LaSalle	-
St. Mikes – Essex	Essex	23
Ecole l'Essor	Tecumseh	138

Source: Windsor and Essex Student Transportation Services

In the Essex-Windsor region, most services including medical, social, shopping and entertainment are located outside of their own municipality. For those who do not have access to a private vehicle, cannot drive, or prefer not to drive, such as seniors, youth

and persons with disabilities, especially dialysis patients, regular transportation services allow access services available to them locally and outside of their municipalities. However, the current transportation services provided by social service agencies are very limited, particularly to the City of Windsor, due to a lack of resources and funding.

Public consultation and stakeholder interviews suggest that lack of access to transportation options is a major quality of life issue and contributes to poor health and a pervasive loss of independence among senior citizens. Dependence on others to access medical appointments and visit friends and relatives may cause some senior citizens to move, give up social activities, or continue to own and drive an automobile past the time they can safely do so.

Access to public transit is important for low- and middle-income non-drivers to provide a basic level of mobility and enhance their quality of life.

5.5 Key Regional Destinations

Based on input from public, key stakeholders and the project steering committee, the key destinations in the Essex-Windsor area for the potential transit service include, but are not limited to:

- downtown Windsor
- University of Windsor
- St. Clair College
- Tecumseh Mall
- Devonshire Mall
- Old Castle area of Tecumseh

5.6 Existing and Future Travel Patterns

The PM peak hour Origin-Destination (OD) matrices obtained from the Essex-Windsor regional transportation forecasting model developed by the EWRTMP study were used to identify the overall travel patterns in Essex-Windsor.

Exhibit 8 shows the existing overall travel demand (2009 total person trips) in the PM peak hour derived based on the 2001 and 2021 OD matrices from the regional transportation forecasting model. The overall travel patterns are very similar to commuting patterns in the region, given that employment-based commuters represent a significant portion of peak period travel.

Exhibit 8 – Existing PM Peak Hour Person Trips

	Amherstburg	Essex	Kingsville	Lakeshore	LaSalle	Leamington	Tecumseh	Windsor	Total
Amherstburg	1,221	307	162	133	341	131	169	1,249	3,714
Essex	380	916	385	350	262	368	267	1,543	4,471
Kingsville	194	361	925	317	150	655	188	985	3,773
Lakeshore	140	273	265	1,303	220	341	541	2,167	5,249
LaSalle	371	226	121	233	959	114	246	2,611	4,882
Leamington	194	419	701	500	165	3,312	249	1,056	6,597
Tecumseh	222	270	210	573	347	215	1,040	3,061	5,938
Windsor	2,002	1,978	1,413	3,350	3,755	1,275	3,930	-	17,702
Total	4,724	4,750	4,182	6,760	6,200	6,411	6,628	12,671	52,326

Exhibit 9 shows a representation of the existing travel patterns within and between municipalities in the County of Essex as well as to and from the City of Windsor. It should be noted that lines are not shown when trips made between destinations total fewer than 500.

In addition to high travel demand between the City of Windsor and all municipalities in the County, the following links have relatively high inter-municipal travel demand:

- Amherstburg – LaSalle
- Amherstburg – Essex
- Essex – Kingsville
- Essex – Lakeshore
- Essex – Leamington
- Essex – Tecumseh
- Kingsville – Lakeshore
- Kingsville – Leamington
- Lakeshore – Leamington
- Lakeshore – Tecumseh
- LaSalle – Tecumseh

Local travel within each municipality is also high particularly in Leamington, Lakeshore, Amherstburg and Tecumseh.

Exhibit 9 – Existing Travel Patterns (2009 PM Peak Hour)

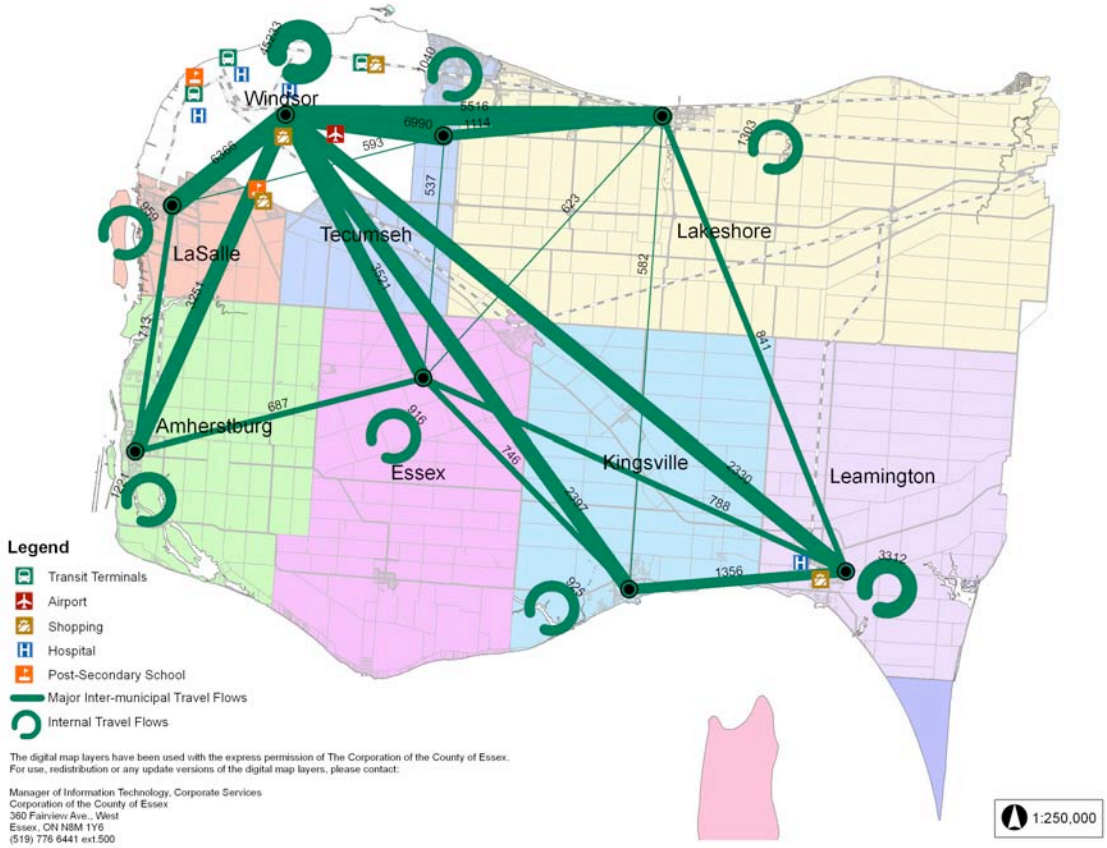


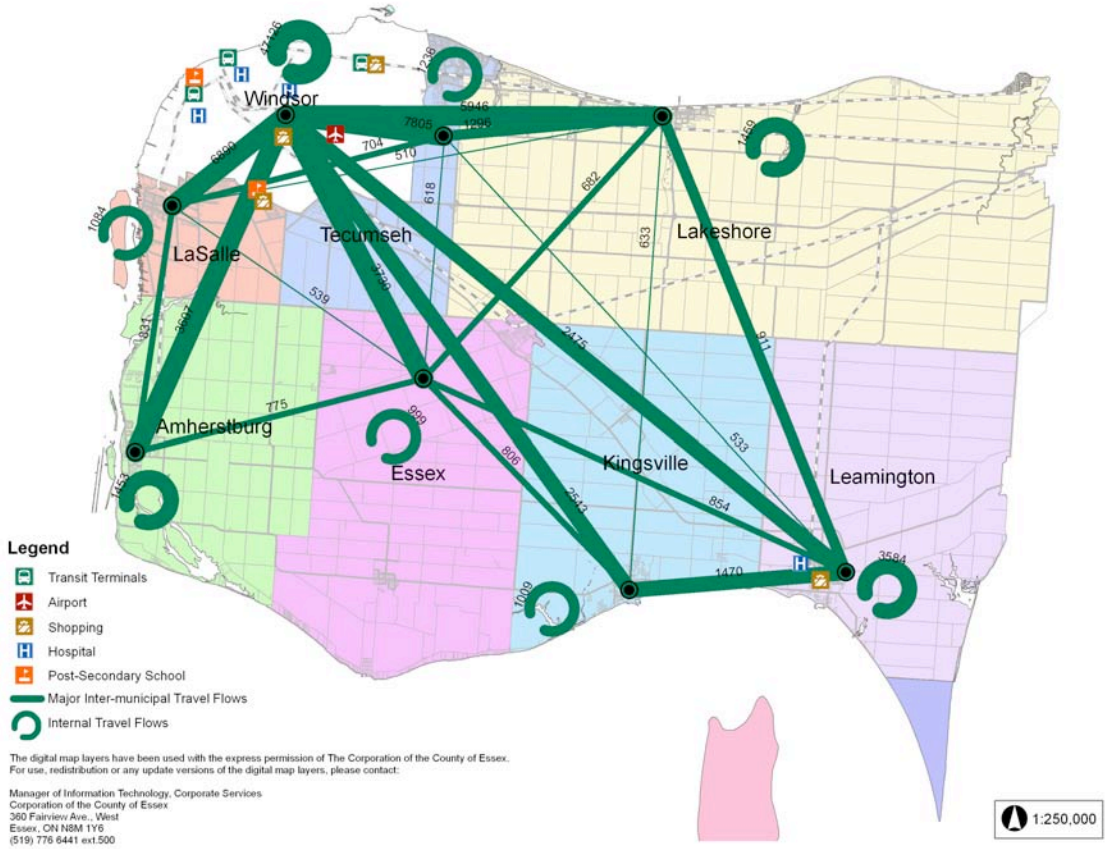
Exhibit 10 shows the 2016 PM peak hour travel demand for each municipality based on the results from the regional transportation forecasting model. The projected future travel demand indicates that travel within the region will grow between all municipalities as population and employment grow, especially in the areas in proximity in the City of Windsor including Tecumseh, Amherstburg, LaSalle and Lakeshore. However, as shown in Exhibit 11, the general travel patterns will remain similar within the region.

Travel patterns are based on where people live and where their main activities such as work, school and shopping are located. Transit services that follow popular travel patterns are most likely to attract riders and meet the transportation needs of most travelers.

Exhibit 10 – 2016 PM Peak Hour Person Trips

	Amherstburg	Essex	Kingsville	Lakeshore	LaSalle	Leamington	Tecumseh	Windsor	**Total**
Amherstburg	1,453	353	187	155	399	152	200	1,422	**4,320**
Essex	423	999	416	382	287	401	298	1,648	**4,855**
Kingsville	217	389	1,009	344	164	711	210	1,053	**4,098**
Lakeshore	159	300	289	1,459	248	369	618	2,375	**5,817**
LaSalle	432	252	136	262	1,084	128	282	2,879	**5,456**
Leamington	217	453	759	541	180	3,584	276	1,127	**7,138**
Tecumseh	276	320	251	678	421	257	1,236	3,538	**6,977**
Windsor	2,185	2,082	1,490	3,572	4,011	1,349	4,267	-	**18,955**
Total	**5,361**	**5,149**	**4,536**	**7,394**	**6,794**	**6,951**	**7,387**	**14,042**	**57,615**

Exhibit 11 – Future Travel Patterns (2016 PM Peak Hour)



5.7 Potential Transit Demand

ENTRA reviewed the transit demand in other regions in Ontario where region-wide transit services are currently available and identified potential transit modal splits between communities in the region. Based on the use of transit services in other similar municipalities, it is estimated that if transit services with good service coverage and level of service were fully implemented in the Windsor-Essex region, the overall transit modal split would be approximately two percent, with higher transit use within the City of Windsor and between urban areas in the County of Essex and the City of Windsor and relatively low demand to and from the rural areas in the County.

The current modal split within Windsor is approximately three percent. Given that there is virtually no transit service outside of these areas at this time (with the exception of Leamington), the modal splits will shift gradually with the introduction and increases in service in areas currently with no transit service. Assuming that the region including Windsor achieves a modal split of two percent at full system implementation, it is estimated that the County's modal share (excluding trips within Windsor) will gradually reach 1.2 percent as services mature.

Given the timing of the possible service development, the potential demand for 2011, 2016, and 2021 in peak and midday periods were developed based on the total travel demand and estimated mode splits between each urban and rural community. Travel demand during peak periods, midday and evening are assumed proportionally to PM peak hour demand and estimated based on the Transportation Tomorrow Survey (TTS) 2006 data.

Exhibit 12, Exhibit 13 and Exhibit 14 show the potential transit demand between municipalities in the region for 2011, 2016, and 2021 respectively. More detailed estimates were also developed for each urban and rural community in the County and will be used for the service options development.

It should be noted that these estimates represent potential transit demand only. Actual ridership may vary depending on the various service characteristics that will be provided, including service coverage, frequency and span, as well as other factors such as affordability and effective marketing. The estimated potential transit demand is mostly consistent with the overall travel patterns in the region.

Results of the travel and transit demand analyses indicate that the most popular transit destination is the City of Windsor where major employment, education and other services are located. The municipalities in the County of Essex with the highest future transit demands are the areas immediately adjacent to Windsor, including Tecumseh and LaSalle, and to a lesser extent, Lakeshore and Leamington.

Exhibit 12 – 2011 Potential Transit Demand

	Amherstburg	Essex	Kingsville	Lakeshore	LaSalle	Leamington	Tecumseh	Windsor	Total
Peak Periods (6:00am – 9:00am, 3:00pm – 6:00pm)									
Amherstburg	33	7	4	3	9	4	5	46	109
Essex	7	23	7	7	6	9	7	56	124
Kingsville	3	8	21	6	3	14	5	28	87
Lakeshore	3	7	6	41	8	10	23	142	241
LaSalle	9	6	3	9	44	4	14	206	295
Leamington	4	9	14	9	4	92	6	34	173
Tecumseh	5	7	5	23	13	7	52	233	344
Windsor	44	55	27	136	196	34	226	0	717
Total	**107**	**123**	**86**	**233**	**283**	**175**	**337**	**746**	**2,090**
Midday (9:00am – 3:00pm)									
Amherstburg	20	4	2	2	5	2	3	28	66
Essex	4	14	4	4	4	6	4	34	74
Kingsville	2	5	13	3	2	9	3	17	52
Lakeshore	2	4	4	25	5	6	14	85	144
LaSalle	5	4	2	5	26	3	8	124	177
Leamington	2	6	8	5	2	55	4	21	104
Tecumseh	3	4	3	14	8	4	31	140	206
Windsor	26	33	16	82	117	20	135	0	430
Total	**64**	**74**	**52**	**140**	**170**	**105**	**202**	**448**	**1,254**

Exhibit 13 – 2016 Potential Transit Demand

	Amherstburg	Essex	Kingsville	Lakeshore	LaSalle	Leamington	Tecumseh	Windsor	Total
Peak Periods (6:00am – 9:00am, 3:00pm – 6:00pm)									
Amherstburg	55	12	6	5	14	6	8	73	180
Essex	12	38	12	12	10	15	12	88	198
Kingsville	6	12	34	9	5	23	8	43	139
Lakeshore	5	12	9	69	14	15	38	224	387
LaSalle	14	10	5	14	72	7	24	319	464
Leamington	6	15	23	15	7	147	11	53	277
Tecumseh	8	12	8	38	24	11	88	375	564
Windsor	73	88	43	224	319	53	375	0	1,176
Total	**180**	**198**	**139**	**387**	**464**	**277**	**564**	**1,176**	**3,385**
Midday (9:00am – 3:00pm)									
Amherstburg	33	7	3	3	9	4	5	44	108
Essex	7	23	7	7	6	9	7	53	119
Kingsville	3	7	20	6	3	14	5	26	84
Lakeshore	3	7	6	41	8	9	23	134	232
LaSalle	9	6	3	8	43	4	14	192	279
Leamington	4	9	14	9	4	88	7	32	166
Tecumseh	5	7	5	23	14	7	53	225	339
Windsor	44	53	26	134	192	32	225	0	705
Total	**108**	**119**	**84**	**232**	**279**	**166**	**339**	**705**	**2,031**

Exhibit 14 – 2021 Potential Transit Demand

	Amherstburg	Essex	Kingsville	Lakeshore	LaSalle	Leamington	Tecumseh	Windsor	Total
Peak Periods (6:00am – 9:00am, 3:00pm – 6:00pm)									
Amherstburg	59	12	6	5	15	7	9	76	189
Essex	12	39	12	12	10	15	13	90	205
Kingsville	6	12	35	10	5	23	8	44	143
Lakeshore	5	12	10	73	15	15	41	232	403
LaSalle	15	10	5	15	75	7	24	328	479
Leamington	7	15	23	16	7	151	11	55	285
Tecumseh	9	13	8	41	26	12	94	394	598
Windsor	76	90	44	232	328	55	388	0	1,212
Total	**189**	**205**	**144**	**403**	**481**	**285**	**588**	**1,219**	**3,514**
Midday (9:00am – 3:00pm)									
Amherstburg	35	7	4	3	9	4	5	46	114
Essex	7	23	7	7	6	9	8	54	123
Kingsville	4	7	21	6	3	14	5	26	86
Lakeshore	3	7	6	44	9	9	24	139	242
LaSalle	9	6	3	9	45	4	15	197	288
Leamington	4	9	14	9	4	91	7	33	171
Tecumseh	5	8	5	25	15	7	57	237	359
Windsor	45	54	26	139	197	33	233	0	727
Total	**114**	**123**	**86**	**242**	**289**	**171**	**353**	**732**	**2,108**

6. Needs and Opportunities

This section summarizes the needs and opportunities for potential transit services in the County as well as service connections to the City of Windsor. This forms the base for the service development in the next phase of the study. The following needs and opportunities are identified based on our background research, online survey results, stakeholder and public consultations as well as the market analysis:

- Public transit services are currently very limited for County of Essex residents. As a result, in most areas within the County, those without access to private vehicles have to rely on their family, friends or private taxi services to get around the community for employment, medical, education and other services. The lack of transportation is a barrier that affects everyone in the community, particularly those who need the services such as the elderly, children, people with disabilities and low-income families.
- Population in all municipalities of the County is projected to grow in the next decade. As communities are growing, so are transportation needs. As the population continues to age, an increasing number of people will become dependant on public transit, as they are no longer able to drive.
- Lack of alternative transportation options creates a barrier for businesses to retain employees and limits their flexibility in where they choose to locate in the region, particularly those that rely heavily on lower-skilled and younger workers more dependant on public transit.
- Post-secondary students often rely on public transportation to travel from home to their schools. Transit service from the County to the post-secondary schools in Windsor could alleviate an existing transit need and provide post-secondary education opportunities to those who cannot afford their own transportation as well as to contribute to increased enrollment from County residents.
- A large number of secondary school students in every County of Essex municipality are currently not eligible for transportation services and require alternative transportation for their school trips, especially during the winter. In addition, the lack of transportation options either restricts access to after-school activities or detracts from overall quality of family life, and adds significant travel costs in transporting students to their after-school activities.
- There is also an unmet travel need from Windsor to municipalities of the County for various purposes such as employment, recreation and social activities.
- Most residents currently rely on driving for their transportation, particularly for work trips. However, peak traffic congestion often occurs on key County roads due to the increasing demand. An effective transit system will provide alternative transportation to County of Essex residents, reduce traffic congestion and capital investments on road infrastructure as well as greenhouse gas emissions and therefore support more sustainable development for local economy and environment.

- Given the broader transit context in the province, there is currently more funding available to establish a transit system as well as for future service expansion. The federal gas tax fund as the largest component of the Building Canada plan and targets exclusively municipal infrastructure to improve water and air quality and reduce greenhouse gas emissions could be a funding resource for set up a transit system in the County. And the gas taxi funding allocated by the provincial government to all transit systems in Ontario could support the future service expansion.
- The County of Essex has a mature sophisticated transit neighbour, the City of Windsor, who has experience and skills in transit operations and is currently providing transit services in the area.

7. Vision, Goals and Objectives

If Essex County pursues the development of transit in the County, it should be guided by an overall vision, with goals and objectives that can help define the role of the service and guide its development.

The purpose of establishing a vision and drafting goals and objectives is to provide a long-term, definable and attainable direction to deliver desired services within the County. It also aims to infuse the organization with purposeful action that will help to achieve its desired goals.

This section describes a possible vision, with goals and objectives related to the development of a transit system for the County of Essex. This vision, developed for the purpose of this report, was used as the basis for the development of routes and services in the County.

7.1 Vision

Recognizing the County of Essex's regional transportation needs and the objectives of the Transportation Master Plan, this vision was identified to help focus efforts to develop a proposed future transportation system for the County. The proposed vision is:

> *To provide sustainable mobility options for all rural and urban residents, contributing to quality of life, economic and environmental sustainability, economic development and a healthy natural environment.*

7.2 Goals

Setting specific goals and objectives are an integral part of directing and fulfilling the County's vision to provide sustainable mobility options for all County residents. The proposed goals, related to the vision, are as follows:

- to provide multi-tiered accessible transit services connecting regional urban areas to employment, education, recreation, social and health facilities
- to support the County's transportation system by providing a transit alternative to complement the road network and active transportation systems
- to provide customer-focused services that meet the transportation needs of all our communities
- to provide supporting rural services connecting to urban communities and services in the County

7.3 Objectives

Objectives are specific, measurable, intermediate ends that are achievable and allow measurement of progress toward achieving the proposed goals. The following are the proposed objectives:

- to provide an integrated network of accessible services comprising urban connectors, County connectors, local and rural service
- to design demand-based service levels and schedules to provide convenient affordable service
- to provide service with accessible vehicles and accessible options to meet the needs of all residents
- to provide direct service for work and school commuters, connecting Windsor and County origins and destinations for effective two-way travel
- to maintain reasonable cost structure, guided by the service standards, to ensure sustainability
- to provide fair and equitable fare structures that ensure fairness to customers and affordability for funding partners

8. Service Concept and Performance Standards

8.1 Service Concept

Based on the County's unique demographic conditions and travel behaviour, ENTRA identified four distinct types of service to fulfill the diverse needs within the County. Each service type supports different objectives and thus yields different degrees of transit service delivery. The four types of service include:

- Urban Connectors
- County Connectors
- Local Services
- Rural Services

Each of these distinct service types is described in the subsequent sections.

Urban Connectors

Urban Connectors are fully accessible transit corridors designed to connect between urban communities in the County and the City of Windsor and its urban fringe.

The primary focus of Urban Connectors is to fulfill the needs of work and student commuters, with consideration for all other trip purposes. Services are designed to facilitate travel from County origins into Windsor (and return) as well as from Windsor origins to the County (and return). Stop locations and service levels would vary depending on observed demand.

These routes are designed (1) to provide superior service particularly in urban areas and the urban fringe by installing more frequent stops and passenger amenities, (2) connect to major Windsor attractions and Transit Windsor services, and (3) to be integrated with local services where warranted and practical, in the County urban areas. They would operate initially on a weekday-only basis, with service expansions to evenings and weekends based on performance.

County Connectors

County Connectors are fully accessible transit corridors with the objective of providing warranted connections to and between urban communities in the County. These corridor-based services aim to satisfy all trip purposes and would operate with limited stops in rural areas, based on demonstrated demand.

Like Urban Connectors, these services are designed to integrate with local services where warranted and practical, particularly at corridor ends. They would operate primarily on a weekday-only basis, with service expansions to evenings and weekends based on performance.

Local Services

Local Services provide integrated, fully-accessible service to all residents in the service area and are designed to maximize coverage in the urban area and connect to County and Urban Connectors.

Local Services could be considered primarily in urban areas where the urban population exceeds a range of 7,000 to 10,000 people and will be planned in conjunction with, and may be supported by, the local municipality.

They would operate primarily on a weekday-only basis, with service expansions to evenings and weekends based on performance.

Rural Services

Rural Services are designed to provide connections between rural areas and the urban communities in the County, focused on providing access to necessary amenities and services. They would operate on a demand-response service design and would provide integrated accessible service to all residents in the service area.

These services should be planned in conjunction with, and may be supported by, the local municipality.

Like the other service types, Rural Services would be implemented on a weekday-only basis, with service expansions to evenings and weekends based on performance.

8.2 Performance Standards

This section outlines the recommended guidelines for developing, implementing, and monitoring transit services in the County of Essex. Establishing performance standards is a pivotal element to transit planning and decision-making as they provide a clear and consistent framework for justifying the provision of new or revised transit services and examining the effectiveness of services in operations.

Service standards also define the conditions that require action when standards are not met, but allow flexibility to respond to varied customer needs and community expectations in an accountable, equitable and efficient manner.

In the County of Essex, these service standards provide a framework to determine the initial feasibility for the provision of regional transit service. Transit services in the County of Essex should strive to achieve the following performance targets in a mature system, however, lower performance levels are to be expected in the short-term.

Amount of Service

Vehicle-hours per capita is an important measure of the amount of service provided. Vehicle hours provided in different systems tend to increase exponentially with population size, so that vehicle-hours per capita increases with population in a linear fashion. In practice, this means that small systems tend to provide service in the range of 0.5 to 0.75 annual vehicle hours per capita, while large systems typically provide in excess of 2.0 vehicle-hours per capita. For communities similar to the County of Essex, the typical range is 0.5 to 1.0 annual vehicle-hours per capita.

ENTRA recommends that a minimum target of 0.5 annual vehicle-hours per capita should be established to guide the provision of services within a defined service area, with a goal of 0.75 vehicle-hours per capita as the system matures.

Service Utilization

Passengers per vehicle-hour measures the total number of passengers divided by the number of vehicle-hours of service. It indicates the effectiveness of the system in attracting passengers to the service and a higher value indicates superior performance.

It is recommended that all transit services should generate at least the number of passengers per vehicle-hour outlined in Exhibit 15.

Exhibit 15 – Ridership Performance Standards

	Passengers per vehicle hour		
	Peak Periods[1]	Off-Peak Periods[2]	Average
Urban Connectors	20	10	15
County Connectors	15	10	12
Local Service	10	5	8
Rural Service	8	5	6
Overall	15	8	11

Notes:

(1) Peak Periods include AM peak and PM peak

(2) Off-Peak Periods include weekday midday, weekday evening, Saturday, and Sunday

Financial Monitoring

The financial performance measures are all affected by inflation, particularly the changing cost of fuel. Since inflationary effects on costs cannot be precisely predicted and will significantly reduce or eliminate evidence of progress in this measure, financial measures are addressed in this document as an effective monitoring tool, but not recommended as a standard. The County of Essex should carefully monitor the following financial measures with consideration of the price index:

- Cost recovery ratio (R/C) is a principal indicator of economic performance in the transit industry. In this indicator, higher values indicate superior performance.
    - typical range in similar communities: 30 – 40 percent
- Net cost per passenger assesses the efficiency of the system, taking passenger revenue into account. In this indicator, lower values indicate superior performance.
    - typical range in similar communities: $2.00 – $3.00
- Cost per hour is a principal measure of the overall efficiency of the operations, and of course, lower values represent superior performance.
    - average in similar communities: approximately $80

8.3 System Concept

Based on projected transit demand and feedback from the public and an array of stakeholders, ENTRA developed a system concept that is consistent with the context of the County and its transportation objectives. These concept routes are classified according to the four identified service types, as shown in Exhibit 16. The system concept is illustrated in Exhibit 17 and the service characteristics at the full implementation stage (beyond 2021) are outlined in Exhibit 18.

Exhibit 16 – A List of Proposed Services (beyond 2021)

Service Type	Proposed Routes
Urban Connectors	• Amherstburg-LaSalle-Windsor • Lakeshore-Tecumseh-Windsor • Leamington-Essex-Windsor (Highway 3 Express)
County Connectors	• Amherstburg-Kingsville • Leamington-Kingsville-Essex-Windsor Local
Local Service *– Urban Fringe Areas*	• Southern Urban Fringe (serving portions of LaSalle with connections to Transit Windsor) • Eastern Urban Fringe (serving portions of Tecumseh and Lakeshore with connections to Transit Windsor)
Local Service *– Other Areas*	• Amherstburg • Essex • Kingsville • Lakeshore • Leamington
Rural Services	• Amherstburg-Essex • Leamington-Lakeshore • Tecumseh-Lakeshore-Essex

The overall system concept presents a long-term look of what the County of Essex might expect upon full system implementation (beyond 2021). In total, the service concept includes three proposed Urban Connectors, two proposed County Connectors, and seven areas proposed for Local Service. Rural Services would operate through a system of demand responsive services based on a defined geographic area connecting the rural communities to urban areas and other transit services in the County.

8.3.1 Initial Implementation

Urban Connectors are the likely candidates for initial implementation, as they are focusing on post-secondary school student and commuter markets and observed to have the greatest travel demand, relative to other routes and connections. Nevertheless,

these routes along with the remaining service types would be implemented only as projected ridership warrants.

Exhibit 19 illustrates the Urban Connector concept for initial implementation, while Exhibit 20 outlines the proposed service characteristics.

If the County decides to proceed with the development of services, the initial Urban Connectors would still need to be more specifically defined in terms of routes and stops, connection points in Windsor, and specific schedules. This work would also include refining ridership estimates based on the specific of destinations, stops and schedules, and may result in refinements to the route, staging or levels of service to ensure the sustainability of the service and that service performance standards are met.

8.3.2 Long-term Service Concept

Development of transit services throughout the County should proceed incrementally, based on observed demand, with expansion of routes or levels of service only when ridership projections and service costs demonstrate that the performance standards will likely be met.

Within this framework, Exhibit 17 illustrates the potential range of services in a mature system. The overall alignment of Urban Connector routes have been roughly defined, while County Connector, Local Service and Rural Service routes only illustrate the proposed connections and general areas of service. Exhibit 18 outlines the potential service characteristics for this plan.

Exhibit 17 – Potential Full Implementation – Concept

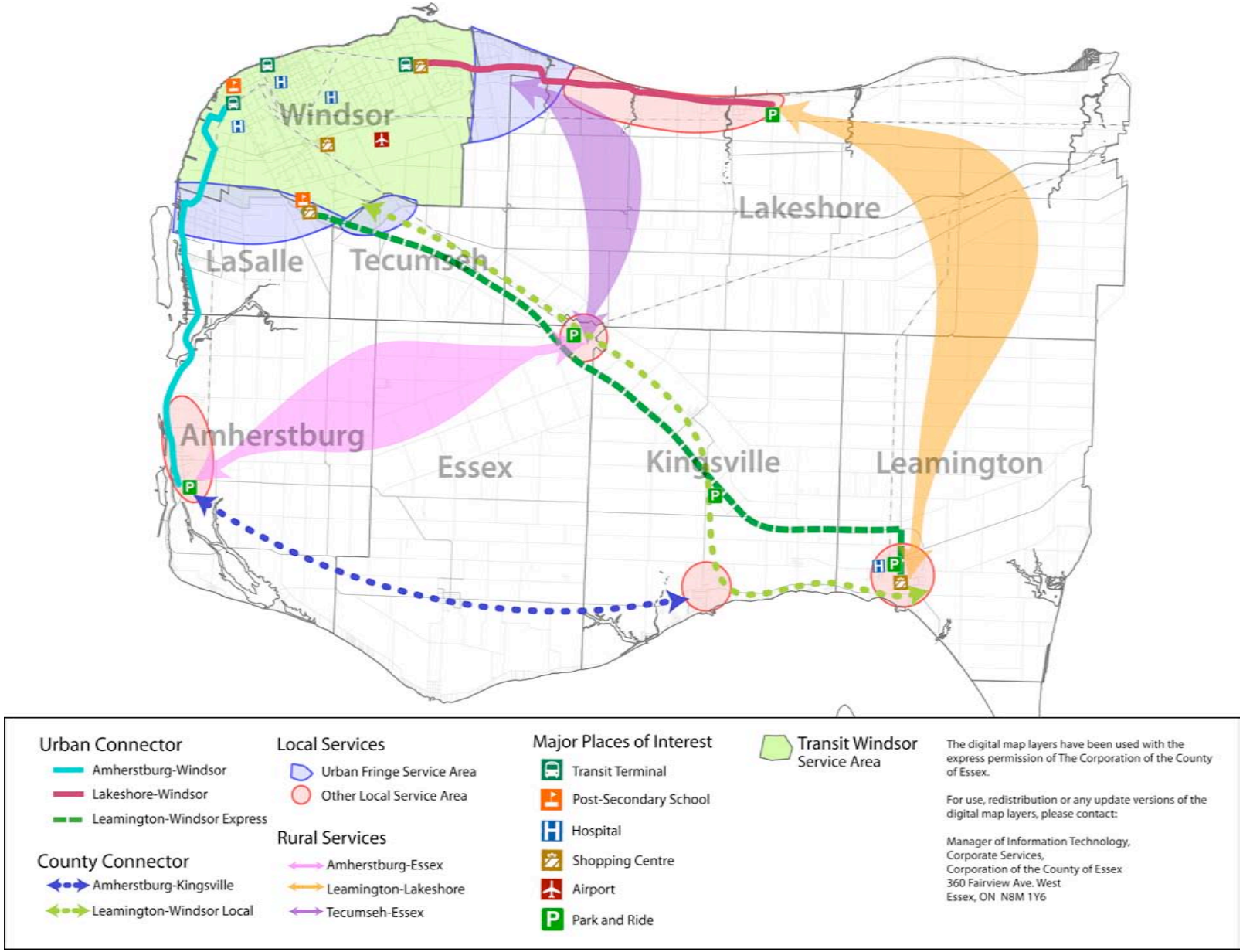


Exhibit 18 – Potential Full Implementation – Service Characteristics

Services		Service Frequency (min)			Vehicles	Annual Estimates (Full Implementation)			
		Peak	Base	Weekend		Service Hours	Operating Cost	Ridership	Rides Per Hour
Urban Connectors									
	Amherstburg - Windsor	30	60	Yes	4	13,600	$1,155,000	221,600	16
	Lakeshore - Windsor	30	60	Yes	4	13,600	$1,155,000	343,300	25
	Leamington - Windsor	30	60	No	4	10,500	$896,000	155,000	15
County Connectors									
	Amherstburg - Kingsville	Demand-based		No	1	1,500	$128,000	23,200	15
	Leamington - Windsor	Demand-based		No	1	3,000	$256,000	52,600	18
Local - Urban Fringe									
	Southern Urban Fringe	30	30	Yes	2	8,300	$706,000	150,600	18
	Eastern Urban Fringe	30	30	Yes	2	8,300	$706,000	138,700	17
Local - Other									
	Amherstburg	60	60	No	1	3,000	$256,000	23,000	8
	Essex	60	60	No	1	3,000	$256,000	15,400	5
	Kingsville	60	60	No	1	3,000	$256,000	16,400	5
	Lakeshore	60	60	No	1	3,800	$320,000	38,000	10
	Leamington	60	60	Yes	1	5,300	$450,000	56,200	11
Rural									
	Amhersburg - Essex	Demand-based		No	1	1,500	$128,000	13,800	9
	Leamington - Lakeshore	Demand-based		No	1	1,500	$128,000	8,200	5
	Tecumseh - Essex	Demand-based		No	1	1,500	$128,000	12,000	8
Total					26	81,400	$6,919,000	1,268,000	16

Exhibit 19 – Potential Initial Implementation – Concept

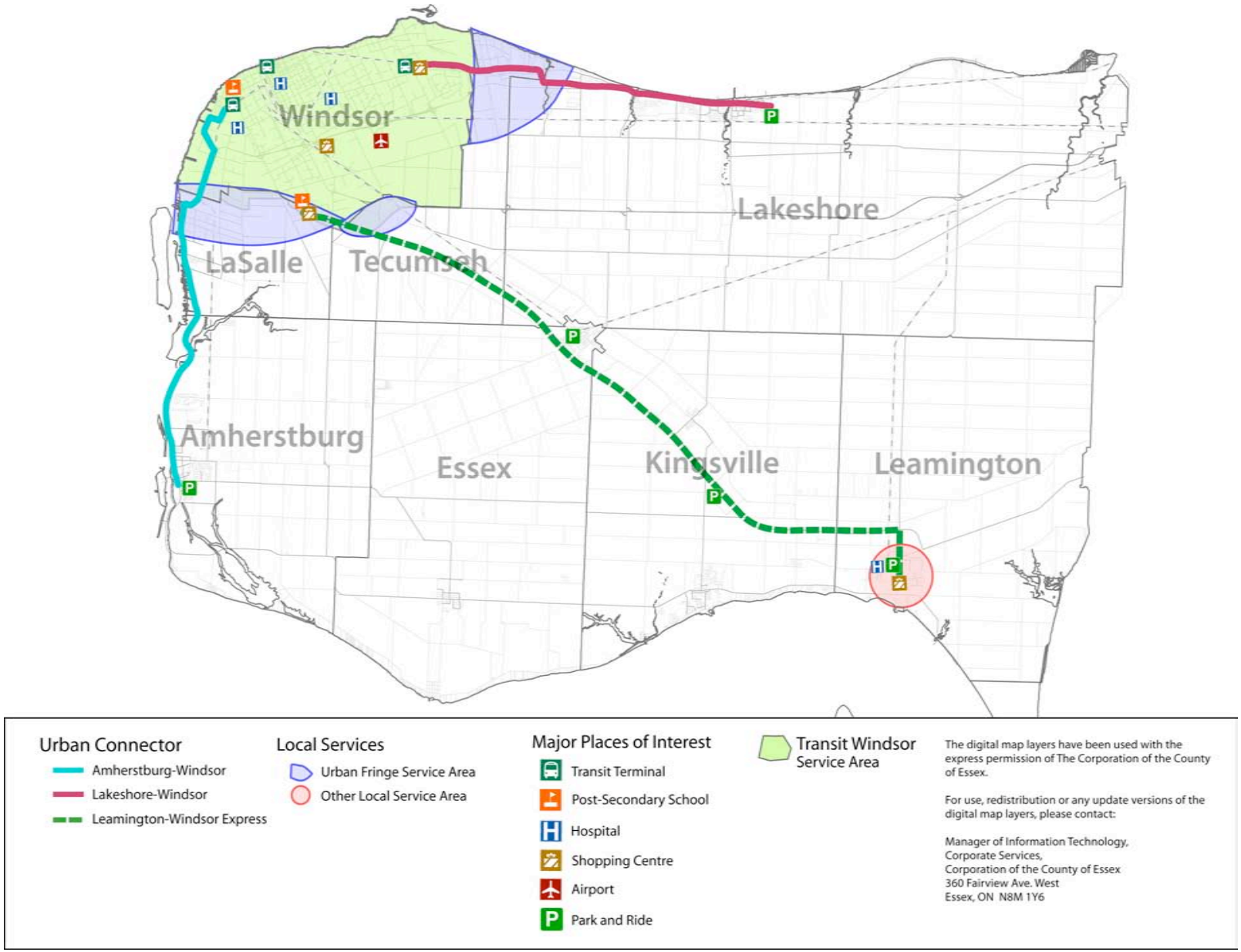


Exhibit 20 – Potential Initial Implementation – Service Characteristics

Services		Service Frequency (min)			Vehicles	Annual Estimates (Initial Implementation)			
		Peak	Base	Weekend		Service Hours	Operating Cost	Ridership	Rides Per Hour
Urban Connectors									
	Amherstburg - Windsor	60	60	No	2	7,500	$640,000	92,600	12
	Lakeshore - Windsor	60	60	No	2	7,500	$640,000	141,600	19
	Leamington - Windsor	60	-	No	2	3,000	$256,000	39,900	13
Local - Urban Fringe									
	Southern Urban Fringe	60	60	Yes	1	5,300	$450,000	66,300	13
	Eastern Urban Fringe	30	30	Yes	1	5,300	$450,000	60,000	11
Local - Other									
	Leamington	60	60	No	1	3,000	$256,000	25,700	9
Total					9	31,700	$2,695,000	426,000	13

8.4 Planning and Evaluation Guidelines

Given the proposed conceptual transit network, this section presents a set of guidelines that can assist in planning for transit service and assessing the feasibility of specific proposals as population and demand grow and ridership increases.

ENTRA presented a conceptual transit service network and a transit service implementation plan based on current population and travel demand projections. However, it is expected that forecasted data might need to be modified depending on official plan updates, changing demographics, land use, travel patterns, economic conditions, or social situations. In light of this, ENTRA has developed planning guidelines to equip the County of Essex staff with adequate tools to facilitate decision-making with regards to transit service provision in the future.

The key objectives of these evaluation guidelines for transit service provision are to:

- familiarize County staff with the established service provision guidelines
- provide step-by-step instructions about how to use the analysis tools developed by ENTRA
- describe how to assess the appropriateness of the proposed transit service based on the findings of the analysis tools

In summary, the planning evaluation guidelines consist of three primary steps. The steps are summarized in Exhibit 21 and comprehensive details and instructions regarding the service planning and evaluation guidelines process are included in Appendix B.

Exhibit 21 – Summary of Service Planning and Evaluation

Steps	Description
1. Service design	• indicate the type of service, level of service, and route alignment of the proposed service
2. Ridership projections	• estimate ridership and evaluate whether the proposed service is warranted according to ridership performance standards • metric used for analysis: riders per revenue hour
3. Amount of service	• calculate the amount of service provided in a defined service area to examine whether the proposed service meets the performance standard • metric used for analysis: vehicle-hours of service per capita

9. Financial and Implementation Plan

9.1 Prioritization and Phasing Plan

Transit services included in the system concept were prioritized based on the identified travel needs of each community, estimated performance levels, and input from the community. As outlined in this section, the proposed services could be developed in three phases.

9.1.1 Phase 1 (2011 to 2016)

The initial phase of the implementation plan proposes the introduction of three Urban Connectors and the improved operation of Local Service in urban fridge areas and Leamington. Details on these services are outlined below:

- Urban Connectors
    - Amherstburg-LaSalle-Windsor: hourly service on weekdays
    - Lakeshore-Tecumseh-Windsor: hourly service on weekdays
    - Leamington-Essex-Windsor: hourly service in the peak periods only
- Local Services
    - Southern Urban Fringe (serving portions of LaSalle): hourly service on weekdays
        - extended service covering most urban areas with connections to Transit Windsor routes
    - Eastern Urban Fringe (serving portions of Tecumseh and Lakeshore): half-hour service on weekdays
        - continuation of the existing operation with connections to Transit Windsor routes
    - Leamington Local: hourly service on weekdays
        - continuation of the existing operation with improved service span and frequency and connection to the proposed Urban Connector

Services in other periods such as evenings and weekends should be considered only as the level of ridership meets the performance standards. Possible implementation of evening and weekend services in the later stage of Phase 1 would include:

- evening services on Amherstburg-LaSalle-Windsor and Lakeshore-Tecumseh-Windsor Urban Connectors and Urban Fringe Local Services
- weekend services on Urban Fringe Local Services

9.1.2 Phase 2 (2016 to 2021)

The second phase of the implementation calls for improved levels of service on some Phase 1 routes and an expansion of service to new areas. Nominally, this Phase is described as 2016 to 2021, but its specific implementation will depend on the relevant communities attaining projected populations, and ridership and costs projected to meet specified performance targets.

Specifically, the following services could be introduced or improved for this maturing phase:

- Urban Connectors
    - Amherstburg-LaSalle-Windsor: improve peak service to half-hour service
    - Lakeshore-Tecumseh-Windsor: improve peak service to half-hour service
    - Leamington-Essex-Windsor: introduce hourly service in the midday
- County Connectors
    - Amherstburg-Kingsville: demand-based service on weekdays
    - Leamington-Kingsville-Essex-Windsor: demand-based service on weekdays
- Local Services
    - Southern Urban Fringe: improve base service to half-hour service
    - Eastern Urban Fringe: extend service area to cover most urban areas
    - Lakeshore Local: hourly service on weekdays in areas beyond the urban fringe

Similar to Phase 1, services in other periods should be considered as the level of ridership meets the performance standards. Possible implementation of evening and weekend services in Phase 2 might include:

- evening services on Leamington and Lakeshore Local Service
- weekend services on Amherstburg-LaSalle-Windsor and Lakeshore-Tecumseh-Windsor Urban Connectors and Leamington Local Service

9.1.3 Phase 3 (Long-term Mature System)

Upon the fulfillment of a matured ridership base, it is anticipated that all services proposed in the system concept could be operated in Phase 3. This phase is expected to occur sometime beyond 2021. Rural Services and the remaining Local Services identified in the system concept would be introduced in this phase. This phase would likely represent a long-term incremental development process, with the services described introduced incrementally, based on observed demands, rather than in any specific timeframe or in relationship to one another.

The following summarizes the service expansions and improvements in this full implementation phase:

- Urban Connectors

    - Leamington-Essex-Windsor: improve peak service to half-hour service
- Local Services
    - Amherstburg Local: hourly service on weekdays
    - Essex Local: hourly service on weekdays
    - Kingsville Local: hourly service on weekdays
- Rural Services
    - Amherstburg-Essex: demand responsive service in the rural areas in Amhersburg and Essex connecting to Amherstburg and Essex urban areas
    - Leamington-Lakeshore: demand responsive service in the rural areas in Leamington and east Lakeshore connecting to Lakeshore and Leamington urban areas
    - Tecumseh-Lakeshore-Essex: demand responsive service in the rural areas in west Lakeshore connecting to Essex, Lakeshore and Tecumseh urban areas

Similar to Phases 1 and 2, evening weekend services would be considered as warranted.

9.2 Governance

A strong governance structure is required to help guide strategic planning, ensure accountability, and develop standards and policies. Furthermore, it is required to encourage integrated land use and transportation planning, and ensure a close and seamless integration between local and inter-municipal transit services for customer convenience. As a result of good governance, transit services can be designed to be more efficient and well integrated, fairly distributed, able to promote positive land use changes, and foster community cohesion.

As part of the guidelines of the development of a transit system in the County of Essex, this section discusses various forms of transit governance that may be used for the County's transit system and identifies some of their advantages and disadvantages as they apply to the County's transit system. It is not an objective of this study to specifically recommend a preferred governance structure. If the County decides to pursue the development of transit services, a key next step will be examine and select appropriate governance structure(s) to guide each of the implementation phases.

9.2.1 Transit Windsor Service Extension

Transit Windsor extends its service area to encompass surrounding municipalities and continues to maintain its own fleet and facilities. Respective municipalities provide a financial contribution for the delivery of transit services in their municipalities while the County and respective municipalities collaborate with Transit Windsor related to service planning and design.

Advantages

- easy to setup and provide services almost immediately (subject to available capacity in Transit Windsor operations)
- County municipalities can capitalize on Windsor's expertise with policy making, route planning, scheduling, operation, and maintenance
- no large initial investments required to purchase assets such as fleet vehicles and maintenance facilities
- minimizes administrative costs
- no governmental approvals or reporting requirements are necessary to establish this governance structure

Disadvantages

- surrounding municipalities may not be able to achieve all operational objectives if County routes are integrated with existing Transit Windsor routes
- services may not conform with the visions, goals and objectives for transit in the County
- more complicated processes for public transparency and financial accountability because of difficulty in separating costs and benefits exclusively for transit services in each municipality
- must delineate appropriate compensation and key responsibilities for each stakeholder for inter-municipal services

9.2.2 Municipal Service

Local municipalities establish, fund, and manage their own transit service, which may or may not include the operation of services outside of their respective local jurisdictions. Services may still be contracted, and may involve Transit Windsor.

Advantages

- allows municipal council to ensure desired goals are met
- allows for decision-making at a more localized level and does not require approval from the entire County

Disadvantages

- complicates the development of coordinated inter-municipal transit if individual municipalities create their own transit services without County feedback or oversight
- diminishes travel connectivity and duplicates of services could result from lack of service coordination if routes are not coordinated
- large initial investments may be required to purchase assets such as fleet vehicles (can be avoided through contract operation)

- need to obtain the services of experienced individuals to assist with policy making, route planning, implementation, operation, maintenance, and financing
- administrative costs required to establish and expand the transit system

9.2.3 Inter-Municipal Partnership

Local municipalities enter into agreement for provision of transit services, creating the partnership, an oversight committee, and specifying membership. Committee has advisory role only and municipal councils are ultimately responsible and accountable.

Advantages

- relatively easy to form, requiring no approval from provincial government
- allows board representation on the project steering committee
- each council can expropriate on behalf of the partnership
- exempt from property tax as lands held by municipal partners

Disadvantages

- not a separate legal entity; therefore, cannot hold land or borrow funds, reliant on municipalities for these functions and shares limitations on debt
- ultimate responsibility and accountability remains with municipalities; decision-making may prove cumbersome and overly complex as policies must be ratified by all councils
- potential problems relating to excessive administrative burden and conflicts over workload
- large initial investments may be required to purchase assets such as fleet vehicles (can be avoided through contract operation)
- need to obtain the services of experienced individuals to assist with policy making, route planning, implementation, operation, maintenance, and financing
- administrative costs required establish and expand the transit system

9.2.4 County Controlled Agency or Department

A department within the County is responsible for managing the transit services. County owns the service vehicles and facilities. A transit board, made up of County councillors, is established as the main decision-making body and reports to the County Council. Board is accountable for all organized actions, including financial performance and execution of contracts.

Advantages

- no governmental approvals or reporting requirements are necessary to establish this governance structure
- allows County Council to ensure regional goals are met

- ensures communication between the County transit system and other public works systems

Disadvantages

- large initial investments required to purchase assets such as fleet vehicles or land (can be avoided through contract operation)
- need to obtain the services of experienced individuals to assist with policy making, route planning, implementation, operation, maintenance, and financing
- administrative costs required to establish and expand the transit system

9.2.5 Regional Transit Authority

Option 1 – All Services are Controlled and Provided by the Authority

The Regional Transit Authority is a stand-alone agency within the County organizational structure and will own all vehicles and other infrastructure (facilities, bus shelters etc.) through the County. Authority members can either be political appointees or nominated by County Council from the population at large for set terms. The Authority will be responsible for developing policies, staffing and determining service delivery levels throughout the County. The County Council provides final approval for financial budget.

Advantages

- relatively easy to implement because it does not require senior government approvals
- can apply for direct provincial funding and grants aimed at provincial transit infrastructure and service growth related enhancements
- able to establish own policies and operating procedures in a manner that reflects the unique needs of the business
- exempt from property taxes as an agent of the County government
- opportunity to provide uniform transit system image to area residents
- service can operate at arms length from local political influences
- Authority can function independent of County administration
- all sectors of the County can have representation on the Authority to ensure that service is provided equally

Disadvantages

- some staffing and infrastructure requirements of the separate Authority may be deemed as duplication within the County organization
- Authority and its powers may encounter resistance from other municipal departments particularly in areas historically managed by others

- Authority will have to develop an organizational structure capable of administering, operating, maintaining and accommodating the service
- Authority still needs to compete with other County departments for funding

Option 2 – All Services are Controlled by the Authority and Local Service is Provided by Local Municipalities

The Authority would still have control of the vehicles and other infrastructure items. Political representation on the Authority could still be similar to that of Option 1. However, local municipalities would determine the level of service they wished to purchase from the Authority.

Advantages

- relatively easy to implement because it does not require senior government approvals
- can apply for direct provincial funding and grants aimed at provincial transit infrastructure and service growth related enhancements
- able to establish own policies and operating procedures in a manner that reflects the unique needs of the business
- exempt from property taxes as an agent of the County government
- provides local municipalities a degree of autonomy to determine levels of service to be provided
- Authority can function independent of County administration
- all sectors of the County can have representation on the Authority to ensure that service is provided equally

Disadvantages

- some staffing and infrastructure requirements of the separate Authority may be deemed as duplication within the County organization
- Authority and its powers may encounter resistance from other municipal departments particularly in areas historically managed by others
- Authority will have to develop an organizational structure capable of administering, operating, maintaining and accommodating the service
- Authority still needs to compete with other County departments for funding
- agreement for services has to be established between the Authority and local municipalities
- service segregation may impact (weaken) the overall transportation objectives of the Authority
- potential problems relating to excessive administrative burden controlling operation of split service

9.2.6 Non-Profit Corporation

Municipalities form a non-profit corporation under the Corporations Act. Board is accountable for all organized actions, including financial performance and execution of contracts. Non-profit corporations are less restricted in their financial relationship with municipal shareholders in terms of revenue support.

Advantages

- allows broad representation on corporation's board
- semi-autonomous body with separate liability from municipalities; ability to hold land in its own right
- benefit of preferred borrowing rates and option to avail itself of appropriation powers, property tax exemption
- income and property tax exempt
- less restricted in financial relationship with municipal stakeholders; free to enter fee-for-service contracts and receive municipal grants

Disadvantages

- lacks automatic GST exemption both on fares and expenditures on goods and services; appealing GST exemption is possible but is costly and time-consuming
- convoluted method to take advantage of municipal powers and grant eligibility, although absence of an overt profit motive enhances the success of grant approvals
- primary intent under the Corporations Act in addressing organizations with a public membership at large
- large initial investments required to purchase assets such as fleet vehicles or land
- need to obtain the services of experienced individuals to assist with policy making, route planning, implementation, operation, maintenance, and financing
- administrative costs required to establish and expand the transit system

9.3 Fleet and Facility Requirements

9.3.1 Vehicles

To ensure balanced operational efficiency and passenger comfort, this section describes vehicle requirements for various types of services provided in each area.

Routes operating between Windsor and the outlying municipalities of Amherstburg, Lakeshore, LaSalle, and Tecumseh could use low-floor 30' transit buses, which can seat 20 to 26 passengers (slightly less if wheelchair positions provided). These vehicles are 12-year buses and cost approximately $350,000 each.

For longer trips such as Leamington-Windsor Urban Connector and County Connectors, the low-floor 30' transit buses could also be used, but consideration should be given to

equip the buses with highway seating and suspension to maximize passenger comfort on the long-distance journey.

A third vehicle type suitable for Local and Rural Service operations is an accessible van (cut away) which is usually a prefabricated fiberglass body mounted on a conventional truck frame. This equipment can be built to accommodate 12 riders and are rated as a seven to 10 year bus, normally costing approximately $100,000 each. These types of vehicles are commonly used in paratransit operations in Ontario and elsewhere.

The total number of vehicles required by each type of service for each implementation phase, based on the proposed levels of service are outlined in Exhibit 22.

Exhibit 22 – Vehicle Requirements

Service Type	Proposed Routes	Vehicles Requirements (Total)					
		Phase 1		Phase 2		Phase 3	
		30' bus	Van	30' bus	Van	30' bus	Van
Urban Connector	Amherstburg-LaSalle-Windsor	2		4		4	
	Lakeshore-Tecumseh-Windsor	2		4		4	
	Leamington-Essex-Windsor Express	2		2		4	
County Connector	Amherstburg-Kingsville			1		1	
	Leamington-Kingsville-Essex-Windsor Local			1		1	
Local Service *– Urban Fringe*	Southern Urban Fringe (serving portions of LaSalle)	1		2		2	
	Eastern Urban Fringe (serving portions of Tecumseh and Lakeshore)	1		2		2	
Local Service *– Other Areas*	Amherstburg						1
	Essex						1
	Kingsville						1
	Lakeshore				1		1
	Leamington		1		1		1
Rural Service	Amherstburg-Essex						1
	Leamington-Lakeshore						1
	Tecumseh-Lakeshore-Essex						1
Total		8	1	16	2	18	8

Note: spare and replacement vehicles are not included in the summary.

9.3.2 Terminal and Park and Ride Facilities

Passenger terminal facilities in each of the municipalities for the initial service would be minimal and limited to an oversized shelter or storefront at a central location in the municipality and house a kiosk for ticket sales and dispensing transit information. As the system matures a more substantial facility could be provided if service demand warranted.

Park and Ride facilities should be considered along major transit corridors providing service connections to areas without direct services, particularly the rural communities. Bus shelters and schedule information should be provided at these facilities for passenger convenience.

9.3.3 Stops and Shelters

In the initial phase the service would probably be flag-stop but as ridership develops in the transit corridor, each municipality would identify priority locations for bus stops and construct stops using concrete or asphalt pads with sign posts to identify their location along the designated routes. At stops with high utilization by transit riders, a bus shelter could be erected for protection from the elements. Bus stop and shelter programs would be ongoing with a certain number added to the system on an annual basis.

At the existing and proposed park and ride lots located along Highway 3 in Leamington, Kingsville and Essex, bus stops and shelters should be established to encourage transit ridership in the Leamington – Windsor corridor.

9.3.4 Maintenance Facilities

In the initial phase of the service, buses operating in the municipalities of LaSalle, Tecumseh and Lakeshore could be stored, serviced and maintained by the municipalities at their respective public works yards or one of the municipalities could assume responsibility for the fleet maintenance and invoice the other municipalities for work done on the other vehicles.

A similar vehicle arrangement could be considered for both Amherstburg and Leamington although in the case of Leamington the current municipal service provider could possibly maintain the vehicles under contract.

Similarly, Transit Windsor could service and maintain the fleets assigned to the municipalities located on its perimeters (LaSalle, Tecumseh and Lakeshore). This option might require Transit Windsor to provide accommodations for the County of Essex bus drivers at the Transit Windsor facility, and similar to the arrangement that several transit systems in the GTHA have with GO Transit for vehicle servicing. If the service is contracted to a third party, including Transit Windsor, the contract terms should include the provision of facilities by the contractor.

During the subsequent system development stages and as the transit fleet expands, a more central location within the County should be identified where the fleet could be maintained. Although vehicles could also be stored at this location, deadheading costs should dictate that a portion of the fleet remain outposted to the individual municipalities

and vehicles rotated between these locations and the main maintenance depot for maintenance and servicing.

9.3.5 Technologies

In the initial phases of the service, only rudimentary technologies would be used in the system to keep capital expenditures to a minimum. This would include the use of mechanical fare boxes and route information limited to printed schedules and pre recorded transit information. Once the system becomes established, more sophisticated technologies should be employed to improve customer services and security and to facilitate system management and operations. These technologies include Automatic Vehicle Location (AVL), Automatic Passenger Counters (APC), Computer-Aided Dispatching (CAD), real time transit information, electronic fare collection, on-board security and so on.

9.4 Fare Strategies

This section discusses some of the potential fare structures applicable to the proposed services. If the County decides to pursue the development of transit services, more detailed analysis will be required to specifically determine fare structures for each type of service, examine the impact of the preferred structure on ridership and revenue, refine ridership estimates as a result, and possibly adjust the financial and operating plan accordingly.

9.4.1 Fare Structure Alternatives

The following fare structure alternatives are available to be applied to the proposed transit system in the County.

- Flat Fare – Exact single fare for a particular passenger class for a continuous transit journey anywhere in the County's service area, including free transfers to connecting buses at transfer points.
- Zonal Fares – The County's service area is divided into a number of fare zones. The zonal fare system operates the same as a flat fare system, but just for travel within the fare zone. For travel across a fare zone boundary to a destination in an adjacent fare zone, a fare zone supplement must be paid.
- Fare-by-Distance – Fares are determined based on the distance travelled for the transit journey. There is usually a base amount charged for a short journey and then an additional amount is charged based on the number of kilometres that the transit journey covers. This is similar to the way a taxi fare is determined.
- Fare-by-Time – Fares are determined based on the length of time required for the transit journey. There is usually a base amount charged for a short journey and then an additional amount is charged based on the number of minutes that the transit journey requires. This is similar to the way a taxi fare is determined.

9.4.2 Analysis of Fare Alternatives

Exhibit 23 outlines the advantages and disadvantages of each available alternative.

Exhibit 23 – Analysis of Fare Alternatives

Fare Structure	Advantages	Disadvantages
Flat Fare	• simple to implement with a manual and cash-based fare collection system – does not require any exit fare calculation • easy for passengers to understand • very customer friendly	• higher fares for a short journey will be needed to subsidize the costs of longer journeys – may be seen as inequitable • average fare will not be comparable to coach or train alternatives
Zonal Fares	• possible to establish affordable fares for travel within zones that will apply to all local journeys and higher fares for longer distance commuter journeys that cross zone boundaries • perceived as equitable since the fare roughly correlates with the cost to deliver	• requires driver to collect zone supplement when crossing fare zone boundary • perceived to be inequitable if short journey crossing zone boundary triggers requirement to pay zone supplement
Fare-by-Distance	• fares are roughly correlated with cost to deliver the service	• very hard to implement with a pay-on-boarding fare system, particularly one that is based on cash since the fare needs to be determined when the passenger leaves the bus – significant technology investment required
Fare-by-Time	• fares are roughly correlated with cost to deliver the service	• hard for passengers to understand why fare should be higher based on transit decision to plan indirect routes to service certain areas • very hard to implement with a pay-on-boarding fare system, particularly one that is based on cash • very few urban transit system examples where fare-by-time has been implemented

9.4.3 Fare Strategies

Based on review and analysis of the available fare alternatives as well as the proposed service concept, a zonal fare structure is considered suitable for implementation of the County's transit system.

Fare zones would be determined based on the proposed service concept and should have overlapping boundaries to deal with the problem of short journeys triggering the requirement to pay an unfair zone supplement.

Whenever a journey extends into an adjacent fare zone, the passenger should be required to pay a fare zone supplement. The amount of one-zone fare and the fare zone supplement(s) should be established based on an assessment of the comparable fare charged by Transit Windsor and the costs for alternative modes.

A co-fare discount should be negotiated with Transit Windsor for transfers to and from the County's transit service.

9.5 Financial Summary

Based on the proposed services from the three phases, a financial plan was developed. The following assumptions were made in the development of this financial plan:

- operating cost per hour: $85 / hour, which is based on other similar transit operations in the area
- average fare: $2.00, based on the other systems with similar service characteristics
- vehicle requirements:
  - standard low-floor 30' buses: $350,000 each
  - cut away: $100,000 each
  - spare vehicle allowance: 15 percent
- inflationary considerations: constant 2010 Canadian dollars

Based on these assumptions, Exhibit 24 outlines the capital and operating costs required for each phase of the implementation. It should be noted that capital costs shown are for the entire period of each phase while operating costs are annual costs of each phase.

The values in Exhibit 24 reflect total cost for operation of all services, including existing local services. This study does not address specific cost allocation between or among the municipalities, which would be developed in more detail at the implementation stage.

As shown in Exhibit 24, an estimated capital cost of approximately $4 million, $5.4 million and $7 million would be required for the three phases, respectively. The annual operating cost would be approximately $1.8 million, $3.4 million and $4.4 million for three phases, respectively, representing approximately 3, 5 and 6 percent of the County's current annual budget.

Exhibit 24 – Financial Summary

	Phase 1 (2011-2016)	Phase 2 (2016-2021)	Phase 3 (beyond 2021)
Total Capital Cost			
Vehicles			
Standard 30' Bus	8	8	2
Spare Bus	2		1
Accessible Van	1	1	6
Spare Van		1	1
Vehicle Cost	$3,600,000	$3,000,000	$1,750,000
Other Capital Costs			
Station, Park and Ride Facility	$280,000	$100,000	$40,000
Maintenance Facility		$2,000,000	$5,000,000
Stop and Shelter	$100,000	$100,000	$100,000
Technology and Software	$50,000	$200,000	$200,000
Total Capital Cost	$4,030,000	$5,400,000	$7,090,000
Annual Operating Cost			
Total Vehicle-hours	31,700	60,400	81,400
Operating Cost	$2,695,000	$5,134,000	$6,919,000
Annual Ridership and Revenue			
Service Area Population	60,000	100,000	125,000
Annual Ridership	426,000	883,000	1,268,000
Average Fare	$2.00	$2.00	$2.00
Projected Revenue	$852,000	$1,766,000	$2,536,000
Net Operating Cost	$1,843,000	$3,368,000	$4,383,000
Performance Indicator			
Vehicle-hours per Capita	0.53	0.60	0.65
Passengers per Capita	7	9	10
Passengers per Hour	13	15	16
Cost Recovery	32%	34%	37%

Notes:

- Operating cost/hour is estimated based on other similar transit operations in the area at $85/hour

- Average fare is estimated at $2.00 based on other systems with similar service characteristics

- Vehicle requirements include an assumed spare ratio of 15 percent

- Vehicle replacement is not included in this plan

- Standard low-floor 30' buses are assumed for Urban and County Connectors and Fringe Local Services and estimated at $350,000 each

- Accessible vans are assumed for other services and estimated at $100,000 each

- All costs and revenues are in constant 2010 Canadian dollars

9.6 Partnership and Funding Opportunities

To help support the delivery of transit service, the County of Essex can rely not only on internally generated funding but also capitalize on available external partnerships. This section examines opportunities to fund and sustain transit services in the County of Essex. The discussion is organized according to three transit source types: internal; provincial and federal; and other sources.

9.6.1 Internal Sources

Internal funding sources may include the following opportunities:

- Fare Revenue – A portion of all operating expenses can naturally be recovered from the farebox, ranging from 30 to 40 percent in similar communities depending on system size, patronage, level of service, and the maturity of the system.
- Advertising Revenue – Advertising on transit vehicles and amenities may help to mend the gap between operating revenues and expenses. Advertising opportunities include areas within transit vehicles, outside transit vehicles, and transit shelters.
- Facilities Revenue – With the potential development of major transit stations in the County, there are opportunities to partner with businesses and intercity transit agencies to share the cost and use of transit facilities.
- Municipal Tax Base – Most transit agencies use regional and local property tax revenues to make up for operating shortfalls.

9.6.2 Provincial and Federal Sources

The following Provincial and Federal funding sources are available and could be used to support transit system development and expansion in the County:

- Provincial Gas Tax – A portion of the revenues generated from the provincial portion of the gas tax is distributed to all Ontario municipalities based on ridership and population. As the system develops, ridership will grow, as will the gas tax funding. The Provincial gas tax could partially fund the capital expenditure as well as service expansions and new services.
- Federal Gas Tax – A portion of the revenues generated from the federal portion of the gas tax is distributed to all municipalities based on population. Only capital projects are eligible for Federal Gas Tax funding (e.g. transit vehicles, stations and technologies).
- Ontario Bus Replacement Program (OBRP) – A program funded by the provincial government whose purpose is to provide long-term funding to replace or refurbish both aging conventional and specialized vehicle fleets.
- Transit Procurement Initiative – A program hosted by the provincial government whose purpose is to consolidate the purchase of transit buses using common bus specifications. The consolidation of purchases with other transit agencies allows for lowered vehicle and administrative costs. In 2009, 12 Ontario municipalities partnered in the initiative to purchase 160 30- and 40-foot buses.

9.6.3 Other Sources

There are other sources such as tourism and educational partnership, which would also support and sustain the public transit services in the County.

- Tourism Partnerships – There is an opportunity to work with tourism agencies such as Tourism Windsor-Essex Pelee Island to connect visitors to major tourist destinations in the County of Essex. Potential funding partnerships may help to promote transit ridership and to promote more tourist spending in the County.
- Educational Partnerships – Post-secondary and secondary school students are identified as main market segments with high ridership potential for the proposed services in the County. When the transit system matures, there are opportunities to partner with post-secondary and secondary schools to encourage increased use of County transit services.

9.7 Marketing Strategy

This section outlines various marketing strategies that could be used by the County to promote transit use in the County.

9.7.1 Identify Target Markets

A target market is the prime audience(s) for the service an organization wishes to sell to. For the County of Essex, it is the group of individuals or organizations that will be actively pursued for transit patronage and will initially involve groups that are most likely to use transit. The identification of target markets is not an attempt to exclude other groups. Instead, it is an attempt to organize a marketing strategy aimed at capturing potential passengers in the most effective manner.

From the market analysis, ENTRA has determined that post-secondary students, secondary school students, commuters, seniors, and low- to medium-income households are more likely to use transit services. Thus, the County of Essex should communicate and engage with these demographic groups to secure a sustainable ridership base and to tailor services to accommodate their needs where possible.

9.7.2 Develop a Visual Identity

A visual identity refers to the visual representation of the organization. In a highly competitive business environment for capturing the attention of a consumer audience, it is important that the County of Essex's transit system be recognized, remembered, and viewed positively in the minds of prospective passengers. A visual identity usually consists of a logo, a consistent set of typefaces, a set of organizational colours, and in some cases a slogan or motto.

ENTRA recommends developing a visual identity scheme to identify transit services throughout the region and to associate with County residents and employees an image synonymous with reliable and convenient transportation. Uniform colours and slogans should be used throughout stops, ads and on fleet vehicles.

9.7.3 Raise Public Awareness

It is often not enough to simply provide transit services to an area, particularly in the provision of a new transit system. It is important to make passengers aware of proposed regional transit services. The County of Essex should attempt to work with businesses, schools, hospitals, tourism and community groups to bring awareness to proposed transit services. As an example, County staff may work with a post-secondary school student union to advertise in student print, web, and radio media, and to launch information workshops at student activity centres and at major student events.

9.7.4 Establish Proactive Customer Service

An effective marketing strategy also encompasses proactive customer service. Transit organizations provide a service to customers and thus should naturally be interested with how their customers perceive and evaluate their services.

The aim is to make customers happier and that involves ensuring that the delivery of transit services is reliable, reasonably frequent, and suits the needs of current and potential riders. This entails actively seeking out passenger feedback and creating a system that supports improving the quality of services before complaints are directed to customer service agents.

Additionally, proactive customer service involves ensuring that riders can easily access information to enable them to make a transit journey. This entails providing transit service information that is timely and accessible across various mediums (e.g. bus stop sign posts, brochures in major activity centres, telephone and online).

9.7.5 Introduce Incentives and Programs for Transit

There is an opportunity to introduce incentives and programs that promote increased transit usage in the County. Specifically, the County can work with the business community, colleges and universities, and with County and local councils to offset the financial load and to enhance the overall delivery of public transit. The following are some programs for consideration:

- Employer-provided transit passes – Employers can purchase monthly passes in bulk, both to provide a fare discount incentive to their employees and to give revenue certainty to the County that is required to improve services to meet the employer's unique travel requirements.
- Collaboration with educational institutions – Secondary and post-secondary school students often rely on public transit for their transportation. The County could work with school boards and post-secondary school student unions to supply costs incentives for the bulk purchasing of transit passes. Similar to employer-provided transit passes, it provides a predictable revenue stream to provide tailored transit services to students.

9.8 Transit Supportive Policies

To maximize the potential benefits of transit, transit-supportive land use policies are adopted in many communities to encourage transit use. These policies include

promoting higher density in close proximity to transit services, providing easy walking and cycling access to transit stops and developing parking policies to reduce automobile use. This section provides details of the transit-supportive policies that should be considered by the County and local municipalities to ensure a successful transit system.

9.8.1 Development and Review Approval Process

The possible introduction of transit service in areas never served in the past poses new challenges for local development planning departments, especially as local official plans have none or few policies that recognize the provision of transit services and that guide transit-supportive developments.

The County should consider development of a collaborative and inclusive development approvals with local municipalities whereby County staff have the opportunity to supply feedback regarding development approvals that take place in lower-tier municipalities to ensure that transit services are best supported within the context of the given community and its planning policies.

In this process, County staff would collaborate with respective local municipalities to create specific development policies or guidelines that support the provision of transit services, are coherent with the County's transit vision, and are consistent with local planning policies. Development principles may include but are not limited to:

- providing suitable community densities
- providing appropriate mixed uses where applicable
- planning road networks that promote direct and efficient transit operations
- developing a safe and ubiquitous pedestrian and cycling network for easy access to bus stops
- organizing development in such a manner that promotes transit usage by orienting structures, rather than parking, to align with the street
- providing curb cuts and safe crosswalks for universal accessibility
- applying traffic calming measures and reducing surface parking

Once the principles are developed and adopted by all pertinent stakeholders, the County would partake in the development review process and supply feedback where necessary based on the established principles. If there is a limited capacity within the County to review development applications, the County could instead work with local planners to incorporate the established principles as part of its respective planning review process.

9.8.2 Engineering Approval Process

The provision of transit services requires that the current road infrastructure can efficiently and safely accommodate transit vehicle operations. County staff should work with County and municipal Engineering Departments to ensure that future road works have due consideration for transit operations where applicable. Specifically, road design guidelines should be developed so to safely accommodate future transit routes, stops and other operational amenities.

9.8.3 Parking and Cycling Policies

Wherever feasible, Park and Ride and Bicycle Parking facilities should be considered along major transit corridors (e.g. Urban Connector routes) with the aim to expand the coverage area of the transit system. The provision of these facilities allows for potential riders, particularly those living in rural areas, to access convenient transit services in the region.

Park and Ride facilities consist of parking facilities at transit stops and provide the added convenience for passengers for those who have a vehicle but choose to take transit. Travellers would park their vehicles at one of these facilities and connect to public transit services, usually to activity centres with scarce parking or where traffic congestion is apparent. These facilities are normally constructed at strategic stops along a main transit corridor. There are also opportunities to work with existing local businesses to designate existing, underutilized parking stalls (e.g. parking at shopping centres) for Park and Ride use.

Bicycle parking facilities at transit stations can also help to boost transit usage. Like Park and Ride facilities, the provision of these facilities in strategic locations along a transit route can help expand the geographic reach of its services.

9.9 Accessibility and AODA Implications

9.9.1 Background

In 2005, the Province of Ontario introduced the updated Accessibility for Ontarians with Disabilities Act (AODA, 2005), with the goal of making Ontario fully accessible to people with disabilities by 2025.

As part of this legislation, a variety of committees have been developing standards in five key areas: customer service, information and communication, built environment, employment and transportation. Of these, the customer service standard has been passed into law (as Ontario Regulation 429/07) and in force effective January 1, 2010. This standard is not transportation specific, and applies to all aspects of the County's services. It imposes specific requirements, such as providing training to staff on serving people with disabilities and having mechanisms to inform customers when services are disrupted.

The standards for communication and information, transportation and employment have completed public review, and are in the final stages of approval. The communication and information standard includes requirements such as providing alternative media or modes for printed materials such as schedules or forms, signage and information requirements, and for other communication mechanisms such as phone (ex. providing TTY or relay services).

The built environment standard has completed public review and is with the committee to develop the final draft of the standard. In its current form, the standard is silent on transit-specific requirements, but the final version is expected to include accessibility requirements for stops and shelters and other transit facilities.

The transportation standard has the most significant implications for the services under review in this study. This includes the requirement for all services to be operated with accessible vehicles, with a variety of accessibility features including calling of stops, visual and audible route identification and others. The draft standard also requires agencies operating conventional fixed route transit to provide an equivalent accessible-origin to accessible-destination service for those that cannot use the fixed route service. The services must be equivalent in terms of service area, hours of service, access and levels of service.

9.9.2 Implications for Service

In planning the service concepts for a County system, ENTRA has been mindful of the AODA requirements, and accounted for them in the design of the service.

Vehicles

First, all services and routes are to be served with fully accessible vehicles. Given the number of passengers with disabilities expected on the service, lift-equipped vehicles will likely be more cost-effective and meet the needs of passengers with mobility aids.

Services

Urban and County Connectors

For the Urban and County Connectors, service areas at route ends can be serviced by an extended loop that provides accessible-origin to accessible-destination service. This means that after arriving at the destination hub in the community, the bus would have time to service other destinations in the community, including door-to-door service on demand. This loop would serve to both distribute arriving passengers and collect departing passengers prior to returning to the hub. Time for these local loops has been accounted for in the high level service design developed for this study.

For stop areas along the routes, it will be necessary under AODA to provide accessible service in the area surrounding each stop. When developing details of stop locations in the implementation planning, this factor must be considered. It may be possible to divert trips short distances on demand to provide accessible service. In areas where the schedules or ridership demands do not permit this type of diversion, the stop might be eliminated or parallel accessible service may eventually have to be provided. The high level service designs developed for this study allow for a limited amount of diversion.

As part of its accessibility plan required under the Act, the County will identify the service areas of these routes, and indicate how accessible service is to be provided.

Local and Rural Services

For the Local and Rural services, integrated accessible services are anticipated, with schedules designed to allow diversions from fixed routes to provide accessible-origin to accessible-destination service. This type of service will likely accommodate the anticipated new areas of local service implementation for several years.

For the existing local services in Leamington, LaSalle and Tecumseh, service delivery will need to ensure that accessible services are provided, either through integrated

routes or with the introduction of parallel services where not currently existing. In areas such as Leamington, where parallel service is available, a review will be necessary to ensure it meets the “equivalent” requirements of the standard.

In the other urban areas, parallel services will likely be required to meet overall demands. The current version of the standard provides for up to two years from the effective date of the regulation to ensure that accessible services are equivalent to the fixed route services.

10. Summary of Study Findings

This section summarizes key findings of the Transit Assessment Study:

- Based on a detailed review and analysis of current and projected demographic information, travel patterns, transit demand and feedback from the public and an array of stakeholders, there is a clear need for public transit services to meet the overall transportation needs of the County of Essex residents.
- Recognizing the County of Essex's regional transportation needs and the objectives of the Transportation Master Plan, a vision was developed to help focus efforts to develop a proposed future transportation system for the County. The proposed vision is:

  To provide sustainable mobility options for all rural and urban residents, contributing to quality of life, economic and environmental sustainability, economic development and a healthy natural environment.

- Based on the County's unique demographic conditions and travel behaviour, four distinct types of service including Urban Connectors, County Connectors, Local Services and Rural Services were identified to fulfill the diverse needs within the County. Each service type supports different objectives and thus yields different degrees of transit service delivery.
- Establishing performance standards is a pivotal element to transit planning and decision-making as they provide a clear and consistent framework for justifying the provision of new or revised transit services and examining the effectiveness of services in operations. Transit services in the County of Essex should strive to achieve the proposed performance targets in a mature system, however lower performance levels are to be expected in the short-term.
- The system concept was developed to meet the identified transportation needs and is consistent with the context of the County, its transportation objectives and the proposed vision, goals and objectives. The overall system concept presents a long-term look of what the County of Essex can expect upon full system implementation.
- Transit services included in the system concept were prioritized based on the identified travel needs of each community, estimated performance levels, and input from the community. The proposed services could be developed in three phases.
  - The initial phase of the implementation plan (2011 to 2016) proposes the introduction of three Urban Connectors from Amherstburg, Lakeshore and Leamington to Windsor and the improved operation of Local Service in urban fridge areas and Leamington.
  - The second phase of the implementation (2016 to 2021) calls for improved levels of service on some Phase 1 routes and an expansion of service to new areas including two County Connectors from Amherstburg to Kingsville and from Leamington to Windsor and one additional local route in Lakeshore.

    - Upon the fulfillment of a matured ridership base, it is anticipated that all services proposed in the system concept could be operated in Phase 3 (beyond 2021). Rural Services and the remaining Local Services identified in the system concept will be introduced in this phase.

- To ensure balanced operational efficiency and passenger comfort, two types transit vehicles including a standard 30' low-floor transit bus and an accessible van should be considered for different types of services provided in each area. In addition to the transit fleet, significant capital investment on transit infrastructure including terminal and park and ride facilities, bus stops and shelters, a transit maintenance facility as well as various technologies would be required to ensure the successful delivery of the proposed transit services.
- The proposed transit services require significant investment to fund the required equipment and infrastructure as well as ongoing operations. Based on the current financial projection, an estimated capital cost of approximately $4 million, $5.4 million and $7 million would be required for the three phases, respectively. The annual operating cost would be approximately $1.8 million, $3.4 million and $4.4 million for the periods of 2011 to 2016, 2016 to 2021 and beyond 2021, respectively.

11. Key Strategies and Next Steps

Achieving the goal of implementing a public transit service in the County of Essex will rely on a variety of strategies designed to capture key markets, provide long-term financial support and build a system incrementally, based on demonstrated success.

These recommendations were developed through an extensive public participation process and represent input from public, key stakeholders and the project steering committee.

The key strategies are:

- Commitment to Service
- Incremental Implementation
- Marketing and Promotion

The following sections expand on these three recommended strategies.

11.1 Commitment to Service

Success will depend on customers' ability to rely on the transit service as a viable choice for transportation. This means that the County will need to commit to providing the service for a sustained period, and provide a minimum level of service designed to meet key market needs.

This commitment will require investment, and will rely on key funding partners, including customers and local municipalities, as well as provincial and federal funding.

Key next steps:

- identify the appropriate governance structure for the service
- determine resource requirements for this organization
- determine appropriate cost allocation and funding sources

11.2 Incremental Implementation

A comprehensive County-wide system in the County of Essex is a long-term initiative. To be sustainable, and permit the commitment to service required for success, services should grow incrementally, based on demonstrated success. Initial implementation stages must focus on key markets to ensure early success. Phase 1 services identified in the report, comprising service in the urban fringe and three key corridors are the most feasible first step.

Key next steps:

- consult with key market groups, especially post-secondary students and commuters for input into specific service requirements

- develop specific service plans for initial service implementation, including specific routes, schedules, destination points
- develop specific fare structures and a revenue management plan

11.3 Marketing and Promotion

Building support for the service is critical to its success, both during service development and following implementation.

Key next steps:

- develop partnerships with customer markets, funding partners and agencies
- identify and promote specific benefits of the proposed service among potential partners, including the broad spectrum of public policy elements supported by the plan, including economic, environmental, health and mobility benefits
- build understanding and support for the required funding, based on this broad spectrum of benefits

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Appendices

A. Summaries of Online Surveys
B. Transit Service Planning Guidebook

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Appendix A

Summaries of Online Surveys

Summary of Online Survey

1. Introduction

Surveys were developed and posted online in an effort to understand current transportation issues and needs, existing travel patterns and characteristics throughout the County of Essex as well as residents perspective on potential transit services. Separate surveys were created for the public, major employers and key stakeholders. A total of 191 responses were received from the public, followed by 54 responses from employers and 17 responses from stakeholders. The following sections summarize key questions of the public, employer and stakeholder survey results.

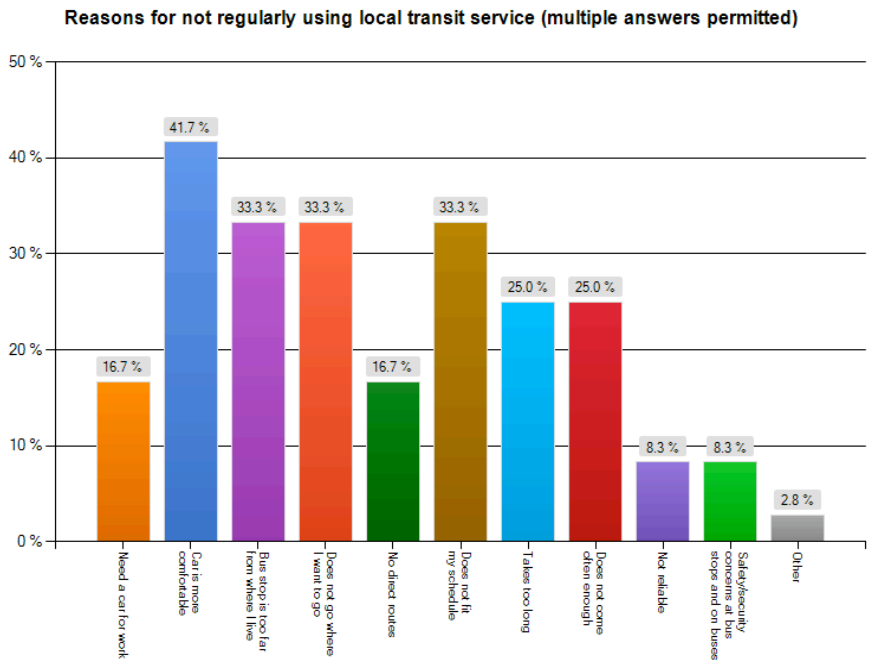
2. County of Essex Public Survey

The public survey was developed to obtain community input on transit needs throughout the County and was available on County and local websites. A paper version of the survey was also made available at locations throughout the region including the County of Essex Library and at a Public Information Centre held on September 30, 2009, in the Town of Essex.

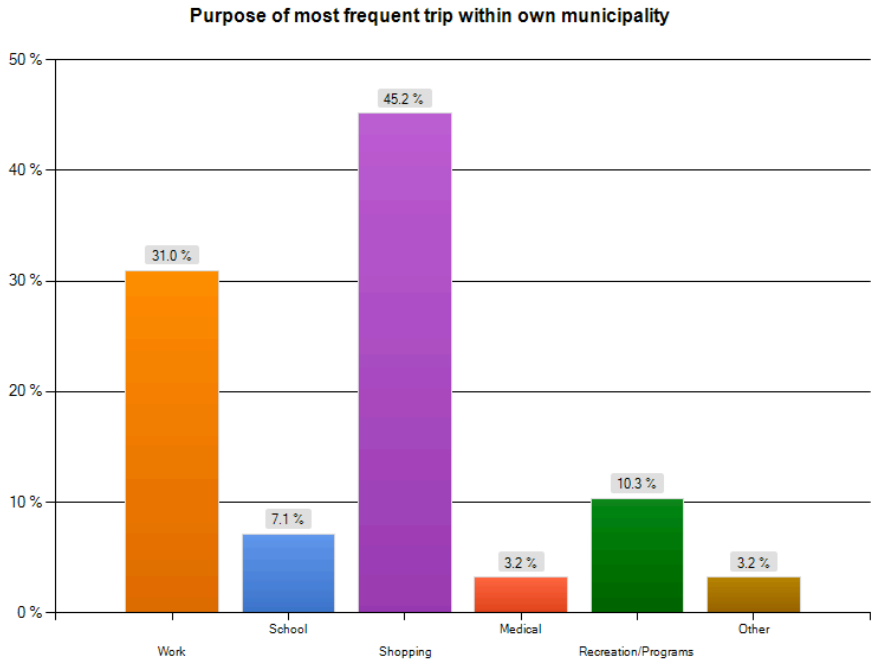
Place of residence – Survey responses were received from all municipalities of the County, but not in proportion to populations throughout the County. The Town of Essex makes up 11.3 percent of the County of Essex population and provided 22.9 percent of public survey responses. Conversely, the Municipality of Leamington makes up 16.3 percent of the County of Essex population yet provided only 4.6 percent of public survey responses.

	Percentage of Population from Census (2006)	Percentage of Place of Residence of Respondents
Amherstburg	12.3%	16.0%
Essex	11.3%	22.9%
Kingsville	11.8%	13.1%
LaSalle	15.7%	9.1%
Leamington	16.3%	4.6%
Lakeshore	18.8%	22.9%
Tecumseh	13.7%	11.4%
Total	**100.0%**	**100.0%**

Reasons for not using transit – This question was designed for residents living in municipalities where transit services are already available such as Leamington and LaSalle. “Car is more comfortable” was selected by 41.7 percent of respondents as the most frequent reason not using local transit service. “Bus stop is too far from where I live”, “Does not go where I want to go”, “Does not fit my schedule”, “Takes too long” and “Does not come often enough” were also selected by at least 25 percent of respondents as reasons for not using transit. “Safety concerns” and “Not reliable” were the reasons with the fewest response at 8.3 percent each.

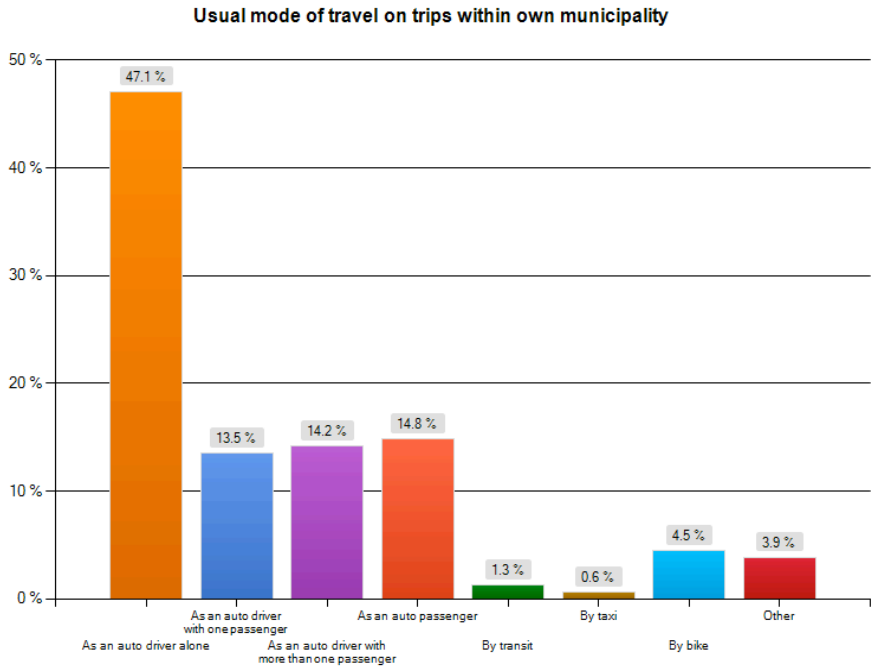


Purpose of most frequent trip within own municipality – "Shopping" was selected by 45.2 percent of respondents as the most frequent trip purpose within their own municipality, and "Shopping" and "Work" together represent more than 76 percent of respondent trips within their own municipalities. The fewest respondent trips taken within their own municipalities are for "Medical" purposes, at only 3.2 percent.

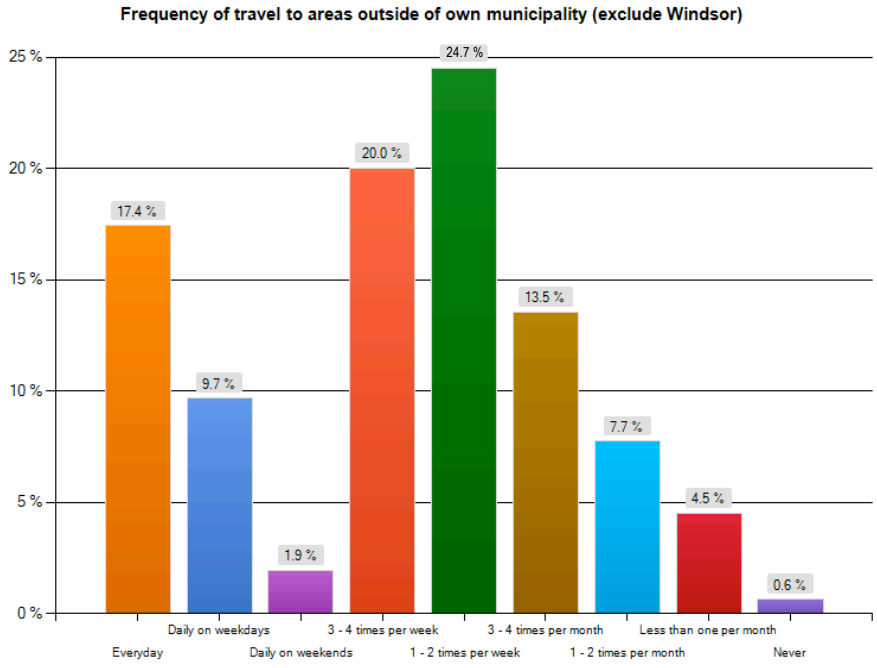


Usual mode of travel on trips within own municipality – Nearly 90 percent of respondent trips within their own municipality are made by car as a driver or passenger

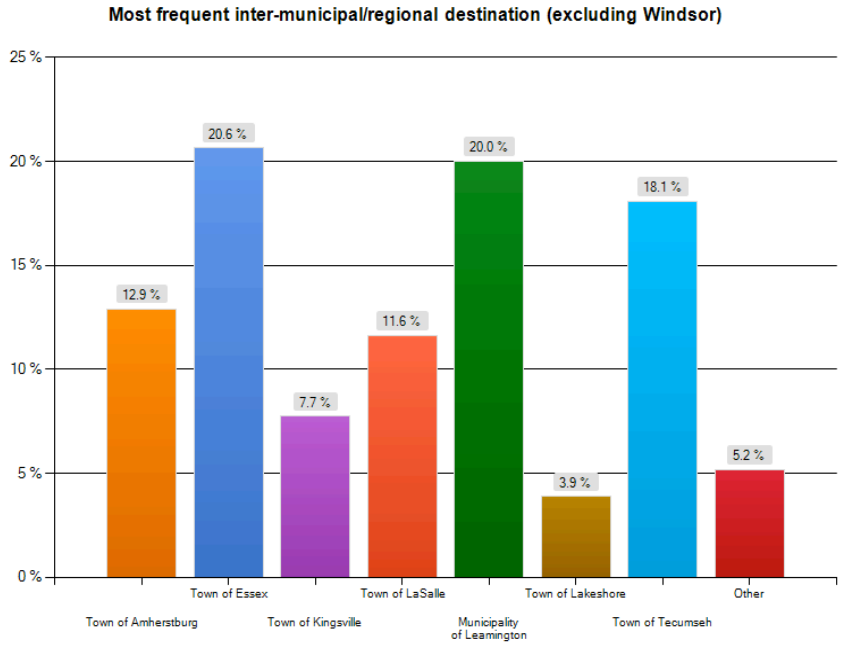
and more than 47 percent are made as an auto driver alone. Only 1.3 percent of respondent trips within their own municipality are made by public transit.



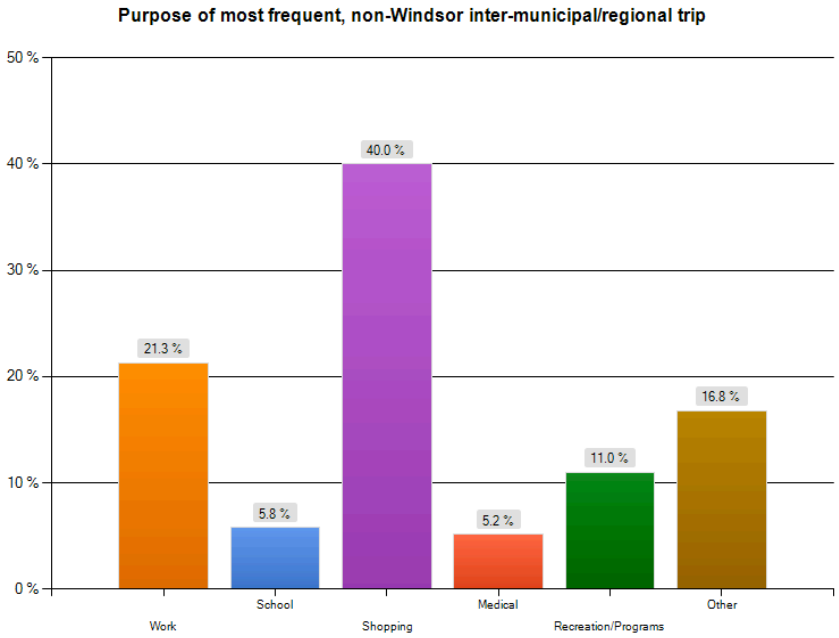
Frequency of travel to areas outside own municipality (excluding Windsor) – Approximately 74 percent of respondents travel to areas outside their own municipality at least one to two times per week (excluding Windsor). More than 27 percent travel to areas outside their of own municipality every weekday (excluding Windsor). Less than 1 percent of respondents stated that they “Never” travel to areas outside their own municipality.



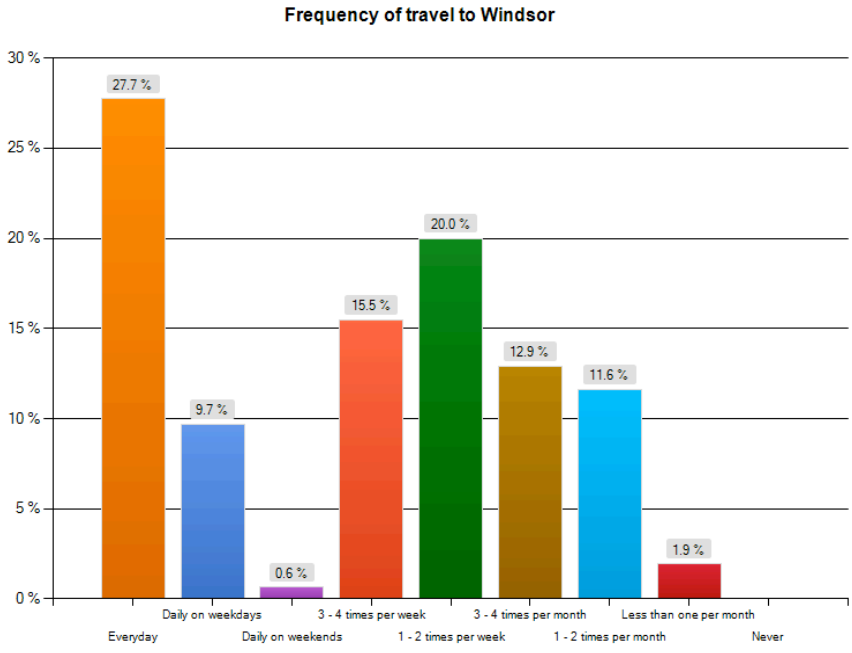
Most frequent inter-municipal/regional destination (excluding Windsor) – The Town of Essex, Leamington and Tecumseh are the most frequent inter-municipal/regional destinations of respondents, and represent approximately 60 percent of inter-municipal/regional travel (excluding Windsor). Lakeshore was selected by 3.9 percent of respondents and is the least frequent inter-municipal/regional destination (excluding Windsor).



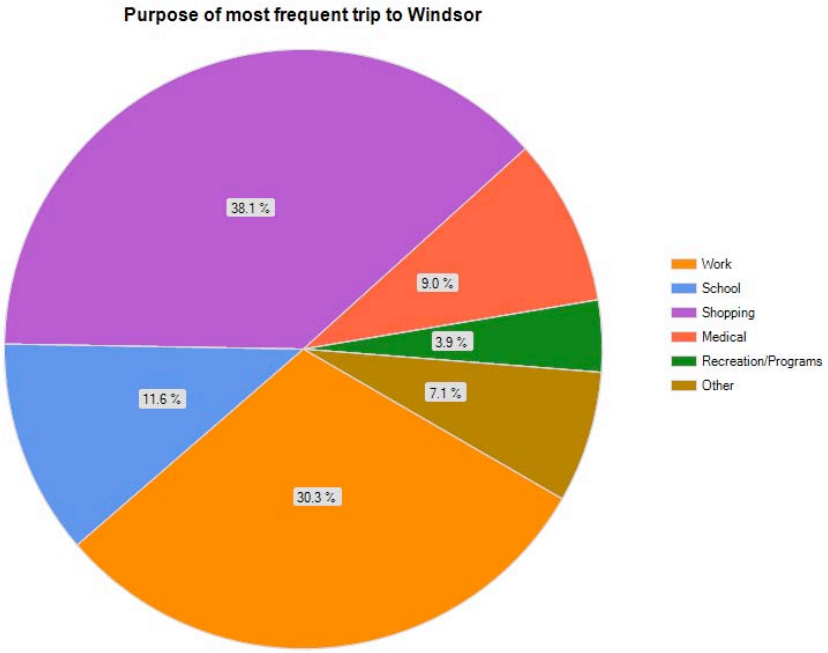
Purpose of most frequent, non-Windsor inter-municipal/regional trip – "Shopping" was selected by 40 percent of respondents as the most frequent trip purpose for inter-municipal/regional travel. "Shopping" and "Work" together account for 61.3 percent of inter-municipal/regional trips. "Medical" and "School" are the least frequent purposes for inter-municipal/regional trips at 5.2 percent and 5.8 percent respectively.



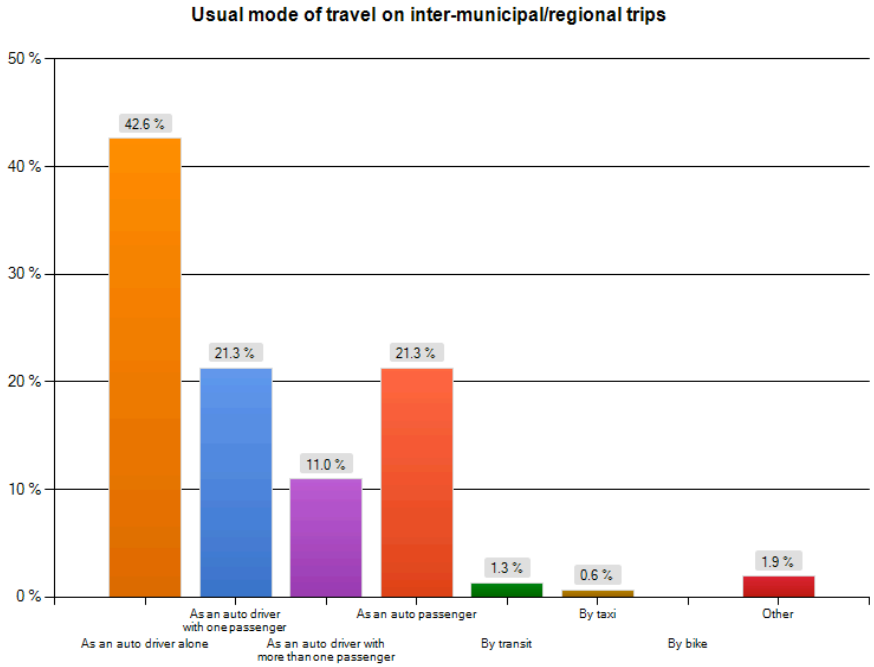
Frequency of travel to Windsor – More than 37 percent of respondents travel to Windsor daily on weekdays, and approximately 74 percent travel to Windsor at least one to two times per week. Only 13.5 percent travel to Windsor one to two times per month or less.



Purpose of most frequent trip to Windsor – “Shopping” was selected by 38.1 percent of respondents as the purpose of their most frequent trip to Windsor. “Shopping” and “Work” together accounted for 68.4 percent of trips to Windsor. “Recreation/Programs” were selected by only 3.9 percent of respondents as the purpose of their most frequent trip to Windsor.



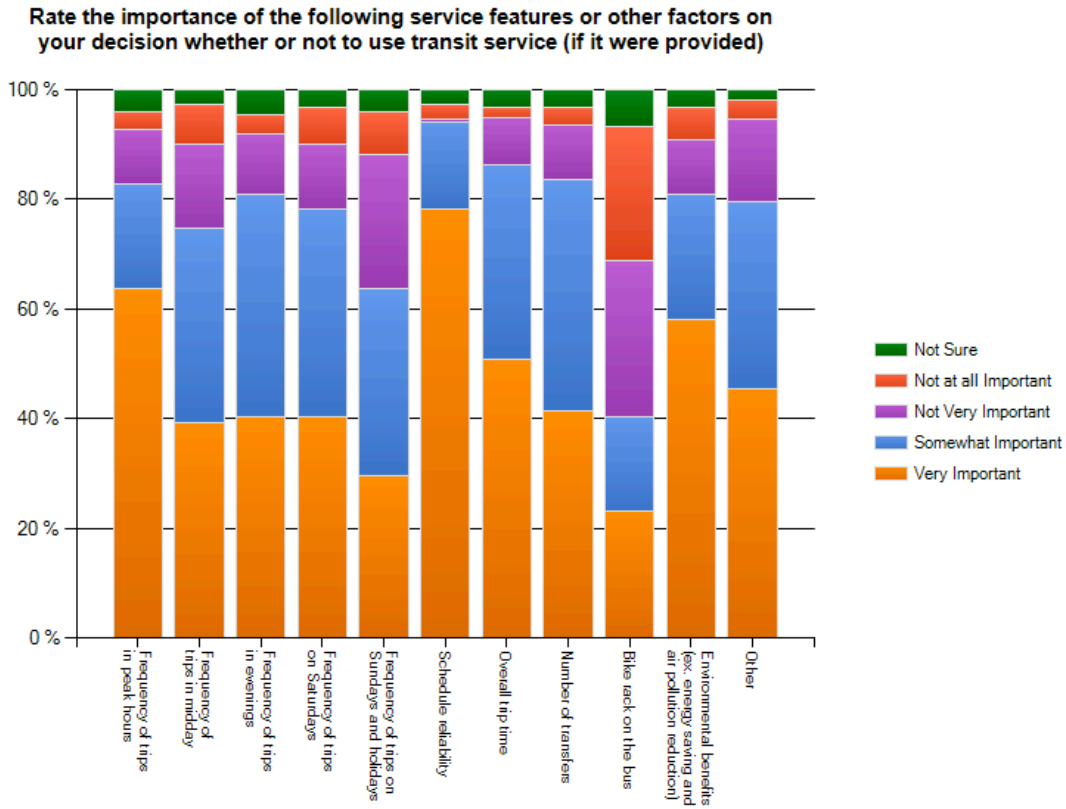
Usual mode of travel on inter-municipal/regional trips – More than 96 percent of inter-municipal/regional respondent trips are made by car as a driver or passenger and nearly 43 percent are made as an auto driver alone. Only 1.3 percent of inter-municipal/regional respondent trips are made by public transit.



Access to Vehicle for Travel – Nearly 81 percent of respondents usually have access to a vehicle for their travel.

Importance of service features or other factors on decision to use transit (if provided) – "Schedule reliability" was the most frequently identified as "Very Important"

influence on the decision to use transit and was selected by more than 78 percent of respondents. “Frequency of trips in peak hours”, “Environmental benefits”, and “Overall trip time” were also selected as “Very Important” by more than 50 percent of respondents. “Bike rack on bus” was selected by 53 percent of respondents as a “Not Very Important” or “Not at all Important” influence on their decision whether or not to use transit.

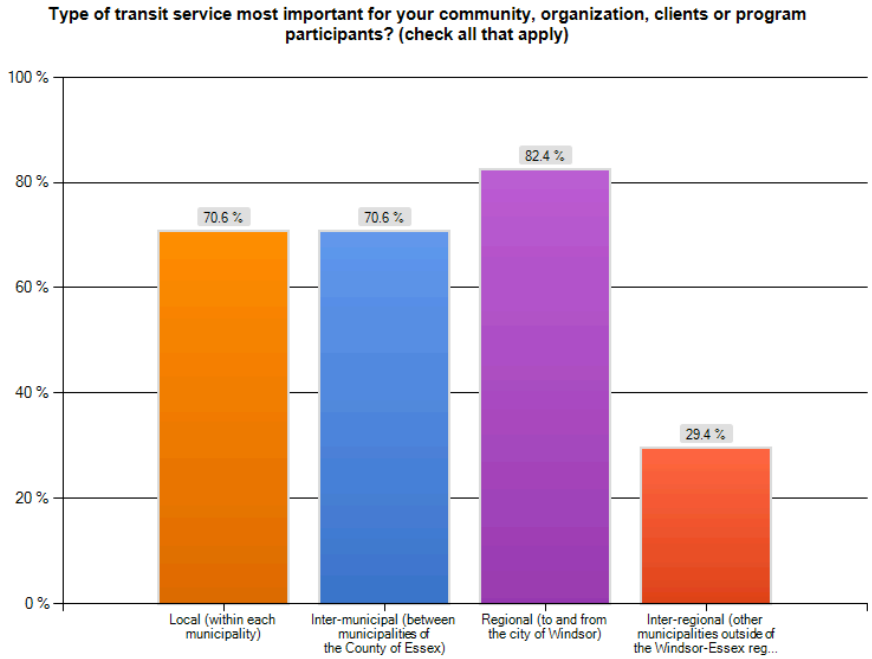


3. County of Essex Stakeholder Survey

The stakeholder survey was developed to obtain input regarding transit needs of the region from stakeholders. Stakeholders were contacted and invited to participate in the survey online.

View of changing needs and markets over the next five years – More than 88 percent of respondents believe needs and markets will be growing in the next five years while none believe there will be a decline. Approximately 12 percent of stakeholder respondents selected “Don’t know”.

Type of transit service most important for the community, organization, clients or program participants of the stakeholder – “Regional (to and from the City of Windsor)” service was identified as the most important transit service by 82.4 of stakeholder respondents. “Local (within each municipality)” and “Inter-municipal (between municipalities of the County of Essex)” were also considered to be important by 70.6 percent of respondents. Only 29.4 percent identified “Inter-regional (other municipalities outside of the Windsor-Essex region)” as an important type of transit service.

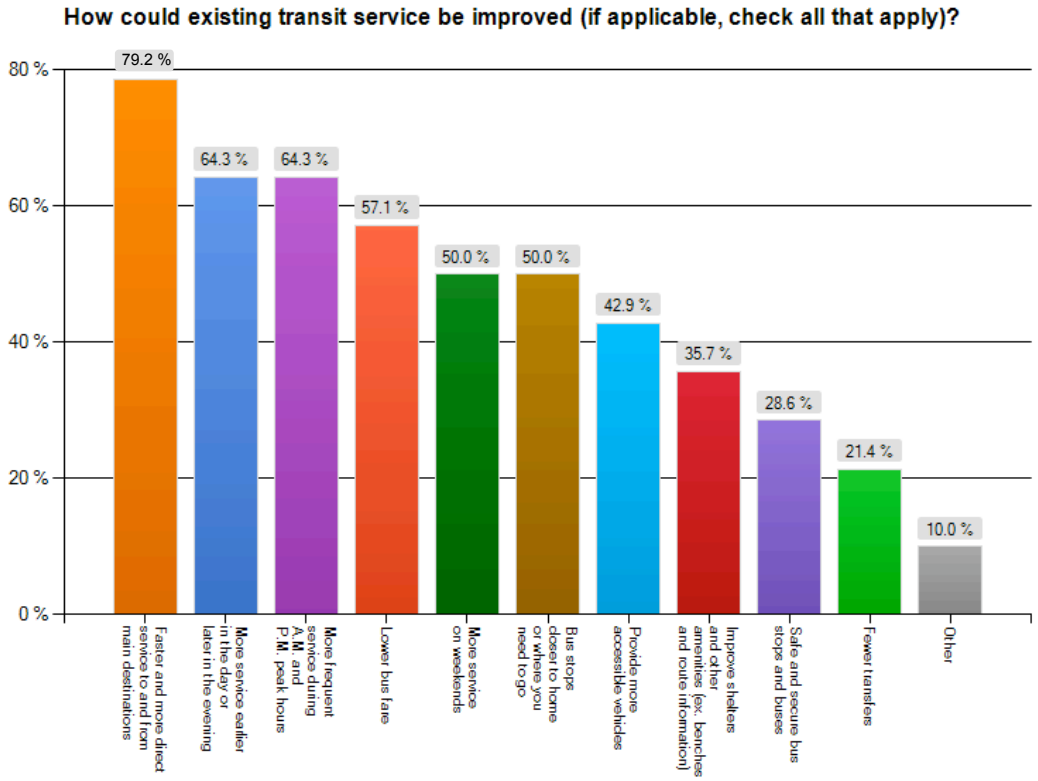


Transportation barriers – More than 88 percent of stakeholder respondents feel transportation is a barrier for their community, organization, clients or program participants. Approximately 12 percent feel transportation is not a barrier.

Existing transit service and transportation needs of community, organization, clients or program participants – More than 88 percent of respondents feel existing transit service does not meet the transportation needs of their community, organization,

clients or program participants. Approximately 12 percent feel that existing transit service meets transit need.

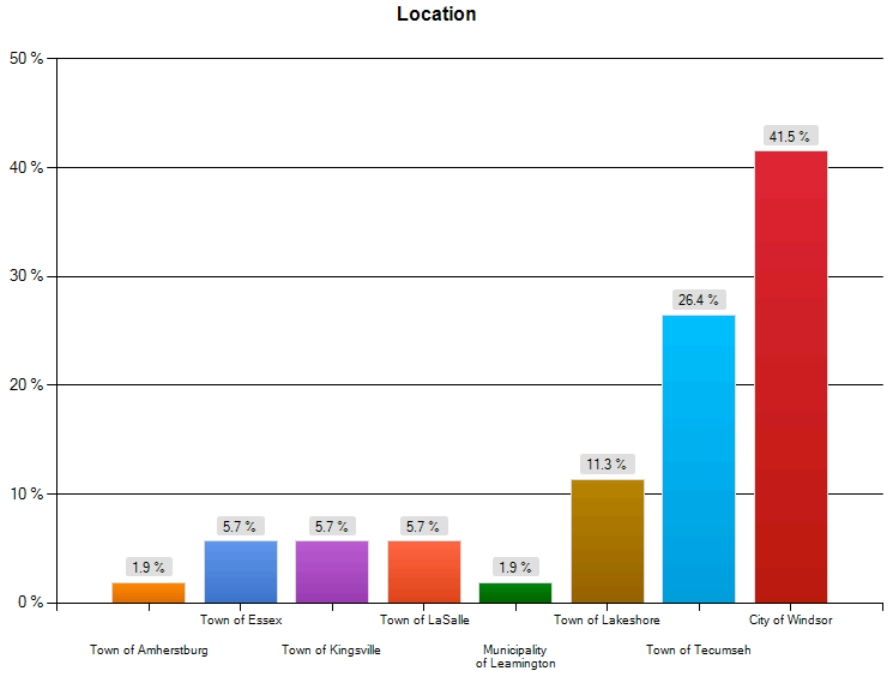
How to improve existing transit service – More than 79 percent of respondents indicated that transit service could be improved via “Faster and more direct service to and from main destinations”. “More service early in day/late in evening” and “More frequent service during A.M/P.M peak hours” were also identified by at least 64 percent of respondents as ways to improve existing transit service. “Fewer transfers” only received 21.4 percent of responses as a way to improve existing transit service.



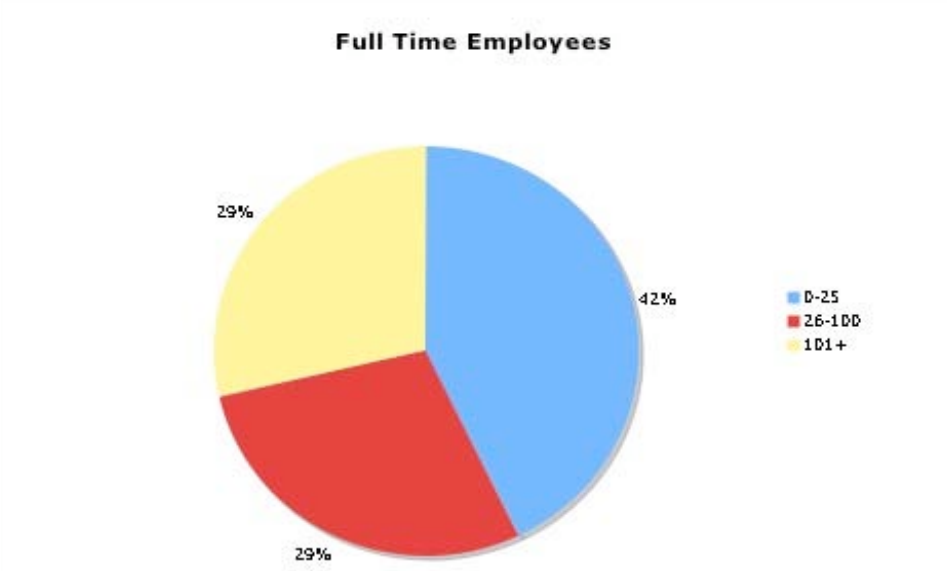
4. County of Essex Employer Survey

The employer survey was developed to obtain input regarding transit needs from major regional employers. Employers were contacted and invited to participate in the survey online.

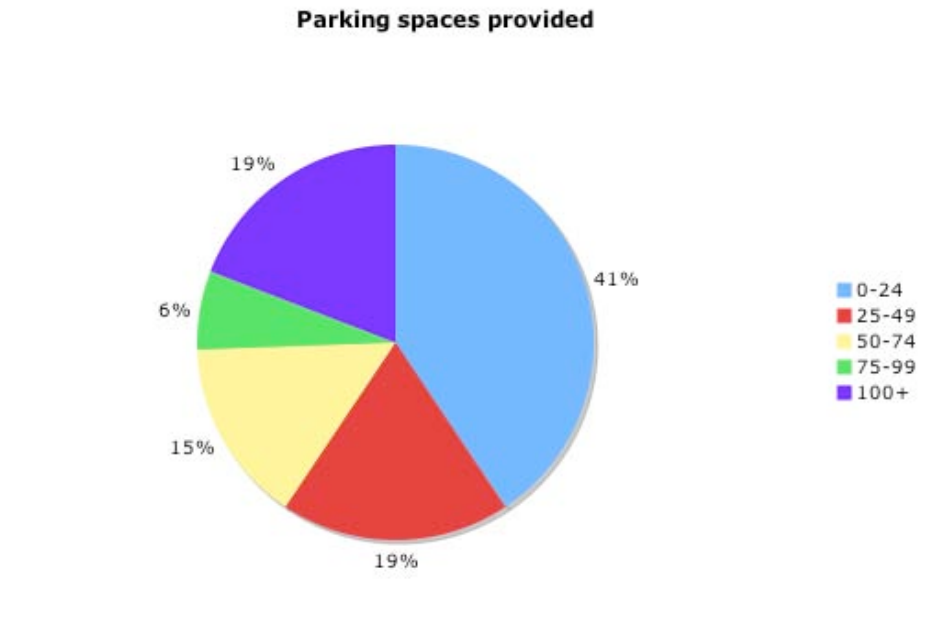
Location – Approximately 68 percent of employer respondents were located in Windsor and Tecumseh. Employers in Leamington and Amherstburg provided only 1.9 percent of survey responses each.



Full time employees – Approximately 58 percent of employers have more than 25 employees while 42 percent employ between 0 and 25 people. The average number of respondent employees was 80.



Parking spaces provided – Sixty (60) percent of employers provide between 0 and 49 parking spaces for their employees and 19 percent provide more than 100 spaces.



Charge for parking or limiting parking availability – More than 96 percent of employers do not charge or limit parking availability. Less than 4 percent of employers charge or limit parking availability.

Staff retention and transit – Nearly 87 percent of employers indicated that a lack of transportation alternatives is not a factor in staff retention. Approximately 13 percent felt that a lack of transportation alternatives is a factor in staff retention.

Transportation service or support provided for employees – More than 98 percent of employers do not provide transportation services or support for their employees (such as a ride-home service, transit subsidies or an employee shuttle).

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Appendix B

Service Planning Guidebook

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Transit Service Planning Guidebook

1. Guidebook Instructions

1.1 Introduction

This guidebook provides step-by-step instructions on how to develop a service design and to determine whether the proposed service is within the acceptable threshold as defined by the Performance Standards. This document will demonstrate how to compute the selected metrics (e.g. passengers per hour, hours per capita) to examine whether the proposed services meet established standard thresholds.

Each transit service proposal begins with the development of a service design. A service design comprises all the variables that dictate a proposed transit service. Typical service design components include (but not limited to):

1. Type of service
2. Route alignment and stop location
3. Span of service
4. Service frequency

In most cases, transit service levels are adjusted according to demand and vary depending on the type (e.g. weekday, Saturday, Sunday) and time of day (e.g. AM peak, midday, etc). Thus, service designs are usually developed on a period-by-period basis. Typically, transit service periods are defined as outlined in Exhibit 1 but may be altered according to local demand.

Exhibit 1: Transit Service Periods

Monday to Friday	
AM Peak	6:00 am to 9:00 am
Midday	9:00 am to 3:00 pm
PM Peak	3:00 pm to 6:00 pm
Evening	After 6:00 pm
Saturday	
Morning	6:00 am to 12:00 pm
Afternoon	12:00 pm to 6:00 pm
Evening	After 6:00 pm
Sunday	
Morning	6:00 am to 12:00 pm
Afternoon	12:00 pm to 6:00 pm
Evening	After 6:00 pm

1.2 Developing a Service Design

The first step to develop a service design is to identify a route alignment. This could be conducted through the use of Google Maps or Bing Maps[1]. Once the route alignment has been identified, the worksheet illustrated in Exhibit 2 can be used to develop the remaining components of the service design.

In this worksheet, you will indicate the type and level of service by time period. A number of different service designs may be required to strike a balance between serving customer needs and financial sustainability.

Exhibit 2: Service Design Worksheet

Route Name (1)								
Round Trip Distance (2)		km						
Service Type (3)		Urban Connectors						
		County Connectors						
		Local Services						
		Rural Services						
Time Period	**Type of Service Operation**		**Level of Service (minutes)** (5)					
	✓		15	20	30	60	90	Other (Specify)
Monday-Friday								
AM Peak (4)		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						
Midday		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						
PM Peak		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						
Evening		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						
Saturday								
Morning		Fixed Route / Schedule						
Sunday								
Morning		Fixed Route / Schedule						

[1] Note: The distance measurements within from these web applications may not be entirely accurate. The use of GIS software will provide more accurate results.

Step by Step	
1	Identify a route name
2	Determine the round trip route distance (km), based on the proposed route alignment
3	Check off the appropriate service type according to the definitions in Service Concept section
4	Check off the appropriate type of service operation for each individual service period
5	Check off the appropriate level of service (min) for each individual service period

1.3 Evaluating Consistency with Ridership Standard

Once the Service Design Worksheet is completed, you will complete a Ridership Calculation Worksheet. This worksheet will allow you to determine whether the proposed service is within the outlined Performance Standard for ridership.

Exhibit 3: Ridership Calculation Worksheet

		Monday-Friday			**Saturday**	**Sunday**
		AM Peak	Midday	PM Peak	Morning	Morning
Calculating Transit Trips						
Total Trips – All Modes	1	trips	trips			trips
Percent of Transit Modal Share	2	%	%			%
Estimated Total Trips – Transit	3	trips	trips			trips
Calculating Round Trip Time						
Round Trip Distance	4	km	km			km
Estimated Vehicle Speed	5	km/h	km/h			km/h
Estimated Round Trip Time	6	h	h			h
Calculating Riders Per Revenue Hour						
Proposed Service Interval	7	mins	mins			mins
Vehicle-trips Per Period	8	trips	trips			trips
Vehicles-hours Per Period	9	h	h			h
Riders Per Revenue Hour	10					
Abide with Service Standard	11	Above Std / Below Std	Above Std / Below Std	Above Std / Below Std	Above Std / Below Std	Above Std / Below Std

Step by Step	
1	Indicate the number of total trips (from all modes) made along the proposed route within the specified time period from the county's Transportation Forecasting Model
2	Indicate the estimated percent of transit's modal share *Transit's modal share would likely range from 0-5% depending on the area being served, the extent of convenient transit connections, and the maturity of the transit system*
3	Multiply 1 by 2
4	Indicate the route trip distance (km) of the proposed route, as already specified from the Service Design Worksheet
5	Indicate the estimated vehicle operating speed of the route *In Urban Areas, operating speeds could range from 15 to 25 km/h depending on the frequency of stops along the route and traffic conditions* *In Rural Areas, operating speeds could range from 25 to 50 km/h depending on the frequency of stops along the route*
6	Divide 4 by 5
7	Identify the proposed service interval (mins), as already specified in the Service Design Worksheet
8	Divide 60 by 7 and multiply the answer by the span of service (h) in that period *Span of service example: if the proposed route operates during the entire duration of AM peak as outlined in Exhibit 1, the service will operate for 3 hours*
9	Multiply 8 by 6
10	Divide 3 by 9
11	Check off whether the figure calculated in 10 is above or below the outlined standards

1.4 Evaluating Consistency with Amount of Service Standard

Once the Ridership Calculation Worksheet is completed, you will complete an Amount of Service Calculation Worksheet. This worksheet will allow you to determine whether the proposed service is within the outlined Performance Standard for amount of service in a defined service area.

Exhibit 4 - Amount of Service Calculation Worksheet

Population Coverage (1)					
	Monday-Friday		**Saturday**	**Sunday**	**Total**
	AM Peak	Midday	Morning	Morning	
Calculating Annual Vehicle Hours					
Vehicle-hours Per Period (2)	h			h	h (3)
Number of Weeks Per Year					52
Annual Vehicle Hours					h (4)
Calculating Vehicle Hours Per Capita					
Vehicle Hours Per Capita					(5)
Abide with Service Standard					☐ Above Std ☐ Below Std (6)

Step by Step	
1	Indicate the population in which the proposed route will serve *Typically, the service area coverage is defined by areas within 500 metres along the proposed route*
2	Indicate the number of vehicle hours per period for each period, as already specified in the Ridership Calculation Worksheet
3	Create a subtotal for weekday vehicle hours by multiplying the sum of Monday-Friday Vehicle-hours Per Period by 5 (the number of weekdays) Add the vehicle hours from the weekday subtotal, Saturday, and Sunday to obtain the number of vehicle-hours per week
4	Multiply 3 by 52 to obtain the annual vehicle hours for the proposed route *Note: This calculation does not account for changes to schedules during holidays. Most transit agencies operate reduced service on the 10 recognized holidays in Ontario.*
5	Divide 4 by 1 to obtain the vehicle hours per capita
6	Check off whether the figure calculated in 5 is above or below the outlined Service Standards

2. Sample calculation

This section provides an example of a hypothetical transit service proposal for the Essex County. The purpose of this sample calculation is to better understand how the described worksheets can be used for transit service decision making.

In this example, an Essex County planner proposes to provide transit services connecting Lakeshore and Tecumseh communities to the Tecumseh Mall Transit Terminal in Windsor. Exhibit 5 illustrates the alignment of a proposed route. Exhibit 6 to Exhibit 8 show how the worksheets are completed and evaluated.

Exhibit 5 - Alignment of Proposed Route

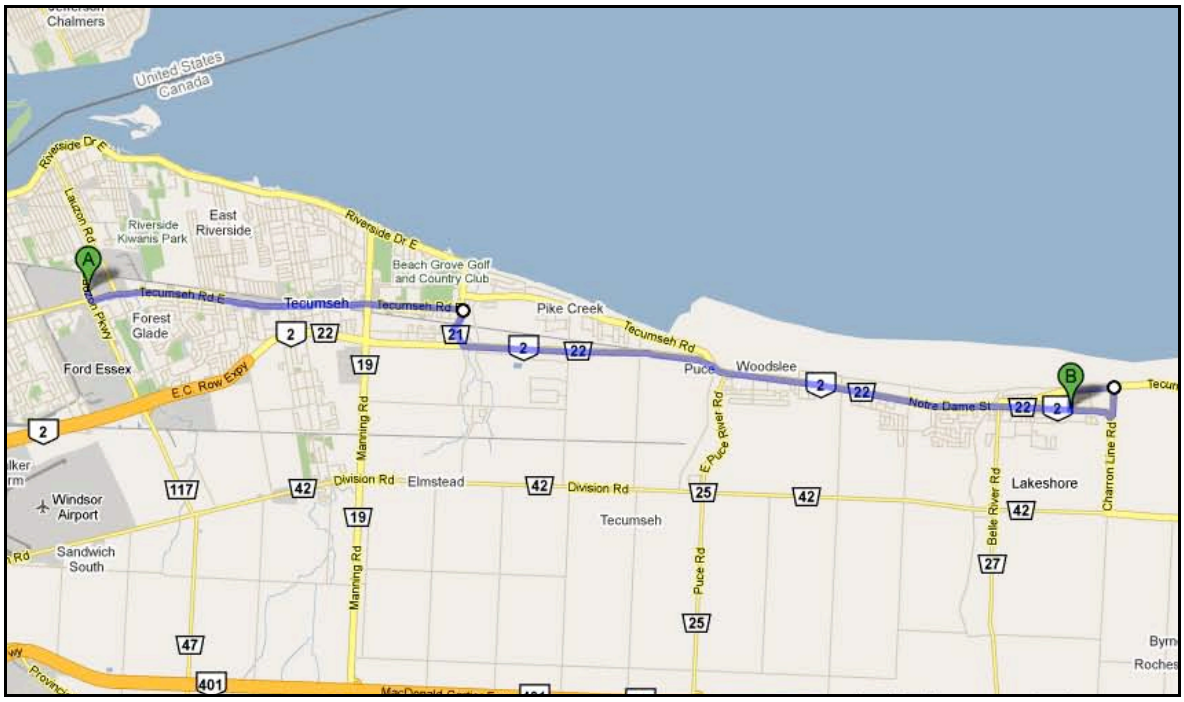


Exhibit 6 - Example of Completed Service Design Worksheet

Route Name	**Route 1: Lakeshore-Tecumseh-Windsor**							
Round Trip Distance	45.8 **km**							
Service Type	✓	Urban Connector						
		County Connector						
		Local Service						
		Rural Service						
Time Period	**Type of Service Operation**		**Level of Service (minutes)**					
	✓		15	20	30	60	90	Other (Specify)
Monday-Friday								
AM Peak	✓	Fixed Route / Schedule			✓			
		Demand Response	Not Applicable					
		No Service						
Midday	✓	Fixed Route / Schedule				✓		
		Demand Response	Not Applicable					
		No Service						
PM Peak	✓	Fixed Route / Schedule			✓			
		Demand Response	Not Applicable					
		No Service						
Evening		Fixed Route / Schedule						
		Demand Response	Not Applicable					
	✓	No Service						
Saturday								
Morning		Fixed Route / Schedule						
		Demand Response	Not Applicable					
	✓	No Service						
Afternoon		Fixed Route / Schedule						
		Demand Response	Not Applicable					
	✓	No Service						
Evening		Fixed Route / Schedule						
		Demand Response	Not Applicable					
	✓	No Service						
Sunday								
Morning		Fixed Route / Schedule						
		Demand Response	Not Applicable					
	✓	No Service						
Afternoon		Fixed Route / Schedule						
		Demand Response	Not Applicable					
	✓	No Service						
Evening		Fixed Route / Schedule						
		Demand Response	Not Applicable					
	✓	No Service						

Exhibit 7 – Example of Completed Ridership Calculation Worksheet

	Monday-Friday				**Saturday**			**Sunday**		
	AM Peak	Midday	PM Peak	Evening	Morning	After-noon	Evening	Morning	After-noon	Evening
Calculating Transit Trips										
Total Trips – All Modes	12,130 trips	9,450 trips	14,900 trips	trips	trips	trips	trips	trips	trips	trips
Percent of Transit Modal Share	2.0 %	2.0 %	2.0 %	%	%	%	%	%	%	%
Estimated Total Trips – Transit	243 trips	189 trips	298 trips	trips	trips	trips	trips	trips	trips	trips
Calculating Round Trip Time										
Round Trip Distance	46 km	46 km	46 km	km	km	km	km	km	km	km
Estimated Vehicle Speed	25 km/h	25 km/h	25 km/h	km/h	km/h	km/h	km/h	km/h	km/h	km/h
Estimated Round Trip Time*	2 h	2 h	2 h	h	h	h	h	h	h	h
Calculating Riders Per Revenue Hour										
Proposed Service Interval	30 mins	60 mins	30 mins	mins	mins	mins	mins	mins	mins	mins
Vehicle-trips Per Period	6 trips	6 trips	6 trips	trips	trips	trips	trips	trips	trips	trips
Vehicles-hours Per Period	12 h	12 h	12 h	h	h	h	h	h	h	h
Riders Per Revenue Hour	20 riders	16 riders	25 riders	riders	riders	riders	riders	riders	riders	riders
Abide with Service Standard	✓ Above Std Below Std	✓ Above Std Below Std	✓ Above Std Below Std	Above Std Below Std	Above Std Below Std	Above Std Below Std	Abov e Std Below Std	Above Std Below Std	Above Std Below Std	Above Std Below Std

* Calculation of estimated round trip time includes provision for recovery time. Recovery time is defined as time that is added to the pure running time (1) to enable a vehicle to make up small delays and (2) to adjust travel time to be compatible with proposed service intervals.

Exhibit 8 – Example of Completed Amount of Service Calculation Worksheet

Population Coverage	39,000										
	Monday-Friday				**Saturday**			**Sunday**			**Total**
	AM Peak	Midday	PM Peak	Evening	Morning	After-noon	Evening	Morning	After-noon	Evening	
Calculating Annual Vehicle Hours											
Vehicles-hours Per Period	12 h	12 h	12 h	h	h	h	h	h	h	h	180 h
Number of Weeks Per Year											52
Annual Vehicle Hours											9,360 h
Calculating Vehicle Hours Per Capita											
Vehicle Hours Per Capita											0.24 hrs/cap
Abide with Service Standard											✓ Above Std Below Std

3. Worksheet Templates

Service Design Worksheet

Route Name								
Route Distance		km						
Service Type		Urban Connectors						
		County Connectors						
		Local Services						
		Rural Services						
Time Period	**Type of Service Operation**		**Level of Service (minutes)**					
	✓		15	20	30	60	90	Other (Specify)
Monday-Friday								
AM Peak		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						
Midday		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						
PM Peak		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						
Evening		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						
Saturday								
Morning		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						
Afternoon		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						
Evening		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						
Sunday								
Morning		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						
Afternoon		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						
Evening		Fixed Route / Schedule						
		Demand Response	Not Applicable					
		No Service						

Ridership Calculation Worksheet

	Monday-Friday				**Saturday**			**Sunday**		
	AM Peak	Midday	PM Peak	Evening	Morning	Afternoon	Evening	Morning	Afternoon	Evening
Calculating Transit Trips										
Total Trips – All Modes	trips	trips	trips	trips	trips	trips	trips	trips	trips	trips
Percent of Transit Modal Share	%	%	%	%	%	%	%	%	%	%
Estimated Total Trips – Transit	trips	trips	trips	trips	trips	trips	trips	trips	trips	trips
Calculating Round Trip Time										
Round Trip Distance	km	km	km	km	km	km	km	km	km	km
Estimated Vehicle Speed	km/h	km/h	km/h	km/h	km/h	km/h	km/h	km/h	km/h	km/h
Estimated Round Trip Time*	h	h	h	h	h	h	h	h	h	h
Calculating Riders Per Revenue Hour										
Proposed Service Interval	mins	mins	mins	mins	mins	mins	mins	mins	mins	mins
Vehicle-trips Per Period	trips	trips	trips	trips	trips	trips	trips	trips	trips	trips
Vehicles-hours Per Period	h	h	h	h	h	h	h	h	h	h
Riders Per Revenue Hour	riders	riders	riders	riders	riders	riders	riders	riders	riders	riders
Abide with Service Standard	☐ Above Std ☐ Below Std	☐ Above Std ☐ Below Std	☐ Above Std ☐ Below Std	☐ Above Std ☐ Below Std	☐ Above Std ☐ Below Std	☐ Above Std ☐ Below Std	☐ Above Std ☐ Below Std	☐ Above Std ☐ Below Std	☐ Above Std ☐ Below Std	☐ Above Std ☐ Below Std

Amount of Service Calculation Worksheet

Population Coverage											
	Monday-Friday				**Saturday**			**Sunday**			**Total**
	AM Peak	Midday	PM Peak	Evening	Morning	Afternoon	Evening	Morning	Afternoon	Evening	
Calculating Annual Vehicle Hours											
Vehicles-hours Per Period	h	h	h	h	h	h	h	h	h	h	h
Number of Weeks Per Year											52
Annual Vehicle Hours											h
Calculating Vehicle Hours Per Capita											
Vehicle Hours Per Capita											hrs/cap
Abide with Service Standard											Above Std / Below Std

Appendix B

Service Design Options

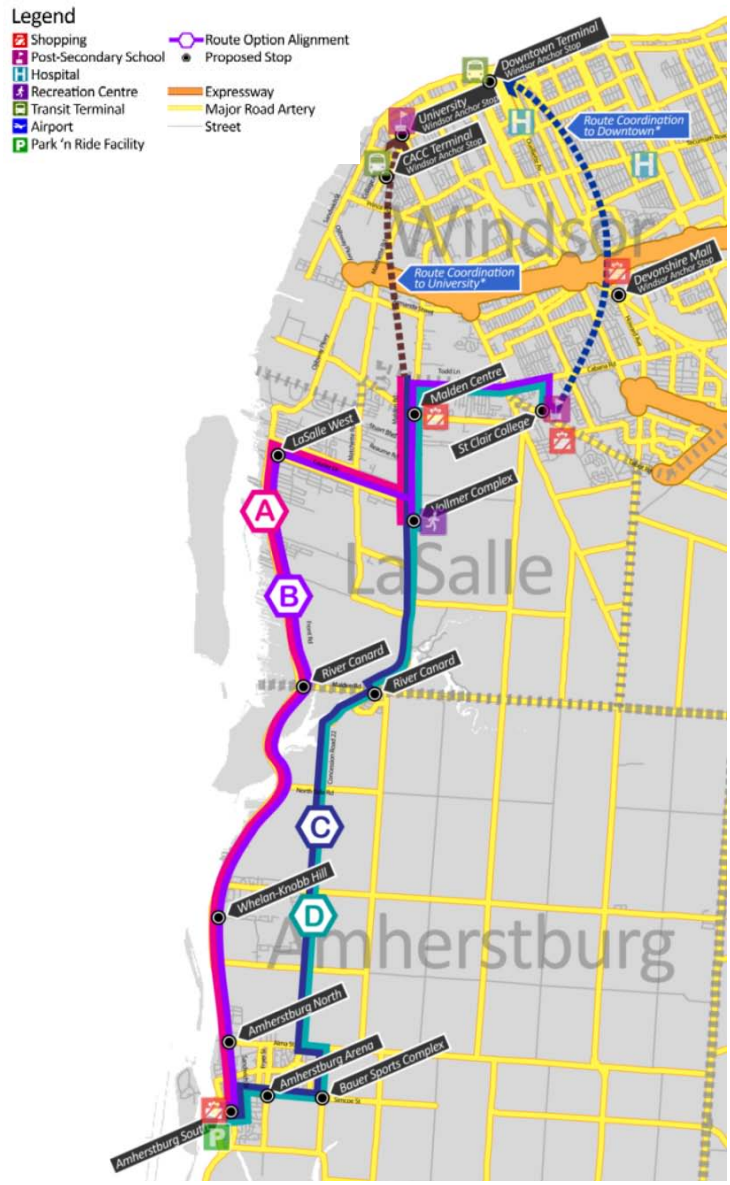
Appendix B: Service Design Options

This section identifies and evaluates the service design options for the Urban Connector for short-term implementation and two potential Urban Fringe Local services. There are options for three Urban Connectors and two Urban Fringe Local services to be identified and examined.

Urban Connector: Amherstburg–LaSalle–Windsor

Exhibit 1 illustrates the three route options for the Amherstburg-LaSalle-Windsor Urban Connector.

Exhibit 1 – Route Options for the Amherstburg–LaSalle–Windsor Urban Connector



* Alignment within Windsor to be refined upon consultations with Transit Windsor staff

Option A

Option A provides service from Walmart Supercentre in Amherstburg to the University of Windsor. The route makes stops at the northern Amherstburg employment area, the Whelan-Knobb Hill and River Canard residential communities, the recreation facility at Front Street & Laurier Drive, the Vollmer Culture and Recreation Complex, Malden Town Centre, and the Windsor CACC Terminal.

To provide connections to Windsor, this option has established the CACC Terminal and the University of Windsor as 'Anchor Stops', which are defined as destinations that would be a major trip generator or that allow for easier transfers to Windsor local services. These Anchor Stops would be, at the very least, preferred stops in Windsor to which the Urban Connector service would operate.

To connect to these Anchor Stops, the proposed alignment within Windsor is as follows: north on Malden Road, northwest on Armanda Street, north on Matchette Road, west on Prince Road, northeast on College Avenue, north on Felix Avenue, and west on Wyandotte Street. From this proposed alignment, there is an opportunity to coordinate or interline with existing Transit Windsor Route 7 as a means to improve operational efficiency and customer service.

Advantages

- provides the fastest connection to Windsor Downtown, University of Windsor and other areas around CACC Terminal
- provides direct connection to the Windsor Sandwich superzone, which make up 5 and 10 percent of trips originating from Amherstburg and LaSalle respectively
- provides the quickest connection to Windsor Downtown (relative to Options B and D), which make up approximately 4 and 11 percent of trips originating from Amherstburg and LaSalle respectively
- provides potential for transit service coordination which may yield operational efficiency and improved customer convenience

Disadvantages

- riders wishing to travel to St. Clair College will require a transfer to Transit Windsor or proposed Urban Fringe services

Option B

Option B calls for the coordination of Transit Windsor services from Walmart Supercentre in Amherstburg to the Windsor International Transit Terminal. The route makes stops at the northern Amherstburg employment area, the Whelan-Knobb Hill and River Canard residential communities, the recreation facility at Front Street & Laurier Drive, Vollmer Culture and Recreation Complex, the Malden Town Centre, and destinations in the City of Windsor.

This option has identified Devonshire Mall and the Windsor International Transit Terminal as 'Anchor Stops', which are defined as destinations that are likely to be major trip generators or that allow for easy transfers to local services. These Anchor Stops would be, at the very least, preferred stops in Windsor for which the Urban Connector service would operate to.

There is potential, for instance, to coordinate two existing Transit Windsor routes (Routes 1A and 7) to facilitate connections to the identified two destinations. Based on the coordination of these services, the proposed route alignment within Windsor is as follows: west on Cabana

Road, north on Howard Avenue, west on Tecumseh Road East, north on Ouellette Avenue, and west on Chatham Street.

Advantages

- provides convenient connections to destinations in the Windsor South and Windsor Central Core superzone, which make up approximately 12 and 25 percent of trips originating from Amherstburg and LaSalle respectively
- provides a convenient no-transfer connection from Amherstburg and LaSalle to St. Clair College, Devonshire Mall, and Downtown
- provides potential for transit service coordination which may yield operational efficiency and improved customer convenience

Disadvantages

- requires a great deal of service coordination with Transit Windsor as it may require restructuring Routes 1A and 7 to connect to identified Anchor Stops in Windsor
- proposed route results in longer running times, which may affect service reliability
- requires longer travel times to connect to the University of Windsor and Downtown (compared to Option A and C)

Option C

Option C provides service from Walmart Supercentre in Amherstburg to the University of Windsor. The route makes stops at the Amherstburg Arena, Larry Bauer Memorial Sports Complex, the River Canard residential community, the Vollmer Culture and Recreation Complex, Malden Town Centre, and the Windsor CACC Terminal.

To provide connections to Windsor, this option has established the CACC Terminal and the University of Windsor as 'Anchor Stops', which is defined as destinations that would be a major trip generator or that allow for easier transfers to Windsor local services. These Anchor Stops would be, at the very least, preferred stops in Windsor for which the Urban Connector service would operate to.

To connect to these Anchor Stops, the proposed alignment within Windsor is as follows: north on Malden Road, northwest on Armanda Street, north on Matchette Road, west on Prince Road, northeast on College Avenue, north on Felix Avenue, and west on Wyandotte Street. From this possible alignment, there is an opportunity to coordinate or interline with existing Transit Windsor Route 7 as a means to improve operational efficiency and customer service.

Advantages

- provides the fastest connection to Windsor Downtown, University of Windsor and other areas around CACC Terminal
- provides direct connection to the Windsor Sandwich superzone, which make up 5 and 10 percent of trips originating from Amherstburg and LaSalle respectively
- provides the quickest connection to Windsor Downtown (relative to Options B and D), which make up approximately 4 and 11 percent of trips originating from Amherstburg and LaSalle respectively
- provides potential for transit service coordination which may yield operational efficiency and improved customer convenience

Disadvantages

- riders wishing to travel to St. Clair College will require a transfer to Transit Windsor or proposed Urban Fringe services
- provides less coverage to LaSalle's western residential communities

Option D

Option D calls for the coordination of Transit Windsor Services to provide a no-transfer service from Walmart Supercentre in Amherstburg to the Windsor International Transit Terminal. The route makes stops at the Amherstburg Arena, Larry Bauer Memorial Sports Complex, the River Canard residential community, the Vollmer Culture and Recreation Complex, Malden Town Centre, St. Clair College, and destinations in the City of Windsor.

This option has identified Devonshire Mall and the Windsor International Transit Terminal as 'Anchor Stops', which are defined as destinations that are likely to be major trip generators or that allow for easy transfers to local services. These Anchor Stops would be, at the very least, preferred stops in Windsor for which the Urban Connector service would operate to.

There is potential, for instance, to coordinate two existing Transit Windsor routes (Routes 1A and 7) to facilitate connections to the identified two destinations. Based on the coordination of these services, the proposed route alignment within Windsor is as follows: west on Cabana Road, north on Howard Avenue, west on Tecumseh Road East, north on Ouellette Avenue, and west on Chatham Street.

Advantages

- provides a convenient no-transfer connection from Amherstburg and LaSalle to St. Clair College, Devonshire Mall, and Downtown
- provides convenient connections to destinations in the Windsor South and Windsor Central Core superzone, which make up approximately 12 and 25 percent of trips originating from Amherstburg and LaSalle respectively
- provides potential for transit service coordination which may yield operational efficiency and improved customer convenience

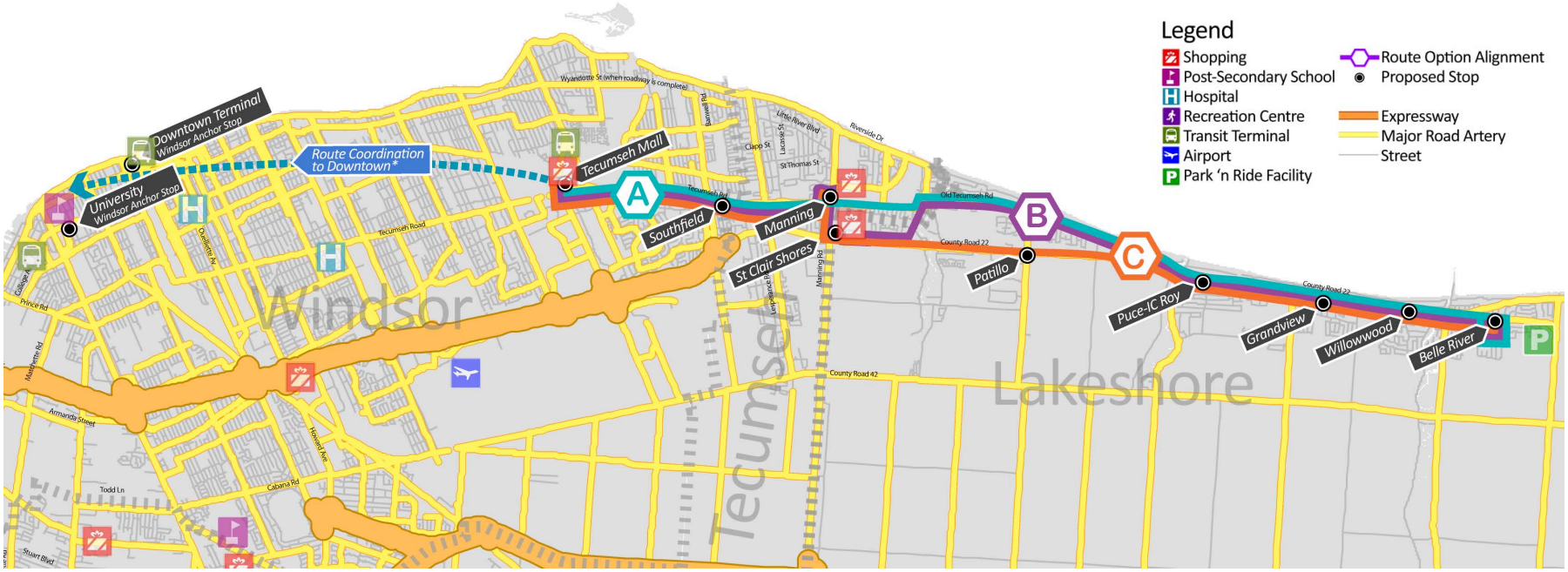
Disadvantages

- requires a great deal of service coordination with Transit Windsor as it may require restructuring Routes 1A and 7 to connect to identified Anchor Stops in Windsor
- proposed route results in longer running times, which may affect service reliability
- requires longer travel times to connect to the University of Windsor and Downtown (compared to Option A and C)
- provides less coverage to LaSalle's western residential communities

Urban Connector: Lakeshore–Tecumseh–Windsor

Exhibit 2 illustrates the three route options for the Lakeshore–Tecumseh–Windsor Urban Connector.

Exhibit 2 – Route Options for the Lakeshore–Tecumseh–Windsor Urban Connector



* Alignment within Windsor to be refined upon consultations with Transit Windsor staff. Suggested route coordination opportunities apply to all three proposed route options.

Option A

Option A provides service from Belle River (Lakeshore) to Tecumseh Mall in Windsor and makes connections to the Willowwood, Grandview, and IC Roy residential communities; St. Clair Beach Shopping Centre at Manning Road; and higher-density residential areas at Southfield Road.

There is potential for the proposed service to be coordinated with Transit Windsor services. Refer to the "Potential for Service Coordination with Transit Windsor" section on Page 7 for details.

Advantages

- provides the quickest connection from Lakeshore and Tecumseh to Tecumseh Mall in Windsor
- accommodates connections to the Windsor Industrial and Windsor Riverside superzones, which make up approximately 25 and 17 percent of trips from northern Tecumseh and urban Lakeshore respectively

Disadvantages

- does not provide connection to the St. Clair Beach and East Pointe Trails shopping plaza, an emerging retail area in the Town

Option B

Option B is a proposal initially recommended in the Transit Windsor Master Plan (2006). The plan's alignment was refined and calls for the introduction of service from 11th Street and County Road 22 in Belle River (Lakeshore) to Tecumseh Mall in Windsor. Similar to Option A, this option connects to the same destinations identified in Option A. However, the route makes a small diversion in Tecumseh to provide convenient connections to two retail areas: St. Clair Beach Shopping Centre and St. Clair Shores power centre.

There is potential for the proposed service to be coordinated with Transit Windsor services. Refer to the "Potential for Service Coordination with Transit Windsor" section on Page 7 for details.

Advantages

- provides a connection to new retail destinations at St. Clair Beach shopping centre and the East Pointe Trails shopping plaza
- accommodates connections to the Windsor Industrial and Windsor Riverside superzones, which make up approximately 25 and 16 percent of trips in northern Tecumseh and urban Lakeshore respectively (similar to Option A and C)

Disadvantages

- results in increased travel time for some passengers because of the two diversions to St. Clair Beach shopping centre and to the retail destinations at Amy Croft Drive and Manning Road

Option C

Option C provides service from Belle River (Lakeshore) to Tecumseh Mall in Windsor and makes connections to the Willowwood, Grandview, and IC Roy residential communities; the Patillo employment area; St. Clair Shores Shopping Centre; St. Clair Beach Shopping Centre; and higher-density residential areas at Southfield Road.

There is potential for the proposed service to be coordinated with Transit Windsor services. Refer to the "Potential for Service Coordination with Transit Windsor" section on Page 7 for details.

Advantages

- provides transit service to the emerging Patillo employment area
- provides a connection to new retail destinations at St. Clair Beach shopping centre and the East Pointe Trails shopping plaza
- accommodates connections to the Windsor Industrial and Windsor Riverside superzones, which make up approximately 25 and 16 percent of trips in northern Tecumseh and urban Lakeshore respectively (similar to Option A and B)
- operating along County Road 22 may result in a faster travel time than along Old Tecumseh Road (as proposed in Options A and B)

Disadvantages

- results in increased travel time for some passengers because of the diversion to St. Clair Beach shopping centre

Potential for Service Coordination with Transit Windsor

For each of the three options proposed for the Lakeshore – Tecumseh – Windsor Urban Connector, there is an opportunity to coordinate proposed service with Transit Windsor services to bring quick and easy connections to major Windsor destinations.

While around 20 percent of trips in Lakeshore and Tecumseh are destined to the Windsor Riverside and Industrial superzones, approximately 8 percent of trips from Lakeshore and Tecumseh are destined to the Windsor Central Core superzones (where the University of Windsor is located). Because post-secondary students are identified as a key market demographic for regional transit service, it is anticipated that the connections to the Windsor Central Core superzone would achieve a higher modal split relative to other superzones.

GENIVAR has identified two 'Anchor Stops', which are defined as destinations that are likely to be major trip generators or that allow for easy transfers to local services, which are defined as destinations that are likely to be major trip generators or that allow for easy transfers to local services. These Anchor Stops would be, at the very least, preferred stops in Windsor to which the Urban Connector service would operate.

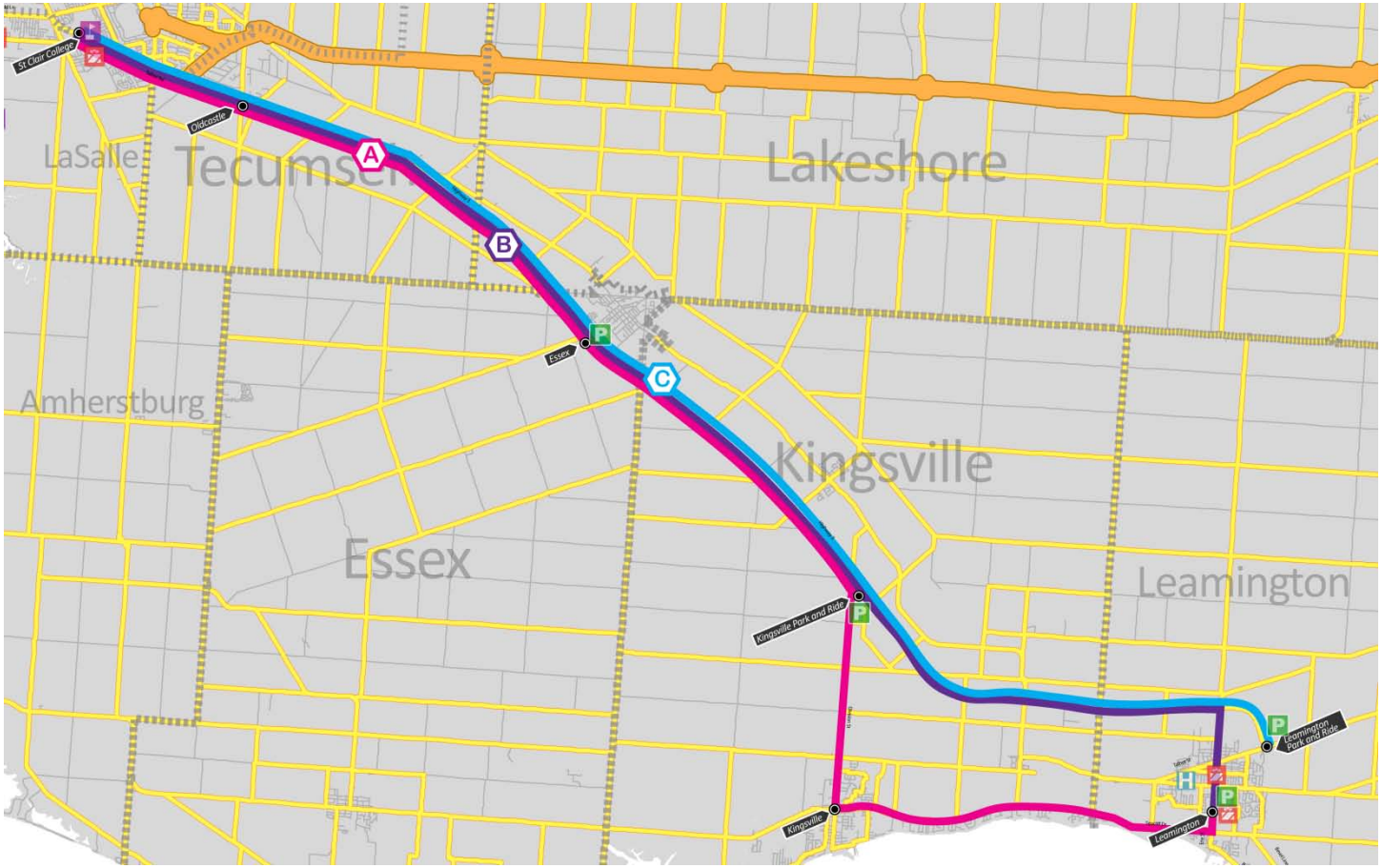
Potential Connection to Downtown and the University of Windsor

The Transit Windsor Master Plan (2006) recommends the introduction of a Bus Rapid Transit Service along the Tecumseh/Ouellette and Howard/Ouellette corridors. As a precursor to the introduction of these services, there may be an opportunity to introduce limited-trip, limited-stop express services (similar to Route 1CX) to provide a faster travel times not only for potential transit riders in Tecumseh and Lakeshore but also internally in Windsor as well.

Urban Connector: Leamington–Kingsville–Essex–Windsor

Exhibit 3 illustrates the three route options for the Leamington–Kingsville–Essex–Windsor Urban Connector.

Exhibit 3 – Route Options for the Leamington–Kingsville–Essex–Windsor Urban Connector



Option A

Option A provides service from RioCan Centre (Walmart) in Leamington to St. Clair College in Windsor and operates mainly along the Highway 3 corridor. The proposed service operates only in the peak period and makes connections to the potential Kingsville Park ‘n Ride facility (Division Road & Highway 3), Essex along Highway 3, and the Oldcastle industrial area.

Advantages

- provides the quick connections between Leamington, Essex, Oldcastle, and St. Clair College in Windsor (but requires longer travel time than Option C)
- provides a balance between accommodating transit rider demand and in-vehicle travel time
- estimated trips to the Windsor South superzone from Kingsville to Windsor South is lower than from urban Leamington

Disadvantages

- does not provide service connections to the Kingsville urban area, which would potentially generate approximately half of the ridership generated in urban Leamington

Option B

Option B also provides service from RioCan Centre (Walmart) in Leamington to St. Clair College in Windsor but operates under a different route alignment. The proposed service operates only in the peak period and makes connections to the Kingsville town centre, the potential Kingsville Park ‘n Ride facility, Essex along Highway 3, and the Oldcastle industrial area.

Advantages

- provides connections between Leamington, Kingsville, Essex, Oldcastle, and St. Clair College in Windsor
- will attract a greater number of riders due to increased connections in urban Kingsville, but likely to the detriment of some potential Leamington riders who would experience longer in-vehicle travel time

Disadvantages

- requires three buses to operate this service, one more than Options A or B

Option C

Option C provides service from the Park ‘n Ride facility in Leamington to St. Clair College in Windsor and operates mainly along the Highway 3 corridor. The proposed service operates only in the peak period and makes connections to the potential Kingsville Park ‘n Ride facility (Division Road & Highway 3), Essex along Highway 3, and the Oldcastle industrial area.

Advantages

- provides the quickest connections between Leamington, Essex, Oldcastle, and St. Clair College in Windsor
- estimated trips to the Windsor South superzone from Kingsville to Windsor South is lower than from urban Leamington

Disadvantages

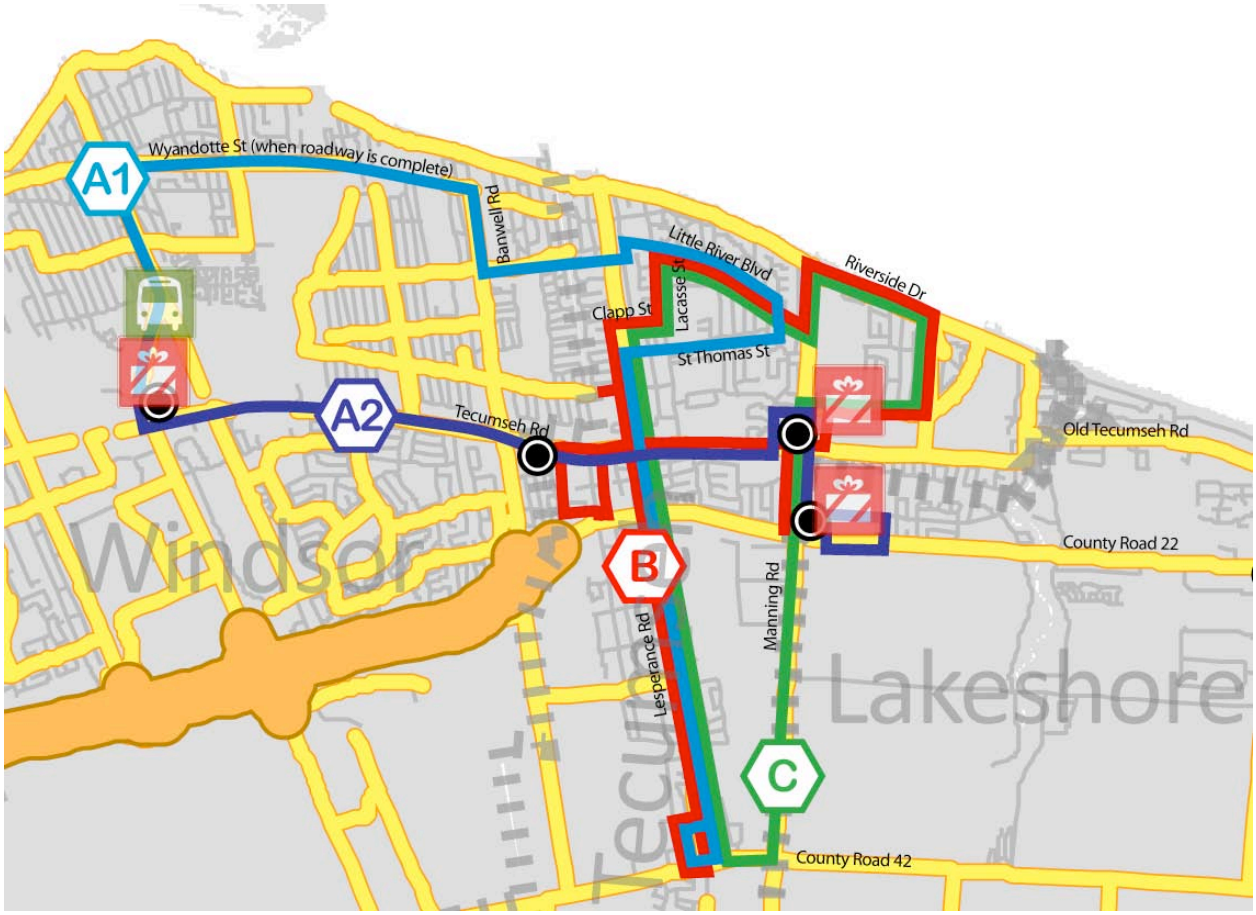
- does not provide service connections to the Kingsville urban area, which would potentially generate approximately half of the ridership generated in urban Leamington
- does not provide direct service connections to the Leamington urban area, and relies on connections from local service, Park 'n Ride, and passenger drop offs for ridership

Urban Fringe – East Local

Exhibit 4 illustrates the three route options for Urban Fringe – East Local services. These options were developed to understand how Urban Connector and Urban Fringe services could operate together as a transit system.

The routes described in this section are provided for consideration by the towns of Tecumseh and Lakeshore. It is the discretion of the local municipalities to determine the appropriate service designs that best accommodate the local mobility needs of their respective communities.

Exhibit 4 - Route Options for Urban Fringe – East Local services



Note: Route options are examined for consideration purposes only. The local municipality has discretion over the appropriate route alignment and service levels for the community.

Option A

Option A is a proposal recommended in the Transit Windsor Master Plan (2006) and calls for the introduction of two routes. Route A1 and A2.

Route A1 (see Urban Fringe – East map on Page 13) calls for the extension of Transit Windsor Route 10 into Tecumseh along Little River Boulevard, Dillon Drive, St. Thomas Street and Lesperance Road. Route A2 (see Urban Fringe – East map on Page 13) operates from Tecumseh Mall to St. Clair Beach Shopping Centre and St. Clair Shores power centre via Tecumseh Road.

Advantages

- provides a high transit service coverage between the Tecumseh urban area and Tecumseh Mall in Windsor
- Route A1 promotes transit service coordination with Transit Windsor, which may yield operational efficiency and improved customer convenience

Disadvantages

- provides an inconvenient service option for riders travelling from the Lesperance Road residential area to the retail facilities along Manning Road
- riders travelling from the Lesperance Road residential area south of Tecumseh Road will either have to transfer at Tecumseh Road or experience longer in-vehicle travel time
- requires more operating resources than the other options
- Route A2 results in a duplication of service with the Lakeshore-Windsor Urban Connector

Option B

Option B is a proposal completed by the Town of Tecumseh, which calls for the operation of a circuitous route covering most of the Tecumseh north urban area. The option provides direct service to most key destinations within the urban area, including St. Clair Beach Shopping Centre, St. Clair Shores power centre and town community and civic centres.

Advantages

- provides extensive door-to-door connections to nearly all major destinations in the Tecumseh urban area
- can accommodate coordinated transfers with Urban Connector service along Tecumseh Road

Disadvantages

- must transfer onto the Urban Connector service to connect to Windsor and Lakeshore
- long circuitous routes with route deviations result in longer in-vehicle travel time for passengers
- requires greater operating resources compared to Option C but better than Option A
- some route sections may duplicate with Lakeshore-Windsor Urban Connector Services

Option C

Option C calls for the operation of a simplified circuitous route along Lesperance Road, Clapp Street, Lacasse Boulevard, Little River Boulevard, Manning Road, Riverside Drive, Edgewater Boulevard, St. Gregory's Road, Manning Road and County Road 22. This option will provide connections between residential communities in the Town's urban area to the St. Clair Beach Shopping Centre and St. Clair Shores power centre. The St. Clair Beach Shopping Centre is selected as the location for coordinated transfers with the Lakeshore-Tecumseh Urban Connector, allowing for easy connections to Windsor and Lakeshore.

Advantages

- provides a balance between providing good transit service coverage in the Tecumseh urban area and ensuring a shorter running time
- can accommodate timed transfers with Urban Connector service at St. Clair Beach shopping centre
- provides connections to the most heavily travelled stops, according to current Tecumseh Transit ridership data

Disadvantages

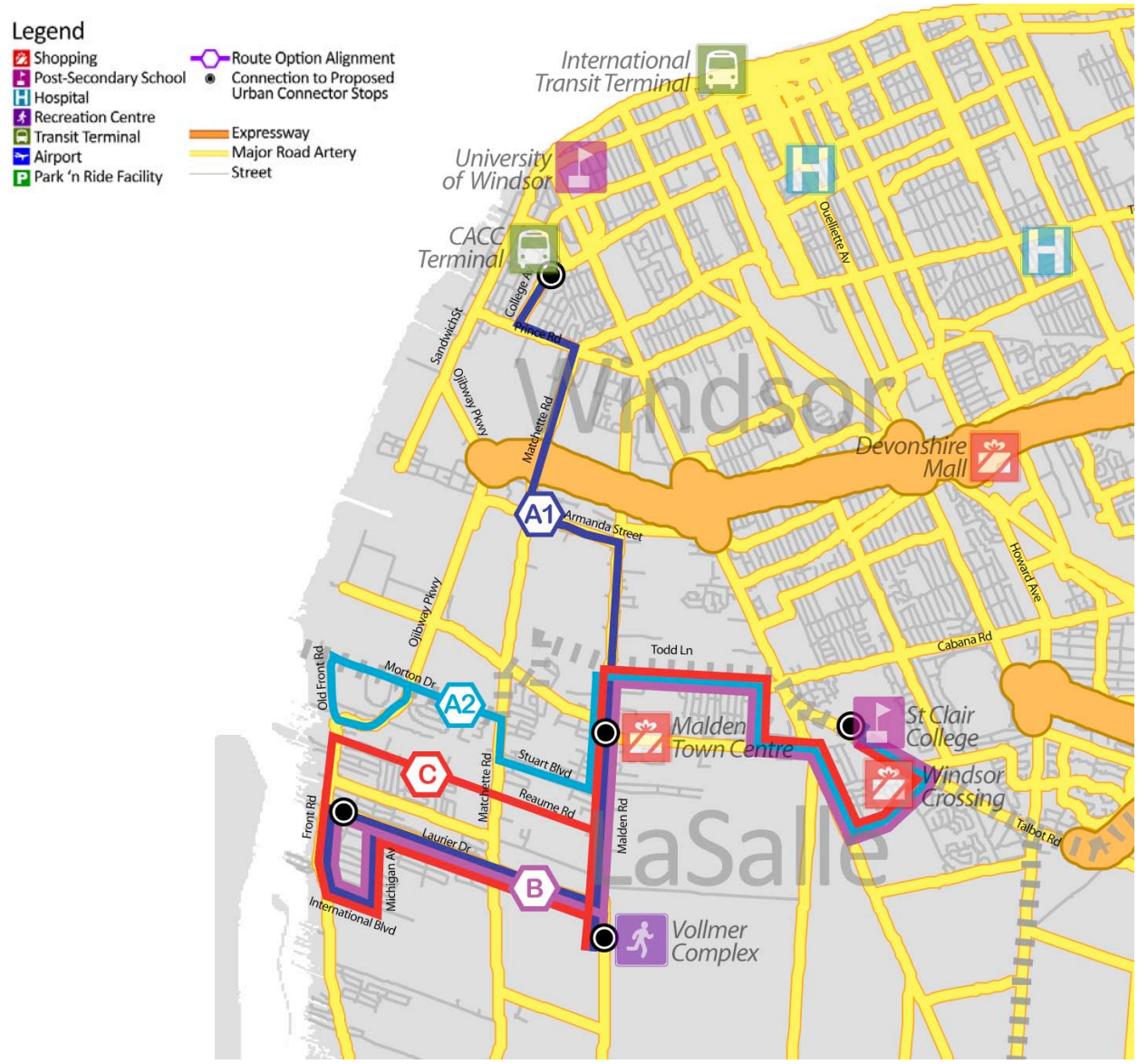
- must transfer onto the Urban Connector service to connect to Windsor and Lakeshore
- does not provide as good service coverage and frequency as the other options, but requires the least operating resources
- route can potentially be extended to Tecumseh Mall to allow for more convenient connections to Windsor

Urban Fringe – South Local

Exhibit 5 illustrates three route options for Urban Fringe – South Local services. These options were developed to understand how Urban Connector and Urban Fringe services could operate together as a transit system.

The routes described in this section are provided for consideration by the Town of LaSalle. It is the discretion of the local municipalities to determine the appropriate service designs that best accommodate the local mobility needs of their respective communities.

Exhibit 5 - Route Options for Urban Fringe – South Local services



Note: Route options are examined for consideration purposes only. The local municipality has discretion over the appropriate route alignment and service levels for the community.

Option A

Option A is a proposal recommended in the Transit Windsor Master Plan (2006) and calls for the introduction of two routes: Route A1 and A2.

Route A1 (see Urban Fringe – South map on Page 13) calls for the introduction of a new branch service from St. Clair College to Morton Drive and Old Front Road and makes connections to major destinations in LaSalle including Windsor Crossing shopping centre, the Malden town centre, the Morton industrial area and well as residential communities in the northern parts of LaSalle's urban area. Route A2 (see Urban Fringe – South map on Page 13) calls for the introduction of a new route from CACC Terminal in Windsor to International Avenue and Front

Road. The route will provide connections to key destinations including the Malden retail strip and residential areas in the southern parts of LaSalle's urban area.

Advantages

- provides good coverage and excellent service frequency in the LaSalle urban area
- provides a choice of service connections to CACC Terminal and St. Clair College
- provides good connections to the Malden town centre from all areas within the LaSalle urban area, which would also facilitate convenient transfers for local travel

Disadvantages

- requires three additional buses relative to the other options

Option B

Option B provides service from St. Clair College to International Avenue and Front Road via Talbot Road, Sandwich Parkway, Huron Church Line Road, Normandy Street, Tenth Street, Todd Lane, Malden Road, Laurier Drive, Front Road, International Avenue and Michigan Avenue. This route provides connections to the Malden town centre, the southern urban residential communities in LaSalle, St. Clair College and Windsor Transit services.

Advantages

- accommodates connections to St. Clair College, which functions as an appropriate gateway to Transit Windsor services
- accommodates direct connections to the Windsor South superzone, which makes up the highest proportion of trips (approximately 8 percent) from the LaSalle urban area
- provides a good two-way service along Laurier Drive, an east-west town artery located in the centre of the LaSalle urban area

Disadvantages

- provides the poorest transit service coverage within the LaSalle urban area relative to the other options
- operates at a lower service frequency but requires fewer operating resources relative to Option A

Option C

Option C provides an alternative routing to Option B. The route also provides service from St. Clair College to International Avenue and Front Road via Talbot Road, Sandwich Parkway, Huron Church Line Road, Normandy Street, Tenth Street, Todd Lane and Malden Road. From there, the route operates via a large on-street loop servicing Reaume Road, Front Road, International Avenue, Michigan Avenue, Laurier Drive and back on Malden Road.

Advantages

- accommodates connections to St. Clair College, which functions as an appropriate gateway to Transit Windsor services (similar to Option B)

- accommodates direct connections to the Windsor South superzone, which makes up the highest proportion of trips (approximately 8 percent) from the LaSalle urban area (similar to Option B)
- provides better service coverage than Option B through the operation of an on-street loop in the south portion of the route

Disadvantages

- operates at a lower service frequency but requires fewer operating resources relative to Option A (similar to Option B)

Appendix C

Marketing Strategies

Appendix C: Marketing Strategies

The following section identifies marketing strategies that can be implemented to promote increased ridership and creating a culture of transit usage in the County of Essex. The two major steps appropriate for the County to pursue are to (1) establish superior customer service and (2) foster community and institutional partnerships.

Establish Superior Customer Service

Like the delivery of any service, the most effective marketing strategy is for transit operators is to provide services that suit the needs of their consumers. That means ensuring that services: (1) gets to where people want to go, (2) are available when riders need it, (3) are reasonably priced, and (4) are easy to use and hassle-free.

To respond these four directives, the following are recommendations to exemplify superior customer service.

Know the Customer

The delivery of transit services requires a solid understanding of current and prospective riders. As a transit operator, one would wish to observe: (1) who are they? (2) what do they value?(3) what are their needs? (for example, trip origin, destination, purpose, special needs).

Phase 1 of the Transit Assessment Report identified employment-based commuters and post-secondary students as the key target markets. These market segments were identified as generating the greatest ridership potential. Identifying target markets is intended to bring better direction and focus to the marketing efforts. The more transit operators know about their target market, the more precise the marketing strategy and intended ridership results could be.

Researching about current and prospective riders can be conducted through existing ridership counts, modelled origin-destination surveys, focus groups, as well as general questionnaire surveys.

Use Available Resources Effectively

Transit agencies operate under strict and often limited operating budgets, and sometimes becomes very difficult to ensure that services are always available when riders need it. For that reason, transit operators must make every effort in ensuring that the allotted resources are used effectively.

Achieving this objective requires processes for the monitoring of services to focus County objectives, to promote continuous quality improvement and to ensure the best use of available resources. Phase 2 of the Transit Assessment Report further describes the role of service standards and outlines the specific measures the County should attain in the medium-term.

Establish Fare Incentives

As the system ridership matures, GENIVAR recommends developing a fare incentive program as a means to reward frequent users and to further capture key target markets.

Bulk Purchase Discount

Depending on the financial and ridership performance of the proposed system, GENIVAR recommends that the County introduce a price discount program that is based on the volume of

monthly pass fare products purchased by one purchaser at one time. Detailed analysis regarding the degree of the discount and its financial and ridership implications should be conducted after the system has accumulated concrete ridership and financial data to better understand the merits for the County to develop such a program.

Transit Windsor currently has a transit pass discount program called the Corporate ValuPass. The program offers up to 15 percent in savings compared to a monthly pass. To qualify, a minimum of 50 employees must commit to a minimum of six consecutive months of transit passes.

Post-Secondary UPASS and Discount Incentives

Post-secondary students were identified as a key target market for transit services in the County. For that reason, it is particularly beneficial to the County to work in conjunction with Transit Windsor to endorse a universal bus pass (UPASS) with Windsor's post-secondary institutions.

In a UPASS program, all eligible students are required pay a set amount and in return are granted unlimited universal access to transit services operated by constituent agencies. A UPASS program is typically enacted by a referendum administered by the individual post-secondary school student unions. The benefits of instituting such a program is as follows:

Exhibit 1 – UPASS Benefits to Post-Secondary Students and the County

Benefits to Student	Benefits to County
• Cost per student for the UPASS is significantly lower than buying individually • Students can leverage their buying power to command for services tailored to their needs	• Encourage students to make transit part of their lifestyle and thus helps to build transit ridership • Provides a consistent stream of operating income

If the interest for a UPASS program is insufficient, the County can still development fare incentives programs by offering student discounts to ticket purchases, monthly passes, as well as cash fares. For instance, Transit Windsor currently provides a 30 percent fare discount to post-secondary students for all fare media types.

Refer to the "Work with Post-Secondary Institutions" section on Page 3 for further details about working with post-secondary institutions as a means to capture more ridership.

Establish Effective Communication Channels

Because regional transit currently does not exist in Essex County, GENIVAR recommends taking important steps in making the transit-riding experience easy and hassle-free. This involves ensuring easy access to schedule and route map materials that are easy to read and interpret at major terminal facilities, at bus stops, and online.

GENIVAR recommends developing information systems for which existing and future passengers could request for trip planning advice and supply rider feedback. Typically, these information systems are available by phone and online. Trip planning information by phone is typically available during regular business hours, and a parallel automated phone system is usually in place to supply the next available vehicle arrival times at a given stop. The issue with

phone-based information services is that the reliance on an purely auditory medium is often ineffective and not user-friendly because the visual and spatial elements are virtually absent, and the conveyance of information is relatively slower than web-based systems.

Web-based information overcomes the aforementioned issues, where route and schedule information can be quickly accessed with a click of a mouse. With the emergence of sophisticated mapping tools, web-based trip planners have become a popular tool for transit riders in many Canadian transit agencies. For instance, Google Transit is a web-based mapping tool whereby transit users enter their origin, destination and the time of departure or arrival. Based on the information, Google Transit plans the transit trip accordingly. Google Transit relies on updated schedule and route data provided by transit operators in order for the generated trip plans to be accurate and timely.

Foster Community and Institutional Partnerships

Work with Post-Secondary Institutions

As discussed in Phase 1 of the County of Essex Transit Assessment Report, post-secondary students were identified as a key target market for transit services in the County. For that reason, GENIVAR recommended developing marketing strategies with the specific goal of capturing ridership from post-secondary students. The following is a list of ways in which the County, in conjunction with Transit Windsor, could better market inter-municipal transit services in the County:

1. Setting up for customer service and promotional booths in the beginning of each term to entice and reinforce students to use transit
2. Establishing a rewards or discount program for regular transit patronage
3. Working with student union associations to establish a UPASS program
4. Liaising with post-secondary administration staff to ensure services respond to their needs and school schedules.

Based on feedback with stakeholders, GENIVAR recognizes that the proposed estimated travel times for some students, particularly those living at the ends of the Urban Connectors (for example, Amherstburg, Lakeshore, and Leamington), may have a lengthy commute to post-secondary institutions. Thus as the system matures, there may be a need to adapt services to ensure services are more competitive and tailor the needs of post-secondary students.

Ensure Visibility in the Community

Participating in special community events is a great way to increase exposure and encourage users to consider using public transit. GENIVAR recommends working with Transit Windsor to encourage employers to participate in events such as Car Free Day, Pollution Probe's Clean Air Commute, and to shift people's mindsets about the use of alternative transport modes, including public transit.

GENIVAR also recommends establishing promotional kiosks at major events around Essex and Windsor to demonstrate stronger visibility the community and to promote transit services available for residents and workers. The Carrousel of the Nations, the Kingsville Fantasy of Lights, the Amherstburg LaSalle Strawberry Festival, the Leamington Tomato Festival, and the Tecumseh Corn Festival are just some examples of events Essex County may participate in.

Appendix D

Transportation Demand Management

Appendix D: Transportation Demand Management

Transportation Demand Management (TDM) is set of measures and strategies intended to improve the transportation system by reducing travel demand or to redistribute the demand in space and time.

The reduction of travel demand typically refers to minimizing the need to travel (for example, telework) and discouraging the use of inefficient transport modes such as single-occupant vehicles (for example, HOV lanes). Redistributing travel demand attempts to better manage road capacity constraints, and it is achieved through space (for example, supporting mixed land uses to promote closer origins and destinations) and time (for example, staggering work arrival times).

The Essex-Windsor Regional Transportation Master Plan (Essex-Windsor Regional TMP) completed in October 2005 raised TDM measures as a “major regional transportation issue.” At the same time, the report recognized the transportation and land use context in Windsor-Essex poses barriers to delivering effective TDM. The Plan cites the relative ease of automobile travel, transit service limitations (referring to a time when regional transit was not being considered), inexpensive and ample parking, and the disbursement of employment away from core areas as conditions that would hinder the success of the TDM strategies.

Nevertheless, the Essex-Windsor TMP recommended a number of measures in the urbanized parts of the Essex-Windsor study area. Exhibit 1 outlines the TDM measures discussed in the document.

Exhibit 1 – TDM Measures Outlined in the Essex-Windsor Regional TMP

TDM Measure	**Desired Result**
Encourage more intensified and mixed-use urban form	Reduce average trip lengths
Follow Smart Growth principles in subdivision design	Provide a variety of travel route choices
Increase roadway connectivity	Provide more efficient travel and promote air quality benefits
Provide expanded infrastructure and service for non-motorized travel modes	Provide feasible modal alternatives
Provide an extension of transit service	Promote greater transit ridership in the Essex-Windsor

In line with the conclusions and recommendations made in the Essex-Windsor Regional TMP and in anticipation of proposed transit service in the County, carrying out a basic TDM strategy which focuses on encouraging walking, transit usage and promoting transit-conducive land uses within the County.