



Executive Summary

# Transit Master Plan

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**Submitted to City of Sarnia  
by IBI Group**

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# 1. Introduction

The city of Sarnia has a population of approximately 72,355 and is the largest city on Lake Huron and in Lambton County. It is located where the upper Great Lakes empty into the St. Clair River. The port of Sarnia remains an important centre for lake freighters and ocean-going ships carrying cargoes of grain and petroleum products.



The early growth of Sarnia was stimulated by the wealth of adjoining stands of timber and by the discovery of oil in nearby Oil Springs in 1858, the first place in Canada and North America to drill commercially for oil. The complex of refining and chemical companies, called Chemical Valley and located south of downtown Sarnia, continues today as a major source of employment and a vital part of the City and the surrounding County's economy.

On 1 January 1991, Sarnia and the neighbouring Town of Clearwater were amalgamated as the new city of Sarnia-Clearwater. On 1 January 1992, the City reverted to the name "Sarnia".<sup>1</sup>



Public transit service has a long history in Sarnia dating to 1875 when the Sarnia Street Railway Company introduced horse-drawn streetcars on an initial route along Davis, Front, Exmouth and Bayview Park to Point Edward. The street railway was electrified in 1901 notably representing the last commercial operation of horsecars in Canada.<sup>2</sup> Private operation of the transit service continued until April 1974 when the City purchased the operation from Charterways Transportation.

Today, transit service is provided within the city of Sarnia and, through a service agreement, in the Village of Point Edward. Both **conventional** (Sarnia Transit) and **specialized** (Care-A-Van) transit services are operated.

## 1.1 Study Objectives

The last major review of Sarnia's public transit services was undertaken in 1991 followed by a smaller operational review in December 2000. Over the intervening years, many changes have taken place in the City in terms of development, employment and demographics. These factors highly influence travel patterns and the transportation needs and expectations of area residents. As a result, the City decided to undertake both a comprehensive review of its transportation needs and prepare a new Transportation Master Plan (TMP) as well as to conduct a comprehensive review of its public transit services within the context of the TMP and prepare a new public transit master plan for both Sarnia Transit and the Care-A-Van service.

The key objectives of the Transit Master Plan are:

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<sup>1</sup> City of Sarnia website.

<sup>2</sup> All-Time List of Canadian Transit Systems.

1. To develop short term, mid-term and long term recommendations for improvements that will result in an improved service delivery and efficiency strategy.
2. To complete a review of existing transit services, both conventional and specialized, and clarify the City's strategic priorities for delivery of services and operations, while focusing on the overall quality, performance and efficiency of transit services and on the role transit plays in the city.

The study is to investigate the current and future transit needs of the community and stakeholders within the context of the City's overall TMP and to assess whether transit services are well-positioned to meet those needs.

Of particular importance, the review of the conventional transit service is to determine the need and optimum location for a transit terminal and assess the impact on existing and future routes and ridership. This will be achieved through an analysis of travel patterns, ridership needs and the design of the most effective transit route network. Overall, the final outcome of this project is to have a Transit Master Plan covering both the conventional and specialized transit services as part of the City's overall Transportation Master Plan which will provide practical and cost effective improvements to Sarnia's transit services for the coming years along with an implementation strategy for the consideration of City Council.

## 1.2 Study Process

The study process consisted of two separate but parallel phases: Phase 1 focused on an analysis of the conventional transit service, Sarnia Transit; Phase 2 focused on analysis of the specialized transit service, Care-A-Van.

The results of these work phases are:

1. Short Term Conventional Transit Service Improvement Plan. Improvements to the conventional transit service to address key operational and customer identified issues;
2. Confirmation of the location of a main transit terminal. Recommend the most appropriate need based on the results of the service improvements and input from transit stakeholders;
3. Specialized Transit/Care-A-Van Review and Assessment. Review all aspects of the specialized transit service and identify future needs, operational practices and resource requirements for the specialized transit service.
4. Transit Master Plan. Short, medium and long term plans to improve the City's conventional transit services. The Plan would be based not only on projected future community and transportation needs and assumptions but primarily on the role and objectives established for public transit as a core component of the City's overall transportation system through the Transportation Master Plan work.

## 1.3 Study Approach

The approach to this study has involved the following activities:

- Extensive consultations with all of the City's transit stakeholder groups through focus group, public information centre and personal meetings;
- A review of transit demand, population demographics and future population and growth trends;
- A review of transit operations and system performance;
- A Peer Review of similar size systems;
- A review of the transit department activities;
- A review and assessment of the system's infrastructure;
- Analysis of Sarnia Transit ridership patterns and transit operations; and
- General research and review of background reports.

Three primary reports, as well as Technical Memoranda on specific topics, were prepared:

1. Conventional Transit Service Plan with recommended immediate, short and long term plans for improving Sarnia Transit services over the next 10 years;
2. Care-A-Van Service Review with recommendations to improve the operation and delivery of the City's specialized transit service; and
3. Technology (ITS) Needs Plan with recommended projects to advance the use of new technologies by the City's transit services.

Together, the three documents represent the City's **Transit Master Plan**.

## 2. Phase 1 – Conventional Transit – *Sarnia Transit*

The Conventional Transit service review was conducted in two parts:

- Part 1 - **System and Market Assessment** which consisted of a critical assessment of the existing conventional transit service resulting in the identification of needs and opportunities. A summary report was prepared; and
- Part 2 - **Conventional Transit Master Plan**, a comprehensive plan for improving Sarnia Transit services over a 10-year period with recommendations for route network and service level changes, and operating and capital budget estimates.

### Part 1 – System and Market Assessment

Assessment of the transit system included the following key tasks:

- a review of the transit route network, service levels, service standards and performance metrics;
- a peer review;
- extensive stakeholder consultation;
- a review of the future transit market; and
- a review of the department activities.

### Stakeholder Consultation

Stakeholder consultation included meetings with transit drivers, supervisors, the City's Transit Advisory Committee, public information sessions and focus group meetings. The input received indicated that:

- There is an increasing need and support for improved transit service and for transit to play a greater role in the community. The objectives of enhancing mobility, reducing car use, reducing transportation costs and improving air quality were common themes;
- Sarnia Transit routes need to be revised to reflect current travel patterns in the city and to be more direct;
- Simplify route network – too many variations;
- Improved service levels and service frequencies were required during the daytime, evenings and Sundays along with a re-orientation of the route structure;
- Transit use needs to be promoted through Increased marketing and communications with residents, employees, employers;

- Increased use of transit by post-secondary students should be pursued; and
- Need to expand transit to new areas.

Stakeholder consultation was also undertaken to review the conclusions from the System and Market Assessment step, to review the future transit service strategy options following the completion of the draft final report and, specifically, proposed improvements to the transit system.

### **Conclusions of System and Market Assessment - Needs and Opportunities**

The review and assessment of the Sarnia's conventional transit service identified the following needs and opportunities for improvement.

#### Peer Review

The peer review of 8 transit systems provided the following conclusions regarding Sarnia Transit:

- Sarnia's level of municipal investment is lowest amongst its peers;
- Sarnia provides a lower level of transit service (revenue-hours) compared to its peers which reflects the level of investment by the City;
- Although increasing, Sarnia Transit ridership is low compared to its peers, reflective of existing service levels;
- Service utilization is below average, which is an indication that services may not be reflective of overall travel needs and patterns; and,
- Sarnia Transit's financial performance (revenue-cost ratio and cost per revenue-hour) is consistent with its peers which indicate that the service is being efficiently run.

#### Markets

- The key future markets for increasing transit use will be high school and college students, workers and seniors.

#### Route Network and Service Levels:

- The transit system's service standards should be updated to reflect the current operating context;
- Increase service to high ridership corridors including Exmouth and Devine;
- The transit route network needs to be restructured to better reflect travel patterns such as north-south and to improve service to major destinations – Lambton College, Lambton Mall, Walmart. System

would continue to emphasize service to the downtown as it is the cultural heart of the city;

- Improve service to employment areas in the south end of city, including measures to improve ridership to Chemical Valley. Routes currently do not provide good north-south orientation that would better suit work-based trips;
- Improve on-time performance by reducing the system average speed and allow flexibility to give operators opportunity to continue high level of customer service and accessibility while meeting scheduled run times;
- Provide options to serve growth areas including phasing options; and
- Develop options to increase ridership in north end where routes are under-performing.

Terminals:

- Establish new terminals with enhanced passenger amenities with locations reflecting changes to the system route structure;

ITS

- Use emerging technologies to improve communications/information sharing with customers, track on-time performance. This issue is addressed in the separate Intelligent Technology Needs report.

Department Activities:

- Improve marketing and communications, prepare a plan, add financial and staff resources;
- Update corporate image of transit;
- Accessibility – develop plan to accept wheelchairs and scooters on Sarnia Transit.

Infrastructure:

- Buses – adopt fleet replacement plan and review vehicle size strategy; reduce spare ratio through greater standardization of fleet;
- Terminals – need to improve customer amenities; implement as part of site selection for terminals. Enhance downtown transit amenities;
- Bus stops – re-design markers/signs to be distinctive; review number and location of stops; assess for AODA compliance; develop plan for making stops accessible; and



- Shelters – adopt regular program for repair and cleaning; increase number of shelters to target of 25% of stops; adopt location selection criteria.
- Vehicle maintenance – simplify inspection/servicing intervals;

General:

- The Transit Service Area (TSA) by-law should be either updated or reviewed for continued relevance;
- Transit-Supportive Policies – adopt supportive policies, review parking rates and relationship to cost to use transit.

These needs and opportunities form the basis for the 10-Year Transit Service Plan.

## Part 2 - 10-Year Transit Service Plan

### Investment Levels

Three transit service investment levels are proposed for improving Sarnia Transit services over the 10-year period 2015 to 2024 based on achieving the level of financial investment in transit identified for Sarnia's peers in the System and Market Assessment part of this study as follows:

1. **Initial** – reflects a marginal increase of 1.3% in revenue service hours compared to existing levels.
2. **Enhanced** – Increase the level of municipal investment by approximately 17%, or 50% of the peer level rate within five years.
3. **Peer Level** – increase the level of municipal investment by 32% to the peer average of 1.0 revenue service-hours per capita by year 10.

Restructuring of the conventional transit route network is required overall to better reflect travel demand, north-south patterns and origins/destinations. The required changes emphasize trunk routes on Exmouth Street, Devine Street, Wellington Street.

A core element of the re-structuring will be the need to relocate the existing main transfer point/terminal on Murphy Road to better reflect current and emerging destinations such as Lambton Mall, Lambton College and the development in the Exmouth/Lambton Mall Road area.

The service plan also considers alternative transit service delivery options to increase the attractiveness of transit in areas with low development densities and consequent low ridership levels.

### Vision, Objectives, Service Standards

The Master Plan proposes a new Vision, Mission Statement, Objectives and Goals for transit and reconfirmation of service standards designed to guide City

Council and staff as well as inform residents regarding the planning, management and operation of the City's transit services over the term of the Transit Master Plan.

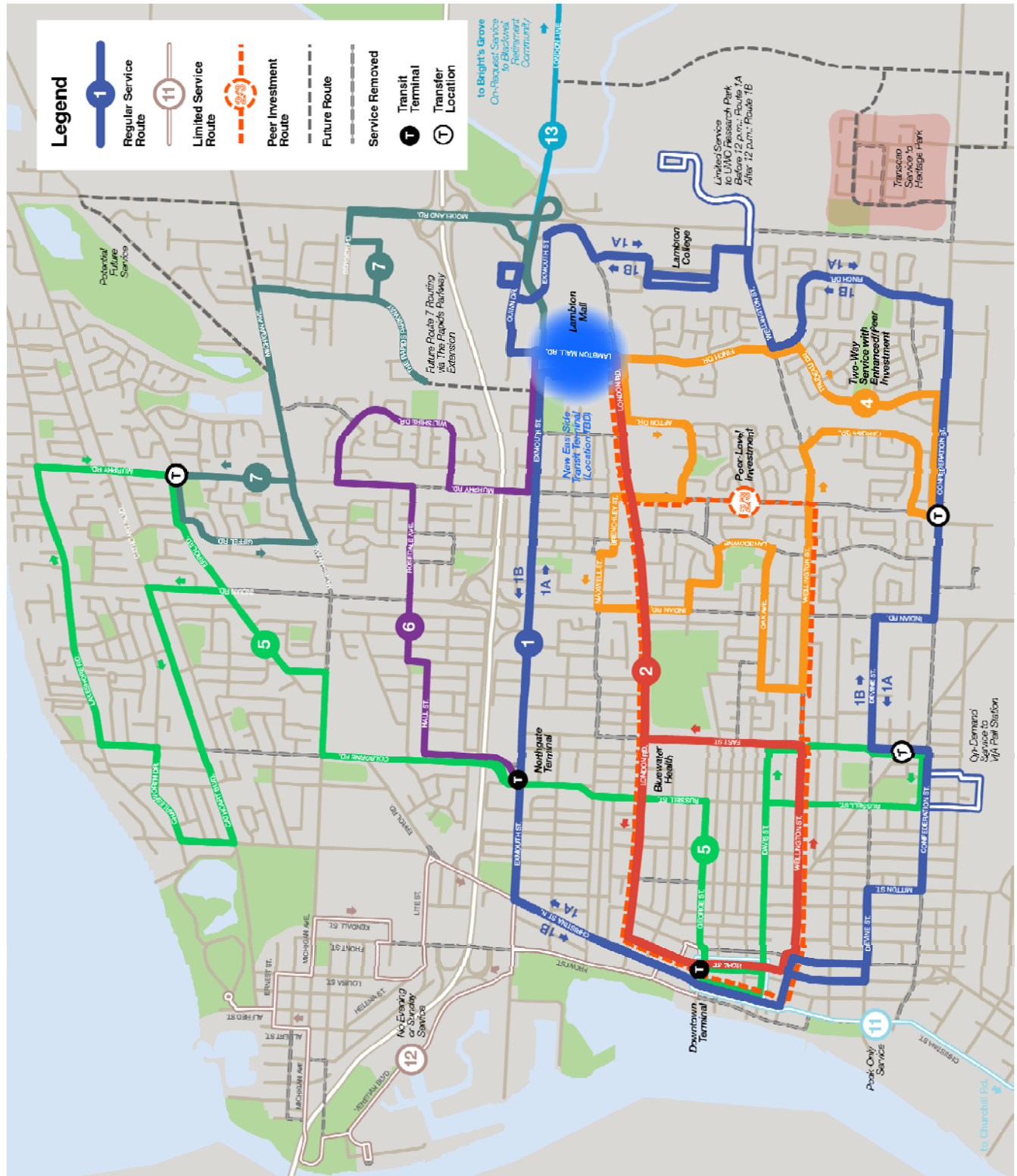
### **Route Network**

The proposed route network for Sarnia Transit is presented in Exhibit ES-1. It represents a significant restructuring of transit services to most areas of the city. Most significantly, the existing transit terminal at Murphy Road is proposed to be replaced with a new east side terminal in the vicinity of Lambton Mall to facilitate restructuring of the route network to better serve the east end of the city. The route network is re-oriented to serve this new terminal and the existing terminal in downtown Sarnia at George and Vidal Streets.

Increasing investment beyond the "initial implementation" level is recommended in order to improve service, attract ridership, and serve future growth areas. The proposed route network has been designed to achieve the following key objectives:

- Provide increased and more direct service to major transit destinations, including Lambton College, Lambton Mall, and Walmart/Sarnia SmartCentres;
- Improve transit service in north Sarnia by providing a direct connection to Lambton Mall (Route 6) and by providing a new north-south crosstown route that serves Bluewater Health, downtown Sarnia, and Confederation Street (Route 5);
- Minimize route network differences between peak, off-peak and day-of-the-week time periods;
- Reduce the system's average operating speed and improve service reliability;
- Introduce demand-responsive services with a proposed "TransCab" service to Heritage Park and an on-demand service to the Bluewater Retirement Community; and,
- Allow for changes with minimal increase to revenue hours in the initial stages of implementation.

Exhibit 1: Proposed Route Network Map



**Transit Investment Plan**

The following is the investment plan for the proposed transit network.

**Exhibit 2: Investment Levels for Proposed Transit Network**

	Initial	Enhanced	Peer
	Service levels based on maintaining existing investment in transit with a marginal increase in revenue service hours.	Service levels based on increasing investment in transit and revenue service hours by approximately 15% to increase frequency of service on most routes.	Service levels based on increasing revenue service hours to peer average levels. Would represent a substantial increase in investment in transit.
<b>Service Span</b>			
Weekdays	6:30 a.m. to 11:30 p.m.	6:30 a.m. to 11:30 p.m.	6:30 a.m. to 11:30 p.m.
Saturdays	8:30 a.m. to 11:30 p.m.	8:30 a.m. to 11:30 p.m.	8:30 a.m. to 11:30 p.m.
Sundays	8:30 a.m. to 6:30 p.m.	8:30 a.m. to 6:30 p.m.	8:30 a.m. to 10:30 p.m.
<b>Weekday Fleet Requirements</b>			
Peak	16 (+1 veh)	18 (+3 veh)	19 (+4 veh)
Midday	11 (no change)	12 (+1 veh)	14 (+3 veh)
Evening	7 (-2 veh)	9 (no change)	10 (+1 veh)
<b>Revenue Service Hours ((Existing: 58,816 regular / 2,946 special / 61,763 total)</b>			
Regular Service	61,237	70,917	80,434
Specials	1,300	1,300	1,300
Total	62,537 (+1.3%)	72,217 (+16.9%)	81,734 (+32.3%)
Revenue Service Hours per Capita	0.96	0.98	1.13 (peer avg: 1.06)

**Fare Policy and Financial Plan**

On a go-forward basis, the general principle of fare pricing should continue to establish a cash fare with progressive pricing incentives (reductions) for more frequent use.

To keep pace with inflation and maintain the system’s cost recovery rate of approximately 38%, fares should be reviewed and increased approximately every two years. On this basis, the adult cash fare (the base fare) would increase \$0.25 every two years with the result that by year 10 of the Master Plan the adult cash fare would be \$3.75. Other rates for tickets and passes would be adjusted accordingly. This represents an increase of approximately 50% over the ten years, or approximately 4.5% per year. The system average fare, which

is currently approximately \$1.12 (45% of the adult cash fare), would increase to approximately \$1.68.

As outlined in the separate ITS plan report, in the longer term the City should consider the introduction of smart card/stored value cards in conjunction with the acquisition of new fareboxes.

### **10-Year Operating and Capital Budgets**

Exhibit 3 summarizes the estimated operating costs, revenues, net city investment level and capital expenditures for the 10 year period for the various cost elements of the transit service plan.

The capital budget expenditures are expressed in constant 2014 dollars over the 10-year period of the Master Plan. Total expenditures would be approximately \$15,075,000 which includes expenditures for 20 replacement large and small buses, purchase of two buses for expansion of service to the Peer Level in years 9 and 10, the option of upgrading the small buses to larger buses, enhancement of the downtown transit terminal, a new terminal at the Lambton Mall, the addition of 82 new shelters and upgrading of all bus stops to meet accessibility standards.

Within this budget, a number of expenditures would be required independent of any change in the transit route network and service levels including the purchase of 20 replacement buses and upgrading of bus stops to meet accessibility standards. The option of replacing small buses with larger buses may also be required. Further, enhancement of the downtown terminal should be undertaken while replacement of the Murphy Road terminal will also be required. As such, except for the purchase of two buses for the service expansion in Years 9 and 10, all expenditures can be considered as core elements.

### **Transit Special Service Area**

In order to deliver transit service to the newly developing areas of the City as well as eliminate the policy conflict between the conventional and specialized transit services, the City should consider rescinding its Transit Special Service Area By-law.

Exhibit 3: 10-year Transit Financial Plan

Category	Years											Total	
	2012	1	2	3	4	5	6	7	8	9	10		
<b>City Population</b>	72,355	72,355	72,355	72,355	72,355	72,355	72,355	72,355	72,355	72,355	72,355	72,355	
<b>Bus Fleet - Service</b>	15	16	16	16	16	18	18	18	18	18	18	19	
<b>Bus Fleet - Total</b>	23	23	23	23	23	23	23	23	23	23	24	25	
<b>Revenue Hours</b>													
Base/Initial Service	61,763	62,537	62,537	62,537	62,537								
Enhanced Service						72,217	72,217	72,217	72,217	72,217			
Peer Level Service													81,734
<b>Revenue Passengers</b>	1,306,320	1,344,500	1,369,772	1,428,672	1,490,105	1,588,800	1,644,408	1,701,962	1,761,530	1,823,184	1,868,200		
<b>Fare Revenue</b>	\$1,462,260	\$1,573,603	\$1,675,324	\$1,825,994	\$1,990,215	\$2,217,526	\$2,398,421	\$2,594,071	\$2,805,682	\$3,034,556	\$3,249,408		
<b>Other</b>	\$467,651	\$467,651	\$467,651	\$467,651	\$467,651	\$467,651	\$467,651	\$467,651	\$467,651	\$467,651	\$467,651	\$467,651	
<b>Gas Tax</b>	\$219,250	\$219,250	\$219,250	\$219,250	\$219,250	\$219,250	\$219,250	\$219,250	\$219,250	\$219,250	\$219,250	\$219,250	
<b>Total Revenue</b>	<b>\$2,149,161</b>	<b>\$2,260,504</b>	<b>\$2,362,225</b>	<b>\$2,512,895</b>	<b>\$2,677,116</b>	<b>\$2,904,427</b>	<b>\$3,085,322</b>	<b>\$3,280,972</b>	<b>\$3,492,583</b>	<b>\$3,721,457</b>	<b>\$3,936,309</b>		
<b>Operating Costs</b>													
Base/Initial Service	\$5,220,737	\$5,418,409	\$5,553,869	\$5,692,716	\$5,835,034								
Enhanced Service						\$6,257,116	\$6,413,543	\$6,573,882	\$6,738,229	\$6,906,685			
Peer Level Service													\$7,081,699
Marketing		\$50,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	
Bus Stop Relocation		\$45,000											
New Bus Stop Signs		\$35,000											
Transit Facility Maintenance		\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	
Renew System Image- Buses		\$17,000	\$17,000	\$18,000									
Total Operating Cost	\$5,220,737	\$5,615,000	\$5,651,000	\$5,791,000	\$5,915,000	\$6,337,000	\$6,494,000	\$6,654,000	\$6,818,000	\$6,987,000	\$7,162,000		
<b>Net Operating Cost</b>	<b>\$3,071,576</b>	<b>\$3,354,496</b>	<b>\$3,288,775</b>	<b>\$3,278,105</b>	<b>\$3,237,884</b>	<b>\$3,432,573</b>	<b>\$3,408,678</b>	<b>\$3,373,028</b>	<b>\$3,325,417</b>	<b>\$3,265,543</b>	<b>\$3,225,691</b>		
<b>Capital Costs</b>													<b>Total</b>
Bus Replacement - Large (10)	\$440,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$5,000,000
Bus Replacement - Small (10)		\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$900,000
Bus - Expansion (2)										\$500,000	\$500,000		\$1,000,000
Transit Terminal- Downtown		\$500,000											\$500,000
Transit Terminal- Lambton Mall		\$1,800,000											\$1,800,000
Additional Shelters (82)		\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$800,000
Bus Stop Accessibility		\$97,500	\$97,500	\$97,500	\$97,500	\$97,500	\$97,500	\$97,500	\$97,500	\$97,500	\$97,500	\$97,500	\$975,000
Small bus replace by Large		\$410,000	\$410,000	\$410,000	\$410,000	\$410,000	\$410,000	\$410,000	\$410,000	\$410,000	\$410,000	\$410,000	\$4,100,000
<b>Total Capital Cost</b>	<b>\$440,000</b>	<b>\$3,477,500</b>	<b>\$1,177,500</b>	<b>\$1,177,500</b>	<b>\$1,177,500</b>	<b>\$1,177,500</b>	<b>\$1,177,500</b>	<b>\$1,177,500</b>	<b>\$1,177,500</b>	<b>\$1,677,500</b>	<b>\$1,677,500</b>	<b>\$1,677,500</b>	<b>\$15,075,000</b>

## Accessibility Strategy

With the City providing both a fixed route conventional public transit service, Sarnia Transit, which is designed to serve the general public and a specialized transit service, Care-A-Van, there should be a unified approach to serving people with disabilities that is designed to optimize the features and flexibility of both services while minimizing the financial investment required.

The overall objective is that the conventional service would be utilized by persons who are able to do so while the specialized service would be dedicated to those persons who cannot access the conventional service, as defined by eligibility criteria.

The City's conventional transit currently does not accept people who use wheelchairs/scooters. In order to begin accepting wheelchairs and scooters on conventional transit as well as make the system fully accessible over time. The Master Plan provides a series of short and longer term actions.

## Transit Supportive Policies

A number of "transit supportive" policies and decisions are proposed which Council can take action on to ensure the success and effectiveness of its public transit service, reduce the municipality's dependency on automobile use and promote environmentally friendly modes of transportation in support of its goals for the transit system.

## Investing In Transit

Public transit provides a wide range of benefits to individuals, businesses and urban areas as a whole. The Canadian Urban Transit Association and the Federation of Canadian Municipalities have published a series of Issues Papers which summarize the benefits of public transit pertaining to health, the natural environment, socio-cultural environment (quality of life).

These benefits include:

- Economic activity and spending through transit industry supply chains, operations, research and new product development;
- Increased labour mobility for numerous economic sectors, particularly downtown businesses;
- Increased personal mobility for people who choose not to drive or otherwise cannot reach work, shopping, health care or other services by car; and
- Public health and safety benefits including those derived from cleaner air and fewer traffic accidents and the corresponding health care requirements.

Overall, financial support for public transit by a municipality should be viewed as an "investment" in the community, in the City's "infrastructure" and should be viewed as an on-going commitment by recognizing that the service is valuable to

those using it and it is appropriate that users contribute to the cost to provide the service in addition to general support by the community.

## Key Elements of the Transit Master Plan

The following are the key elements of the proposed Sarnia Transit Master Plan:

- A new Vision, Mission Statement, Goals, Objectives and Service Standards;
- Re-structuring of the transit route network as presented in Exhibit 7-1 and described in Section 7;
- Increase transit service levels progressively over the 10-year period of the plan from approximately 62,500 revenue-hours today to 81,700 revenue hours to reach the peer level as proposed in the Service Plan;
- Total operating costs, including a 2.5% inflation factor, would change from \$5,220,737 in 2012 to \$5,615,000 in Year 1, to \$6,337,000 in Year 5, and \$7,162,000 in Year 10. The City's net annual investment in the operating cost of the conventional transit service would increase from \$3,071,576 in 2012 to \$3,354,496 in Year 1, \$3,432,573 in Year 5 and \$3,225,691 in Year 10, representing a 5% increase in Year 10 compared to Year 1;
- Ridership projected to increase from 1,306,320 in 2012 to 1,588,105 in Year 5 and 1,868,200 in Year 10. Fare revenues would increase from \$1,462,260 in 2012 to \$2,217,526 in Year 5 and to \$3,249,408 in Year 10 reflecting the effect of an average 4.5% increase in fares annually and the projected increase in ridership.
- Select a location for a new terminal east of Murphy Road to replace the outdated terminal on Murphy Road;
- Retain the existing downtown "terminal" and transfer point location and enhance the terminal design and appearance;
- Acquire 10 large and 10 small buses to renew the fleet over the period of the plan and consider upgrading the small buses to larger buses (9.7 m) to provide added capacity for accessibility and passenger comfort purposes;
- Begin accepting wheelchairs and scooters on the conventional transit service at the earliest opportunity;
- Adopt a fare strategy to progressively increase transit fares on a regular basis at the rate of \$0.25 every two years;
- Renew the corporate image of the transit system by adopting a new logo and colour scheme to be applied to buses and stops;
- Adopt new bus stop signage to provide enhanced visibility and customer information;
- Increase marketing and promotion of the system through a budget increase and additional staff resources;



- Increase the number of shelters to 20% of stops (82 additional shelters) to enhance the attractiveness of using transit; and
- Adopt a plan to make all bus stops accessible by 2024 as required under the AODA.

## Recommendations

The following are the recommended actions and plan for implementing the 10-Year Transit Master Plan for consideration by City Council.

It is recommended that:

1. City Council receive the 10-Year Transit Master Plan outlined within this report covering the conventional transit service, Care-A-Van service and the ITS strategy plan contained in separate report documents;
2. City Council endorse the 10-Year Transit Master Plan, specifically including restructuring the conventional transit route network, locating a new transit terminal in the city's east end and increasing the City's investment in transit to that of the City's peers over the period of the plan; and that
3. City Council endorse the 10-Year Transit Master Plan and that the plan and related policies and strategies form part of the City's overall Transportation Master Plan.
4. Phase out the "Transit Special Service Area" and associated By-law.

## Implementation Plan

To implement the above recommendations, the following timeline and action plan is proposed.

### Immediate Term – Years 1 and 2

- Select a site for a new east end transit terminal to replace the Murphy Road terminal;
- Design the new terminal, then construct the terminal;
- Following completion of the new terminal, implement the recommended route re-structuring and associated implementation activities (bus stop relocations);
- Upgrade the downtown transit "terminal" (transfer) location to enhance customer amenities and comfort;
- Adopt the bus stop accessibility program;
- Increase marketing and communications activities, adopt marketing plan;

- Update/refresh Transit services corporate image including all related transit infrastructure and materials (buses, stops, customer information materials, communications materials);
- Acquire replacement buses.

**Short Term – Years 3 and 4**

- Increase transit service levels to include revised north end routings
- Continue enhanced marketing and communications activities
- Acquire replacement buses

**Longer Term – Years 5 to 10**

- Progressively increase transit service levels
- Continue to invest in Technology, specifically, acquisition of electronic fareboxes and smart card technology
- Complete program to make all bus stops accessible;
- Acquire replacement buses and buses for service expansion (2).

### 3. Phase 2 – Specialized Transit – Care-A-Van

The review of the City’s specialized transit service, Care-A-Van, with recommendations, is documented in a stand-alone report. The following is a summary of the report.



The Accessibility for Ontarians with Disabilities Act (AODA) creates strategic planning challenges and financial pressures that are unprecedented within Ontario’s transit and specialized transit industry. In fact, the issue before the City of Sarnia is how to provide a level of Care-a-Van specialized transit service that satisfies the requirements of the AODA in general and the Provincial Transportation Standards (the Integrated Accessibility Standards (Ontario regulation 191/11)) specifically. Further, the City is challenged to develop a plan to deliver public transit services to people with a disability that satisfies community requirements and expectations in a cost-effective manner.



The Province of Ontario’s Integrated Accessibility Standards (Ontario regulation 191/11) requires transportation services to prevent and remove barriers so that people with disabilities can more easily access transportation services across the province. Conventional providers and specialized transportation service providers must have started to meet the requirements of the transportation standards beginning last July 1, 2011. Certain requirements have various other effective dates depending on the requirement and/or type of transportation covered under the standard.

***What is an accessibility standard?***  
**An accessibility standard is a rule (set of measures, policies & practices) that persons and organizations have to follow to identify, remove and prevent barriers.**

The issue is the management of demand. In other words, it is the management of the demand for specialized transit services that is important in order to help the City and their planning and funding partners plan effectively for the future. Alleviating all capacity constraints on the complementary specialized transit services provided by Care-a-Van represents a key risk factor in the City’s efforts to balance community and regulatory requirements and budgetary realities. Efforts to accommodate future demand by simply adding capacity may in fact lead to an upward spiral of increased demand, possible refusal rates, and the need for more services. While this spiral will not perpetuate indefinitely, it is certainly likely to create untenable financial and operating pressures unless steps are taken to manage demand at the same time.



It is important to identify potential improvements in meeting fiscally responsible mandates in the delivery of specialized transit services -- demand management measures. These measures are intended to ensure adequate customer and revenue volume for services, or to divert demand from more costly to less costly services using incentives, information, and other voluntary measures.

The objective for the City in the near term includes the effective delivery of specialized transit and to accommodate the growing demand for public transit services by people with disabilities. To address this challenge, Sarnia Transit

continues to develop an increasingly close relationship between accessible conventional transit services and the delivery of Care-a-Van specialized transit service.

The review of Care-a-Van found that specialized transit in Sarnia faces several challenges - growing demand, changing community expectations, accessible conventional/fixed-route transit services, and increasing costs - that present challenges in the delivery of specialized transit services.

In light of these challenges, the review proposes a set of recommendations that would result in enhancements to the delivery of specialized transit service in the City, modeled on industry best practices and regulatory trends. At its heart, the recommended service model would ensure the continued compliance with AODA, as they evolve in the province, while simultaneously implementing demand management strategies to preserve the Care-a-Van service for those who truly need it and shifting some trips to more cost-effective transportation services.

## Summary of Recommendations

The recommended approach (Section 6) addresses:

- Service Structure and Operations
  - Reduce the advance booking requirement to 24 hours in advance (and up to seven days);
  - Formalize the use of a twenty-minute scheduling window;
  - Elimination of trip purpose restrictions as they impact standing orders and advance booking requirements;
  - Place a moratorium on standing orders/subscription trip requests;
  - Need to migrate to the use of commercially available scheduling software for route optimization and enhance system productivity;
  - As an interim measure<sup>3</sup>, explore opportunities to collaborate with other agencies regarding call-taking and scheduling functions; and
  - Enhanced integration with conventional transit to encourage the voluntary use of Sarnia Transit fixed route services by Care-a-Van registrants (for some of their trips – some of the time).
- Eligibility and Certification

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<sup>3</sup> Care-a-Van scheduling software may be incorporated in the recommended procurement of Smartbus software and scheduling software implementation. This deployment is targeted to be implemented three years out.

- Adopt the use of a revised application form (provided as part of review process) reflecting an applicant’s functional limitations (rather than current focus on physical disability);
  - Recertification of existing Care-a-Van registrants; and
  - “Grandfather” existing registrants.
- Service Standards reflecting service delivery and operating performance.

The Financial Plan (Section 7) is premised on no expanding levels of service or resources with marginal increases in demand to be accommodated through scheduling efficiencies and the adoption of demand management strategies or interventions as recommended in Section 6 (and summarized above).

From 2014 to 2018:

- Passenger trips are projected to increase 3.1%.
- Productivity, as measured by passenger trips per hour is projected to increase 10.7%.
- Total operating costs are projected to increase 7.1% while net operating cost will increase 8%.
- The net cost per passenger is projected to increase 4.8%.
- The net cost per capita is projected to increase 9.7%.

### Study Objectives and Work Program

This 5-Year Service Plan has been designed to achieve several key objectives, specifically:

- Set strategic direction for improvements to specialized transit services over the next 5 years;
- Identify opportunities and obligations of the City in cost-effectively meeting the mobility requirements of the City’s elderly and disability communities within a framework of providing shared ride public transit for those unable to use accessible conventional transit. This will include a more integrated approach with the accessible fixed-route, Sarnia Transit services;
- Review existing Care-a-Van policies, procedures, operations and organization to ensure the delivery of efficient, effective and fiscally responsible service delivery in compliance with the Province’s AODA (including implications of the Provincial Integrated Accessibility Standards/Ontario regulation 191/11); and

- Provide estimates of future demand for Care-a-Van services and assess the implications of growth and increasing demand on operational and capital budgets.

Existing Care-a-Van specialized transit services provide tremendous benefits to people with disabilities, but because of increasing demands and high costs, it is important that the service be provided with maximum efficiency. Improving cost efficiencies requires the review of current processes, and implementation of other creative and innovative solutions to best respond to emerging specialized transit needs over the next five years. To this end current issues and financial realities have been addressed, including:

- Is the best service being provided, given the financial and operational resources available?
- How does Sarnia Transit service latent and increasing demands for Care-a-Van, given fiscal and budgetary limitations?
- What efficiencies may be gained through enhancements to administrative and operating processes including eligibility and certification, advance booking, trip purpose policy, etc.?
- What is the most effective manner of providing specialized transit services given the differences in needs for persons with different functional disabilities and the range of service delivery options available?
- To what extent can the future accessible conventional transit services meet the mobility needs of persons with disabilities?
- What initiatives and policies can be implemented to promote the use of lower cost options, while providing quality service to customers?
- What opportunities exist to potentially coordinate, through a community collaborative effort, the operation and funding of transportation services for persons with a disability?

These issues and study objectives are subsequently translated into work program, which included:

- Data collection: (primary and secondary);
  - Profile of Care-a-Van services
  - Census data / Transport Canada's TransAccess database
  - Operating and demographic data from the City and County of Lambton.
- Development of travel demand forecasts;

- A series of stakeholder consultations including the public, Care-a-Van customers, agencies/organizations representing the City’s elderly and disabled populations, City’s Accessibility and Transit Advisory Committees and Sarnia Transit officials/staff including operations staff and operators.
- A review of existing Care-a-Van operating policies, service characteristics and budgets, and reservation, scheduling and trip management processes; and
- Development and analysis of alternate service strategies and related implementation.

### Mobility Vision – A Way Forward

Through multiple initiatives addressing quality of life considerations, the City ensures a healthy, connected, supportive environment for its residents. It is within this spirit that the following guiding principles provide the foundation for the recommended Care-a-Van service plan strategies:

- Universal access including an accessible infrastructure;
- Flexible mobility options with a cost-effective mix of accessible shared-ride, public transportation services; and
- Maximize the utility and investment in accessible conventional transit (mobility management strategies) to encourage a shift from specialized to conventional public transit.

**Care-A-Van: shared ride public transit for those unable to use accessible public transit**

These guiding principles recognize the requirement for an accessible infrastructure.

As a transit provider, the City has facilitated a more integrated approach between accessible conventional transit services (Sarnia Transit) and specialized (Care-a-Van) transit services. The City has created a user-friendly, accessible conventional transit service that may provide additional mobility options for many specialized transit service registrants. An accessible public transit system provides a higher degree of trip making flexibility and facilitates greater travel spontaneity and independence. A truly accessible transit system can become the preferred choice for many people with a disability.

In order to fully implement an effective 5-Year Service (Mobility) Plan, the City must build on its current successes in developing a corporate and community culture that recognizes and supports the strategic, social and economic benefits of a Mobility Plan. This culture must be fully accepted and supported by the City as well as Care-a-Van program management and frontline staff. The longer term vision is to move towards the concept of universal access to conventional public transit services. While preserving the integrity of Care-a-Van specialized transit services for those with no alternatives, universal access to conventional transit services requires the need to address ancillary considerations including an accessible infrastructure, streetscape, audible signals, etc.

## 4. Transit Technology Needs Assessment

As part of the Transit Master Plan study, a review and assessment of the City's technology needs related to its public transit services has been prepared and is documented in a separate report. The following are the findings and recommendations.

### Overview

The City is planning its transportation technology needs for the next five years as part of a broader study to develop a Transit Master Plan for the agency.

Early discussions with the agency identified inefficient data collection methods, difficulties in service management, and a dissatisfaction with the performance of existing technologies. Other concerns noted included operator safety, fare evasion, and schedule adherence difficulties related to traffic conditions. On the maintenance side, there is insufficient automation in regards to inventory and preventative maintenance, and troubleshooting for current technology is difficult and time-consuming. Lastly, the current system is not able to be expanded to meet future AODA requirement regarding external stop announcements.

An options analysis defined a large subset of available technologies in the marketplace and evaluated which technologies would be most effective at addressing Sarnia Transit and Care-A-Van's needs. Once these had been identified, cost and benefit estimates were developed in order to determine the feasibility of the modules. The options were distilled down to seven potential modules, which in turn were assessed in terms of priority:

Figure 1: Transit Technology Priorities

	Transit Technologies
High	<p><b>SmartBus System (Computer Aided Dispatch / Automatic Vehicle Location) Deployment</b></p> <ul style="list-style-type: none"> <li>Tracking and management of the fleet based on GPS locations</li> <li>Communication with operators via a Mobile Data Terminal</li> <li>Detailed ad hoc and periodic reports to assess schedule adherence and other metrics</li> </ul> <p><b>Rostering and Dispatch Software Implementation</b></p> <ul style="list-style-type: none"> <li>Automatic assignment of drivers to vehicles and work assignments</li> <li>Integration with existing payroll and attendance systems</li> </ul>
Medium	<p><b>Advanced Traveller Information Systems Implementation</b></p> <ul style="list-style-type: none"> <li>Enable real-time information and third party data feed</li> <li>Interactive Voice Response telephone system</li> <li>Variable message signs at stations</li> <li>Upgraded transit information website</li> </ul>



	<p><b>Automatic Passenger Counters Deployment</b></p> <ul style="list-style-type: none"> <li>• Install APCs on remaining fleet</li> </ul> <p><b>On-board Security System Upgrades</b></p> <ul style="list-style-type: none"> <li>• Install a six-camera audio and video recording system on-board all vehicles</li> </ul> <p><b>Transit Signal Priority Deployment</b></p> <ul style="list-style-type: none"> <li>• Implementation of a TSP module at 10 key intersections</li> <li>• Equip vehicles with TSP emitters</li> </ul>
<p><b>Low</b></p>	<p><b>Smart Card Fare Collection Deployment (to be re-evaluated after completion of the Automatic Passenger Counters module)</b></p> <ul style="list-style-type: none"> <li>• Introduction of stored-value cards to collect fares</li> <li>• Integration of smart fare system with central CAD/AVL.</li> </ul>

### Recommended Program

The high and medium priority items were structured into a 5-year deployment window according to need and technology dependencies. Overall, it is estimated that a full-scale deployment will cost a total of \$1,550,000 over five years with an additional \$350,000 associated with operations and maintenance of the systems during that period. The ongoing maintenance costs of the system after complete deployment are approximately \$170,000 annually, including additional labour required to operate the system. These expenses (Capital and Operations/Maintenance) are outlined by type and year in the figure below for budgeting purposes.

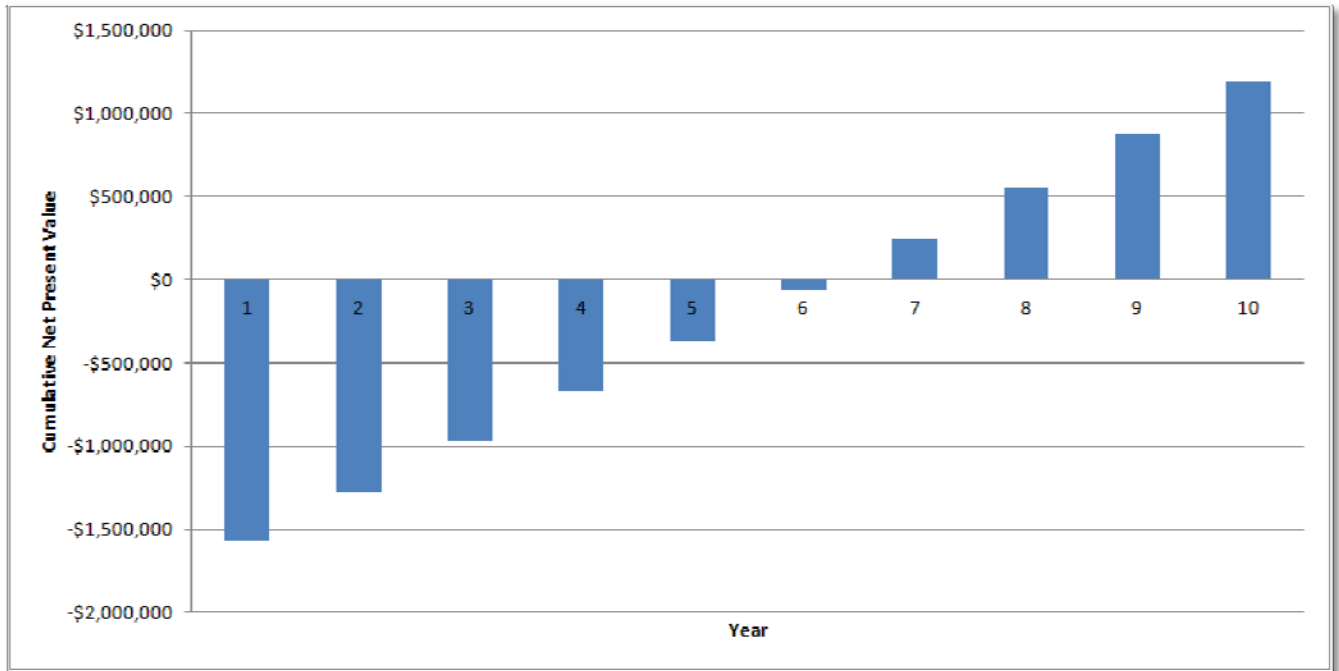
Figure 2: 5-Year Transit Technology Program

Tasks	Capital Budget and Contingency	Annual Operations and Maintenance	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<i>Short Term</i>																						
Conventional and Demand-Responsive Services SmartBus System Deployment	\$ 668,000.00	\$ 98,000.00	0																			
Conventional and Demand-Responsive Services Rostering and Dispatch Software	\$ 93,000.00	\$ 19,500.00	0																			
<i>Medium Term</i>																						
Automatic Passenger Counters	\$ 56,000.00	\$ 2,500.00																				
Advanced Traveller Information Systems	\$ 242,000.00	\$ 6,000.00																				
On-board Security System Upgrades	\$ 192,000.00	\$ 9,000.00																				
Transit Signal Priority	\$ 303,000.00	\$ 27,500.00																				
	<b>Total 5-Year Expenditure</b>																					
Capital Budget	\$	1,550,000.00	\$	100,000.00	\$	480,000.00	\$	490,000.00	\$	210,000.00	\$	270,000.00										
Operations and Maintenance	\$	350,000.00	\$	-	\$	10,000.00	\$	70,000.00	\$	130,000.00	\$	140,000.00										
<b>Total Budget</b>	\$	<b>1,900,000.00</b>	\$	<b>100,000.00</b>	\$	<b>490,000.00</b>	\$	<b>560,000.00</b>	\$	<b>340,000.00</b>	\$	<b>410,000.00</b>										
<b>Legend</b>																						
Planning and Review																						
Specification and Procurement																						
Implementation and Testing																						

The above costs are off-set by a set of benefits that include: increased customer satisfaction, increased ridership, reduction in maintenance effort, reduced customer service effort, better schedule adherence, increased operations supervision, and a reduction in the effort spent on data entry. As can be seen in Figure 3 below, the benefits of moving to this new system greatly outweigh the costs of implementation and payback is achieved during the seventh year of the project.

There are a number of considerations to make before undertaking a project of this magnitude. The first is that stakeholders external to Sarnia Transit may need to be involved and/or consulted on various modules, and thus need to have a strong role from the outset. In particular, City IT, Legal, and Traffic departments may have responsibilities relating to modules like upgraded security systems or transit signal priority. Further, it is important to have project leaders in order to provide in-house support, to ensure that any future system meets the needs of Sarnia Transit from a user's perspective, and to champion the adoption of the technology by staff. Lastly, there must be a focused marketing effort to encourage riders to use the new technology as it is adopted in order to receive maximum benefit from the upgrades.

Figure 3: Transit Technology Program Payback



Overall, the deployment of this complete system will help to improve customer satisfaction, promote efficiency in the organization, and address organizational needs that are lacking. The new system will integrate existing reporting systems and streamline reporting and management tasks. Furthermore, the program will allow Sarnia Transit to make the initial steps towards making the service AODA compliant with respect to announcements outside the buses. While this deployment is expected to take five years, the benefits will start to be realized as early as 2015 when the Rostering and Dispatch Software is in place.