7. 10-Year Transit Service Plan

This section presents the recommended 10-Year Service Plan for the City's conventional transit service, Sarnia Transit, for the period 2015 to 2024. It is based on the results of the System and Market Assessment phase of this study as presented in the previous sections which identified opportunities for improving the City's conventional transit service. The Service Plan for the specialized transit service, Care-A-Van, is presented in a separate, companion report.

The core principles behind the recommended transit Service Plan are two-fold:

- Increase transit ridership to reduce dependence on the automobile as an important element in the City's new Transportation Master Plan; and

- Ensure transit services are delivered cost-effectively.

To achieve these principles, a major re-structuring of the transit route network and a progressive, modest increase in investment by the City over the 10-year term of the service plan are proposed. The Transit Service Plan is structured around three financial investment levels to guide the improvement of Sarnia Transit service over the short, medium (5 year) and longer (10 years) terms as described in sections 7.1 and 7.2 below. Each investment level is based on the overall Vision, Mandate and Service Standards for the conventional transit service described in section 7.2. In support of the Transit Service Plan are sub-plans for Infrastructure, Marketing and Communications, and Finance/Fare Policy.

7.1 Transit Service 10-Year Investment Levels

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

1. **Initial** – maintain the current rate of municipal investment on a per capita basis and current service levels. It includes a marginal increase in revenue service-hours compared to existing levels. The Transit Service Area would need to expand to include new development areas. Modest ridership growth would be anticipated with this option and the transit modal split (share of all transportation trips) would remain at or close to the existing rate of 2.0%.

2. **Enhanced** – Increase the level of municipal investment by approximately 15%, or 50% of the peer level rate within five years with resulting increases in service levels and revenue service-hours. The TSA would need to expand to include new development areas. Moderate ridership growth of 15% over 5 years could be expected with an increase in the modal split to 2.5% to 3/0%.

3. **Peer Level** – increase the level of municipal investment by 30% to the peer average of 1.0 revenue service-hours per capita over ten years. The separate TSA would be eliminated. Higher ridership growth of approximately 30% over 10 years would be expected with a target increase in the transit modal split to 3.5% to 4%.

Restructuring of the conventional transit route network is required overall to better reflect travel demand, north-south patterns and origins/destinations. The required changes would emphasize trunk routes on Exmouth Street, Devine Street, Wellington Street. It would also be designed to improve travel directness to high employment areas.

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.

7.2 System Vision, Objectives and Service Standards

This section proposes a Vision, Mission Statement, Objectives and Goals 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.

Vision

It is proposed that the long-term vision for the transit system be one that emphasizes quality of life, sustainability and economic development:

- ***Quality of Life*** *– The City's transit services will provide mobility options for all residents to ensure access to work, education, health care, shopping, social and recreational opportunities.*

- ***Sustainable*** *– Transit is a cost-effective alternative to the automobile, reduces the environmental impact of transportation in the city, shall be affordable for the community and fiscally responsible to the taxpayers.*

- ***Economic Development*** *– Transit shall be an "economic engine" for community to support growth and prosperity with services and costs reflective of the City's economic development initiatives and consistent with the growth in its residential and commercial sectors.*

To achieve this long-term vision for transit, the following mission, objectives, goals and service standards are recommended.

Mission

The following transit mission statement is suggested:

To provide cost-effective transit services that enable all residents to access work, education, health care, shopping, social and recreational opportunities in Sarnia, and that are competitive with the automobile in terms of proximity, schedule reliability, frequency, and travel time.

This statement should be featured in all City and Transit promotional material as well as in the City's key policy and planning documents.

Objectives

To realize the vision and mission, the following 10-year objectives intended to position Sarnia Transit to be a significant contributor to the City's vision of quality of life and sustainable development are proposed.

Goal 1: To Improve Service Levels and Ridership

Sarnia Transit service levels will be progressively increased to attract new users particularly the non-student market. To do so, the City will improve its transit services to encourage people to leave their cars at home and increase the modal split for transit. There is potential for increasing ridership and the modal split as the current route structure is discouraging ridership.

- ***Services*** – *increase annual vehicle hours from 62,000 (2013 level) to 81,000 over the next 10 years.* This translates into an approximate 3% annual increase which is needed to achieve the desired increased ridership levels.

- **Ridership** – *increase annual revenue passengers from 1.3 million in 2013 to 1.9 million over the next 10 years.* This represents an approximate 3.0% per annum increase consistent with the increase in service levels.

The service and ridership objectives are to be accomplished through an improved and uniform route structure throughout all service hours and more direct two-way services in the main travel corridors which reflect established travel patterns.

Goal 2: To Improve System Productivity and Cost-Effectiveness

Maximizing the efficient use of transit system resources including manpower, equipment and vehicles, facilities, and systems will enable Sarnia Transit to continue to be cost-effective. The objectives are focused on system financial policies and the productivity of resources:

- **System Financial Policy** – attain an operating cost recovery, exclusive of capital cost, of 38% over the short term; the 2013 cost recovery rate was 38%.

- **Municipal Investment** – gradually increase the municipal investment to $52.00 per capita level by 2024; the current investment level is $38.04 (2012) per capita. The higher investment level will permit service level to improve consistently over the 10 year timeline and represent an annual increase of approximately 3%.

- **Fare Policy** – adjust the fare structure and rates at regular intervals so that passenger revenues increase with inflation and maintain the cost recovery target.

- **Service Utilization** – increase the service utilization rate from 19.5 revenue passengers per vehicle service hour to 23.0 revenue passengers per vehicle service hour over 10 years through service improvements and active promotion of transit use.

Goal 3: To Improve Service Quality and Customer Satisfaction

In order to become more competitive with the auto, Sarnia Transit will need to improve its schedule adherence, service reliability, and the appeal and accessibility of the buses and transit infrastructure.

Service Standards

Sarnia Transit, like most transit systems, utilizes service standards in planning transit services. These standards include considerations for service coverage, frequency of service, and system performance. The service standards set out by Sarnia Transit are summarized below:

- Level of Service standards set out warrants for the provision of transit service within the service area and included:

  – Coverage of 90% of the city within a 400-metre walk of transit during peak periods;

  – Minimum provision of hourly bus service where provided, with an increase in service where ridership exceeds 8 revenue passengers per vehicle hour; and,

  – Evening and Saturday service provided where average ridership exceeds 8 revenue passengers per vehicle hour.

System Performance standards set out targets for ridership and overall system financial performance and include:

  – Routes achieving a minimum of 8 revenue passengers per vehicle hour; where not achieved, a reduction to 60-minute service would be considered; and,

  – Overall system cost-ratio target of 38% each year.

These service standards have generally been adhered to in the planning and operation of services in Sarnia. Existing routes have been extended to service

new developments and destinations to achieve service coverage targets, high ridership routes have had increased service, and low ridership routes have had services scaled back. The proposed route network adheres to these service standards and no changes to these standards are proposed.

7.3 Proposed Route Network

The proposed route network for Sarnia Transit is presented in Exhibit 7-1. 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 reoriented to serve this new terminal and the existing terminal in downtown Sarnia at George and Vidal Streets. A description of the service plan and individual route plans are provided in Section 7.4.3. The route network and associated service levels are based on the goals, objectives and service standards outlined above. The service plan and the service level for each route reflects the three levels of investment, detailed in Section 7.1 above:

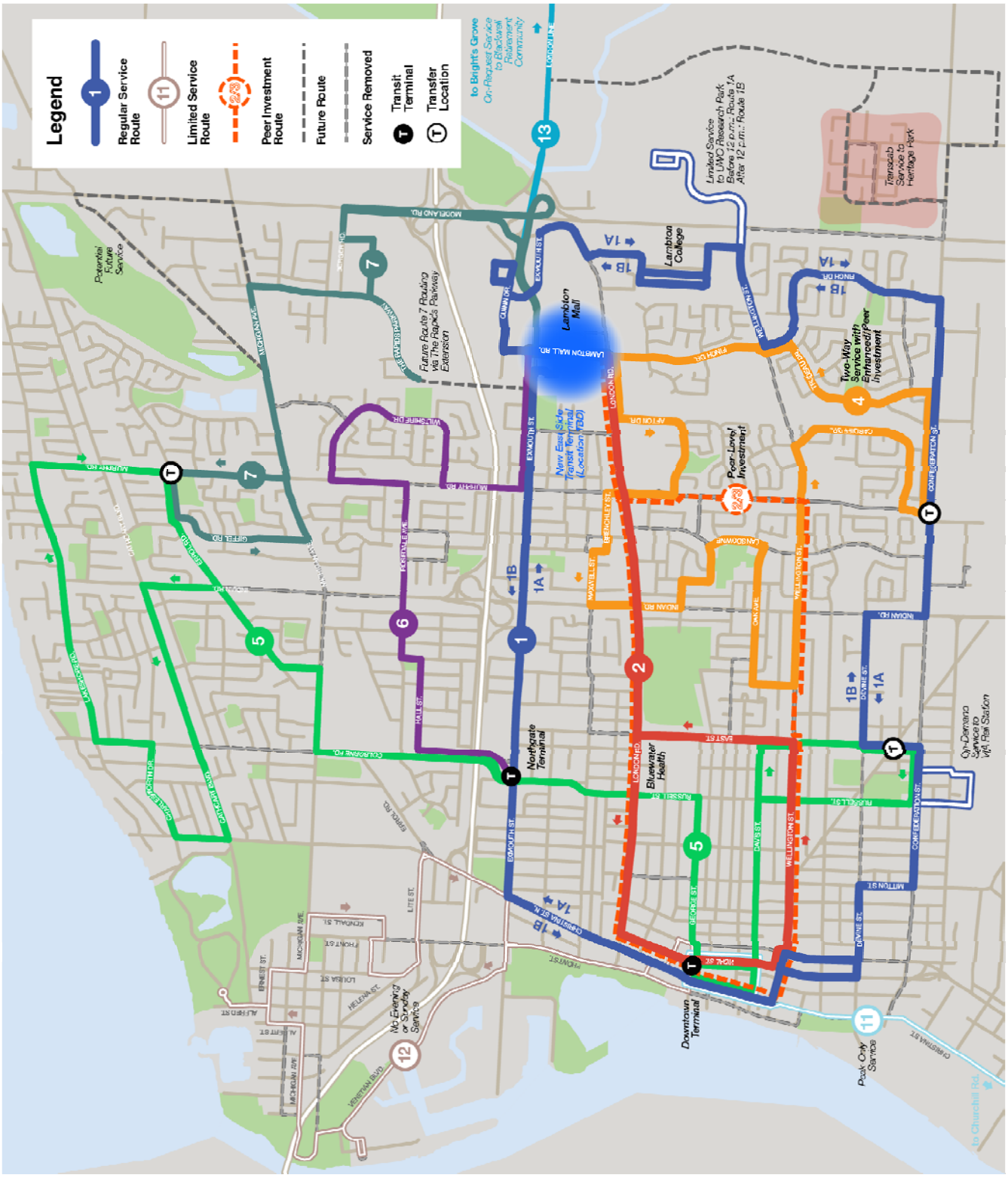
- **Initial** implementation reflects a marginal increase of 1.3% in revenue service hours compared to existing levels;
- **Enhanced** service reflects an increase in service levels by 17% compared to existing levels in year five;
- **Peer-level** reflects an increase of service to peer average levels, representing approximately 32% increase in service hours compared to existing levels by year 10.

Ultimately, 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 7-1: Proposed Route Network Map



Transit Network Investment Plan

Currently, Sarnia Transit operates fewer revenue service hours per capita, a key measure of transit investment, than its peer cities across Canada. One of the ways to increase ridership is to improve service through an increase in the number of revenue service hours. The proposed transit network is designed to operate within the existing transit investment envelope; however, for optimal operation and to attract more riders, a higher level of investment and transit service levels would be beneficial.

The service plans developed for the proposed network, in Section 2.3 below, are based on the three levels of investment described in section 2.1. Each increase in investment level will allow for more frequent service (particularly in off-peak periods), expanded service periods, and additional routes. A summary of the variations in service levels, investment, and revenue service hours is provided in Exhibit 7-2.

Exhibit 7-2: 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.
Service Span			
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.
Weekday Fleet Requirements			
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)*
Revenue Service Hours ((Existing: 58,816 regular / 2,946 special / 61,763 total)			
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)*

It is recommended that the proposed network be implemented at the Initial investment level, with increasing investment to the Enhanced and Peer levels over the 5-year and 10-year planning horizon.

Proposed Service Periods

Service periods will change modestly with the proposed route network to reflect the standardization of peak and off-peak period route networks. Currently, afternoon peak period service starts at 2:30 p.m. This differentiation will no longer be required as all routes provide service throughout the midday. Consequently, the afternoon peak period will be shorted by one hour and the midday period extended by one hour. All other service periods remain the same.

At the peer investment level, evening service will be introduced on Sundays between 6:30 p.m. and 10:30 p.m. on most routes.

The existing and proposed service period changes are illustrated in Exhibit 7-3.

Holiday Service

Service will not operate on most statutory holidays, with the exception of Canada Day, where special bus service is provided, and Easter Monday (a non-statutory holiday). Evening service is not provided on Christmas Eve and a special schedule is provided on New Year's Eve. This is consistent with most small- to mid-sized transit systems across the country.

Exhibit 7-3: Proposed Service Periods

Time Period	Existing	Proposed
Weekday		
AM Peak	6:30 a.m. to 9:30 a.m.	6:30 a.m. to 9:30 a.m.
Midday	9:30 a.m. to 2:30 p.m.	**9:30 a.m. to 3:30 p.m.**
PM Peak	2:30 p.m. to 6:30 p.m.	**3:30 p.m. to 6:30 p.m.**
Evening	6:30 p.m. to 11:30 p.m.	**6:30 p.m. to 11:30 p.m.**
Saturday		
Daytime	8:30 a.m. to 6:30 p.m.	8:30 a.m. to 6:30 p.m.
Evening	6:30 p.m. to 11:30 p.m.	6:30 p.m. to 11:30 p.m.
Sunday		
Daytime	8:30 a.m. to 6:30 p.m.	8:30 a.m. to 6:30 p.m.
Evening		6:30 p.m. to 10:30 p.m. *(peer investment level only)*

Proposed Service Plan by Route

This section describes the overall route network and service plan by route and investment level.

Route 1A/1B Mainline (Downtown to Lambton Mall via Exmouth/Confederation)
Length: 18.1 kilometres
Round-trip running time: 60 minutes

The proposed Route 1 will serve as the main line for transit services in the city and will replace parts of existing Route 1 (Confederation), Route 2 (Devine), Route 9 (Exmouth), and Route 14 (Sherwood). The route will operate as a two-way circular route for most of the day and serves the city's main transit destinations including downtown Sarnia, Lambton College, Lambton Mall, and Walmart/Sarnia SmartCentres. All other proposed routes provide connections to Route 1 at various points, including the two main terminals at Lambton Mall and Downtown Sarnia. Informal transfer points are located throughout the city where the routes intersect. Route 1A will operate clockwise and Route 1B will operate counter-clockwise. At the initial implementation investment level, peak period service will operate every 15 minutes and every 30 minutes at all other times. In the evening, hourly service will be provided on both branches. At the Enhanced and Peer levels of investment, two-way service will be provided at all times. Service to the UWO Research Park will be provided at all periods on request. Before 12:00 p.m., on-request service will be provided on the 1A (clockwise) branch, while after 12:00 p.m., it will be provided on the 1B (counter-clockwise) branch.

Exhibit 7-4: Proposed Service Plan - Route 1

Time Period	Initial	Enhanced	Peer
Weekday			
Peak	1A: 15 minutes (4 buses) 1B: 15 minutes (4 buses)	1A: 15 minutes (4 buses) 1B: 15 minutes (4 buses)	1A: 15 minutes (4 buses) 1B: 15 minutes (4 buses)
Midday	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)
Evening	1A: 60 minutes (1 bus) 1B: 60 minutes (1 bus)	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)
Saturday			
Daytime	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)
Evening	1A: 60 minutes (1 bus) 1B: 60 minutes (1 bus)	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)
Sunday			
Daytime	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)
Evening	No Service	No Service	1A: 30 minutes (2 buses) 1B: 30 minutes (2 buses)

Route 2 London (Downtown to Lambton Mall via London Road)
Length: 10.6 kilometres
Round-trip running time: 30 minutes

Route 2 is proposed to provide service on London Road between Downtown Sarnia and Lambton Mall. At the west end of the route, it will operate on an on-street loop and serve London Road in the westbound direction and Wellington Street in the eastbound direction, returning to London Road via East Street. Service on Route 2 will be provided every 30 minutes during all service periods, each day.

During the midday and Saturday daytime at the Initial and Enhanced investment levels, Route 2 will interline with Routes 7 (North End-Rapids Parkway) and 12 (Point Edward). This will provide customers with transfer-free service to downtown and Lambton Mall, respectively.

At the Peer investment level, Route 2 will be modified to operate along London Road only and supplemented by a new Route 3 (Wellington). Details on this combined Route 2/3 are provided below.

Exhibit 7-5: Proposed Service Plan - Route 2

Time Period	Initial	Enhanced	Peer
Weekday			
Peak	30 minutes (1 bus)	30 minutes (1 bus)	See Route 2/3
Midday	30 minutes (2 buses, interlined with Rt. 7/12)	30 minutes (2 buses, interlined with Rt. 7/12)	
Evening	30 minutes (1 bus)	30 minutes (1 bus)	
Saturday			
Daytime	30 minutes (2 buses, interlined with Rt. 7/12)	30 minutes (2 buses, interlined with Rt. 7/12)	See Route 2/3
Evening	30 minutes (1 bus)	30 minutes (1 bus)	
Sunday			
Daytime	30 minutes (1 bus)	30 minutes (1 bus)	See Route 2/3
Evening	No Service	No Service	

Route 2/3 London/Wellington (Downtown to Lambton Mall via London Road and Wellington Street) – Peer Service Level Only
Length: 11.7 kilometres
Round-trip running time: 30 minutes

At the peer investment level, an additional route will be introduced to provide through service on Wellington Street between downtown and Lambton Mall. To accommodate this new route, it will be combined with Route 2 (London) and operate as a two-way, on-street loop via London Road, Christina Street, Wellington Street, and Murphy Road.

From a customer perspective, the London Road portion of the route would continue to be designated as Route 2, while the Wellington Street portion would be designated as Route 3. Service would be provided every 30 minutes during all service periods by two buses (one in each direction).

Exhibit 7-6: Proposed Service Plan - Route 2/3

Time Period	Initial	Enhanced	Peer
Weekday			
All Periods	See Route 2	See Route 2	30 minutes (2 buses)
Saturday			
All Periods	See Route 2	See Route 2	30 minutes (2 buses)
Sunday			
All Periods	See Route 2	See Route 2	30 minutes (2 buses)

Route 4 Southeast Local (to Lambton Mall)
Length: 12.4 kilometres
Round-trip running time: 30 minutes

Route 4 will provide local service between Lambton Mall, neighbourhoods in the city's southeast quadrant, and sections of Wellington Street between East Street and Cardiff Drive. It will replace sections of existing Route 3 (Wellington), Route 4 (Maxwell), Route 2/11 (Devine/Davis), Route 9 (Exmouth) and Route 14 (Sherwood). Informal transfers are available on London Road and at Confederation Street to connect to proposed Routes 1 and 2 for service to downtown Sarnia.

At initial investment levels, Route 4 will operate in one direction only (counter-clockwise). At enhanced and peer levels, the route will operate in both directions at most times of the day.

Exhibit 7-7: Proposed Service Plan - Route 4

Time Period	Initial	Enhanced	Peer
Weekday			
Peak	30 minutes (1 bus)	4A: 30 minutes (1 bus) 4B: 30 minutes (1 bus)	4A: 30 minutes (1 bus) 4B: 30 minutes (1 bus)
Midday	30 minutes (1 bus)	4A: 30 minutes (1 bus) 4B: 30 minutes (1 bus)	4A: 30 minutes (1 bus) 4B: 30 minutes (1 bus)
Evening	30 minutes (1 bus)	30 minutes (1 bus)	30 minutes (1 bus)
Saturday			
Daytime	30 minutes (1 bus)	4A: 30 minutes (1 bus) 4B: 30 minutes (1 bus)	4A: 30 minutes (1 bus) 4B: 30 minutes (1 bus)
Evening	30 minutes (1 bus)	30 minutes (1 bus)	30 minutes (1 bus)
Sunday			
Daytime	30 minutes (1 bus)	4A: 30 minutes (1 bus) 4B: 30 minutes (1 bus)	4A: 30 minutes (1 bus) 4B: 30 minutes (1 bus)
Evening	No Service	No Service	30 minutes (1 bus)

Route 5 North End-Russell (Lakeshore Road to Confederation Street via Downtown)
Length: 24.2 kilometres
Round-trip running time: 60 minutes

The proposed Route 5 will provide a north-south connection through the city, serving the north end of Sarnia, Bluewater Health, downtown, and the southeastern portion of the city. This will eliminate the need for customers from the north end of Sarnia to transfer in order to travel downtown; however, transfers will be required to travel to Lambton Mall to Route 1 (Mainline).

Route 5 will replace most of existing Route 7 (Cathcart) as well as sections of existing Route 2/11(Davis/Devine). New service will be provided on Russell Street between Exmouth Street and Confederation Street, as well as East Street between Davis Street and Confederation Street.

Service will be provided every 30 minutes during the day Monday to Saturday and every 60 minutes in the evening and Sunday daytime.

Exhibit 7-8: Proposed Service Plan – Route 5

Time Period	Initial	Enhanced	Peer
Weekday			
Peak	30 minutes (2 buses)	30 minutes (2 buses)	30 minutes (2 buses)
Midday	30 minutes (2 buses)	30 minutes (2 buses)	30 minutes (2 buses)
Evening	60 minutes (1 bus)	60 minutes (1 bus)	60 minutes (1 bus)
Saturday			
Daytime	30 minutes (2 buses)	30 minutes (2 buses)	30 minutes (2 buses)
Evening	60 minutes (1 bus)	60 minutes (1 bus)	60 minutes (1 bus)
Sunday			
Daytime	60 minutes (1 bus)	60 minutes (1 bus)	60 minutes (1 bus)
Evening	No Service	No Service	60 minutes (1 bus)

Route 6 North End-Rosedale (Northgate Terminal to Lambton Mall via Rosedale and Wiltshire)
Length: 12.2 kilometres
Round-trip running time: 30 minutes

The proposed Route 6 will provide an all-day link between the north end, Lambton Mall, and Northgate Terminal. It will replace sections of existing Route 7 (Cathcart) and Route 5 (Rosedale). This route will eliminate the need for customers to transfer to travel to Lambton Mall while providing opportunities to transfer to the proposed Route 1 or Route 5 for travel to downtown Sarnia or Lambton College at Northgate Terminal.

Service will be provided every 30 minutes at most times of the day. In the evenings, service will be provided every 60 minutes and the route will be interlined with the proposed Route 7 (North End-Rapids Parkway).

Service levels for this route are proposed to be the same between the three investment levels; Sunday evening service is proposed at the Peer investment level.

Exhibit 7-9: Proposed Service Plan – Route 6

Time Period	Initial	Enhanced	Peer
Weekday			
Peak	30 minutes (1 bus)	30 minutes (1 bus)	30 minutes (1 bus)
Midday	30 minutes (1 bus)	30 minutes (1 bus)	30 minutes (1 bus)
Evening	60 minutes (0.5 buses, interlined with Rt. 7)	60 minutes (0.5 buses, interlined with Rt. 7)	60 minutes (0.5 buses, interlined with Rt. 7)
Saturday			
Daytime	30 minutes (1 bus)	30 minutes (1 bus)	30 minutes (1 bus)
Evening	60 minutes (0.5 buses, interlined with Rt. 7)	60 minutes (0.5 buses, interlined with Rt. 7)	60 minutes (0.5 buses, interlined with Rt. 7)
Sunday			
Daytime	60 minutes (0.5 buses, interlined with Rt. 7)	60 minutes (0.5 buses, interlined with Rt. 7)	60 minutes (0.5 buses, interlined with Rt. 7)
Evening	No Service	No Service	60 minutes (0.5 buses, interlined with Rt. 7)

Route 7 North End-Rapids Parkway (to Lambton Mall)
Length: 13.4 kilometres
Round-trip running time: 30 minutes

The proposed Route 7 will extend regular service to the growth areas and the secondary schools located in the vicinity of The Rapids Parkway, connecting to the proposed terminal at Lambton Mall. This replaces the on-demand extension of existing Route 5 (Rosedale). The proposed route also extends to Murphy Road and Errol Road.

Peak period service will be provided every 30 minutes, which service every 60 minutes at most other times at the Initial and Enhanced investment levels. During the midday, this route will be interlined with Route 2 (London) and provide transfer-free service to downtown Sarnia. In the evening and on Sundays, the route will be interlined with Route 6 (North End-Rosedale).

In the future, pending the extension of The Rapids Parkway to Exmouth Street, the route could be rerouted to serve this new street and potentially allow for new service on Blackwell Road.

Exhibit 7-10: Proposed Service Plan – Route 7

Time Period	Initial	Enhanced	Peer
Weekday			
Peak	30 minutes (1 bus)	30 minutes (1 bus)	30 minutes (1 bus)
Midday	60 minutes (0.5 buses, interlined with Rt. 2)	60 minutes (0.5 buses, interlined with Rt. 2)	30 minutes (1 bus)
Evening	60 minutes (0.5 buses, interlined with Rt. 6)	60 minutes (0.5 buses, interlined with Rt. 6)	60 minutes (0.5 buses, interlined with Rt. 6)
Saturday			
Daytime	60 minutes (0.5 buses, interlined with Rt. 2)	60 minutes (0.5 buses, interlined with Rt. 2)	30 minutes (1 bus)
Evening	60 minutes (0.5 buses, interlined with Rt. 6)	60 minutes (0.5 buses, interlined with Rt. 6)	60 minutes (0.5 buses, interlined with Rt. 6)
Sunday			
Daytime	60 minutes (0.5 buses, interlined with Rt. 6)	60 minutes (0.5 buses, interlined with Rt. 6)	60 minutes (0.5 buses, interlined with Rt. 6)
Evening	No Service	No Service	60 minutes (0.5 buses, interlined with Rt. 6)

Route 11 South Vidal
Length: 10.6 kilometres
Round-trip running time: 30 minutes

Route 11 will continue to provide service to Sarnia's Chemical Valley employment area during peak periods. No routing changes are proposed for this route. Service will be reduced compared to existing levels due to low ridership, provided every 60 minutes during the morning and afternoon peak periods. The service will be interlined with Route 12 (Point Edward). At the enhanced and peer investment levels, 30-minute service would be provided.

Exhibit 7-11: Proposed Service Plan – Route 11

Time Period	Initial	Enhanced	Peer
Weekday			
Peak	60 minutes (0.5 buses, interlined with Rt. 12)	30 minute (1 bus)	30 minute (1 bus)

Route 12 Point Edward
Length: 12.5 kilometres
Round-trip running time: 30 minutes

Route 12 will continue to provide service under contract to the Village of Point Edward. Routing changes were introduced to the route in January 2014 to reduce running time and improve schedule reliability. The proposed route network incorporates these changes. Service levels at the initial investment levels will be maintained at existing levels. Service will be provided at 60 minutes during the day Monday to Saturday. At enhanced and peer investment levels, increasing service to every 30 minutes may be required at all periods to accommodate changes to Route 2/3 that would constrain the ability to interline the route. It is recognized, however, that this will require approval and an investment increase by the Village of Point Edward.

Exhibit 7-12: Proposed Service Plan – Route 12

Time Period	Initial	Enhanced	Peer
Weekday			
Peak	60 minutes (0.5 buses, interlined with Rt. 11)	30 minutes (1 bus)	30 minutes (1 bus)
Midday	60 minutes (0.5 buses, interlined with Rt. 2/)	60 minutes (0.5 buses, interlined with Rt. 2)	30 minutes (1 bus)
Evening	No service	No service	No service
Saturday			
Daytime	60 minutes (0.5 buses, interlined with Rt. 2)	60 minutes (0.5 buses, interlined with Rt. 2)	30 minutes (1 bus)
Evening	No service	No Service	No Service

Route 13 Bright's Grove
Length: 34.5 kilometres
Round-trip running time: 60 minutes

Service to Bright's Grove, currently provided by Route 15, will continue, but will instead serve the new Lambton Mall terminal. On-demand service to Hiawatha Horse Park will continue and routing to and in Bright's Grove will remain unchanged. In addition, service to Bluewater Retirement Community will be provided on an on-demand basis.

Service will be provided approximately every 60 minutes throughout the day.

Exhibit 7-13: Proposed Service Plan – Route 13

Time Period	Initial	Enhanced	Peer
Weekday			
Peak	60 minutes (1 bus)	60 minutes (1 bus)	60 minutes (1 bus)
Midday	60 minutes (1 bus)	60 minutes (1 bus)	60 minutes (1 bus)
Evening	60 minutes (1 bus)	60 minutes (1 bus)	60 minutes (1 bus)
Saturday			
Daytime	60 minutes (1 bus)	60 minutes (1 bus)	60 minutes (1 bus)
Evening	60 minutes (1 bus)	60 minutes (1 bus)	60 minutes (1 bus)
Sunday			
Daytime	60 minutes (1 bus)	60 minutes (1 bus)	60 minutes (1 bus)
Evening	No Service	No Service	No Service

Heritage Park Transcab

Due to low ridership on the existing Route 9 (Exmouth) extension into Heritage Park, regular service will be replaced by Transcab service. This type of on-demand service is provided by many transit systems to serve low-ridership areas and is provided by contracted taxi services.

Transcab service to Heritage Park will be coordinated with Route 1 (Mainline) service. A designated transfer location will need to be identified. Customers travelling to Heritage Park would request Transcab service with the bus operator upon boarding Route 1, who will coordinate the request with transit dispatch. Customers travelling from Heritage Park would call the taxi company directly to arrange for a connection to the transfer point. Some transit agencies charge a premium fare for Transcab service in conjunction with a regular transit fare.

An on-demand extension of Route 1 may be considered to serve Bingo Country before and after game sessions.

In the future, as development tin the Heritage Park area continues, a regular service route may be warranted. This route is indicated on the proposed route network, connecting from Lambton Mall via London Line and the planned

collector road east of Modeland Road. This route is not included in the service plan due to uncertainty in timing of development and related roadway network.

Bluewater Retirement Community

Service to the Bluewater Retirement Community will be provided on an on-request basis on Route 13 (Bright's Grove), during daytime periods. This will provide transit service to the community without an increase in operating costs.

Projected Ridership

With the proposed changes to the Sarnia Transit network, ridership is projected to increase incrementally proportionally to investment into expanded services. Currently, Sarnia Transit underperforms in several measures related to ridership, including revenue hours per capita, rides per revenue hour, and rides per capita. This is largely a result of services that are not meeting the travel needs of the community and transit underserving major destinations including Lambton College and emerging retail areas in the city's east end. Improvements to services as proposed in the new network plan are projected to result in marginal improvements to the rides per service hour from 21.2 to 21.5 at the Initial level, 22.0 at the Enhanced level, and 22.9 in the Peer level. These ridership projections are conservative, but will lead to an increase in ridership 3%, 21%, and 43%, respectively, compared to existing levels.

Exhibit 7-14: Investment Levels for Proposed Transit Network

	Existing	Initial (Immediate)	Enhanced(Five-Year)	Peer (Ten-Year)
Population				
Service Population	72,355 (2011 Census)	72,355 (2011 Census)	72,355 (2011 Census)	72,355 (2011 Census)
Revenue Service Hours (Existing: 58,816 regular / 2,946 special / 61,763 total)				
Regular Service	58,816	61,237	70,917	80,434
Specials	2,946	1,300	1,300	1,300
Total	61,763	62,537 (+1.3%)	72,217 (+16.9%)	81,734 (+32.3%)
Revenue Service Hours per Capita	0.85	0.86	0.98	1.13 (peer avg: 1.06)
Ridership				
Annual Ridership	1,306,320	*1,344,500*	*1,588,800*	*1,868,200*
Rides per Service Hour	21.2	21.5	22.0	22.9 (peer = 25.5)
Rides per Capita	18.0	18.6	22.0	25.8 (peer = 26.6)

Implementation Options

The implementation of the proposed route network will be dependent on the identification and implementation of a new terminal in the Lambton Mall area. Subsequent changes to service related to increasing investment can be phased in over a longer period of time. The following provides an overview of implementation steps for the proposed route network.

Pre-Implementation

- Identify site for new bus terminal near Lambton Mall; complete design and construction;
- Detail route network changes and conduct public consultation on final service plan; and,
- Prepare for network implementation, including removing/adding new bus stops, marketing campaign, and operator training.

Initial Implementation

- Implement the proposed route network at the initial investment level, which requires a marginal increase in service hours.

Enhanced Investment Level

Three major changes, which can be implemented independently:

- Two-way service on Route 1A/1B Monday to Saturday evening and Sunday Daytime (+4,000 hours compared to initial implementation);
- Two-way service on Route 4A/4B during the daytime Monday to Sunday (+4,100 hours); and,
- Provision of 30-minute service on Route 11 and Route 12, subject to approval by Point Edward, during peak periods (+1,500 hours).

Peer Investment Level

Two major changes, which total an increase of 9,000 service hours compared to the enhanced investment level, can be implemented in phases:

- Implementation of Route 3 (Wellington), which would necessitate changes to Route 2 (London), 7 (Rapids Parkway), 11 (South Vidal), and 12 (Point Edward) (+7,700 service hours compared to Enhanced Level); and,
- Implementation of Sunday evening service (+1,300 service hours).

Service Plan Summary

The proposed transit network has been designed to address the deficiencies and challenges of the current system including schedule reliability, level of service, and connectivity to key destinations. The proposed network represents a significant overhaul of services; however, this can be accomplished with a marginal increase in transit investment in the short term. In addition, new areas and travel patterns will be better served by transit without significant loss of coverage within existing serviced areas. The network will be better suited to serve emerging destinations in the city's east end, including Lambton College, Lambton Mall, and the retail areas near Highway 402 and Modeland Road.

The most significant impact of the proposed network will be the need to establish a new transit terminal near Lambton Mall. The current terminal at Murphy Road is over capacity while the surrounding area is no longer a major destination it once was. The new terminal location will be better situated to current travel demands and, coupled with the downtown terminal, serve as clear anchors for the transit network at each end of Sarnia. The existing transit terminals at Murphy Road and Northgate are identified for decommissioning.

A summary of proposed routes and service details at each investment level is provided in Exhibits 1.12 to 1.14. Implementing the proposed network at the Initial investment level is recommended to respond to immediate travel needs and patterns. Increasing to the Enhanced service level will provide additional benefits to customers, including expanded two-way service on the circular routes (Route 1 and Route 4) at most times. Further enhancement of service levels, to Peer investment levels, would introduce additional routes and expanded evening service on weekends.

The proposed route network will also position Sarnia Transit to respond to future growth in the city's development areas in the eastern parts of the city. Route 7 will provide flexibility to serve the neighbourhoods near The Rapids Parkway, while a future route to Heritage Park from Lambton Mall can be implemented when development and population warrants the service.

Exhibit 7-15: Proposed Transit Network Service Details (Initial Investment Level)

Route	Route Length (km)	Avg. Speed (km/h)	Headway (mins)			Vehicles			Revenue Hours		
Weekday			Peak	Day	Eve	Peak	Day	Eve	Peak	Day	Eve
1A Mainline	18.1	18.1	15	30	30	4	2	2	24	12	10
1B Mainline	18.1	18.1	15	30	-	4	2	-	24	12	-
2 London	10.6	21.2	30	30	30	1	1	1	6	6	5
4 Southeast Local	12.4	24.	30	30	30	1	1	1	6	6	5
5 North End-Russell	24.2	24.2	30	30	60	2	2	1	12	12	5
6 North End-Rosedale	12.2	24.4	30	30	60	1	1	0.5	6	6	2.5
7 North End-Rapids Pkwy	13.4	26.8	30	60	60	1	0.5	0.5	6	3	2.5
11 South Vidal	10.6	21.2	60	-	-	0.5	-	-	3	-	-
12 Point Edward	12.5	25.0	60	60	-	0.5	0.5	-	3	3	-
13 Bright's Grove	34.5	34.5	60	60	60	1	1	1	6	6	5
Total						**16**	**11**	**7**	**96**	**66**	**35**
Saturday			Day		Eve	Day		Eve	Day		Eve
1A Mainline	18.1	18.1	30		30	2		2	21		10
1B Mainline	18.1	18.1	30		-	2		-	21		-
2 London	10.6	21.2	30		30	1		1	10.5		5
4 Southeast Local	12.4	24.8	30		30	1		1	10.5		5
5 North End-Russell	24.2	24.2	30		60	2		1	21		5
6 North End-Rosedale	12.2	24.4	30		60	1		0.5	10.5		2.5
7 North End-Rapids Pkwy	13.4	26.8	60		60	0.5		0.5	5.25		2.5
12 Point Edward	12.5	25.0	60		-	0.5		-	5.25		-
13 Bright's Grove	34.5	34.5	60		60	1		1	10.5		5
Total						**11**		7	**115.5**		35
Sunday			Day		Eve	Day		Eve	Day		Eve
1A Mainline	18.1	18.1	30		-	2		-	20		-
2 London	10.6	21.2	30		-	1		-	10		-
4 Southeast Local	12.4	24.8	30		-	1		-	10		-
5 North End-Russell	24.2	24.2	60		-	1		-	10		-
6 North End-Rosedale	12.2	24.4	60		-	0.5		-	5		-
7 North End-Rapids Pkwy	13.4	26.8	60		-	0.5		-	5		-
13 Bright's Grove	34.5	34.5	60		60	1		-	10		-
Total						**7**			**70**		
								Annual Revenue Hours (regular service)			62,237
								Annual Revenue Hours (specials)			1,300
								Total Revenue Hours			**62,537**

Exhibit 7-16: Proposed Transit Network Service Details (Enhanced Investment Level)

Route	Route Length (km)	Avg. Speed (km/h)	Headway (mins)			Vehicles			Revenue Hours		
Weekday			Peak	Day	Eve	Peak	Day	Eve	Peak	Day	Eve
1A Mainline	18.1	18.1	15	30	30	4	2	2	24	12	10
1B Mainline	18.1	18.1	15	30	30	4	2	2	24	12	10
2 London	10.6	21.2	30	30	30	1	1	1	6	6	5
4A Southeast Local	12.4	24.8	30	30	30	1	1	1	6	6	5
4B Southeast Local	12.4	24.8	30	30	-	1	1	-	6	6	-
5 North End-Russell	24.2	24.2	30	30	60	2	2	1	12	12	5
6 North End-Rosedale	12.2	24.4	30	30	60	1	1	0.5	6	6	2.5
7 North End-Rapids Pkwy	13.4	26.8	30	60	60	1	0.5	0.5	6	3	2.5
11 South Vidal	10.6	21.2	30	-	-	1	-	-	6	-	-
12 Point Edward	12.5	25.0	30	60	-	1	0.5	-	6	3	-
13 Bright's Grove	34.5	34.5	60	60	60	1	1	1	6	6	5
Total						**18**	**12**	**9**	**108**	**72**	**45**
Saturday			Day	Eve		Day	Eve		Day	Eve	
1A Mainline	18.1	18.1	30	30		2	2		21	10	
1B Mainline	18.1	18.1	30	30		2	2		21	10	
2 London	10.6	21.2	30	30		1	1		10.5	5	
4A Southeast Local	12.4	24.8	30	30		1	1		10.5	5	
4B Southeast Local	12.4	24.8	30	-		1	-		10.5	-	
5 North End-Russell	24.2	24.2	30	60		2	1		21	5	
6 North End-Rosedale	12.2	24.4	30	60		1	0.5		10.5	2.5	
7 North End-Rapids Pkwy	13.4	26.8	60	60		0.5	0.5		5.25	2.5	
12 Point Edward	12.5	25.0	60	-		0.5	-		5.25	-	
13 Bright's Grove	34.5	34.5	60	60		1	1		10.5	5	
Total						**12**	**9**		**126**	**45**	
Sunday			Day	Eve		Day	Eve		Day	Eve	
1A Mainline	18.1	18.1	30	-		2	-		20	-	
1B Mainline	18.1	18.1	30	-		2	-		20	-	
2 London	10.6	21.2	30	-		1	-		10	-	
4A Southeast Local	12.4	24.8	30	-		1	-		10	-	
4B Southeast Local	12.4	24.8	30	-		1	-		10	-	
5 North End-Russell	24.2	24.2	60	-		1	-		10	-	
6 North End-Rosedale	12.2	24.4	60	-		0.5	-		5	-	
7 North End-Rapids Pkwy	13.4	26.8	60	-		0.5	-		5	-	
13 Bright's Grove	34.5	34.5	60	60		1	-		10	-	
Total						**10**			**100**		
								Annual Revenue Hours (regular service)			70,917
								Annual Revenue Hours (specials)			1,300
								Total Revenue Hours			**72,217**

Exhibit 7-17: Proposed Transit Network Service Details (Peer Investment Level)

Route	Route Length (km)	Avg. Speed (km/h)	Headway (mins)			Vehicles			Revenue Hours		
Weekday			Peak	Day	Eve	Peak	Day	Eve	Peak	Day	Eve
1A Mainline	18.1	18.1	15	30	30	4	2	2	24	12	10
1B Mainline	18.1	18.1	15	30	30	4	2	2	24	12	10
2/3 London/Wellington	11.7	23.4	30	30	30	1	1	1	6	6	5
3/2 Wellington/London	11.7	23.4	30	30	30	1	1	1	6	6	5
4A Southeast Local	12.4	24.8	30	30	30	1	1	1	6	6	5
4B Southeast Local	12.4	24.8	30	30	-	1	1	-	6	6	-
5 North End-Russell	24.2	24.2	30	30	60	2	2	1	12	12	5
6 North End-Rosedale	12.2	24.4	30	30	60	1	1	0.5	6	6	2.5
7 North End-Rapids Pkwy	13.4	26.8	30	30	60	1	1	0.5	6	6	2.5
11 South Vidal	10.6	21.2	30	-	-	1	-	-	6	-	-
12 Point Edward	12.5	25.0	30	30	-	1	1	-	6	6	-
13 Bright's Grove	34.5	34.5	60	60	60	1	1	1	6	6	5
Total						**19**	**14**	**10**	**114**	**84**	**50**
Saturday			Day	Eve		Day	Eve		Day	Eve	
1A Mainline	18.1	18.1	30	30		2	2		21	10	
1B Mainline	18.1	18.1	30	30		2	2		21	10	
2/3 London/Wellington	10.6	23.4	30	30		1	1		10.5	5	
3/2 Wellington/London	10.6	23.4	30	30		1	1		10.5	5	
4A Southeast Local	12.4	24.8	30	30		1	1		10.5	5	
4B Southeast Local	12.4	24.8	30	-		1	-		10.5	-	
5 North End-Russell	24.2	24.2	30	60		2	1		21	5	
6 North End-Rosedale	12.2	24.4	30	60		1	0.5		10.5	2.5	
7 North End-Rapids Pkwy	13.4	26.8	60	60		0.5	0.5		5.25	2.5	
12 Point Edward	12.5	25.0	60	-		0.5	-		5.25	-	
13 Bright's Grove	34.5	34.5	60	60		1	1		10.5	5	
Total						**14**	**10**		**147**	**50**	
Sunday			Day	Eve		Day	Eve		Day	Eve	
1A Mainline	18.1	18.1	30	30		2	2		20	8	
1B Mainline	18.1	18.1	30	30		2	2		20	8	
2/3 London/Wellington	10.6	23.4	30	30		1	1		10	4	
3/2 Wellington/London	10.6	23.4	30	30		1	1		10	4	
4A Southeast Local	12.4	24.8	30	30		1	1		10	4	
4B Southeast Local	12.4	24.8	30	30		1	-		10	-	
5 North End-Russell	24.2	24.2	60	60		1	1		10	4	
6 North End-Rosedale	12.2	24.4	60	60		0.5	0.5		5	2	
7 North End-Rapids Pkwy	13.4	26.8	60	60		0.5	0.5		5	2	
13 Bright's Grove	34.5	34.5	60	-		1	-		10	-	
Total						**10**	**9**		**110**	**36**	
Annual Revenue Hours (regular service)										80,434	
Annual Revenue Hours (specials)										1,300	
Total Revenue Hours										**81,734**	

Interim Transit Service Improvements

At the outset of the study process in consultation with City staff and as part of the initial assessment of the conventional transit service, a number of service and operational issues were identified which required early resolution to improve service efficiency and reliability. The changes summarized below have been implemented and represent immediate service improvements.

- **Routes 1 and 14 – Walmart**

The Walmart store and surrounding box store development at Quinn/Barclay is an important trip generator for transit. However, the location of this development presents significant access challenges for transit vehicles due to the extended and circuitous nature of how transit buses must access the site for the convenience of transit users. In addition, the associated road network is severely congested during peak hours and these conditions together result in significant delays for transit vehicles particularly at the intersections of Quinn/Barclay and Barclay/Exmouth. Transit is regularly having to augment service to cover for late-running buses which incurs an un-budgeted, and unnecessary, added expense aside from the impact and inconvenience on transit users.

Routing alternatives to minimize delays are limited and would, in any event, involve partial or full removal of service to Walmart which would be counter-productive. Instead, the two intersections represent a good opportunity to introduce traffic control changes, such as advance-green or even bus-priority signalling, in order to allow buses to travel through the intersections with limited delay.

It is recommended that the Transit and Traffic departments review the design and traffic control measures at these intersections in order to develop a solution for giving transit vehicles greater priority. We would be pleased to assist in this regard. Further, it is noted that transit-priority measures be a core requirement of the City in any similar future development.

- **Route 9 – Peak Hour Ridership Capacity**

During the AM and PM peak periods, several trips to and from Lambton College are at capacity with some instances of stop by-passing due to full buses. Additional capacity is required in the form of “extras” or “trippers” to assist the regular bus. This can be provided in the AM by re-deploying the bus previously used for the Plant Express service (discussed below). In the PM, re-deployment of existing bus assignments and bus operators may be required to provide the necessary additional capacity.

- **Route 9 – Service to UWO Research Park and Heritage Park**

Currently, the outer (east) end of route 9 branches between the UWO Research Park and Heritage Park. Route 9 operates every 15 minutes from Murphy Terminal (4 buses per hour) to Lambton College before branching. However, the level of service between the two branches is unbalanced with 3 of the 4 trips per hour going to the UWO Research Park and the 4th trip going to Heritage Park. In effect, there is hourly service to Heritage Park while there is a 15/15/30

minute frequency of service to the UWO Research Park. This unbalanced service is the result of two factors – high levels of employment at the UWO Research Park necessitating more frequent service to that destination and, a more recent desire to provide transit service to Heritage Park without a cost impact. To achieve the latter, one of the trips originally destined to the UWO Research Park was re-directed to Heritage Park. In the meantime, the level of employment at the UWO park has declined.

The current unbalanced service levels between the two route branches means that there is unbalanced and unattractive service in Heritage Park where there is the potential for further ridership increase while the level of service to the UWO Research Park is not warranted due to the decline in employment levels at the Park. On this basis, a balanced level of service in terms of two trips per hour (30 minute frequency) was implemented to both the UWO Research Park and the Heritage Park area.

- **Route 12 – Point Edward**

The key issue with this route is primarily the difficulty in maintaining schedule adherence. Poor schedule adherence affects the integrity and reliability of the service. It also can impact the safe operation and comfort of the service as bus operators must drive aggressively in order to maintain schedule. Poor schedule adherence, where buses run behind schedule, or late, also impacts service within the City Sarnia as the bus which is utilized for route 12 also provides service, on an alternating 30 minute basis, for route 2. Thus, late operation on route 12 means that route 2 also operates behind schedule.

Poor schedule adherence is essentially related to the length of the route. Simply put, route 12 is too long a route to be reliably, and safely, completed within the required 30 minute round trip time. Increasing the amount of running time to, for example, 40 minutes, would increase the cost of operation of the route because of the additional time involved. It would then also negatively impact route 2 in Sarnia. The increased running time would also result in an unusual frequency of service which would not be convenient or attractive to users.

Several alternatives for improving the reliability of the route through changes to the route structure including removing parts of the route and adding them to other Sarnia routes (such as adding the service on Errol Road to routes 7 or 9) were considered. Adding parts of the route to routes 7 or 9 would adversely affect either of those routes. Also, consideration was given to utilizing a “helper”, or extra, bus at certain times in order to keep the route on time. However, this would require the use of an additional bus and bus operator and would increase the number of revenue-hours and cost to the Village

In terms of cost impact on The Village of Point Edward, the existing service and revenue-hours represent the minimum cost option. Therefore, any change to improve the reliability of the service should not add any additional revenue-hours and cost to the municipality.

The only alternative, therefore, for improving schedule adherence with route 12 (as well as route 2) without increasing the cost of operation, would be to shorten the length of the route. The required reduction target is a minimum of one kilometre. In this regard, three alternatives were considered:

4. Remove service along Venetian Blvd and the OLG casino with the route revised to operate along St. Clair to Michigan. The routing via Houser/Louisa/Helena would also be discontinued;

5. Remove service along Michigan/Livingston and Victoria Avenue west of Albert with the route revised to travel along Albert from Alexandra to Albert; and

6. Eliminate the loop via Houser/Louisa/Helena/Lite.

Options 2 and 4 individually would not achieve the necessary distance and time savings. Option 1, removing service along Venetian and to the OLG site, would achieve the desired savings although there are a number of important employment and trip generators along this portion of the route such that eliminating this service would be detrimental to the integrity of the route.

In order to maintain transit service at the existing cost level and improve schedule reliability, it is proposed that route 12 be shortened by the removal of service as described in options 2 and 3. The Village of Point Edward developed a further alternative to shorten the route which was implemented.

- **Route 10 – Plant Express – Peak Hour Extra**

Two trips are provided on route 10 at 7:00 and 7:30 AM from the Murphy Road terminal directly to the industrial area south of Confederation Street. Ridership on these two trips has declined significantly over the past number of years and now total approximately 4 people per trip. Alternative service is available to the industrial area with route 10 from downtown and routes 3 and 4 between the Murphy Road terminal and downtown. Although this would require the existing Plant Express riders to transfer downtown, the difference in travel time would be an additional 10 minutes, which is not viewed as being significant. At the same time, there is demand for additional capacity to Lambton College in the morning peak period. The vehicle/drive resources now used for the Plant Express would be better utilized to address the capacity issues.

As a result, the Plant Express service was discontinued and existing users informed of the reason for the change and the available alternative service. The vehicle/driver resources were re-deployed to meet more urgent capacity needs elsewhere within the transit system.

- **Temporary Closure of St. Christopher Catholic School**

The temporary one-year closure of the St. Christopher School for re-construction and relocation of students to a school in the London Road/East Street area can be expected to result in an increase in transit use (conventional and Care-A-Van) by students to the new school location in view of the distance involved. Transit can, therefore, expect increased ridership on route 4 and, when considering the number of students involved and typical peaking volumes prior to and after school times, it is highly likely that a capacity issue could occur. In this regard, there may be a need to provide additional capacity through the use of extra buses, or “trippers” on route 4 and possibly on connecting routes depending on student origin-destination patterns. At the same time because route 4 operates in one direction only during the off-peak/mid-day period, there

may be a demand for two-way service during the mid-day. These services (trippers and two-way mid-day) represent an additional operating cost to Sarnia Transit. Transit may also need to review the availability of buses to operate extra trips in peak hour.

7.4 Infrastructure Plan

This section summarizes the required actions and investment to maintain and enhance the City's public transit infrastructure for its conventional transit system consisting of its vehicles, transit centre (garage), terminals, stops and shelters.

Transit Fleet

Vehicle Size

The transit fleet of 23 vehicles for the conventional service is currently a mix of small (7.6m) and medium (9.7m) size buses with one larger (12.2m) bus while the Care-A-Van service utilizes six small buses. A total of 15 buses are currently required for the conventional transit service leaving eight buses as spare units for operations backup and maintenance purposes, a spare ratio of 35%.

The small buses are lift-equipped while the larger buses are low-floor with ramps for accessibility purposes. The City, based on a recommendation by staff, recently purchased a larger 12.2 m (40 foot) bus for the conventional service in order to meet capacity considerations.

The City has a conventional vehicle fleet replacement program based on a life cycle of 12 years for the medium bus fleet and 8 years for the small bus fleet. The larger 12.2m bus recently purchased has an estimated life cycle of 18 years. The average age of the large bus fleet is 10 years, slightly higher than the optimum target of 6 to 9 years. There are two buses in the fleet that are more than 20 years old. These vehicles should be replaced as soon as possible. With a fleet of 23 vehicles and life cycle of 6 years (for small buses) and 12 to 18 years for large buses, this equates to a requirement to replace one large bus and one small bus approximately each year in order to maintain a target fleet average age which will ensure reliability and minimize annual maintenance costs.

Over the life of the 10-year Transit Master Plan, a total of 10 large and 10 small buses will need to be purchased representing an annual expenditure of approximately $590,000 annually ($500,000 + $90,000) or $5.9 million over 10 years. For the Transit Service Plan, an additional two vehicles are projected to be required to implement the service improvements in the long term associated with achieving the Peer service level. Depending on the pace of implementation of that service level, these vehicles may be required by year 9 and 10. On the basis that they would be large (12.2m) buses, a cost estimate in 2014 dollars of $500,000 each has been assumed. Exhibit 18 below presents the bus purchase requirements for replacement and service expansion purposes over the term of the plan.

Exhibit 7-18: 10-Year Transit bus Purchase Requirements

Requirement	Qty	Program Year										Total	
		1 to 4		5		6 to 8		9		10			
		Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
Replacement:													
Large Bus	10	4	$2.0M	1	$0.5M	3	$1.5M	1	$0.5M	1	$0.5M	10	$5.0M
Small Bus	10	4	$0.36M	1	$0.09M	3	$0.27M	1	$0.09M	1	$0.09M	10	$0.9M
Growth	2	-	-	-	-	-	-	1	$0.5M	1	$0.5M	2	$1.0M
Total	**22**	**8**	**$2.9M**	**2**	**$0.59M**	**6**	**$1.77M**	**2**	**$1.09M**	**2**	**$1.09M**	**22**	**$6.9M**

Over the period of the Master Plan, a total of 23 large and small buses will be required for replacement and growth purposes. This represents a total cost of $6.9 million.

Vehicle Size and Type

As noted above, the transit fleet has featured a mix of small and medium buses with one larger (12.2m) bus received in 2013. However, as noted in the System Assessment report, the transit operations have been increasingly experiencing capacity issues with the existing bus fleet leading to the decision to purchase the 12.2m bus. The reason for the capacity issues are three-fold:

- Increased ridership during peak periods, particularly to the College; and
- Increased occurrences of large strollers and other similar items being brought onto the buses by transit users.

In addition, but more importantly, as the conventional system progresses to accept wheelchairs and scooters as discussed in section 2.9 following, more space will be required on transit vehicles to properly accommodate these vehicles. As a result, continued use of the existing 7.6m small buses will become operationally difficult. The City will therefore need to transition to larger buses in order to provide the needed capacity and space. At the same time, transitioning to full size transit buses will permit people wishing to use the conventional transit service to board safely and efficiently as these vehicles are low-floor transit buses and have ramps instead of lifts. On this basis, it is recommended that as the 7.6m small buses come due for retirement, they be replaced by either a 9.7m or 12.2m low-floor ramp-equipped buses. This change, however, would increase the annual capital cost for buses by $410,000 (the difference between the cost of a full size bus at $500,000 compared to a small bus at $90,000) for each small bus replaced, or an additional $4.1 million for the 10-year period of the Transit Master Plan over the total of $6.9 million in Exhibit 18.

A side-benefit of this strategy, however, will be to standardize the fleet on full-size transit buses thereby providing a greater level of flexibility in the utilization of the fleet. This approach, in turn, will permit an overall reduction in the current spare ratio of 35% to the industry norm of approximately 20%. As a result, in

the longer term, only one additional bus would be required by year 9 for the proposed service improvement, a capital cost savings of approximately $500,000.

Vehicle Technology – CNG, Electric

All new buses purchased by the City have featured standard clean diesel technology which meets the most recent stringent environmental standards applicable for 2013. Clean diesel technology is the most cost-effective choice for Sarnia at the present time. There are, however, alternative vehicle technologies available such as "hybrid diesel-electric", compressed natural gas (CNG) and full electric buses.

Hybrid diesel-electric drive combines the diesel engine with an electric drive system and batteries to reduce overall fuel requirements. However, this technology has a significant capital cost premium of $200,000 per vehicle and experience with this technology to date has been less than satisfactory both in terms of reliability, maintenance costs and, particularly, fuel savings. As well, maintenance of the hybrid drive system also requires more specialized maintenance procedures, equipment and training. For a small system such as Sarnia, these requirements and the cost premium to purchase this technology cannot be justified. Instead, the presence of a "mini" hybrid system featuring electrically-powered accessory drive and with a modest cost premium of less than $15,000 per bus have proven to be more successful by reducing fuel consumption significantly. This specification option was included in the most recent vehicle purchased by the City and should continue to be purchased.

The use of CNG as a bus fuel technology has seen renewed interest in the past few years due to concerns about escalating diesel fuel prices compared to very low CNG fuel costs. CNG bus technology has been in use in many cities, particularly in the United States but also in a few cities in Canada (Hamilton, Waterloo Region, London, Vancouver) although Waterloo and London phased out those vehicles with standard diesel buses. Original concerns with fuel quality and engine reliability which resulted in high maintenance costs and low reliability with CNG vehicles, have largely been overcome and with low prices for CNG fuel a number of larger transit systems are considering purchasing this technology. However, there is a cost premium of approximately $50,000 per bus along with the need to install a CNG fuelling system, which could be as high as $2.5 million depending on final design, and the need to modify the transit facility to comply with CNG building codes. Collectively, these costs make this vehicle technology alternative difficult to justify from a cost-effectiveness standpoint for Sarnia compared to the potential fuel cost savings estimated at 20% ($7,000) per year per bus. However, City staff should monitor experience with this technology as part of the Metrolinx provincial vehicle procurement program (Transit Procurement Initiative) of which the City is part.

Electric bus technology, wherein the vehicle is powered by electricity from on-board batteries, is an emerging vehicle alternative. A number of bus manufacturers are developing this technology with a Chinese company, BYD and a United States company, Proterra, demonstrating prototype vehicles. Canadian bus manufacturers, New Flyer and Nova Bus, are also developing "electric" vehicle, in varying design formats. However, the price premium for these vehicles is significant, in the order of $900,000, and the vehicles are not

proven in regular transit service. Nevertheless, there appears to be potential with this technology and City staff should monitor progress through the Metrolinx provincial vehicle procurement program.

For the purposes of the Transit Master Plan, it is recommended that future transit bus purchases continue to be for clean diesel technology.

Vehicle Maintenance, Servicing and Cleaning

As reviewed in the System and Market Assessment report, the transit fleet presents a positive image and appears in generally good condition. There is logical separation of in-house and contracted maintenance activities.

The results of the review of the maintenance program noted that there is a high number of different inspections undertaken which can be confusing for the mechanical staff and can lead to "missed items". Consideration should given to moving oil changes to the same kilometre inspection interval – approximately every 10,000km and reducing the number of preventative maintenance (PM) inspections to two types and co-ordinate the inspection intervals with the semi-annual Ministry of Transportation inspection requirements. All high kilometre items, such as rear differential oil and transmission oil changes, can be included in the six-month MTO inspection cycle.

For vehicle servicing and cleaning, a complete thorough interior clean of each vehicle is performed only once a year which is below industry practice. Most systems perform a thorough cleaning at least every three months. However, for Sarnia the lower frequency is due to the fact that sections of the interior are cleaned on an on-going basis on alternate days with the regular nightly vehicle servicing (fuelling) program. Passenger and driver seats are, however, steam-cleaned and disinfected every three months. This practice is effective and should continue.

Transit Centre

The transit centre (garage) is well-suited to the needs of the City and its transit service combining all of the essential elements (office space, maintenance, vehicle cleaning/fuelling and storage) necessary for delivering the two transit services. The Facility has been well-maintained and is in generally good condition. The maintenance and storage areas have sufficient capacity to accommodate the modest increase of two buses required to implement the recommended service plan over the long term. Therefore, no expansion of the building is required.

On an on-going basis, however, the building does require regular upkeep and renewal of interior fittings and equipment. An amount of $50,000 should be set aside each year for this purpose (1% of facility cost).

Terminals

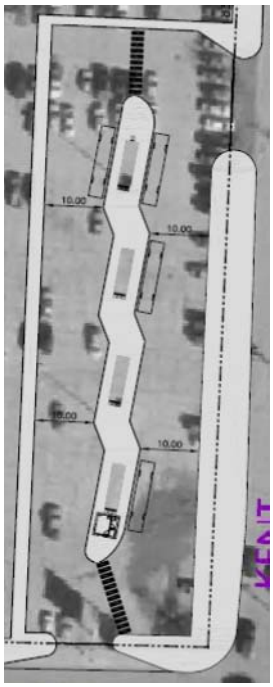
The transit system currently has three terminal, or transfer, locations where several bus routes intersect to permit transit users to conveniently and comfortably transfer between routes as necessary to complete their trip. The

three locations are Downtown, Northgate Mall and Murphy Road/Real Canadian Superstore.

Three formal terminal locations continue to form part of the proposed route network re-structuring. Other locations where transit users can transfer between routes will be possible but these locations would not warrant formal transit "terminals". The status and required improvements to the three formal terminal locations are discussed below.

Murphy Road – New Location Required

Core to the recommended route network is the relocation of the current Murphy Road terminal at the Superstore to a new site in the vicinity of the Lambton Mall. The new location represents a more suitable location for this important intersection point for transit routes in the east end of Sarnia. At the same time, as noted in the System and Market Assessment report, the Murphy Road terminal is currently operating beyond capacity but, more importantly, is not conducive to meeting required accessibility standards due to its constrained site.



Obtaining a new terminal location will clearly require a review and assessment of available properties although preference would be to locate the terminal adjacent to, or on the site of, the Lambton Mall. The terminal would need to be suitable to accommodate eight routes.

A location on or near the mall site would require discussions and cooperation with the Mall owners. Similar terminals have been successfully constructed in various cities in Ontario including London, Kitchener, Waterloo, Brampton and Kingston which have served to benefit the mall, store owners, store customers and transit users. Exchanging car parking spaces for transit terminal space represents an important demonstration of support for transit use by the mall and store owners as well as making an environmental statement. At the same time, transit does represent a significant transportation mode for shoppers and ought not to be discounted. Investing in transit by the mall and store owners represents an investment in the community.

A terminal serving eight routes would need eight loading bays with additional space for bus circulation and layover. A site of approximately one acre (0.5 ha) would be required for the terminal, subject to final design and location. Access to the terminal should be, ideally, from the surrounding road network permitting ready access from all directions. The terminal could be of either a central platform as depicted in the attached drawing, or a peripheral platform design although a central platform is preferred for operational and passenger convenience reasons. Shelters, benches and information signage would be

located on the platform. The photo is of the recently opened 6-bay transit terminal in Woodstock.

The estimated cost for an 8-bay terminal, subject to final design and amenities, would be approximately $1.8 million, excluding land.

Northgate Mall

This terminal would continue as a key transfer point between the main route on Exmouth Street and the proposed new intersecting north-south route along Chapel/Colborne. No improvements or changes to the current stop locations, customer amenities or operational arrangements are proposed or necessary.

Downtown

The downtown terminal location has been the subject of separate studies in the past to consider alternate locations and an off-street site. Buses currently stop, layover and board passengers curbside on George and Vidal Streets adjacent to the Bayside Mall. Modest transit user accommodations are provided in the form of shelters and benches but the overall atmosphere for transit users is not positive. Previous studies looked at an off-street location which would be more operationally-friendly and provide an improved passenger environment but no suitable locations were confirmed. However, no suitable location was found.

The downtown area is an important employment, shopping and recreational area within the city and is therefore an important location to be served by transit. In the proposed long range transit plan seven transit routes will continue to serve and connect the downtown from all parts of the city and the village of Point Edward. As such, and to facilitate transfers between routes as well as to conveniently meet the needs of transit users, a central location where the routes would meet will continue to be required. Space for at least seven routes and buses, on a time-transfer basis, is required. Ideally, an off-street location would be preferred since this offers a higher level of customer convenience, safety and operational flexibility while separating buses from traffic. However, in the absence of a suitable off-street site, the existing George-Vidal “terminal and transfer” location for transit buses would be satisfactory. It could be enhanced to provide, through architectural and streetscaping treatments, a significantly improved appearance and environment for transit users while also complementing the rejuvenation of the downtown. To achieve this will require additional curbside/sidewalk depth and curb space for buses to stop. As the required land is part of the Bayside Mall property, it is recommended that the City approach the Mall owner and work cooperatively to develop an attractive plan for an enhanced on-street transit terminal design for implementation at the earliest opportunity. An estimated budget to undertake these enhancements would need to be confirmed through the development of concepts. However, a budget allowance of $500,000 to include shelters, street furniture, lighting, signage and changes to the road and boulevard area would be appropriate.

Further to this conclusion and recommendation, enhancement of the existing location should proceed whether or not the recommended service plan is implemented.

Overall, from a transit terminal standpoint, the priority for the transit system, as noted at the outset of this section, will be the relocation of the Murphy Road terminal to a new site in proximity to the Lambton Mall.

Stops

Re-structuring of the route network will require the installation of new bus stops and the relocation and removal of dis-used stops. There will be a cost to relocate, install and remove stops. Depending on the final route network, as many as one-third (200) of the current stop signs could be affected along with a requirement to install new signs, estimated to total 100. On this basis, and at an average cost of $150 per sign, the cost to relocate and install new signs would be approximately $45,000.

As part of the overall marketing plan and updating of the Sarnia Transit image, the opportunity should be taken to replace all of the existing bus stop signs with new distinctive signage. These signs should include the name or route number serving the stop, the approximate time of bus stop arrival and customer contact information along with the transit system logo and a bus pictograph. The estimated cost to replace the stops not affected by the proposed route changes (350) would be approximately $35,000 or $100 per stop including new signs and installation.

The Cities of St. Thomas and Woodstock (photo) have installed new bus stop signs which incorporate these features and these could serve as a pattern for Sarnia.

Stop Accessibility

Each stop will need to be made fully accessible under the AODA and the City has until 2024 to achieve compliance. Work has commenced in this regard with any new stops or stops associated with road reconstruction being upgraded accordingly. Appropriate accessibility guidelines for stops, and shelters, are available from the Ontario Public Transit Association. The City should allow an estimated average cost of $1,500 per stop for this initiative. On the basis of upgrading all 650 stops, the total cost would be $975,000 which could be undertaken over 10 years with completion by 2024, or $97,500 per year.

Winter Maintenance

To ensure good customer service and safety, all stops and shelters should be cleared of snow within 24 hours of a significant snow fall (>5cm). The City current has a program in place to complete this work within this timeframe and should continue to do so. Clearing bus stops and shelters of snow is also a requirement under the AODA.

Shelters

The City currently has 55 shelters located at bus stops throughout the City. These are installed and maintained by the City. The number of shelters

represents a coverage rate of approximately 9% of bus stop locations and is low in comparison to other municipalities. Improving amenities for people at bus stops improves the attractiveness of taking transit. Increasing the number of shelters contributes to this objective. A more desirable percentage would be 25% to 30% of stops, requiring, for the lower percentage, the purchase of approximately 82 additional shelters. The estimated cost per shelter is an average of $10,000 including installation and concrete pad. The design of the concrete pad should also provide for wheelchair accessibility requirements which includes making the pad at least 8 metres long and 3 metres wide with a ramp and curb cut at one end. Therefore, the total cost to acquire 82 shelters would be approximately $820,000 and could be implemented over 10 years to minimize the annual cost impact.

The 2013 budget for shelter maintenance is approximately $25,000 for the existing shelters, or $500 per shelter per year. Adding 82 shelters by 2024 would increase the annual shelter maintenance budget by approximately $41,000.

7.5 Marketing and Communications Plan

Marketing is an often misunderstood concept and is often erroneously used inter-changeably with “promotion”, “advertising” or “communication”. In fact, marketing is all three which is why the phrase “Marketing and Communication” is used. Marketing means educating, creating awareness and informing. There are essentially two basic elements to marketing:

- Understanding the market for the services being provided; and,
- Communicating with those within the market so that they know what services are being provided.

This last component involves a range of activities designed to, at once, inform and encourage use of a product. For public transit, it means telling the customer what transit services are available, how they can use transit, how they can get information about the transit services and why it is a good idea to use transit.

Understanding the Market

The objective of the new transit plan is to increase transit use by improving services and service coverage within Sarnia. Those who will benefit from the transit improvements include users and non-users alike. Users will benefit from having more convenient service and improved mobility – access to jobs, social and medical facilities, education and jobs. Non-users may see a more convenient and useful service and be encouraged to take transit. Those who choose not to use transit can, nevertheless, benefit from increased transit ridership through an improvement in the quality of urban life and reduced air pollution.

The primary transit markets therefore, are:

- Existing transit users including students, seniors and persons without access to alternative modes of transportation;
- Non-users who may be encouraged to take transit.

For this latter group, transit must be seen as easy to use, convenient and useful. Within the existing user group it has been shown in many other situations that users can be encouraged to take transit more often through an improvement in transit service. Thus, communication with this market is equally important.

Communication is a two-way street: not only does the provider, or seller, of a service tell its existing or potential customers what services it is providing and deliver that service, but it also seeks input from its customers as to the quality of the service provided and their satisfaction with that service. Thus, communications activities within a marketing plan should include both sides of the equation.

Communication is also about building an image, brand loyalty and consumer confidence. In this era when consumers have a wide range of choice in every product available, niche marketing becomes important as does building recognition for a product or service.

Plan Features

An outline for a marketing and communications plan for transit is set out in Appendix A. Overall, it is suggested that the existing corporate image of the transit system be updated. The Plan consists of the following activities:

- Community involvement - working with business leaders and the public at large to promote use of the system;
- New transit brochure - creating a new map/schedule brochure to provide more information about the transit system, the City and important attractions. The cost of the brochure could be partially offset by the sale of advertising space on the brochure;
- Media advertising and print materials – create an annual calendar of community events to advertise with and link to transit use through the local cable channel and radio station;
- Customer Information Phone Line – provide current route and schedule information for transit users. Ensure the line is properly staffed to answer questions, concerns, provide route and schedule information and to respond to complaints;
- Bus Stop Signs – develop new bus stops incorporating the City's transit system colours, customer information number and bus arrival times to replace all existing signs. These new signs would also replace the separate schedule holders at most stops;

- Transit Web Page – establish a separate domain name and expand page to include current and historical information about the transit system as well as links to local events and points of interest;

- Bus stop shelters – add additional shelters along major corridors with advertising. Use ad space to promote transit and to display a transit route map and schedules;

- Information panels at major centres – develop and install information panels at major locations throughout the city. These would include a map of the conventional bus services as well as schedule information and information regarding the use of the specialized transit service;

- Media meetings – provide information and meet periodically with the local media;

- Press Releases and Media Articles – provide a regular supply of information to the local media regarding transit activities and issues;

- Council Presentations – make regular presentations to Council on the performance of the transit system and any newsworthy occurrences;

- Internal Communication Program – meet regularly with transit staff and share information in a timely manner with staff on the progress and issues surrounding the transit system

- Special Promotion Days – provide regular promotional events focused on the transit system including special fares

The introduction of the new route network presents an excellent opportunity to aggressively promote transit in the community. Accordingly, updating the image of Sarnia Transit should take place to emphasize renewal of transit service in the City. All elements of the transit system's visible assets – buses, bus stop signs, printed material – would be affected with a new logo and paint scheme developed for the buses and represented on all printed material to demonstrate a common image and theme. The new logo and paint scheme would be introduced progressively over several years.

Additional steps would include installing distinctive bus stop signage as noted in the Infrastructure section. New larger signs should be adopted and installed which would include key passenger information such at route number, scheduled arrival times at the stop, telephone information number and website address.

Plan Investment

To support the marketing and communications plan, additional financial and staff resources will be required. Initially, a special promotional budget of $50,000, not including staff costs, is recommended for Year 1 to implement the launch of the

new service including development and distribution of promotional material and to handle increased customer enquiries during the transition period.

A sustaining annual budget of $30,000 plus an annual staff time commitment of 500 hours (0.25 FTE) is forecast to successfully manage the marketing and communications plan on an on-going basis. This budget could be supplemented by joint promotions and the trading of advertising opportunities (empty ad space in shelters and on buses could be traded for joint promotions) with local businesses.

The implementation of a comprehensive marketing plan is vital to the future success of the transit system and to attracting new users

7.6 Fare Policy and Financial Plan

This section sets out a long term policy for reviewing and adjusting the transit system fare structure and rates to meet future needs followed by the 5-year and 10-year financial plan associated with the recommended transit service plan and supporting sub-plans described above. The financial plan includes projected operating and capital costs as well as ridership and fare revenue estimates based on the recommended fare policy.

Fare Policy

Transit Fees for Service are considered and approved annually by City Council and are the basis for fares and rates charged by the Transit Department for the forthcoming budget year. The fares and rates also form the basis for the preparation of the Transit Department's revenue projections for its annual operating budget. This is an appropriate overall approach, that is, to review and consider fares during the annual operating budget process.

What are the key principles that should be followed when establishing a transit fare structure and adjusting rates?

Establishing a fare structure and corresponding rates requires a balance between the competing demands of the portion that transit users pay, the amount other transit stakeholders in the community invest in transit through the municipal budget, and pricing transit fares such that it is affordable while perceived as having a "value". Within this context there are a number of key principles that apply to setting fares based on experience in the industry:

1. Fares should be reviewed and adjusted no less often than every two years but preferably annually. Small regular adjustments are more acceptable than less frequent larger adjustments;

2. Because the public transit system benefits the community as a whole, it is appropriate that the community financially supports transit. The current cost recovery rate of approximately 38% is reasonable for a small city and consistent with Sarnia's peers;

3. Transit fares should provide an incentive to using transit through the availability of fare media that offer discounts for more frequent use;

4. Cash fares should be permitted (as opposed to requiring all users to pre-purchase transit fares ahead of time) because of the high number of infrequent users and visitors, and the general lack of places to pre-purchase transit fare media; and

5. Transit users would prefer to an increase in fares compared to having services reduced.

Overall, the fare rate needs to be perceived as being fair in terms of the level of service that is provided and the costs of transportation. The current fare policy rewards frequent users. It has rates that are fair to adults, students and seniors who are frequent riders, given the nature and extent of the services that are provided. The goal is to maintain the fairness of the fare structure as the system is expanded in the future.

Regularly adjusting transit fares also helps to maintain a reasonable cost-recovery ratio (R/C ratio) and optimize the municipality's investment in its public transit service. In contrast, if the fare revenue is not allowed to increase progressively, then in periods of financial restraint increased pressure is placed on transit service levels with the result that transit services are either curtailed or needed improvements deferred. This situation can have a long term negative impact on the municipality's transit service as well as its overall transportation system by further increasing dependence on the automobile through inhibited transit service levels.

The current transit fare rates for the Sarnia Transit and Care-A-Van services is summarized in exhibit 19. Fares are based on a flat cash fare of $2.50 for all customers which was recently adjusted as of January 1, 2014. A discount is offered to customers through the sale of tickets and monthly passes as an incentive to encourage more frequent transit use. Tickets are available in sheets of 20 for $44.00, or $2.20 per ticket, an approximate 11% discount compared to the cash fare, while a calendar-based monthly pass is available at $66.00. The pass rate is equivalent to 30 trips per month multiplied by the single ticket rate. The monthly pass is good for an unlimited number of trips each month so that, in effect, the more the person uses transit the less their "per trip" cost becomes. Sarnia Transit calculates that the average monthly pass holder uses transit an average of 55 times per month which is consistent with the experience in other cities.

Additional transit incentive packages and discounts are offered through various pass media including programs for students, the Blind, veterans as well as a program for businesses to provide discounted passes to employees.

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.

Further, fares should be reviewed and adjusted no less often than every two years to keep pace with inflation and to maintain a cost recovery (R/C) ratio of approximately 38%.

Exhibit 7-19: Sarnia Transit Fare Structure (2014)

Fare Category	Rate
Base: Cash Tickets (20) Monthly Pass	 $2.50 $44.00 $66.00
Semester – Elementary	$148.50
Semester - College	$165.00
Summer Savings (July/August)	$99.00
Blind (annual)	$27.50
Children < Age 5	Free
Veterans	Free
Support Person	Free
Employer Pass Discounts	10% to 25%

Future Fare Strategy

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.

While the proposed level of fare increase, 4.5% per annum, may appear high compared to inflation, it is required in order to maintain the cost recovery rate considering the ratio of revenue compared to cost wherein a higher revenue percentage increase is required to compensate for the cost increase.

Fare Technology

As outlined in the separate ITS strategy 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. The cost associated with this investment is not included in the Transit Master Plan budget.

Charter Rate

The City also charters (rents out) buses for groups or businesses and an hourly rate has been established for this service which includes the bus operator.

Maintenance Department Services

The services of the maintenance department of Transit are made available to non-owned vehicles such as visiting or tour charter coaches and intercity buses. Fees for a range of vehicle servicing and maintenance activities such as washing, cleaning, fuelling and repairs, have been established.

Poverty Reduction Program

Introduced in 2008, the City, through the transit department fare structure, provides a limited number of discounted transit fares for people on reduced income. The program is administered by the Inn of the Good Shepherd. The current discounts are as follows:

Category	Full Rate	Program Rate	Discount
Monthly Pass (standard)	$60.00	$40.00	$20.00
20-Ticket Sheet	$40.00	$25.00	$15.00
10-Ticket Sheet	$20.00	$12.50	$7.50

The number of passes and tickets provided each month is 90 and 15 respectively. This program is not currently included in the Transit Department's Fees for Service book.

It is proposed that this program be included on the basis of the established **discount amounts** for the monthly pass, 20-ticket sheet and 10-ticket sheet of **$20.00, $15.00 and $7.50** respectively and in the established **limited quantities** of **90 passes per month** and **15 sheets of tickets** per month.

Financial Plan

This section presents the financial plan consisting of both operating and capital estimates for the recommended 10-year transit service plan as described in the previous sections. Exhibit 20 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.

Exhibit 7-20: 10-year Transit Financial Plan

Category	Years											
	2012	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
City Population	72,355	72,355	72,355	72,355	72,355	72,355	72,355	72,355	72,355	72,355	72,355	
Bus Fleet - Service	15	16	16	16	16	18	18	18	18	18	19	
Bus Fleet - Total	23	23	23	23	23	23	23	23	23	24	25	
Revenue Hours												
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	
Revenue Passengers	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	
Fare Revenue	$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	
Other	$467,651	$467,651	$467,651	$467,651	$467,651	$467,651	$467,651	$467,651	$467,651	$467,651	$467,651	
Gas Tax	$219,250	$219,250	$219,250	$219,250	$219,250	$219,250	$219,250	$219,250	$219,250	$219,250	$219,250	
Total Revenue	**$2,149,161**	**$2,260,504**	**$2,362,225**	**$2,512,895**	**$2,677,116**	**$2,904,427**	**$3,085,322**	**$3,280,972**	**$3,492,583**	**$3,721,457**	**$3,936,309**	
Operating Costs												
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	
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	
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	
Net Operating Cost	**$3,071,576**	**$3,354,496**	**$3,288,775**	**$3,278,105**	**$3,237,884**	**$3,432,573**	**$3,408,678**	**$3,373,028**	**$3,325,417**	**$3,265,543**	**$3,225,691**	
Capital Costs												**Total**
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	$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	$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	$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	$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	$4,100,000
Total Capital Cost	**$440,000**	**$3,477,500**	**$1,177,500**	**$1,177,500**	**$1,177,500**	**$1,177,500**	**$1,177,500**	**$1,177,500**	**$1,177,500**	**$1,677,500**	**$1,677,500**	**$15,075,000**

Operating Costs

Transit operating costs would increase, consistent with changes in the levels of service in Years 1, 5 and 10 from $5,220,737 in 2012 to $5,615,000 in Year 1 for the Initial Service Level, to $6,337,000 in Year 5 upon the implementation of the Enhanced Service Level, and to $7,162,000 in Year 10 upon the implementation of the Peer Service Level. The operating costs are based on the 2012 cost per revenue-hour of $84.53 factored to include a 2.5% inflationary increase each year over the term of the plan to which is added expenditures associated with an increase in the marketing budget, bus stop relocation and new signs (year 1 only), transit facility maintenance and renewal of the transit system image through repainting of 11 buses.

For revenue estimation purposes, a $0.25 increase in the cash fare is incorporated every two years representing an average increase of 4.5% per annum. This also represents an estimated increase of $0.11 in the average fare over the base level of $1.12 every two years.

In the Revenue total, “Other” includes the Provincial gas tax which has been kept at a constant level for the period of the Master Plan as it is subject to City Finance decisions regarding allocation of these funds on an annual basis.

On the basis of the proposed increase in revenue service-hours, operating cost increase, ridership and fare increase over the 10 years of the plan, the City’s net investment in its conventional transit service would change from $3,071,576 for 2012 to $3,354,496 in Year 1, $3,432,573 in Year 5 and $3,225,691 in Year 10. At the end of the ten-year period, the City’s net annual operating investment in the conventional transit service would increase approximately $150,000 from the 2012 level, or 5%, reflecting the effect of the projected increase in ridership and fare revenues.

Capital Budget

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.

7.7 Transit Special Service Area

As discussed in the System and Market Assessment report, the City has a defined area of the city where transit service is provided and within which property taxes include the cost of transit. This area is known as the "Transit Service Area", or TSA.

Most future development within the City is projected to occur outside the TSA such that the TSA would need to be revised and expanded to meet the future transit service needs of the City, if that is desired by City Council. At the same time, there is inconsistency in the application of the TSA between the conventional and specialized transit services wherein Care-A-Van service is not subject to the same boundary limitation and is funded from the general levy.

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.

8. Accessibility Strategy – Sarnia Transit and Care-A-Van

8.1 Accessibility for Ontarians with Disabilities Act

The Accessibility for Ontarians with Disabilities Act (AODA) was adopted in 2005 to ensure universal accessibility for persons with disabilities. The legislation includes standards and guidelines for customer service, information and communications, built environment, and employment. Transit is envisioned to play a key role in creating barrier-free communities and as a result, will need to be mindful of its obligations and requirements under the AODA. The City and its Transit Department have prepared plans that respond to the AODA compliance requirements and target dates.

One of the key aspects of the AODA is the Integrated Accessibility Standards (IAS), which came into effect in July 2011. These standards set out minimum requirements to ensure barrier-free environments. For transit customer service and information, two sections of the IAS are of particular importance:

The information and communications standards require that all customer information be provided in accessible formats with communication support. Accessible formats may include, but are not limited to, large print, recorded audio and electronic formats, Braille and other formats usable by persons with disabilities. Communication supports include but are not limited to, captioning, alternative and augmentative communication supports, plain language, sign language and other supports that facilitate effective communications. As a large public sector organization, Sarnia Transit must meet the requirements for accessible formats and communication supports by January 1, 2015.

Websites must also become compliant with web content accessibility guidelines. Sarnia Transit's website meets the regulation and conforms to WCAG 2.0 Level AA. Validation checks to ensure compliance should be coordinated with major changes to the website.

As well, the process to receive and respond to customer feedback must be made available in accessible formats with communication supports. Sarnia Transit is already taking steps to meet this requirement, for example, by providing the customer survey as part of this study on a WCAG 2.0 compliant website with accessible formats, such as large-print text, and assistance with completion on demand. All feedback processes must be in compliance by January 1, 2014.

In addition to the information and communications standards, the transportation standard also has an impact on customer information and overall accessibility of transit vehicles and facilities. For example, electronic on-board and pre-boarding announcements will be a requirement for all conventional transit vehicles by January 1, 2017. There are also requirements around signage design, service disruption procedure, and other accessible features.

8.2 Conventional Transit Service Accessibility

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, which is designed to serve people with disabilities 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 conventional transit service, in accordance with Provincial policy on accessibility, has moved towards accepting people with disabilities through the purchase of low-floor buses with kneeling capabilities, a mobility device ramp and two wheelchair positions per bus. These features will continue to be enhanced by the upgrading of bus stops and related infrastructure to accept mobility devices as outlined within this transit service plan.

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. In this context, it is to be emphasized that Care-A-Van is for those persons unable to use an accessible public transportation system, not for those who find it more difficult, are reluctant or unwilling to use an accessible public transportation system. It is important to recognize that determining and managing the demand for transportation is done sensitively as there are many customers whose needs vary from day to day according to their disability and to ensure that customers using Care-A-Van can function independently when arriving at their destination.

At the same time, the City can facilitate a more integrated approach between accessible conventional transit service and its specialized transit service. It can build on current initiatives and further foster a user-friendly, accessible conventional service that voluntarily attracts older adults and riders with a disability away from specialized transit services thereby increasing available space on the specialized service. The City's 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 as well as ensure that the City's transit services remain in full compliance with the AODA.

While the City's conventional transit has been moving towards full accessibility, the service currently does not accept people who use wheelchairs/scooters as required under the AODA, the primary reason being the anticipated negative impact on route schedules and operational reliability as a result of the time that can be required for a person using a wheelchair or scooter to board or exit a vehicle. These concerns are being addressed in the Transit Service Plan described within this study report.

Allowing people with mobility aids to use conventional transit services instead of, or in addition to, a specialized transit service has broader societal as well as financial benefits. Conventional transit services provide people who use mobility aids with greater flexibility in meeting their transportation needs as well as

affording them greater integration into society. Financially, emphasizing greater use of the lower-cost-per-ride conventional transit service instead of the higher cost specialized transit service is a sensible strategy for efficiently investing the City's available transit financial resources. For these reasons, Sarnia should adopt a plan to make its conventional transit service fully accessible as soon as practical.

In order to begin accepting wheelchairs and scooters on conventional transit, the following actions will be required in the short term (1 year) and longer term (2 to 10 years). The objective is to position Sarnia Transit to begin accepting wheelchairs and scooters within one year.

Short Term Actions

- Bus Stops - The City will need to inventory all bus stops to determine required modifications to meet accessibility standards, particularly for accessible paths of travel and location and design of shelters, benches, sidewalks and curb cuts. A bus stop accessibility plan to progressively upgrade stops will need to be prepared

- Bus Fleet – although all conventional buses are "accessible" (either low-floor with ramps or high floor with lifts), several high floor buses need to have their securement hardware (tie-downs) upgraded or, alternatively, have rear-facing positions installed. Over the longer term, the City should replace high floor and small cutaway buses with low-floor buses or larger low-floor buses.

- Bus Operator Training – The City will need to provide training to bus operators in the handling of wheelchairs/scooters including deployment of ramps/lifts, securement of aids, and customer orientation and sensitivity training.

- Operations – The Transit Department will need to develop guidelines as Standard Operating Procedures for handling wheelchair/scooter users in terms of boarding, securement and exiting of bus. Also required are SOPs for situations where stops are not accessible or if a bus cannot accommodate a wheelchair/scooter (ie. advise person to wait for next bus or arrange for either Supervisor with accessible van or CAV to pick up person).

- Operations – Transit will have to make sure all routes are accessible with a minimum of one bus on each route to be accessible at the outset until such time as all buses are fully accessible and establish a process for replacing an accessible bus with another accessible bus in the event of a breakdown.

- Operations Impact – The Transit Department will need to develop a strategy for responding to any significant service delays due to wheelchair/scooter boardings. In view of the current operational issues pertaining to late operation and tight running times, acceptance of wheelchairs/scooters could have an operating cost

impact in order to ensure consistent on-time performance. For example, depending on experience in terms of the number and frequency of wheelchair/scooter boardings/exits, an extra bus may be required to fill in for late operation and ensure on-time performance. Transit may also have to adjust its current policy of buses waiting for transfer connections at terminals. This would have a negative impact to the customer and should be noted.

- Passenger Capacity/Bus Size – Acceptance of wheelchairs and scooters will require additional space within buses, particularly on the small bus fleet, in order that people in mobility aids can maneouvre within the bus and to minimize the impact on other transit users. This issue is compounded by the increased presence of strollers on buses. Overall, larger buses are likely to be required in order to accommodate mobility devices while maintaining total passenger capacity.

- Customer Information Materials – Until such time as all buses are fully accessible, Transit will need to designate which trips on each route are accessible as an information guide to people with disabilities. Customer information materials such as route map, schedules, website, will need to be modified to present this information. Transit will need to prepare an internal SOP for ensuring that accessible buses are available for each trip.

- Customer Orientation – A program for training and orienting mobility aid users in the use of the conventional transit service will need to be developed.

Longer Term Actions

- Bus Stops – complete program to ensure that all stops are accessible with necessary concrete pads, curb cuts, sidewalk links (accessible pathways) as required based on inventory of bus stops noted above. Action by – Transit/Public Works, Finance. This has a budget implication and should be noted.

- Bus Fleet – replace large high-floor buses with low-floor buses and small lift-equipped buses with either small low-floor buses or larger low-floor buses. Replace smaller buses with larger buses in order to maintain overall passenger capacity as necessary. Action by – Transit, Finance.

- Stop announcements – Transit will need to add an external speaker to all buses to provide “Next Stop” announcements to boarding customers. This can be completed in the short term (3 to 5 years) and would be a capital budget item. Action by – Transit, Finance. This has a budget implication and should be noted.

Of the foregoing tasks, the areas of priority for action are transit operations, employee training and customer information materials each of which will have resource and budget implications.

8.3 Implementation Process

In order to make the conventional transit service "accessible" (defined as accepting mobility aids), the City could proceed in one of two ways:

1. Progressively make individual routes accessible; or

2. Make the full transit system accessible as of one date.

Progressively making the transit system accessible has the advantage of transitioning into and assessing the impact of accepting mobility aids from an operations perspective gradually and being able to better respond to any issues on a reduced scale. However, progressive accessibility can lead to inequities between "accessible" and "non-accessible" routes and areas of the City with the result that some form of alternative service would need to be provided to accommodate a person transferring between an "accessible" route and a "non-accessible" route. In the end, this could prove problematic. At the same time, the same level of effort, in terms of bus operator training, development of operational procedures, customer orientation and preparation of customer information materials would need to be completed whether or not a gradual or full approach was taken.

On balance, therefore, the most advantageous and simplest approach is to make all routes on the transit system accessible as of one date. In doing so, however, it is to be noted that not all buses in the City fleet are accessible and that modifications or replacement of vehicles will be required over time. For this reason, a commitment would be made to have a minimum of one vehicle per route accessible with all buses and trips fully accessible as the fleet replacement or upgrade programme permits. Also, it should be noted that, in view of the potential capital investment involved, there will be a significant cost associated with making all bus stops accessible. As the 10-Year Transit Service Plan is recommending changes to the transit route network which will affect bus stop and shelter locations, any upgrade to bus stops and shelters should not commence until the new route network is in place. The timeline for this is likely 2015 or 2016 subject to the budget process, Council approvals and construction of a new east end transit terminal.

In view of the expectations under the AODA and Human Rights legislation, the City should proceed in advance of any route re-structuring through the TMP process to make the conventional transit service fully "accessible" by accepting wheelchairs and scooters. A suitable target date would be spring 2015.

8.4 Financial Implications of AODA Compliance

Several of the foregoing tasks will have immediate (2013 and 2014) operating budget implications. The most significant costs are related to employee training, ensuring operational reliability, production of customer information materials, customer orientation and inventory of bus stops. Operating budget cost estimates for each of the foregoing areas should be developed by City staff once the scope and content of each program is finalized. There will also be multi-year capital cost implications associated with the requirement to upgrade bus stops

and shelters and the bus fleet. Cost estimates for these programs are identified in the service plan budget.

9. Transit Supportive Policies

9.1 Policy Framework

An urban transit system cannot function and thrive solely on the basis of the level and quality of service it provides. A wide range of external factors, such as urban development patterns, traffic and parking policies, can have a significant impact on how effectively the transit service performs and how efficiently the service functions financially. City Council, as the body responsible for not only the delivery of transit services but also transportation, parking and development policies, should consider the impact of the various decisions and policies it enacts on the performance of its transit system. The starting point is to provide strong statements in the City's Official Plan (OP) about the role of the public transit system in the community and how the use of transit will be encouraged and supported in all policy actions and planning processes the City undertakes. Next, the City should set goals and objectives for the transit system such as modal split targets, ridership levels and service levels in the Transportation Master Plan (TMP). The City is in the process of up-dating its TMP. The current TMP has not clear goals or modal split targets for transit. As a result, the role of transit in the community is unclear, a fact supported by the views of stakeholders and the performance of the transit service.

The transit strategic plan study will provide role, policy and ridership objective guidelines for inclusion in the TMP in the Business Plan to be developed next.

In addition to statements and objectives in the OP and TMP, there are a number of "transit supportive" policies and decisions 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. This section identifies and discusses a number of these actions.

9.2 Land Use Planning Policies

Land use planning needs to be more supportive of public transit in the location of subdivisions and the placement of roads and high density development in the subdivisions. This starts at the provincial policy level with the Strong Communities Act (2004), plus the new provincial Policy Statement (2005) that requires municipalities to establish land use patterns, densities and mixes of uses that plan for public transit (Policy 1.6.5.4). The following are recommended guidelines which the City should be applying to its zoning by-laws and subdivision approvals to enhance transit-supportive development:

- **Location of New Developments** – new developments should be infill developments along roads and in areas adjacent to roads with frequent all-day transit service. Intensification should be encouraged in the main transit corridors. Isolated developments with under 1,000

people more than 1 kilometre from a transit route should be discouraged.

- **Design of Subdivisions** – new subdivisions should be linked to adjacent neighbourhoods. Collector roads should be continuous through the subdivision and should be designed for the efficient routing of buses. Local roads and lots should be spaced so that 90% of the subdivision is within a 300 metre walk of a bus stop on the collector road system in the subdivision or on the arterial roads adjacent to the subdivision. High density residential and employment-related development should be located on the collector road system in the subdivision or along the arterial roads adjacent to the subdivision. Reverse-frontage development on arterial roads should be avoided as it is unfriendly to transit and a potentially unsafe walking environment.

- **Subdivision Approval and Staging** – Transit needs to be involved in all stages of the subdivision approval process. A Developer should be required to enter into an agreement with the City regarding the staging of the development and the completion of essential roadways for transit access prior to full habitation.

9.3 Parking Supply and Pricing

Controls on parking supply combined with parking price increases would increase the attractiveness of transit. In recent years, low downtown parking prices, increased parking supply, and abundant, free parking have encouraged greater auto use. Several mechanisms are available for controlling parking supply and pricing to better level the playing field between transit and automobiles.

Current parking pricing for daily and long term (monthly) parking costs less than the equivalent price to take transit. Current daily rates are $0.50 per hour off-street and free for under 2 hours. The off-street rate equates to $4.00 per day for 8 hours which is less than a round-trip on transit. Monthly rates are $44.75 while a monthly transit pass is $66.00. Clearly, parking rates are supportive of car use which is counter-productive to encouraging greater use of transit. Parking rates should, as a minimum, be equal to the cost of using transit or, preferably, higher.

At the same time, the City's guidelines for parking supply as part of new or existing developments is generous which, similarly, does not directly support increased transit use.

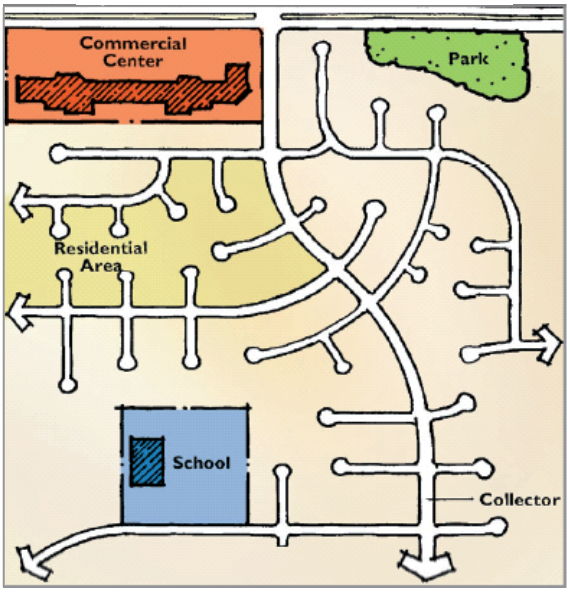
9.4 Transit-Oriented Development

The relationship between urban growth and mass transit is the primary factor influencing the demand for transit. The shape and structure of urban development can work for or against transit ridership. The images below illustrate some of the differences between conventional auto-oriented urban development and new styles that promote more compact and pedestrian-friendly urban design. A sparse, auto-oriented area where

housing is separated from other activities makes transit more difficult to use and less attractive. In contrast more compact development with a variety of activities and that encourages walking creates an environment where transit is easy to use and more attractive.

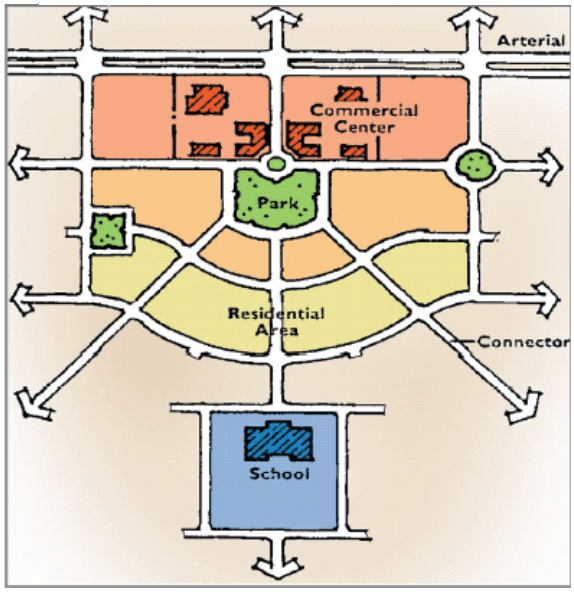
Exhibit 9-1: Example of Transit-Oriented Subdivision Planning

Conventional Auto-Oriented



Makes travel by foot or bike difficult. Expensive to service with transit.

Pedestrian & Transit Oriented



Balances auto & pedestrian access. Easy to bike or use transit.

IBI/Calthorpe Associates

Transit-oriented development is a particular strategy for urban development that makes transit more attractive through well-designed physical connections between high-quality transit service and compact residential and commercial areas. TOD provides architectural, planning and urban-design guidelines for shaping neighbourhoods into configurations that are pedestrian and transit friendly. Typical features of TODs are compact, mixed-use neighbourhoods that use streetscape improvements and other urban design strategies to create attractive atmospheres that encourage walking and transit ridership.

The intent of transit-oriented development is to concentrate as much potential ridership as possible in close proximity to a transit station while creating an environment that further encourages walking and transit use.

A philosophy closely related to TOD is smart growth - a family of regional policy tools that encourage redevelopment of core urban areas and limitations on new development on the urban periphery. Rather than expanding service into hard to serve areas, smart growth allows and encourages more people to live and work where high-quality transit service can be easily provided. TODs are often seen as one tool for achieves smart growth goals.

Specific transit-supportive policies should be included in the City's Official Plan as well as the new Transportation Master Plan.

Parking supply and pricing policies which would help support increased use of public transit by both limiting the amount of parking available in key areas such as the downtown and mall developments, as well as pricing parking rates to be at least equivalent to the use of public transit, if not higher, should be adopted.

In general, the Transportation Master Plan (TMP) should incorporate the vision, mission statement, goals, objectives and service standards outlined in section 8.2 above. A key element of the transit component of the TMP is that the transit share of all trips taken within the city (mode share) should be increased from the current approximate 2% to 3.5% over the next 10 years. This would be achieved by implementing both the recommended route network re-structuring proposed within the Transit Service Plan (section 8.4) and the increases in transit investment and service levels to match the levels of Sarnia's peer communities.

10. 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.

An additional benefit is the property impact of enhanced land accessibility that increases residential and commercial values. Another is a reduction in traffic delays and congestion costs.

For Sarnia specifically, the benefits of an improved public transit service would be:

- Support for the City's growth plan by:
    - **Attracting and retaining businesses**.
      Business growth will be essential to the City's future economic viability and vitality. Enhanced transit service can help attract and retain these businesses by improving accessibility and reducing costs for companies. For example, construction and maintenance costs can be significantly reduced for a business along a transit line if there was no need to construct a parking lot.
    - **Attracting and retaining residents**
      An efficient transit system enhances the image of a city to potential new residents, by providing options and choices in how to get around a city. The added option of transit can help families reduce costs, young professionals to avoid the burden of car ownership
    - **Serving new areas**
      Providing quality transit into newly developed areas sooner, rather than later, has proven to increase transit usage in residential and commercial areas. In addition, transit lines will influence how a community develops by encouraging transit-oriented development.

- Supporting local business and the tourism industry by providing access for residents in the region to work opportunities, particularly for lower wage earners that work in the service industry who may not have access to a private vehicle

- Supporting the tourism industry by providing transit access to key attractions and trip generators. This would make the city more attractive to tourists who do not have access to a car or for those unfamiliar with the city.

- Mobility options for the aging population whose demands for a high quality of life will require a level of mobility equal to what they experience today.

- Reduction in the cost of living by reducing reliance on the automobile

- Reduction in pollution (GHG's) and resulting in improved air quality

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.

11. Recommended Actions and Implementation Plan

The foregoing sections outline the proposed 10-Year Master Plan for the City's conventional transit service, Sarnia Transit, designed to improve and enhance these services consistent with the overall objective of increasing transit ridership as a core element in the city's Transportation Master Plan objective of promoting alternatives to the automobile and to minimize the environmental impact of transportation on Greenhouse Gas Emissions. The Master Plan also provides direction and actions for enhancing the City's investment in its transit system.

The Transit Service Plan proposes a restructuring of the transit route network to better serve residents' travel patterns, serve new areas of the city as well as to address existing transit operational issues including schedule adherence.

Together with the Care-A-Van Program review and the ITS Plan and the Conventional Transit Service Plan, these documents form the Transit Master Plan for the 10-year period, 2015 to 2024.

11.1 Key Features of the Master Plan

The following are the key features or aspects of the proposed Sarnia Transit Master Plan:

- Development of 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.

- Adopt the recommendations contained in the Care-A-Van Service Review report including changes to eligibility criteria; and

- Endorse the recommendations and priority projects contained in the ITS Plan report.

11.2 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.

11.3 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).