



The City of Orillia
Operational Review of Orillia
Transit Service

May 21, 2017

Transit Consulting Network
283 Golf Road, Keswick, Ontario L4P 3C8

City of Orillia Project Team

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1. INTRODUCTION

1.1 Introduction

The City of Orillia completed a review of its fixed-route transit service in 2009 that resulted in the expansion of service to meet the growing demand for transit. The City of Orillia retained the services of Transit Consulting Network to develop a transit service plan over the next five years. The plan is to build on recent successes, improve service reliability and accessibility, expand transit's reach within the City, and identify alternatives to improve upon the existing route and route network design that would also consist of assessing the downtown terminal in terms of its functionality and potential relocation. A five-year transit asset management plan will also need to be in place to ensure sufficient rolling stock, infrastructure and technology is in place to support the proposed transit service plan.

1.2 Study Scope

The Operational Review of Orillia Transit Service Request for Proposal identified the following study objectives to be reviewed and analyzed:

- Efficiency and effectiveness of existing routes and schedules
- Schedule and route restructuring including recommendations for improvements to existing transit routes
- Options for the expansion of service areas not serviced by transit
- Transit terminal location
- A comparison with key metrics with other municipal transit systems of comparable size
- Vehicle requirements
- The possible utilization of electric and/ or hybrid buses including a cost/ benefit analysis
- Total cost/ benefit of placing bike racks on buses

The study was broken down into the following phases and tasks:

- Phase I: Existing Transit Environment
 - Transit Report Card and Peer Review: To assess Orillia Transit's performance over the recent five-year period and how the performance compares with others in its peer group
 - Community Engagement: To identify transit improvement priorities based on input from a wide range of stakeholders, including the general public
 - Analysis of Existing Transit Services: To assess the existing transit services based on available operations and boarding data provided by the City of Orillia and terminal options
- Phase II: Transit Policy Framework
 - Goals and Objectives: City of Orillia policy direction to guide Orillia Transit over the next five years based on Study Phase I findings
 - Transit Service Design Guidelines: To guide the development of the five-year transit service plan based on the goals and objectives of the study
 - Route and Service Alternatives: Assessment of transit service alternatives that can be considered by the City of Orillia today and in the future
 - Transit Ridership Growth Strategies: Industry best practice strategies applicable to the City of Orillia that can be considered to grow transit ridership today and in the future
 - Route and Service Concepts: The development of preliminary route and service design concepts that would form the basis of the five-year Transit Service Plan

- Phase III: Final Transit Service Plan and Financial Plan
 - Five-year Transit Service Plan: Proposed transit service changes for each of the next five years
 - Five Year Transit Operating Budget: Proposed five-year transit budget based on the proposed transit service plan
 - Five Year Capital Budget: Proposed capital budget needed to support the transit service plan
 - Recommendations
 - Next Steps: To guide City of Orillia staff over the next five years

1.3 Description of Orillia Transit Service

The City of Orillia has had transit service since the 1950s through a private operator, Orillia Transportation Company. Responsibility for the service was then assumed by the city in 1975 and in 1978 a specialized transit service - Orillia Wheelchair Limousine Service (OWLS) - was introduced.

Orillia Transit operates a radial route system whereby all buses connect every 30 minutes in the downtown using an on-street bus terminal located at Mississauga Street and West Street. Buses currently operate from 6:15am to 10:45pm on weekdays, 8:45am to 7:45pm on Saturdays and 8:45am to 4:15pm on Sundays. There is no statutory holiday service.

To support the service, the City of Orillia owns 11 accessible buses with five scheduled to operate at any one time. It is worth noting that three new Nova buses were delivered in December 2016 to replace three older buses in the fleet. The older buses will be kept in storage for use, as required.

The 30-minute service works very well and provides for an easy to comprehend schedule; however, due to the success in transit ridership growth in recent years and increased vehicular traffic, there has been a strain placed on the transit system.



1.4 The Case to Support Transit Investments

Communities are finding that residents faced with the loss of personal mobility or are unable to afford a car, are increasingly inclined or obliged to move to communities where affordable public transportation exists. Likewise, employers consider the availability of public transportation when making business location decisions. A major factor that makes possible a good quality of life is the availability of affordable public transportation since it enables those without access to a private car to access goods, services, jobs, and maximize social connectedness, which is now considered a health-related benefit.

The market for transit – students, the working poor, people with disabilities, senior citizens, people on social assistance, and those that simply want to do without that 2nd or 3rd car are all segments of the population whose needs should not be ignored. The viability of policies to maintain the elderly in their homes instead of in long-term care, access to health care, social services, and essential maintenance such as shopping and banking all depend on personal mobility. Community leaders seeking to reverse or stabilize a potential decline in population must consider access to transportation as a key issue affecting the vitality and the financial health of their community.

Another key factor that can be considered to support the availability of affordable public transit is the positive financial impact transit can have on a community. For example, the ability to reduce car ownership can have a profound effect on a household’s finances and quality of life. Table 1: CAA 2015 Driving Costs provides the true cost of car ownership using a Camry LE.

ANNUAL DRIVING COSTS – based on the Camry LE				
Km driven per year	Annual operating costs (variable)	Annual ownership costs (fixed)	Total cost	Cost per km
12,000 km	\$1,975.20	\$7,179.84	\$9,155.04	\$0.76
16,000 km	\$2,633.60	\$7,494.00	\$10,127.60	\$0.63
18,000 km	\$2,962.80	\$7,494.00	\$10,456.80	\$0.58
24,000 km	\$3,950.40	\$7,801.08	\$11,751.48	\$0.49
32,000 km	\$5,267.20	\$8,373.48	\$13,640.68	\$0.43

Table 1: CAA 2015 Driving Costs

For auto owners that drive 16,000 kilometres per year, the total annual cost reported to own and operate a vehicle is \$10,127 per year. Arbitrarily applying a factor of 75% to be conservative, this would still equate to \$7,600 per year or \$630 per month compared to an Orillia Transit monthly bus pass at \$47, saving residents \$583 per month. The savings would likely be spent on local goods and services, improving the quality of life of residents and supporting local businesses.

For those residents that earn little income and are forced to own a vehicle in order to get to and from work, car ownership becomes a financial burden. For example, a person working part-time 24 hours per week with a net income of \$10 per hour must work 16 hours per week to own and operate a vehicle; this consumes two-thirds of their earnings. A major car repair expense can be devastating. Those on low fixed incomes or under-employed face even more challenges. Fortunately, the City of Orillia has a record of financially supporting fixed-route transit.

The modern understanding of public transportation is to see it as a Family of Services rather than being limited to the usual fixed route bus service (Orillia Transit) and specialized transit such as OWL Limousine. Each member of the Family of Services has different strengths and cost levels. Taken together, they support each other to provide, overall, an excellent range of mobility choices as an alternative to the private car.

The ultimate goal and challenge is to make adjustments to Orillia Transit that will maintain an ability to meet the community needs and comply with existing and impending AODA requirements, while operating effectively within available resources, and not over-committing the City of Orillia financially. The study must find solid evidence on which to base recommendations that will lower the cost and/or improve the quality of transit and mobility services, while ensuring full and timely compliance with AODA IASR requirements.

2. PHASE I: EXISTING TRANSIT ENVIRONMENT

2.1 Transit Report Card and Peer Review

The Canadian Urban Transit Association (CUTA) has kept records of individual transit systems and their performance across Canada since the 1970's when transit systems began reporting data annually. The data is summarized in the Canadian Urban Transit Fact Book. This mature database has evolved over the years, is consistent, and is designed for industry professionals. The Ministry of Transportation of Ontario requires Ontario municipalities that apply for the 2-cent per litre dedicated gas tax funding to report similar statistics as a condition of funding. The Ontario database is managed by CUTA.

The data was analyzed for two purposes:

- To measure Orillia Transit performance over a 6-year 2010-2015 period. It should be noted that 2015 data became available during the study and was added as a sixth year to the five-year 2010-2014 Report Card
- To compare key 2014 Orillia Transit performance metrics in relation to its peer group

In summary, Orillia Transit's performance has been exceptional over the 2010-2015 period in terms of transit ridership growth, transit system efficiency and effectiveness and, in comparison to its peer group, Orillia Transit stands out as a top tier performing transit system; however, this has come at a price. The increased demand has resulted in more stops being made and lower bus travel speeds on some routes that have resulted in transfer connections being missed in the downtown.

2.1.1 2011-2015 Orillia Transit Report Card

Table 2: 2011-2015 Orillia Transit Performance Data quantifies the change in performance over the five-year period.

2010 to 2015 CUTA Statistics - Orillia Report Card													
Year	Service Area Population	Population per km ²	Ridership (revenue passengers)	Total Direct Operating Expense	Passenger Revenues	Revenue Vehicle Hours	Cost Efficiency (Cost per Hour)	Revenue Passengers per Revenue Hour	Revenue Vehicle Hours per Capita	Revenue Passengers per Capita	Municipal Operating Contribution per Capita	Adult Cash Fare	Average Fare
2010	31,716	1,101	449,388	\$1,419,667	\$549,736	20,567	\$69.03	21.85	0.65	14.17	\$13.88	\$2.25	\$1.22
2011	32,140	1,116	575,095	\$1,586,092	\$702,724	23,333	\$67.12	24.65	0.73	17.89	\$12.73	\$2.25	\$1.22
2012	30,659	1,065	675,000	\$1,609,697	\$755,752	25,361	\$63.47	26.62	0.83	22.02	\$14.38	\$2.00	\$1.12
2013	31,564	1,096	750,000	\$1,760,023	\$891,251	25,379	\$69.35	29.55	0.8	23.76	\$14.05	\$2.00	\$1.19
2014	32,945	1,144	750,000	\$1,815,905	\$878,622	25,881	\$70.16	29.0	0.79	22.77	\$13.98	\$2.00	\$1.17
2015	32,945	1,144	750,000	\$1,838,744	\$836,480	25,942	\$70.88	29.0	0.79	22.77	\$15.82	\$2.00	\$1.12
% Change 2014 Vs 2010	3.9%	3.9%	66.9%	29.5%	52.2%	26.1%	2.7%	32.6%	21.5%	60.7%	14.0%	-11.1%	-8.2%

Table 2: 2010 – 2015 Orillia Transit Report Card

2.1.2 2014 Orillia Transit Peer Review

Comparisons were made of the various operating, service performance and financial data with eight other Ontario transit systems. Caution must be exercised when comparing peer review statistics since the peer review only provides a high level assessment of transit service levels and costs in other comparable jurisdictions.

The criteria guiding the selection of peer review jurisdictions for comparison purposes with the City of Orillia were Ontario municipalities with a population below 40,000 with a similar service area and population density. It should be noted that transit systems across Ontario can vary significantly due to factors such as:

- Local labour costs
- Municipally operated versus contracted services
- Climate and topography, local bus fare policies
- High school student transportation policies (yellow school bus versus public transit)
- Local financial commitment to transit

Eight (8) Ontario municipal jurisdictions were selected and the 2014 data illustrated in Table 3 below. Since transit operating environments can vary significantly, direct comparisons between one jurisdiction and another should not be made.

Note: although 2015 data is available for Orillia Transit, the 2015 data for the peer group transit systems were not made available at the time of this analysis; this has no impact on the final report recommendations.

2014 Canadian Urban Transit Association Statistics Peer Review														
Jurisdiction	Service Area Population	Service Area Size	Population per km ²	Ridership (revenue passengers)	Total Direct Operating Expense	Passenger Revenues	Revenue Vehicle Hours	Cost Efficiency (Cost per Hour)	Revenue Passengers per Revenue Hour	Revenue Vehicle Hours per Capita	Revenue Passengers per Capita	Municipal Operating Contribution per Capita	Adult Cash Fare	Average Fare
Orillia	32,945	28.8	1,144	750,000	\$1,815,905	\$878,622	25881	\$70.16	29.0	0.79	22.77	13.98	2.00	1.17
Brockville	21,870	20.3	1,077	110,466	\$706,150	\$203,828	10841	\$62.91	10.2	0.50	5.05	\$14.40	\$2.25	\$1.85
Owen Sound	22,000	23.7	928	210,702	\$1,251,073	\$330,242	13608	\$89.57	15.5	0.62	9.58	\$34.99	\$2.50	\$1.57
Orangeville	29,400	14.0	2,100	110,254	\$714,813	\$154,505	9999	\$69.29	11.0	0.34	3.70	\$7.10	\$2.00	\$1.40
St. Thomas	36,000	35.7	1,008	198,400	\$1,065,843	\$332,104	17017	\$62.63	11.7	0.47	5.51	\$17.27	\$2.50	\$1.67
Stratford	32,000	27.0	1,185	615,745	\$2,411,846	\$872,691	29836	\$77.19	20.6	0.93	19.24	\$47.42	\$2.75	\$1.42
Timmins	38,622	24.0	1,609	958,868	\$4,726,880	\$1,482,472	40941	\$115.46	23.4	1.06	24.63	\$79.22	\$2.50	\$1.55
Collingwood	19,000	27.1	701	220,755	\$809,796	\$218,458	11625	\$60.24	19.0	0.61	11.62	\$20.74	\$2.00	\$0.99
Woodstock	38,000	39.0	974	346,369	\$1,897,351	\$440,764	18430	\$99.48	18.8	0.49	9.11	\$22.27	\$2.00	\$1.27
Average of Peer Group	29,982	26.6	1,192	391,284	\$1,711,073	\$545,965	19,798	\$78.55	17.7	0.65	12.38	\$28.60	\$2.28	\$1.43

Table 3: 2014 Orillia Transit Peer Review

2.1.3 Assessment of Orillia Transit Performance

2.1.3.1 Transit Ridership and Services Hours

As can be seen in Exhibits 1 and 2, while the amount of service provided increased by 26.1% from 2010 to 2015 in Orillia due to new Sunday service and expanding evening hours of operation, transit ridership grew by an impressive 67%.

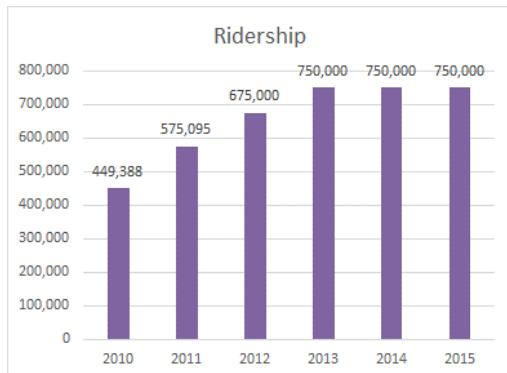


Exhibit 1: 2010-2015 Orillia Transit Ridership

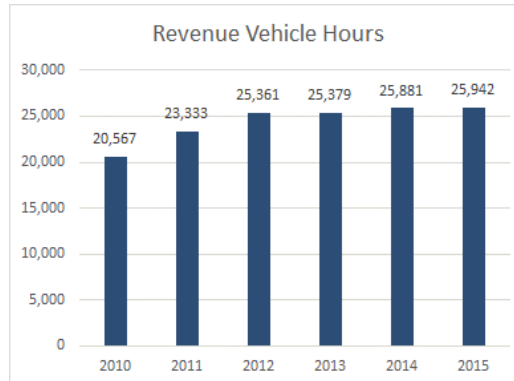


Exhibit 2: 2010-2015 Orillia Transit Revenue Hours

To quantify the relative amount of service provided by the City of Orillia, the Service Hours per Capita measure has been developed in the industry, which is simply the number of annual hours of revenue service divided by the service area population. These have been summarized in Exhibits 3 and 4.

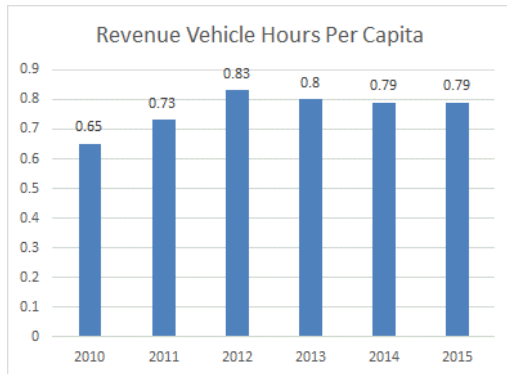


Exhibit 3: 2010-2015 Orillia Revenue Hours per Capita

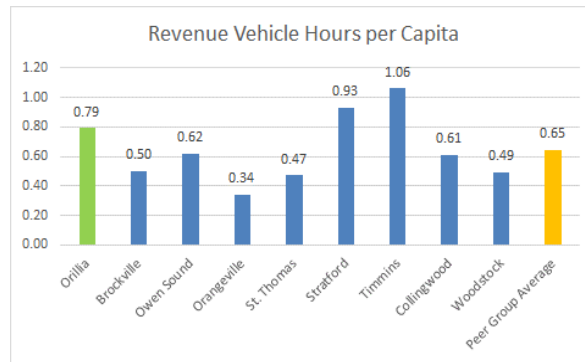


Exhibit 4: Peer Group Revenue Hours per Capita

On a per capita basis, Orillia Transit increased service from 2010 to 2015 by 21.5% while population grew by only 3.9%. In comparison to its peer group in 2014, Orillia Transit provided 21.5% more service hours per capita. Although this compares well, it should be remembered that although service has levelled off, there are operational issues due to schedules not being met as a result of increased transit demand, particularly on the Georgian and West Ridge routes. This becomes clearer when one looks at transit service performance during the same period.

2.1.3.2 Orillia Transit Efficiency

Transit systems across Canada use the Revenue Passengers per Hour of service statistic as one measure to quantify transit efficiency and to help determine when to increase or modify service. Exhibit 5 and Exhibit 6 illustrate Orillia Transit’s efficiency from 2010 to 2015 and in comparison to its peer group, respectively.

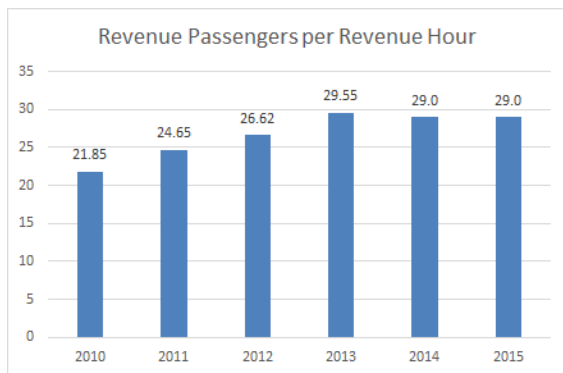


Exhibit 5: 2010-2015 Orillia Revenue Passengers per Hour

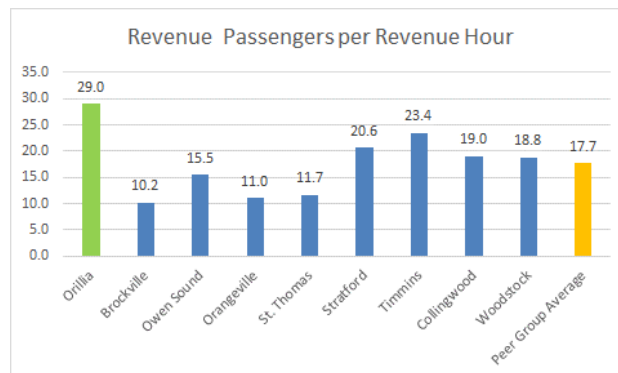


Exhibit 6: 2014 Peer Group Revenue Passengers per Hour

The 32.6% improvement in service efficiency from 2010 to 2015 during the time when the hours of service increased by 26.1% is commendable. In comparison to the peer group average in 2014, Orillia Transit excelled, carrying 64% more passengers per hour of service. As demand grows further in Orillia while hours of service remain constant, transit efficiencies will continue to improve; however, it also points to potential problems such as schedule reliability, associated with increased bus loads and the need to add service.

2.1.3.3 Orillia Transit Service Effectiveness

A key measure of a transit system’s effectiveness is how many trips are taken annually based on the population served in a given year, which is expressed in the industry as Revenue Passengers per Capita. This is calculated using the total passengers carried in a given year divided by the population reported. If transit ridership growth exceeds population growth then service is deemed to be more effective and as such, transit becomes a more integral component of urban travel.

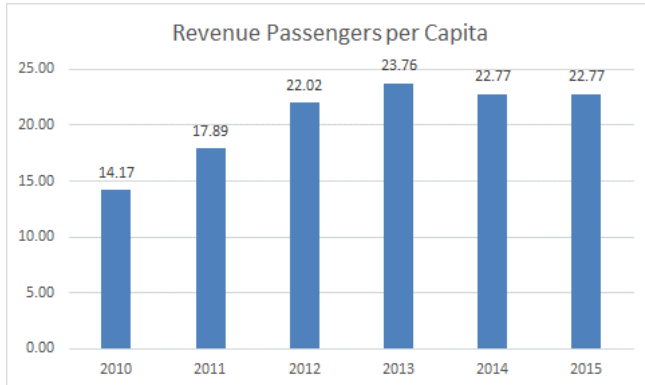


Exhibit 7: 2010-2015 Orillia Revenue Passengers per Capita

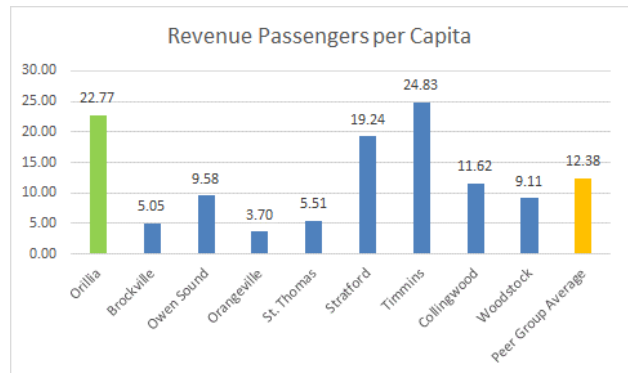


Exhibit 8: 2014 Peer Group Revenue Passengers per Capita

Exhibit 7 clearly shows that Orillia Transit’s effectiveness has improved by a very significant 60% from 14.17 trips per capita in 2010 to 22.77 trips per capita in 2014 and 2015. It also exceeds the Ontario peer group average of 12.38 passengers per capita in 2014 by a remarkable 84%.

2.1.4 Orillia Transit Financial Indicators

A key metric that transit systems use to track financial performance is the direct cost per hour of service. This can vary significantly between transit systems due to differences in operating environments. A more important comparison would be to look at individual transit system performance over time to identify trends while a peer group comparison provides an opportunity to determine whether or not a transit system is in line with the norm.

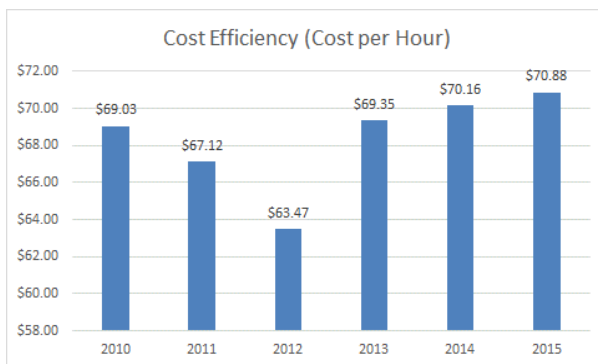


Exhibit 9: 2010-2015 Orillia Transit Cost per Hour

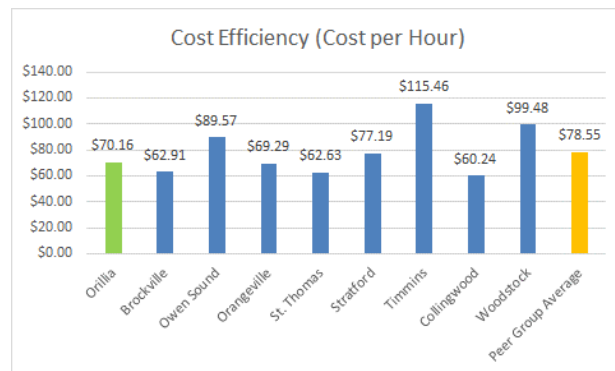


Exhibit 10: 2014 Peer Group Cost per Hour

Exhibit 9 illustrates that Orillia Transit’s hourly cost in 2010 was \$69.03 and only increased by 2.7% to \$70.88 in 2015, which is well below the cost of inflation over the five-year period. When compared to the peer group in Exhibit 10, Orillia Transit’s hourly cost is 10.7% below the average of \$78.55 in 2014. The peer group values range from a low of \$60.24 in Collingwood to a high of \$115.46 in Timmins. Transit system wage rates, operating environments, topography, etc. can vary significantly across Ontario and as such, the hourly cost of service should not be compared directly with any individual transit system. Reasons that can be attributed to Orillia Transit’s relatively low costs are the private sector agreement in place and, from consultant observations, the low administrative overhead costs at the City of Orillia.

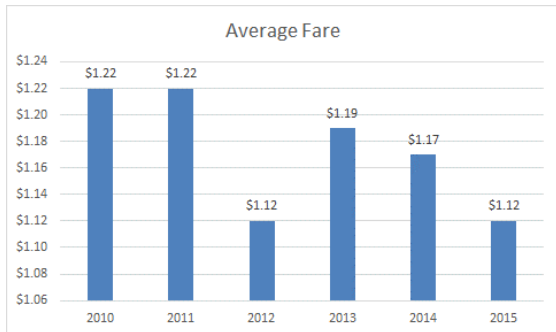


Exhibit 11: 2010-2015 Orillia Transit Average Fare

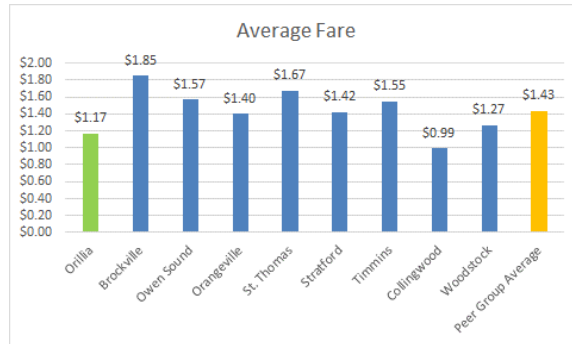


Exhibit 12: 2014 Peer Group Average Fare

Although transit costs have increased by a nominal 2.7% from 2010 to 2015, the average fare paid by Orillia Transit passengers has decreased by 8.2% from \$1.22 in 2010 to \$1.12 in 2015. This can largely be attributed to a reduction in the adult cash fare from \$2.25 charged in 2010 and 2011 to \$2.00 in 2012, which has not been increased since. What is telling is that in Exhibit 12, the average Orillia Transit fare of \$1.17 is 18.2% below the peer group average fare of \$1.43. Given that service has expanded and fares have not kept pace with inflation, it is reasonable to assume that fare increases could be justified especially if service is expanded further.

A municipality’s commitment to transit is reflected by the quality of the transit service (e.g. service reliability) and the quantity of the transit service provided (e.g. hours of service per capita), which is dictated by the financial resources made available. The municipal operating contribution per capita is a high-level measure of the local municipal investment that is calculated using net transit costs (total direct operating costs less revenues) and dividing by the total population served.

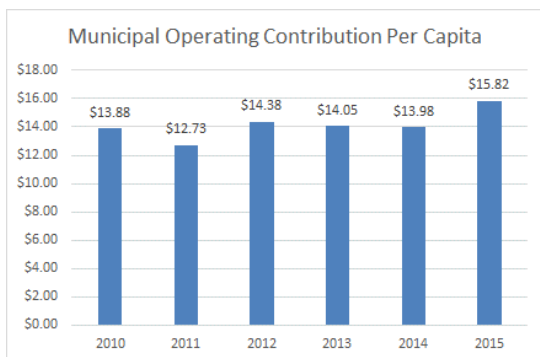


Exhibit 13: 2010-2015 Orillia Transit Net Cost per Capita

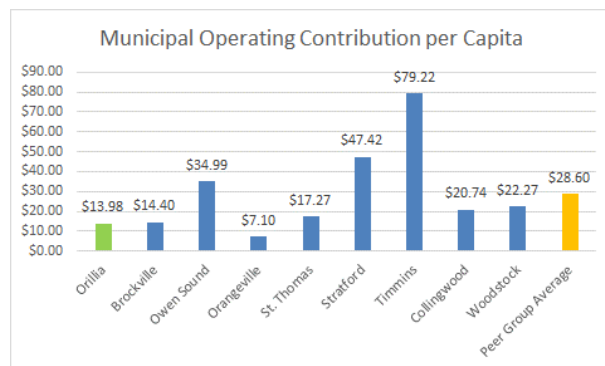


Exhibit 14: 2014 Peer Group Net Cost per Capita

As shown in Exhibit 13 there have been variations over the 2010-2015 period in terms of the City of Orillia municipal contribution to support transit on a per capita basis; however, although the contribution made in 2015 (\$15.82 per capita) is increased by a nominal 14% over 6 years, this is well below the peer group average. In 2014, the City of Orillia stood out at contributing significantly less than the average of the peer group systems (\$28.60 per capita). Much of this positive comparison is attributed to the low cost of the service combined with the highest efficiency of the peer group transit systems in terms of passengers carried per hour of service.

2.1.5 Summary of Report Card and Peer Review

Based on the Report Card and Peer Review findings, the City of Orillia has made significant progress from 2010 to 2015 for all efficiency and effectiveness metrics. Orillia Transit also stands out and compares well with its peer group transit systems with populations served less than 40,000 with similar population densities. Although the statistics show well, they do not necessarily mean things should not change.

For example, the 29.0 passengers carried per hour of service is well above the peer group average and could mean that the 32.6% increase since 2010 translates to more frequent bus stops and, eventually, negatively impacting schedule adherence. It could also mean that buses may be overcrowded. If this is the case, it will have a negative impact on future growth in transit ridership.. With the success of the Lakehead University U-pass program, growth in the number of Georgian College students and staff, and normal population and employment growth, additional expectations will need to be addressed. Fortunately, Orillia Transit continues to be performing well.

2.2 Community Engagement

The community engagement process consisted of two components:

- Informal Transit Focus Group meetings to obtain preliminary input and to discuss ideas from select representatives of the community
- Community-wide online and hard copy survey to obtain input from residents throughout the community

2.2.1 Transit Focus Groups

The focus groups and surveys were designed to help prioritize transit investments based on industry best practices in route and service design.

The stakeholder consultations consisted of informal roundtable meetings presenting all participants with an opportunity to be involved in very frank discussions, which would go a long way to successful study completion. Transit Consulting Network provided an overview of the study and the desired study outcomes along with best practices in similar municipalities with transit systems across Ontario. This information provided the Transit Focus Group (TFG) participants with background relative to the role that transit can play to better enable them to provide meaningful input based on their own perspectives. The TFG discussions enabled TCN to more fully understand community needs from a cross-section of interest groups.

TCN facilitated a number of stakeholder consultations, including Transit Focus Group (TFG) meetings:

- Transit Advisory Committee (March 9,2016)

- TFG #1: Georgian College (March 30, 2016)
- TFG #2: Lakehead University (March 30, 2016)
- TFG #3/#4: Senior Management Team and Council Members (combined)
- First Student Bus Operator Drop-in (June 1, 2016)
- Public Open House (June 2, 2016)

The Transit Advisory Committee meeting provided Transit Consulting Network with insight to the issues that were likely to come up with the various TFGs. The discussion points and issues raised by the stakeholder participants and the general public were summarized as follows:

2.2.1.1 Georgian College and Lakehead University

Two post-secondary institution TFG meetings were held consecutively. Both provided similar input, regardless of the school attended. There was a balanced representation of the 13 TFG participants that consisted of those that currently use transit as well as those that drive to school, including former transit customers and those that take the bus occasionally.

Highlights of the discussions are provided as follows:

Route Coverage

- The route system coverage is considered good
- Students predominantly reside in the areas of the City that are served by West Ridge and Georgian routes
- Some Georgian students live in the West Ridge area due to lower housing prices (this forces transfers)
- Walmart service is only in one direction, which forces West Ridge residents to travel to Walmart via the downtown.
- More direct service between West Ridge and Georgian College would help

Service Reliability

- Both West Ridge and Georgian routes are not reliable, especially during peak hours
- Some transfers are not being met, which forces students to walk long distances, wait in inclement weather or forced to take taxis, which is cost prohibitive for most students
- Late buses attributed to Walmart route deviation, circuitous travel on Georgian route and high demand during peak hours
- When transfers are missed, long wait times of 25 minutes to board the next bus are experienced. If it the last trip of the day, transit customers may be forced to use taxis.

Frequency of Service

- The current 30-minute service is considered to be good if buses are on time but less frequent service would not meet their needs
- Additional Georgian Route bus suggested 8am-10am, noon-2pm and 4-6pm to coincide with class times; this would result in 15-minute service and shorter, more acceptable wait times

Span of Service

- Would like to see at least one extra trip added to the schedule
- Saturday last trip at 8:15pm does not meet needs students with part time jobs
- Sunday last trip at 4:30pm does not accommodate part time job hours or those that return from home on weekend inter-city coaches

Customer Service

- Some bus operators also complain about the transit system
- Bus destination signs not being changed

Other Topics

- Fares would be considered reasonable if service improved
- Bike racks would help, especially at the end of a route when service is no longer available or a connection has been missed
- There may be linking of programs between Lakehead and Georgian in the future
- There was support for a link between Lakehead and Georgian via Highway 12
- There was support for the use of taxis if demand was too low for bus service at the end of the service day
- Bus stop request for both sides on West Ridge Blvd. at Diana Dr.

2.2.1.2 Senior Management Team and Council

Two consecutive TFG meetings were held at the City of Orillia that began with a PowerPoint presentation followed by an informal workshop.

Highlights of the discussions are provided as follows:

Route Coverage

- Low income households should be well served
- Priority destinations were identified in the study Request for Proposal
- Future Costco and Hydro One sites should be accommodated
- Should meet walk distance to bus stop guidelines
- Avoid route changes that serve the few if it negatively impacts the majority

Service Reliability

- Recognized that drivers operate at high speeds at some periods of the day
- Consider a schedule adherence policy

Frequency of Service

- Do not change the current 30-minute service frequency
- Consider 15-minute service on a main route

Span of Service

- Start weekend service earlier
- Later evening service all days should be considered
- Complaints that there is no holiday service but perhaps there could be a reduced level of service to accommodate those that must work such as nurses and retail employees

Other Topics

- Consider the tourism market such as providing day passes for sports events, etc.
- Smart Bus technology should be embraced recognizing that Orillia Transit is headed in that direction such as through the GPS-based Bus Stop announcement system that was purchased through Metrolinx
- Would be great if Georgian College students had a U-pass similar to Lakehead University

- Bike racks on buses would enable people to get to more places (i.e. continue their journey at the end of the route); distance to travel from one end of the City to the other is prohibitive for many
- Bus terminal location and amenities need to be addressed
- Noted that 2,000 housing units are to be built within the CBD/ downtown
- Can we consider eliminating some transit and provide taxi vouchers?
- Connect with youth since it was recognized that millennials are more transit-supportive than previous generations
- Advertising revenues recognized as a significant component of overall revenues
- It was noted that OWLS (accessible transit service) hours of operation must increase if Orillia Transit service hours of operation are increased

2.2.1.3 First Student Bus Operator Drop-in

Transit Consulting Network met on June 1, 2016 with up to eight representative First Student bus operators – Orillia Transit’s front line staff - from 1:00pm to prior to the commencement of their afternoon shift (2:30-3:00pm). Bus operators were notified ahead of time of the meeting by First Student management. The interest level was high since it provided a first time opportunity for bus operators to identify issues, express what the priorities were from their perspective and identify potential solutions. An enlarged Orillia Transit public route map was on display and marked, accordingly.

Overall, the bus operators identified operational problem areas that were similar to those expressed by other stakeholder groups. For example, some bus routes had too much layover while others (e.g. West Ridge and Georgian) had insufficient running times; the traffic signal lights and general traffic congestion along Coldwater Road created significant delays; and circuitous bus travel in the downtown to access their departure bus bay was also identified as a problem area. It was suggested that buses inter-line between routes to match a route with little built-in layover time with a bus route with more layover time. This would help balance travel times and potentially reduce bus circulation in the downtown.

The opportunity to provide input was well received by the bus operators while the feedback received by Transit Consulting Network was considered invaluable since it reinforced what other stakeholder groups were saying.

2.2.1.4 Public Open House

A public open house was held on June 2, 2016 whereby open house boards were displayed and a brief presentation was made by Transit Consulting Network with the support of City of Orillia staff. Although many of the public that attended were supportive of the service provided for various reasons, there were numerous negative comments received related to buses running late, bus connections being missed, the use of poor quality spare vehicles, etc. In some cases, nearby bus stops were considered too far from their homes while some had no nearby service at all.

The residents provided 124 written comments for improvements, which are summarized as follows:

- 18% extend service hours
- 16% expand route coverage
- 14% use better replacement buses
- 8% more shelters
- 7% more frequent service
- 4% Improve bus terminal

- 4% bike racks on buses
- 29% other (bus overloading, customer information and service, etc.)

The input received from all stakeholder groups was then used as a basis to develop an on-line web-based survey.

2.2.2 On-line Public Transit Survey

Stakeholder consultations provided extensive and quality insight to community needs; however, the relatively small groups do not allow for input on a community-wide basis.

The general public questionnaire (see Appendix A: Online Questionnaire) was posted on the Town’s website from July 18 through August 4, 2016 for the general public and from July 26 through August 9, 2016 for employers only. There were 362 members of the public that responded online with another 40 that filled out a hard copy survey for a total of 402. There were 23 employers that responded to the online employer survey. Key public survey results are discussed in this section while full results were provided to the City of Orillia in a separate document.

To round off the community engagement process, a separate online business survey was added at the request of the City of Orillia Economic Development Manager, which was forwarded to employers via the Chamber of Commerce.

It should be noted that the analysis is not representative of the Town’s demographics, rather, they summarize only the responses of those that filled out the questionnaire.

2.2.2.1 Respondent Information

Respondent information is summarized by the on-line survey questions:

In which of the following age categories do you fall?		
Answer Options	Response Percent	Response Count
Under 18	2.2%	8
18-24	23.0%	82
25-44	34.0%	121
45-65	28.4%	101
66-74	6.7%	24
75+	5.6%	20
<i>answered question</i>		356

A significant number of the respondents were seniors over 65 years old (12.3%) while future seniors, the 45 to 64 age cohort, at 28.4% of the respondents indicates there will be a growing need to accommodate far more seniors in the future.

Which of the following categories best describes you? (Select up to 2)		
Answer Options	Response Percent	Response Count
Employed full time	34.3%	147
Employed part time	17.8%	76
Retired	16.1%	69
College/University/Trade School student	14.3%	61
Homemaker	8.9%	38
Other (please specify)	6.8%	29
High school student	1.9%	8
<i>answered question</i>		355

34.3% of the respondents stated they were employed full time while 17.8% reported working part time. In the ‘other category’, 18 respondents (5%) reported they were unemployed for various reasons. Affordable access to employment for this group is critical since forced car ownership is the only option if transit does not meet their needs.

In what range did you total family income fall under in 2015? Was it:		
Answer Options	Response Percent	Response Count
Under \$20,000	20.9%	57
\$20,000 to \$34,999	32.6%	89
\$35,000 to \$49,999	15.4%	42
\$50,000 to \$74,999	12.1%	33
\$75,000 to \$99,999	8.1%	22
\$100,000 to \$149,999	7.7%	21
\$150,000 or over	3.3%	9
answered question		273

A significant portion of the respondents were retired at 16.1% of the respondents and in post-secondary education at 14.3% of the respondents, which may be under-reported due to the summer break for students. Both groups in the sample and will have different needs in the transit service provided.

Out of the 273 that reported income, over half (53.5%) had a household income below \$35,000.

Although the figure is not a true representation of the entire population, it does illustrate that there are many households and individuals that are captive to transit such as, the under employed, seniors that are unable to drive and students. More recently, the number of individuals that are in the higher income cohort and millennials will opt to use transit as a mode of choice for reasons other than cost (e.g. environmental, sustainability, etc.). It is this group – the choice transit user - that represents the highest market potential for transit.

A question that was asked all of respondents is whether or not they used transit in the last 3 months.

Have you used the Orillia Transit System within the last three (3) months?		
Answer Options	Response Percent	Response Count
Yes	74.8%	300
No	25.2%	101
answered question		401

Those that that indicated ‘yes’ outnumbered those that said ‘no’ by 3 to 1. Both groups were then asked how far the nearest bus stop was to their home in terms of walk time, recognizing that a 5-minute walk (450 metres) is considered acceptable.

How many minutes does it take you to walk from your home to the nearest bus stop? (Orillia Transit customers)		
Answer Options	Response Percent	Response Count
0 to 3	42.2%	122
4 to 5	34.3%	99
6 to 10	15.9%	46
11 to 15	4.2%	12
16 to 20	1.0%	3
More than 20	2.1%	6
Not sure / don't know	0.3%	1
answered question		289

How many minutes does it take you to walk from your home to the nearest bus stop? (Non-transit customers)			
Answer Options	Response Percent	Response Count	% of Known Walk Time
0 to 3	42.7%	38	49.4%
4 to 5	23.6%	21	27.3%
6 to 10	12.4%	11	14.3%
11 to 15	3.4%	3	3.9%
16 to 20	1.1%	1	1.3%
More than 20	3.4%	3	3.9%
Not sure/don't know	13.5%	12	NA
answered question		89	77

Those within a 5-minute walk of a bus stop represent the majority of both transit customers (76.5%) and non-transit customers (76.7%) that responded, recognizing that 59 (76.4%) of the 77 non-transit customers reported they were within a 5-minute walk. In this regard, approximately one-quarter of all respondents reported to be more than the acceptable walk distance to a bus stop. What the data suggests is that transit coverage within the city should be improved.

2.2.2.2 Transit Customer Respondents

How often do you use Orillia Transit during a typical week (Monday through Sunday)?		
Answer Options	Response Percent	Response Count
1 day	16.7%	48
2 days	11.8%	34
3 days	12.2%	35
4 days	12.5%	36
5 days	22.6%	65
6 days	12.2%	35
7 days	11.8%	34
answered question		287

Almost half of the respondents (46.6%) that used transit in the last three months reported they used transit at least 5 days per week. What this tells us is that they are more likely captive to transit (no access to an auto) than those that used transit on fewer days and are likely using transit to access full time jobs and school. The 46.2% that used transit less are more likely to be part time employees, the unemployed, home makers, volunteers, and seniors.

What are the main reasons you use Orillia Transit? (select up to 3)

Answer Options	Response Percent	Response Count
I do not have access to a car	28.3%	171
I do not have a licence to drive	16.4%	99
Using transit is good for the environment	14.9%	90
To save money by not owning a car	13.9%	84
Buses take me where I want to go	13.9%	84
I did not have access to a car for a specific trip	7.6%	46
A disability prevents me from driving	3.6%	22
Not sure / No opinion	1.3%	8
<i>answered question</i>		290

When these same respondents were asked why they use transit, the majority were likely captive to transit on a regular basis or, in some cases, took transit infrequently since they did not have access to a car for a specific trip. The third highest response selected (14.9%) was for environmental reasons, which indicates this group would be amenable to using alternative forms of propulsion such as hybrids,

compressed natural gas or electric buses. The 13.9% that indicated they used transit to save money is an economic benefit of transit use; this can be used to market transit in the future.

To identify what areas of improvement that existing transit customers want to see in the service offered, it was interesting to note, although not surprisingly based on the transit focus group feedback, that

What are the most important improvements that would encourage you to use Transit more often than you currently do? (select up to three only)

Answer Options	Response Percent	Response Count
Better buses	23.8%	191
Buses leaving on time	15.3%	123
Later evening service	13.9%	112
More frequent service	9.5%	76
Improved downtown bus terminal/transfers	9.5%	76
Earlier morning service	6.1%	49
Service to more destinations	5.4%	43
Improved customer service	5.1%	41
Shorter travel time to your destination	3.7%	30
Lower bus fares	2.9%	23
Reduce the need to transfer between buses	2.9%	23
Having bus service closer to home	1.0%	8
Better access to bus service information	1.0%	8
<i>answered question</i>		290

'better buses' was the number one concern. Longer hours of service (later evening/ earlier morning service) came in second at a combined 20% while buses leaving on time was a third priority for 15.3%.

Another interesting statistic was that only 2.9% indicated lower bus fares as a priority, which tells us that transit customers may be less sensitive to fare increases and would be more likely to support fare increases should their priority needs be met (i.e. better buses,

longer hours of operation, improved service reliability, etc.). Compared to all other transit systems selected in the peer group, the average Orillia Transit fare of \$1.17 reported in 2014 was 18.2% below the average fare of \$1.43 yet the service hours per capita were 21.5% higher in Orillia.

2.2.2.3 Non-Transit Customer Respondents

What are the main reasons you don't use Orillia Transit? (select up to three only)

Answer Options	Response Percent	Response Count
Prefer to use my car / vehicle	22.6%	43
Bus schedules are not reliable	15.8%	30
Need to use my car / vehicle	12.6%	24
Too slow	10.0%	19
Too inconvenient	10.0%	19
Lack of bus information	6.8%	13
Does not come often enough	6.3%	12
Buses do not operate when I need to travel	5.3%	10
Does not provide service to my area	4.2%	8
Having bus service closer to home	2.1%	4
Fares are too high	2.1%	4
Safety or security concerns	2.1%	4
<i>answered question</i>		90

The largest market potential for transit are those that do not use transit today. Of the 90 respondents that did not use transit in the last three months, only 12.6% indicated they were captive to using their car while 22.6% preferred to use their car. The remaining respondents (64.8%), which represents a significant market that can be targeted, cited other reasons for not using transit; however, these areas can be addressed in the next five-year transit service plan.

What features or improvements would encourage you to try Orillia Transit for at least some of your trips?		
Answer Options	Response Percent	Response Count
Better buses	14.3%	36
Improved downtown bus terminal / transfers	9.9%	25
Later evening service	9.5%	24
Buses leaving on time	9.5%	24
Shorter travel time to you destination	8.7%	22
More frequent bus service	7.9%	20
Better access to bus service information	6.7%	17
Service to more destinations	6.3%	16
Reduce the need to transfer between buses	5.2%	13
Earlier morning service	4.8%	12
Lower bus fares	4.8%	12
Nothing could encourage me to try transit	4.8%	12
Improved customer service	4.4%	11
Having bus service closer to home	3.2%	8
<i>answered question</i>		90

A similar question was asked to determine what Orillia Transit improvements would encourage transit use. Better buses was the number one response similar to that requested by transit customers. The other areas that non-transit customers cited are very similar to that of the transit customer priorities. Since only 4.8% said they would not use transit, this tells us that by addressing transit customer priorities, the largest transit market potential – the car driver – could eventually become a choice transit customers in the near future.

2.2.3 Employer Survey Highlights

An employer survey was developed with the assistance of the Economic Development Department and circulated to businesses. Transit Consulting Network then followed up on a number of businesses to advise them of the study and encourage responses. A total of 23 businesses responded, identifying shift times that varied throughout the work day with shifts covered by Orillia Transit for the 7:00am start time; however, some shifts end at 11:00pm while transit service terminates at 10:45pm. One company reported a start time at 6:00am. In some cases, there was a request that transit should be closer to their business.

In order to accommodate the majority of shifts, service would need to serve the 11:00pm shift end time, which would require buses leave the terminal at approximately 11:00pm to be back at the terminal for the last transfer and trip departing at 11:30pm. For the companies that have a shift time start at 6:00am, it may be prudent to approach them to change to a 7:00am shift start.

2.2.4 Summary of Public Comments

There were 218 respondents that provided either a single comment or multiple comments/ opinions, which were very much in line with the feedback received during the transit focus group consultations relative to transit service improvement priorities, with the following key priorities:

- Expanded hours of operation all days of the week:
 - Earlier start times
 - Later end times
- Improved service reliability
- Ensuring there are quality buses and bus spares that are more accessible
- Better bus transfer (terminal) facility

“The buses need to be reliable and consistent!”

“Safe, reliable public transportation is a vital service in any successful municipality.”

“School buses need to be taken off.”

“Need for a new bus terminal.”

The comments, in conjunction with analysis of the survey results, ensured the City of Orillia had undertaken due diligence in seeking public input and reaching consensus with respect to identifying transit priorities to the extent possible when developing the appropriate route and service design.

2.3 Analysis of Existing Transit Services

While the community engagement process provided first-hand valuable input to the study, confirmation of the issues identified was necessary to quantify the challenges and opportunities available. Data supplied by the City of Orillia consisted of total boardings by bus stop and day of week (weekday, Saturday, Sunday) during March 2015. Although useful in assessing route performance relative to passenger demand, the information did not provide for route profiles or actual bus travel times.

Route load profiles are needed to determine what bus trips exceed seated capacity and by how much at the trip level to help determine whether or not service should be increased or modified. Bus travel time data by trip would indicate whether or not schedules are being met. Given that the quantitative data provided in 2015 is insufficient to determine where route modifications are necessary, the information gleaned from the community while route operating statistics would be assessed based on existing schedules and route distances.

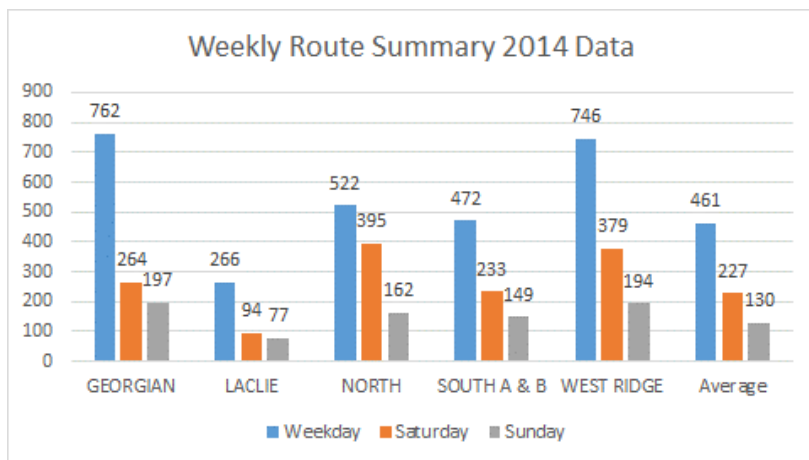
2.3.1 Passenger Demand by Route

As expected, both the Georgian and West Ridge routes with 40% of the total service carry the 55% of the total weekday ridership, followed by the South Route, North Route and Laclie Route. This is to be expected since West Ridge Route serves Lakehead University (approximately 1,400 students), Walmart and the growing West Ridge area, while the Georgian Route serves Soldiers Memorial Hospital and Georgian College (approximately 450 students).

Route	Weekday	Saturday	Sunday
GEORGIAN	762	264	197
LACLIE	266	94	77
NORTH	522	395	162
SOUTH A & B	472	233	149
WEST RIDGE	746	379	194
TOTAL	2,768	1,365	779

Saturday ridership levels approximate 50% of weekday levels; however, Saturdays have 27% fewer hours of service (12 hours versus 16.75 hours). Sunday demand is 28% of weekday demand while service is 52% less than weekday service (8.5 hours versus 16.75 hours).

Given the ridership statistics, it is reasonable to assume that the focus groups identified Georgian Route and West Ridge Route as candidates for expanded hours of operation and candidates for additional buses.



In terms of weekday performance, the combined Georgian and West Ridge routes carry an average of 46 total boardings per hour. To put this in perspective, the Ontario peer group average for revenue passengers per hour is 19.0.

2.3.2 Schedule Adherence by Route

It is reasonable to assume that frequent boardings (ons) and alightings (offs) of passengers would result in slower average speeds than buses less utilized; however, other reasons impact bus reliability, namely, traffic congestion and route distances. Given no schedule adherence data was available, Transit Consulting Network staff had several onsite visits to observe bus arrivals and departures.

Although the onsite observations were not conducted during peak conditions of the year (e.g. winter), it was clear that bus arrival times varied considerably (e.g. 5 minutes or more). Each route was then measured to determine their average scheduled speed, revealing the following:

- Georgian Route: 12.1 km route length and 24.2 kph scheduled travel speed
- West Ridge Route: 13.2 km length and 26.4 kph scheduled speed
- South Route A and B: 11.4 km length (average) and 22.8 kph scheduled speed
- Laclie Route: 10.3 km length and 20.6 kph scheduled speed
- North Route: 9.9 km route length and 19.8 kph scheduled speed

Although acceptable travel speeds can vary depending on passenger demand, traffic conditions, the number of turns made, and the number of bus stops made, average urban travel speeds should approximate 18-22 kph. Given this assumption, it is clear that both the Georgian Route and West Ridge Route exceed the desired scheduled travel speeds. This was also made clear during the community engagement process.

While the South Route average travel speed slightly exceeded the 22 kph upper design speed limit, there were no schedule adherence issues identified. This can be explained by the higher travel speeds along the less congested Atherley Road. Laclie Route and, in particular, North Route, are well within reasonable travel speeds, which explains why they were not identified as problematic.

What the aforementioned information tells us is that the 30-minute pulse in the downtown (an ideal route frequency) is not working and something needs to be done. To fix the problem and guide the City of Orillia over the next 5 years and beyond, route and service design principles need to be in place that reflect community priorities and best practices in a policy framework document that is discussed in the following Section 3: Phase II Transit Policy Framework.

3. PHASE II: TRANSIT POLICY FRAMEWORK

Transit policy drives the decision-making process by providing transit management and political decision-makers with the tools needed to support service recommendations and to maximize transit growth opportunities while maintaining cost effectiveness. Setting policies early also drives the planning process and clarifies, for example, whether service changes should be designed to expand the system and target new riders, or whether existing funding levels should be reallocated to better serve existing customers. It is important to ensure that the policies reflected input from all stakeholders, including non-transit users.

The policy framework consists of:

- **Goals and Objectives** provide general policy direction for the community
- **Service Standards** assist in determining where service will be provided, when service will be provided, and how it will be provided.

3.1 Goals and Objectives

Through the consensus-building process that the consultant team advocated throughout the study, Transit Consulting Network (TCN) developed a number of goals and objectives based on the draft transit vision and mission statements recommended by the TCN.

The City of Orillia's Revised Strategic Plan developed on October 13, 2011 provided the following vision and strategic priorities:

- Vision: "A healthy progressive community that respects people and promotes growth in a sustainable environment."
- Strategic Priorities:
 - "People First – Respect for all through customer-centres approach
 - Support Business – Improving Orillia's competitive position
 - Environmental Stewardship – Having regard for the environment in decision-making
 - Healthy Communities – Enhancing wellness of the community"

The aforementioned corporate vision and strategic priorities are in line with the development of the following draft transit vision and mission statements:

Transit Vision Statement

The preferred future of public transportation in the City of Orillia:

"The City of Orillia will provide an accessible public transit system that is supported by residents and the business community and recognizes that public transit is increasingly becoming the mode of choice of current and future generations".

Transit Mission Statement

The purpose of Orillia Transit:

"To provide safe, reliable, efficient, and customer-friendly public transit service that supports the economic vitality, growth, environmental sustainability, and health of the community."

To support the transit vision, a number of goals and objectives were developed.

Service Goals

To provide a public transportation system as a viable alternative to the automobile in the City of Orillia

- Improve the quality of life of residents who do not have access to an automobile
- Meet the travel demand generated by various target markets in the employment, academic, commercial, medical, and service industries

Performance Goals

Transit performance targets have been established for the next 5 years as a method to support continuous improvement principles:

- Effectiveness: To increase transit use by 30 percent – from 22.77 to 30 trips per capita by 2021
- Efficiency:
 - To increase service utilization use by 10 percent from 29.0 to 32.0 passengers per hour within 5 years
 - To attain 95% schedule adherence defined as buses being zero minutes early and no more than five minutes late all bus stops
 - To ensure 95% of bus transfers are accommodated in the downtown terminal

The performance targets identified can be adjusted, as required, and are designed to be slightly out of reach to ensure continuous improvement is sought; this helps to ensure ridership growth initiatives are balanced with fiscal responsibility.

Service Objective

The minimum frequency of service and span of service provided shall be adequate to meet the various target markets within the community.

3.2 Transit Service Design Guidelines

In October 2004, the Province announced its intention to invest two cents a litre of the provincial gas tax in public transit in order to ensure that local public transportation services continue and increase overall ridership through the expansion of public transportation capital infrastructure and levels of service. The development of a municipal transit ridership growth plan was a requirement for receiving gas tax funding.

In the June 2005 report entitled A Guide to Preparing a Transit Ridership Growth Plan was jointly developed by the Province of Ontario, Canadian Urban Transit Association, Ontario Community Transportation Association (now Ontario Public Transit Association), Transport Canada, Representatives of Municipal Transit Systems (Conventional & Specialized), and Representatives of Municipal Planning Departments.

The report identifies a number of transit growth initiatives (many are discussed in section 3.4 Transit of this report - Transit Ridership Growth Strategies - as well as addressing how municipalities develop, which states the essential need for transit service to be considered early in the community planning process. To assist municipalities, the Province of Ontario published the report entitled Transit Supportive Guidelines in 2012 <http://www.mto.gov.on.ca/english/transit/pdfs/transit-supportive-guidelines.pdf>.

Since 1980, municipalities have embraced various iterations of transit supportive land use policies and guidelines to address urban sprawl, support route design principles to maximize directness of travel, and service standards to balance community needs with local affordability.

3.2.1 Transit Service Standards

The goals and objectives provide general policy direction for the City to follow with respect to the provision of Transit service. Transit service standards are needed to guide Orillia in determining when transit service will be provided, how often it will be provided and how it will be provided through:

- A framework for making rational decisions on the level and quality of service in the community
- Increased public awareness of the philosophy of service and growth for Orillia Transit
- A strong commitment by Council to maintain service standards within the context of balancing social and environmental objectives with fiscal responsibility
- A high degree of acceptance for Transit expenditures since the decision-making process will be perceived as fair

3.2.2 Transit Service Level Policies

Recognizing fiscal restraint and the need for an expanded and sustainable public transportation system, there must be a balance between providing a desirable high level of service and affordability. The service level policies have been designed, within reason, to enable residents that are captive to transit to expect a minimum level of service.

Minimum Bus Service Hours and frequency

A minimum 30-minute frequency of transit service shall be provided based on trip times from the downtown terminal:

- 6:00am – 11:15pm weekdays (currently 6:15am - 10:15pm)
- 7:00am – 10:00pm Saturdays (currently 8:45am - 7:45pm)
- 8:00am – 8:00pm Sundays (currently 8:45am - 4:15pm)

The span of service is designed to accommodate large retailers and businesses where, for example, weekday morning shifts commence at 7:00am and afternoon shifts end at 11:00pm.

3.2.3 Service Reliability

It is reasonable to expect buses to be reliable, that is, buses must be on time at all publicly scheduled time points. 'On time' should be defined as buses never being early at a scheduled time point (zero minutes early) and not being more than 5 minutes late to allow for unforeseen delays.

In order to maintain service reliability and maximize transit efficiencies, it is of paramount importance that bus schedules reflect what is actually happening on the street and as such, scheduled times may vary by time of day. For example, peak period roundtrip times are generally longer than late evening travel times. It is also important to ensure that travel times are consistent regardless of the bus operator assigned to the route.

When a bus leaves the downtown terminal, the bus operator should travel their designated route in the quickest and safest travel time possible. This would ensure bus operators never arrive early along the route and are not late more than a few minutes. If this results in much earlier arrivals at the terminal for

some routes, this is considered acceptable. By following this practice, schedules along the route would be consistent and layover times that take place at the downtown terminal would be maximized.

3.2.4 Land Use Planning and Transit

Arterial transit routes offer a more attractive service because they are more direct and cost-effective than transit routes along slower internal collector roads and residential streets. However, transit service along collector roads is necessary in many cases since arterial roads are often spaced too far apart to accommodate acceptable transit walk distance requirements. When designing for new residential developments, maximum transit route coverage at minimal cost must be viewed as a priority, not unlike other services the City provides.

Following the development of community master plans are two planning phases that should address public transit needs – the Secondary Plan and the Draft Plan of Subdivision as summarized in the following:

- Determine basic location and orientation of transit routes
- Determine a street system and walkway layout, which attempts to accommodate efficient transit service along the arterial and collector road system
- Determine location of activity centres (schools, shopping facilities and medium to high density residential areas) along transit routes
- Determination of mobility hubs and transfer facilities to maximize integration of modes and reduce overall transit travel times
- Co-ordinate location of bus stops with design of intersections and walkways in order to minimize walk distances, provide for reasonable bus stop spacing, and provide for safe pedestrian routes; and
- Locating walkways which would serve as many purposes as possible (i.e. access to bus stops, schools, shopping, parks, and trail links)

When developing bus routes, best practices are applied to route design, walk distances to bus stops, the locating of bus stops, and bus stop accessibility.

3.2.5 Acceptable Transit Route Design

There are various ways of arranging transit routes to provide service. Best practices have been introduced relative to route design principles that provide for:

- Reasonable walk distances to bus service for residents
- Directness of travel by bus
- Safe travel speeds and reliable schedules

The guidelines can be applied when re-designing bus routes and used for land use planning purposes to help ensure transit requirements are being met during periods of urban growth. Applying the guidelines consistently provides transparency and objectivity when determining where bus routes will be placed.

Transit Travelways: Transit routes should be provided along arterial and collector roads, which have reasonable through access rather than on crescents or cul-de-sacs to the extent possible. A 9.0 metre pavement width is the minimum for transit routes. Exceptions can be made where no reasonable alternative is available to provide for acceptable walk distances to residential dwellings and businesses.

One-way Transit Loops: Provision should be made to minimize the length of one-way transit loops to no more than 2.0 kilometres. One-way transit routes provide for transit service on one side of the street only and will typically be found in residential areas to minimize vehicle requirements and where two-way service may not be warranted.

Bus Route Design Speeds: Safe travel speeds are needed to ensure buses can maintain their schedule and be designed such that people can get from A to B in the quickest and safest manner possible. An average design travel speed of approximately 18-22kph should be in place in urban environments. Orillia Transit's average speed was reported at 20.44 kph in 2014; however, given the difficulty maintaining schedule adherence (i.e. late buses on Georgian and West Ridge routes), a lower average travel speed is suggested to be 19.0 kph.

Bus Route Lengths and Population Density: Road layouts in residential developments should be designed such that transit routes require a minimum 1,000 residents served per 1.0 kilometre of transit route. The City of Orillia has approximately 28 km of roads that are covered by transit (total of all route lengths divided by 2 to compensate for the one-way service that is in place in many areas) and a 2014 population of 32,945. This represents an impressive 1,176 residents per 1.0 kilometre of bus route, which exceeds the guideline. This should at the very least be maintained and, in light of sustainable (more compact) development initiatives, it could be increased to improve future transit efficiency and effectiveness.

3.2.6 Walk Distance to Bus Service

A guideline used to help design or redesign bus services is ensuring there is a reasonable walk distance to bus service as follows:

- 95% of dwelling units should be within a 450 metre walk distance of an existing or future bus stop
- 70% of dwelling units should be within a 300 metre walk distance of a bus stop. The 450m walk distance equates to an approximate 5 minute walk time to a bus stop for most people (walking 4kph).
- All multiple housing units should be within a 300 metre walk distance of an existing or future bus stop.
- Special needs housing, high density employment, shopping, medical, and institutional development should be within a 150 metre walk distance of a bus stop.

The 450 metre standard (see Section 3.2 Transit Service Design Guidelines) is considered a realistic goal except for steep roadways in some areas of the city. If a more stringent standard than 450 metres is chosen, this may result in improved coverage being required in existing residential areas but at a higher cost. Under most circumstances, residents of multiple housing units tend to be more captive as transit customers and should be located close to transit service.

3.2.7 Bus Stop Locations and Design

Once bus routes are designed or existing routes modified, the following strategies should be applied to bus stop locations and bus stop design:

- **The location of bus stops should be coordinated with the design of walkways, intersections and development in order to minimize walk distances and provide for reasonable bus stop spacing.**

Ideally, bus stops should be located at walkways and intersections as well as being in proximity to high density residential complexes and major shopping facilities in order to minimize walk distances for most people. Other factors used to determine bus stop locations and reasonable spacing are demand, road type, pedestrian safety, and public requests.

- **In industrial areas, sidewalks should be provided along at least one side of the roadway.**

Industrial areas are considered to be 'hostile' environments due to higher volumes of truck traffic; however, it is important that employees are provided with safe pedestrian access from bus stops to their places of employment, particularly during winter weather conditions. Walkways, for the purpose of transit connections, must be constructed out of a material which can be maintained year-round. Responsibility for the maintenance of these walkways must be allocated to the appropriate department.

- **Bus stops and bus stop amenities must meet Accessibility for Ontarians Disability Act (AODA) requirements.**

Meeting AODA requirements will better enable some OWLS customers to use Orillia Transit for at least some of their trips. Based on 2014 CUTA statistics, it cost an average of \$28.06 per OWLS passenger trip in 2014 while the average cost for Orillia Transit trip was \$2.42 per customer. Each time an eligible OWLS customer uses Orillia Transit, a savings of over \$25 could be realized.

3.2.8 Trade-offs

Since the types of residential community design varies significantly from high density apartment complexes to low density estate type development, all design objectives may not be met in all cases. Trade-offs may be necessary from time to time in view of other design considerations.

In order to provide some flexibility in the guidelines, the following recommendations should also be considered:

- That land use/transit coordination is a necessary and valuable goal recognizing that, in the implementation of the transit subdivision design guidelines, trade-offs may exist in some instances with other planning, engineering and environmental considerations.
- That secondary plans and draft plans of subdivisions recommended by staff shall reflect efforts used in trying to achieve the transit guidelines stated herein.
- The City of Orillia should initially inform the development industry of the proposed guidelines as set out in this report. It is suggested that the Planning and Development Department in conjunction with Public Works staff be responsible for informing developers and their representatives on an ongoing basis.

The key factor is that at the outset of community design, it is known whether or not the design guidelines have been met with every effort made to attain them. It is likely that existing and planned subdivisions which do not meet all of the guidelines would receive a lower level of transit service (e.g. peak period only) than more transit-oriented subdivisions which meet or exceed the design objectives.

3.3 Route and Service Alternatives

There are a number of transit route and service concepts that were considered for the City of Orillia that are described below and how they would fit into the 2017-2021 Route and Service Plan.

Conventional Transit Bus

The current 12.2 metre (40') conventional transit buses will continue to serve all fixed-route transit services.

Community Bus

A community bus typically, but not necessarily, is a small- to medium-sized vehicle that is easy to board and able to arrive close to locations that generate or attract a larger portion of seniors such as seniors' residences, shopping centres, recreation, social, and medical facilities. Service frequencies tend to be hourly or even every two hours, and usually operate at off-peak periods. Sometimes a community bus service replaces a conventional route either completely or during off-peak hours. Seniors and stay at home parents and children are off-peak markets served by community buses.

Recommendation: To be considered further for service.

Fixed Flex-route Concept

A Fixed-flex route service combines some of the advantages of fixed route (predictable service, low cost per passenger) with those of door-to-door services such as OWLS. A fixed-flex route bus would follow a normal scheduled route but have the ability to deviate off the route and return to the route within 5 minutes to continue their trip.

Fixed-flex route service would provide curb-to-curb service to some OWLS registrants at no additional cost or at a marginal cost, in most cases. This reduces demand for OWLS and also helps establish the pattern of OWLS passengers to travel dynamically by using a scheduled transit service. The service; however, is not a replacement for all OWLS customers since many will require the more personalized door-to-door customer service due to their unique limitations of mobility.

A fixed flex-route can be employed along both arterial and collector roads similar to conventional transit and a community bus route. The vehicle can deviate from the established route to pick up and drop off OWLS registrants, seniors with limited mobility, and others. Route deviations for pick-ups must be requested in advance, either through dispatch or by phoning the vehicle directly, if permitted. Deviations for drop-offs may be requested in advance, but can also be requested on-board and accommodated if the driver has sufficient time to do so. Given the need to have a reliable schedule at stops and route-end points, it is necessary to set limits to both the number and the distance of deviations.

Recommendation: To be considered as a potential option to community bus.

Fixed-route Shared-ride Taxi

Where demand is low, a smaller vehicle contracted to the taxi industry offers a low cost option to residential areas that are too distant from existing fixed route transit services, which are not warranted. A large accessible van or small bus can be used. The significant benefits are lower cost, extended reach

for transit, and the ability to establish the pattern of catching a transit vehicle at a designated stop at a scheduled time. Taxis would travel along a set route and schedule and customers would board at designated bus stops, similar to conventional fixed-route transit. Areas of the City where no fixed route transit exists due to low density and demand, there are still expectations that at least some service can be provided.

Taxis could be used in a number of ways:

- Feeder services from outlying communities to link up with Orillia Transit at a designated bus stop or bus terminal area
- A fixed schedule or fixed flex-route schedule
- As a feeder service to employment areas not adequately served by public transit
- As a limited feeder service to remote neighbourhoods where service may only be required to access goods and services for residents that are unable to drive yet do not qualify for OWLS

Contracted taxi service providers would be compensated based on a negotiated hourly rate. The City of Orillia might undertake to offer a minimum revenue guarantee in the contract tender, if deemed necessary to secure good quality bids. As an example, taxi vans can provide daily off-peak service from 9am to 3pm Mondays, Wednesdays and Fridays, reaching areas currently not served. The schedule could be developed upon consultation with residents.

Shared-ride taxis are used in conjunction with bus service as an interim solution until bus service is warranted. No dedicated dispatch service is required for this option. Since taxis would not offer a door-to-door service and is being shared, the service is not viewed as competing with regular taxis.

Recommendation: To be considered for outlying neighbourhoods as a potential option to community bus.

Dial-a-Ride

Dial-a-Ride service is a demand-response door-to-door service whereby residents call into a dispatch centre or driver cell phone to request service. A small bus is then sent to pick them up. For regular trips (i.e. daily, weekly, etc.), service can be arranged on a reservation basis so that the customer is not required to continuously call. Service can be completely in response to requests, or can be structured to operate on a frequency basis (e.g. every hour). In that case, the requester is given the next available time the vehicle can arrive to pick him or her up, and an approximate arrival time at destination. Similar to a fixed route shared-ride taxi, a Dial-A-Ride customers would be able to transfer to a bus route, if necessary, to complete a trip. On the return trip, the process is the same where the customer is also required to call and request the trip.

Dial-a-Ride Service is generally used in place of bus service in areas where population is sparse and demand for service is low. The need to request each trip and wait for the next available time can make it less convenient for the customer; however, this is offset by the convenience of door-to-door service, especially important during inclement weather. Given the relatively high cost and inconvenience, other options should be considered.

Recommendation: Not to be considered further.

Specialized Transit

Specialized Transit service can be used as a demand-responsive alternative for those that are not eligible for specialized transit to help fill vehicles being used where capacity exists. A two-tier eligibility program

would give priority to registered eligible customers while those that are ineligible would be able to book if seating is available. Similar to fixed-route shared-ride taxis, the use of OWLS to non-registrants would be limited to neighbourhoods within the City where conventional public transit buses and all day service is not warranted.

The practice of integrating conventional transit with specialized transit is practiced in many municipalities whereby specialized transit customers are transported to bus service to complete a trip and vice versa. This saves money and helps integrate the mobility impaired with the community at large. More information and analysis is out of scope for this study and will be required in order to consider this option further.

Recommendation: To be considered in the future through consultation with OWLS

3.4 Transit Ridership Growth Strategies

Expanding route coverage within the City of Orillia while increasing the annual transit service hours significantly within 5 years is an obvious transit ridership growth strategy. Residents will have better access to jobs while businesses will have a larger pool of both employees and customers that do not have affordable alternatives of travel. Equally important is that the increased investment in transit enhances the quality of life of existing and future residents whom have no other affordable means of travel.

The following addresses specific strategies to maximize the effectiveness of the service expansion.

3.4.1 Expanding the Client Base

With an expanded transit system and increased hours of operation, Orillia Transit would be in a better position to target specific markets, which are discussed in the foregoing.

3.4.1.1 High School Students

The City of Orillia would be in a position to provide an alternative to yellow school bus transportation for high school students, which is proven to be effective elsewhere in Ontario. If schedules are designed appropriately, buses could be used to transport students by transit thereby filling seats and increasing revenues. High school student bus passes can be purchased by the school board; this would add new revenue to the Orillia Transit system. Equally important, high school students – the future market for transit – would be exposed to the benefits of transit and would have free use of transit for after school activities and part time jobs. At the same time, school boards may be able to save in the cost of some of their school bus trips. Although potential savings realized by the school boards does not affect the municipal budget, the opportunity to save money is realized by the municipal taxpayer.

An alternative to using Orillia Transit to and from school, is the availability of a deep discount after school ‘activity pass’ that allows unlimited travel after school hours and on weekends.

3.4.1.2 Industrial Specials

Although the majority of employers would be better accommodated in a revised route network design and expanded hours of operation, there remains an opportunity to provide ‘industrial specials’ for workers that start before the 7:00 am service. Following the trip(s) undertaken by the industrial special,

the same bus could be allocated to picking up high school students. Further discussions with major employers should be undertaken following this study.

3.4.1.3 Seniors – the ‘Grey’ Market

Seniors are a growing segment of the population that will place further demands on the City for accessible transportation since, at some point, none of us will be able to drive or walk to the nearest bus stop, yet would not qualify for specialized transit (i.e. OWLS). This ‘grey’ market will continue to challenge Councillors to meet resident needs. What is interesting; however, is that these residents are not demanding full service; their demands are modest for the most part. The ability to access infrequent medical appointments, go shopping or even socialize (a health benefit), can make a significant difference to their quality of life even if service is provided a few times a day and a few days a week.

3.4.1.4 Tourism Industry

Opportunities to promote Orillia Transit to the tourist industry can be investigated to promote travel within the City (e.g. to boaters) and outside of the City (e.g. Casino Rama service).

3.4.1.5 Regional Transit

The 2016 Simcoe County Transit Feasibility and Implementation Study addresses the connectivity of Orillia Transit with transit systems in Barrie and Midland–Penetanguishene in Simcoe County, Durham Region and connections northerly to the Muskoka Region. The market for transit would expand to accommodate those travelling beyond their municipal borders and do so seamlessly through service and fare integration. It would, therefore, be prudent that the City of Orillia plan for the inevitable connection to other transit systems. In this regard, consideration should be given to accommodating inter-municipal bus service at a central transfer facility such as the downtown bus terminal where only one bus trip from anywhere in the city is needed for travel beyond Orillia. This is discussed further in Section 3.4.4 Downtown Bus Terminal.

3.4.2 Transit Technology

Smart Card Systems

Transit smart card systems are growing in popularity to replace the need for transit customers to carry exact cash fares, tickets or passes and the need to purchase far more expensive electronic registering fareboxes that can count coins and paper currency. A transit smart card system enables transit customers to load value on a microchip-based card that acts like an electronic purse (e-purse), also referred to as a farecard. The transit farecard has monetary value similar to those typical of retail sector loyalty cards; however, that’s where the similarity ends.

What differentiates the transit farecard from a retail card is the back-end software that consists of ‘business rules’ such as a complex fare pricing system built in to the farecard. Value can also be reloaded onto the (re-usable) farecard, as required. Transit farecards have the potential to reduce the cost of the revenue management process (RMS) – fare collection and coin counting, printing and distribution of paper media (e.g. tickets and passes), commissions paid to sell fare media, and farebox maintenance in the case of registering fareboxes. Transit farecards also reduce or eliminate the revenues lost to fare evasion.

The use of smart cards can also help reduce transit boarding times. For example, the time taken to deposit and verify cash fares, tickets, passes, and transfers can take an estimated 5 seconds average per boarding. In comparison, boarding with a transit farecard will take an estimated 1.5 seconds. If, for example, 50 passengers boarded a bus during a 30-minute peak trip, the current payment process will take an estimated 4.2 minutes. If all 50 passengers boarded with a farecard, the total time attributed to boardings would approximate 1.25 minutes; this would save an approximately 3 minutes per trip, sufficient to address many schedule adherence problems.

A number of small transit systems in Ontario such as Midland, Penetanguishene, Bradford West Gwillimbury, and Chatham utilize low-cost fare collection technology that is integrated with GPS. The technology is considered a transit ridership growth strategy by the Province of Ontario given its ease of use and eliminating the need for exact cash fare. By integrating with GPS, the City of Orillia would be able to track transit use by bus stop, direction and time period (by trip, by hour, time of day, week, month, and annually).

Benefits of using smart cards are summarized as follows:

- Eliminating the need to print and distribute tickets, punch passes and transfers, thereby reducing fare collection costs
- Eliminates fare evasion
- Reduced boarding times
- Tracking of smart card use through embedded serial numbers
- Flexibility in fare pricing (i.e. to the one cent level, if required)
- Ease of implementing fare changes
- Future adoption of mobility payments



Exhibit 15: Smart Card Equipment

Another critical benefit of an integrated smart card-GPS system is that the City of Orillia will not only be able to monitor bus stop activities, schedule adherence performance data would also be provided. This would provide the information needed to adjust schedules, as required, and provide the City of Orillia with the ability to monitor the performance of the service provider (i.e. First Student). Since cloud-based software is used, there is no ongoing requirement for a server or support required from Orillia IT staff.

Real Time Passenger Information

With GPS-equipped buses, the opportunity for the public to track buses on-line at home or outside with their smart phones or personal device assistants (PDA) will enable them to reduce their wait time at stops and ensure that buses are not missed. This is important during inclement weather conditions when buses could be behind schedule.

On-board Security Cameras

Many transit systems across Canada have installed cameras on buses as a deterrent of bad behaviour of some transit customers and for liability purposes. More important, transit customers and bus operators will feel more secure while travelling especially during evening periods. It is also worth noting that bus operators undertake excellent defensive driving programs and are normally not at fault in an accident. Should a transit vehicle be involved in an accident, the incident would be recorded for insurance purposes.

3.4.3 Bike Racks on Buses

Active transportation has been playing a significant role in the overall transportation choice across Canada. Since all transit customers are pedestrians, they benefit from walk distance guidelines as proposed in this report. One active transportation market that has not been accommodated are those that travel by bicycle, which was made clear through the community engagement process. Much of the need was identified by college and university students that have become a growing market for Orillia Transit and one of the key reasons that Orillia Transit has outperformed its peers. Bike racks on buses have now become the norm for public transit systems (e.g. Barrie Transit and Bradford West Gwillimbury Transit have 100% of buses equipped).



Bike racks allow transit customers to bicycle to transit stops, mount their bicycle on one of two bike mounts then board the bus. At the end of a trip, the bicyclist can then continue travel. Doing so expands the transit market potential and is a step towards a successful active transportation strategy that does not unduly burden the ability of buses to maintain schedules. With the advent of bike racks on buses, bike storage facilities should then be made available at the downtown bus terminal and other key destinations and institutions.

3.4.4 Downtown Bus Terminal

Orillia Transit operates a radial route system where five buses connect in the downtown core with buses arriving and departing every 30 minutes at a transfer location (West Street at Mississauga Street). Improvements to the on-street bus terminal was identified by stakeholders as one of the highest priorities.

Maximizing passenger comfort, safety and security are features of a central transfer facility or bus terminal that will encourage growth in transit use. Equally important is efficient access and egress that minimizes bus circulation in the downtown. The current bus terminal lacks many of the amenities needed, namely:

- Complete separation between buses and other traffic
- Accommodating additional vehicles in its current configuration
- Heated waiting area
- Complete separation between passengers transferring and normal traffic
- Washroom facilities
- Enhanced security
- Saw-tooth bus bays to accommodate customers with mobility aids*
- Efficient circulation of buses within the downtown
- Integration with inter-city buses

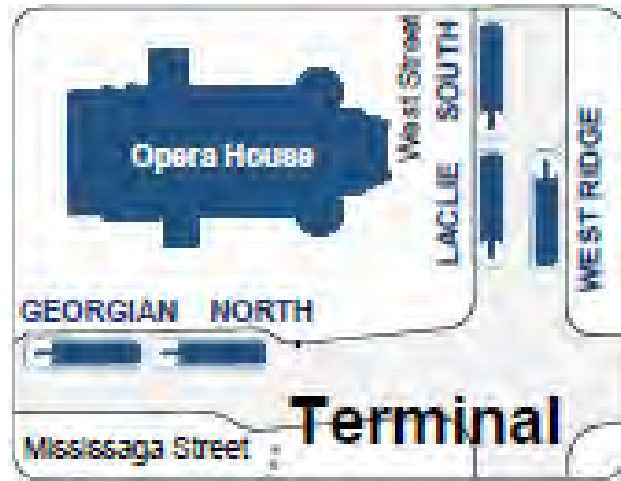


Exhibit 16: Mississauga Road: Georgian and North Routes

3.4.4.1 Bus Bay Design

Each bus route has a designated layover location, which is ideal; however, the parallel bus bay design does not allow for safe boarding and alightings as can be seen in Exhibit 16. Since buses are forced to park at an angle, the distance between the bus and sidewalk forces customers to step down from the curb then step up when boarding. A person boarding in a wheelchair is not be able to access the bus without difficulty or without assistance. A more appropriate design would be a saw-tooth design, which would be angled to parallel the bus, allowing barrier-free access at both front and rear doors of the bus.



Exhibit 17: West Street: Laclue, South and West Ridge Routes

3.4.4.2 Downtown Bus Terminal Location

The ideal location for an off-street downtown bus terminal or on-street transfer facility is one that is central, offering a short walk to and from higher-density residential areas, institutions and businesses to access goods and services and jobs. As a minimum, the current configuration will need to be expanded to accommodate a second bus bay on West Street while amenities will need to be improved such as providing a heated shelter, modifying existing bus stop areas to accommodate safer saw-tooth bus bays, and adding information kiosks and security cameras. Public washrooms and indoor waiting areas are also desirable.

The current location is relatively central and provides for even travel times between routes to maintain the current and ideal 30-minute frequency. An alternative location in the downtown can be feasible; however, there may need to be modifications to the existing routes in order to maintain the desired 30-minute frequency. In this regard, a location that is within 400 - 500 metres of the existing terminal may be possible, subject to a functional design study that could minimize the amount of turns that buses make, which can go a long way to minimize route travel times in the downtown.

Transit Consulting Network and City of Orillia staff reviewed various locations in close proximity to the existing terminal; two were considered:

- The Orillia Central Preschool daycare located at 26 Coldwater Road E. (addressed in Public Works Report No. PW-10-068 Dated August 3, 2010 to Council Committee)
- The current OPP Detachment 'current OPP detachment located on Colborne Street E. between Peter St. and Matchedash St.

Given the significant increase in transit ridership in recent years, it is time to undertake a downtown bus terminal location and functional design study. The study should, as a minimum, identify land that should be secured that could house a new bus terminal or transfer facility to accommodate Orillia Transit and, ideally, inter-city buses. The City or Orillia would then be in a position to more quickly respond to any enhanced infrastructure funding application that avails itself as a result of recent Provincial and Federal announcements to increase investment in public transportation over the foreseeable future.

Recommendation: That the City undertake a downtown terminal location and functional design study.

3.4.5 Bus Fares

3.4.5.1 Fare Pricing Policy

The 2016 Peer Group Fare Structures table shows that fare pricing can vary significantly across Ontario. The current Orillia Transit fare structure is described below:

- \$2.00 cash fare
- \$22.00 for 11 tickets (\$2.00 per ticket; no discount)
- \$84.00 for 48 tickets (\$1.75 per ticket; 12.5% discount)
- Monthly pass is \$47.00 (\$1.17 per fare based on using service 5 days per week; 41.5% discount)
- \$16 to \$26: group day passes for 10 to 30 children and 3 to 5 adults
- Pre-school and elementary school children ride for free
- \$108 annual Lakehead University U-Pass

The average fare paid per Orillia Transit passenger in 2014 was \$1.17, which was 18% below the peer group average of \$1.43 (excluding Barrie). However, when compared to all Ontario transit systems in municipalities of less than 50,000 population, Orillia offered a 44% discount to the \$1.68 average fare.

Each municipality sets their own fare pricing policies; however, many municipalities do not follow them. For example, if the base cash fare increases, the multiple fare discounts such as passes may not keep pace. This negatively impacts a transit system’s financial performance.

The challenge is to develop a fare pricing strategy that balances affordability with fiscal responsibility. And the simpler a fare policy is, the better.

In 2015, the Orillia Transit fare revenue breakdown was reported as follows:

- \$392,473 in cash fares received (59% of sub-total)
- \$55,314 in ticket sales (8% of sub-total)
- \$223,062 in monthly passes sold (33% of sub-total)
- \$670,849 Sub-total, which excludes Lakehead University U-Pass
- \$127,976 Lakehead University U-Pass
- \$798,824 Total passenger revenues

Cash fares represent a relatively high portion (59%) of all revenues received primarily due to the minimal discount of the ticket price – a 10% to 12.5% savings versus a more reasonable 20% discount. Pass sales are also very high due to the deep discount offered. The low cash fare and deeply discounted passes explain why the \$1.17 average fare in 2014 was 30% below that of the Ontario-wide peer group consisting of municipalities under 50,000 population (\$1.68 average fare). It is also worth noting that the average fare received in 2015 was \$1.07, which is 10 cents lower than 2104.

A best practices philosophy with respect to balancing transit costs with revenues is to have a fare pricing policy that has a higher fare for the infrequent transit customer (base cash fare) and one that rewards frequent transit customers. Although affordability is key, transit customers are less sensitive to fare increases when they are coupled with improved transit service.

Peer Group 2016 Fare Structures				
Orillia	Adult	Senior	Student	Pre-school
Cash	\$2.00	\$2.00	\$2.00	free
Ticket (unit cost)(11 tickets)	\$2.00	\$2.00	\$2.00	
Group day pass 10-30 Child & 3 to 5 Adults)	\$16 - \$26			
Lakehead University U-pass (annual)	\$108.00			
Monthly pass	\$47.00	\$47.00	\$47.00	
Other (48 tickets)	\$1.75	\$1.75	\$1.75	
Special notes:				
Barrie excluding route 90	Adult	Senior	Student	Pre-school
Cash	\$3.00	\$3.00	\$3.00	free
Ride Cards (10 Ride Cards)	\$26.00	\$21.00	\$23.00	
Day pass	\$7.50	\$7.50	\$7.50	
Georgian College Semester Pass			\$255.00	
Monthly pass	\$86.00	\$56.00	\$66.00	
Other (6 ride cards)	\$15.60	\$12.60	\$13.80	
Special notes:				
Midland-Penetanguishene	Adult	Senior	Student	Pre-school
Cash	\$2.00	\$1.75	\$1.75	free
Ticket (unit cost) (20 tickets)	\$1.25	\$1.00	\$1.00	free
Owen Sound	Adult	Senior	Student	Pre-school
Cash	\$3.00	\$3.00	\$2.50	free
Monthly pass	\$70.00	\$55.00	\$45.00	
Other: Elementary School			\$40.00	
Orangeville	Adult	Senior	Student	Pre-school
Cash Urban	\$2.00	\$1.50	\$1.50	free
Ticket (unit cost) (10 Tickets)	\$1.70	\$1.30	\$1.30	
Monthly pass	\$50.00	\$40.00	\$40.00	
Other - Special needs monthly pass	\$25.00	\$25.00	\$25.00	
Woodstock	Adult	Senior	Student	Pre-school
Cash	\$2.50	\$2.50	\$2.00	free
Student transit ride July-August			\$25.00	
Day pass (2-5 riders)	\$7.50	\$7.50	\$7.50	
Monthly pass	\$60.00	\$48.00	\$48.00	
Other - Han-D-ride pass (12 rides)	\$25.00	\$25.00	\$25.00	
Special notes: Veterans and Support Persons are eligible for free rides				
Brockville	Adult	Senior	Student	Pre-school
Cash	\$2.25	\$2.25	\$2.25	free
Ticket (unit cost)	\$1.80	\$1.80	\$1.80	
Monthly pass	\$64.00	\$64.00	\$64.00	
Other (40 Ride pass)	\$64.00	\$64.00	\$64.00	
Stratford	Adult	Senior	Student	Pre-school
Cash	\$2.75	\$2.50	\$2.50	free
Ticket (unit cost)(12 tickets)	\$2.50	\$2.25	\$2.25	
Day pass	\$7.00	\$7.00	\$7.00	
Monthly pass	\$61.00	\$51.00	\$51.00	
Other Family pass	\$15.00			
Special notes:	Family program up to 4 riders with at least one adult			
St. Thomas	Adult	Senior	Student	Pre-school
Cash	\$2.50	\$2.50	\$2.50	free
Ticket (unit cost)(5 tickets)	\$2.00	\$1.50	\$1.50	
Monthly pass	\$65.00	\$55.00	\$55.00	
Timmins	Adult	Senior	Student	Pre-school
Cash	\$3.00	\$2.50	\$2.50	free
Ticket (unit cost)	\$3.00	\$2.50	\$2.50	
Monthly pass	\$72.00	\$55.00	\$57.00	
Other: 20 ride card	\$60.00	\$50.00	\$50.00	

A suggest fare pricing strategy for the City of Orillia is:

- A higher base cash fare for all transit customers (current)
- A 20% discount to the base cash fare for tickets
- A monthly pass – also referred to as a ‘period pass’ - discount based on 40 trips per month of the ticket fare price, which provides for free travel on evenings and weekends (note: monthly transit passes when introduced in Ontario were originally priced at 40 to 42 trips per month)

Based on the fare pricing strategy, the base cash fare would be increased to at least \$2.25 in 2017 then increased to \$2.50 in 2018. If the strategy is followed in 2017, tickets would then be offered at a cost of \$1.80 per ticket, which is \$0.20 less than the 11-ticket price (10% discount) and only \$0.05 more than the current unit price of \$1.75 for 48 tickets (12.5% discount). Based on the formula of 40 trips per month, the monthly pass cost would need to increase from \$47.00 to \$72.00.

Although increasing the cost of monthly passes to \$72 is based on being able to travel to and from work and school (40 trips per month) leaving free use of transit at all other times, it would not be well received. It is suggested that a nominal increase equal to the cash fare increase (12.5%) from \$2.00 to \$2.25 be applied in 2017 and then again in 2018 when the cash fare increases from \$2.25 to \$2.50 (11%). This would mean that the monthly pass would be priced at \$53 in 2017 and \$59 in 2018. The impact of the fare changes should then be re-assessed in early 2018.

In order to properly estimate revenues, a detailed fare payment survey would need to be undertaken (i.e. referred to as an ‘average fare’ study).

3.4.5.2 Target Market Fare Pricing Strategies

When increasing bus fares, there are strategies to consider that can encourage increased transit use while reducing costs to the customer, described as follows:

60-minute Transfer/ Period Pass

Currently, transfers are only valid for connections at the terminal and valid on a connecting bus within 30 minutes. A transfer time of 60 minutes is recommend along with the ability of the transit customer to return via the same bus route or continue their travel on another connecting bus within 60 minutes of their original boarding. The transfer would, in effect, act as a period pass.

One example of the benefit of the 60-minute transfer time is that a customer can board a West Ridge bus to the downtown, shop and then continue their journey or return home on a single bus fare. When introduced in Kitchener-Waterloo, which was one of the first transit system in Ontario to do so, the strategy was found to be revenue neutral yet resulted in increased transit use. The ‘free’ transfer was designed for 1) the single parent who could drop off their child at daycare then resume travel to work on the next bus and 2) the stay at home parent who needed to have a short-trip to a store with their pre-school child during the day and return home on a single fare.

High School Activity Pass

With expanded hours of operation, a high school activities monthly pass can be made available to students to use after school should they remain to participate in school hours activities or travel to their part time job. For example, a deep discount of \$20 per month would provide for very inexpensive travel when bus capacity is available (e.g. evenings and weekends). The pass would also benefit parents who, in turn, would not have to pick up their high school children after school.

Transferable Monthly Pass

The current monthly pass is not transferable, which means that under a new pricing formula, if a transit customer is unable to use the pass on some days, the discount would not be as great. A transferable pass could then be given to another person or member of the household to use. Generally, passes are purchased for travel to and from work or school, which means that additional trips are generally taken outside the peak hours when seating capacity is available.

Universal Bus Pass (U-Pass)

The successful and popular program with Lakehead University students is a boon to transit ridership and transit revenues. Although the U-pass price is deeply discounted, it is considered reasonable since there is full participation of students, which provides the City of Orillia with a sustainable revenue source. The increase in revenues also makes it more affordable for the City to increase service to better accommodate students while other customer groups would benefit as well that will, in turn, increase transit use further.

Efforts to extend the program to Georgian College should continue by focussing on the financial savings to students and the benefits of the added revenues that could be applied to improved service. There are exceptions that can be made such as students that live outside of the city limits. The U-Pass can also be extended to faculty and post-secondary school support personnel as well, which would require a similar pricing structure and conditions (e.g. full participation).

3.4.6 Municipal Staff and Community Liaison

Bus operators are the front-line public liaison for Orillia Transit and based on community feedback and observations of the consulting team, do an excellent job relative to customer service for the most part. On the other hand, incidents such as late bus complaints and requests to extend service are beyond the control of the bus operator and require other levels of assistance.

Schedule information and complaints are currently handled by First Student staff directly and forwarded or escalated (depending on the incident) to the City of Orillia. Other public inquiries such as requests for service are also handled by First Student; however, municipal staff and Councillors also receive requests directly. Given the significant growth in Orillia Transit use, public expectations and inquiries are only going to increase.

To support transit operations, the City of Orillia has allocated the 50% of a clerical support staff member and 25% of the Manager of Transportation staff time to address Orillia Transit issues. This allocation may have been sufficient in the past; however, that is not the case today.

The level of expertise required and the amount of time dedicated to addressing transit issues has increased significantly and will continue to do so as a result of:

- Increases in transit service provided and ridership growth (i.e. more passengers, more incidents)
- Addressing AODA issues
- Conventional transit and specialized transit are becoming more integrated
- Increased liaison with:
 - businesses industry
 - tourism industry and Parks and Recreation
- Identifying opportunities to extend service outside of the municipal boundaries (e.g. Casino Rama) similar to the extension of service to Orillia Square Mall

- Addressing City of Orillia requirements or concerns in a regionalized or more integrated transit network with other Simcoe County municipalities
- Transit-specific technologies that will be playing a greater role (e.g. next bus announcements, smart cards, GPS, vehicle tracking, automatic passenger counters, etc.)
- Transit planning technical expertise will be increasingly relied upon
- Meeting community expectations through additional investments will require significant budget increases and as such, more staff accountability will be sought by Council
- Attendance at transit workshops to keep on top of industry best practices should be encouraged
- Provincial and Federal transit funding for small and rural communities is increasing and as such, a more dedicated transit staff member will be needed to assess opportunities for enhanced funding (e.g. potential new bus terminal or City-owned transit maintenance facility)
- Performance-based transit operating agreements are not uncommon and require a high level of sophistication and negotiating skills
- Seeking low-cost transit service alternatives to reduce costs is an ongoing requirement

In the opinion of the consultant team project manager, Wally Beck, a more realistic staff time requirement dedicated to public transportation would be:

- 50% for a clerical support position (existing); this is an average as time required will vary by time of year (e.g. school start times, introduction of new routes, etc.)
- 75% of the Manager of Transportation (or equivalent) staff time immediately should council support the proposed 5-year Transit Service Plan in whole or in part. If a new staff equivalent is required, the remaining 25% of their time could be allocated to support other municipal tasks. Over time, this position could be fully allocated to Orillia Transit and OWLS.

In addition to the aforementioned staff allocation, technologies that provide for the tracking and reporting of transit use and performance by route and time of day (e.g. schedule adherence, passenger boardings by bus stop, passengers per hour, etc.) should be in place to support the dedicated transit staff. This will enable staff to address transit issues in a timely manner thereby improving customer service. One example is the integrated smart card system in place at the Town Bradford West Gwillimbury, Town of Midland and other municipalities where the following reports are easily generated:

- Total boardings by bus stop by passenger category (e.g. seniors, students, adult) by whatever period is specified such as weekday and Saturday or even year to date
- Revenue collected by route and time period
- Transfer activities
- Bus schedule adherence information such as whether or not buses are early or late and by how much; this can tell you whether or not public schedules should change, whether the route should be shortened or can be extended to serve more areas
- Monthly route reports for transit management reporting to Council

The aforementioned reports can be used to enforce a performance-based transit operating agreement with the transit service provider.

Other technology such as Automatic Passenger Counters (APC) can provide both ons and offs by bus stop and provide information on what the passenger load on any given trip or average by time period. This provides data to justify whether or not additional bus service is needed

3.5 Route and Service Concepts

The community engagement process and onsite observations helped the study team to more fully understand the community priorities relative to service issues and the need to expand service today and in the near future.

3.5.1 Route and Service Design Challenges

In terms of route design, there are a number of physical challenges faced by the City of Orillia that limit transit route design options, namely:

- Highways 11 and 12 are barriers to more direct and efficient route design to link residential areas. This forces buses to deviate, adding unproductive route distances.
- The steep grade of several roads within the City results in longer routes to serve the same number of residents and businesses
- The locations of Walmart and Georgian College – two key destinations – are remote, which forces buses to travel longer distances

In terms of the service hours, a number of issues exist that need to be addressed in a new route plan:

- Both the West Ridge and Georgian routes have unreliable schedules due to the demand and the route length, which requires buses to travel at speeds above acceptable averages (20-22 kph)
- The West Ridge route problem is exasperated due to heavy traffic conditions west of Highway 11 and the growing development that needs to be better served west of West Ridge Drive
- The Walmart location forces buses to deviate by 800 metres (1.6 km roundtrip) while service to Walmart is provided in one direction only (outbound from downtown), which forces residents in the West Ridge to travel by bus to the downtown in order to access Walmart
- Georgian College is relatively isolated forcing buses to deviate by 2.2 km from James Street West along Memorial Avenue to the college (4.4. km return)
- The South Route A and B routing is indirect and confusing to some residents
- Georgian, Laclie, North, and South routes have a significant portion of one-way service, which forces transit customers to travel out of direction. In some cases, residents can walk quicker than take the bus.
- Route layover bus bays at the downtown terminal force buses to circulate more than they need to, which can be addressed through route inter-lining
- As a guideline, round-trip route distances (downtown to downtown) should not exceed 10-11 kilometres in length to attain an acceptable average travel speed of 20-22 kph (kilometres per hour); some exceptions exist where little development exists on some sections of roadway, which can support higher travel speeds
- Hours of operation were identified as a concern for many residents, transit customers, businesses, and institutions

Although challenges exist, these challenges can be overcome by applying best practices and designing service by putting oneself in the shoes of a transit customer. It was clear that transit customers are very satisfied with the 30-minute frequency of service and as such, this should be maintained to the extent possible. Lending itself to the successful 30-minute service design is the location of the downtown transit terminal which, for the most part, is centrally located and should remain to be centrally located.

3.5.2 Existing Vs Proposed Route Concepts

In order to address the challenges and growth over the next five years, a number of route design changes are suggested for all routes except North Route. Exhibit 18 illustrates the current route network while Exhibit 19 illustrates the proposed route network.

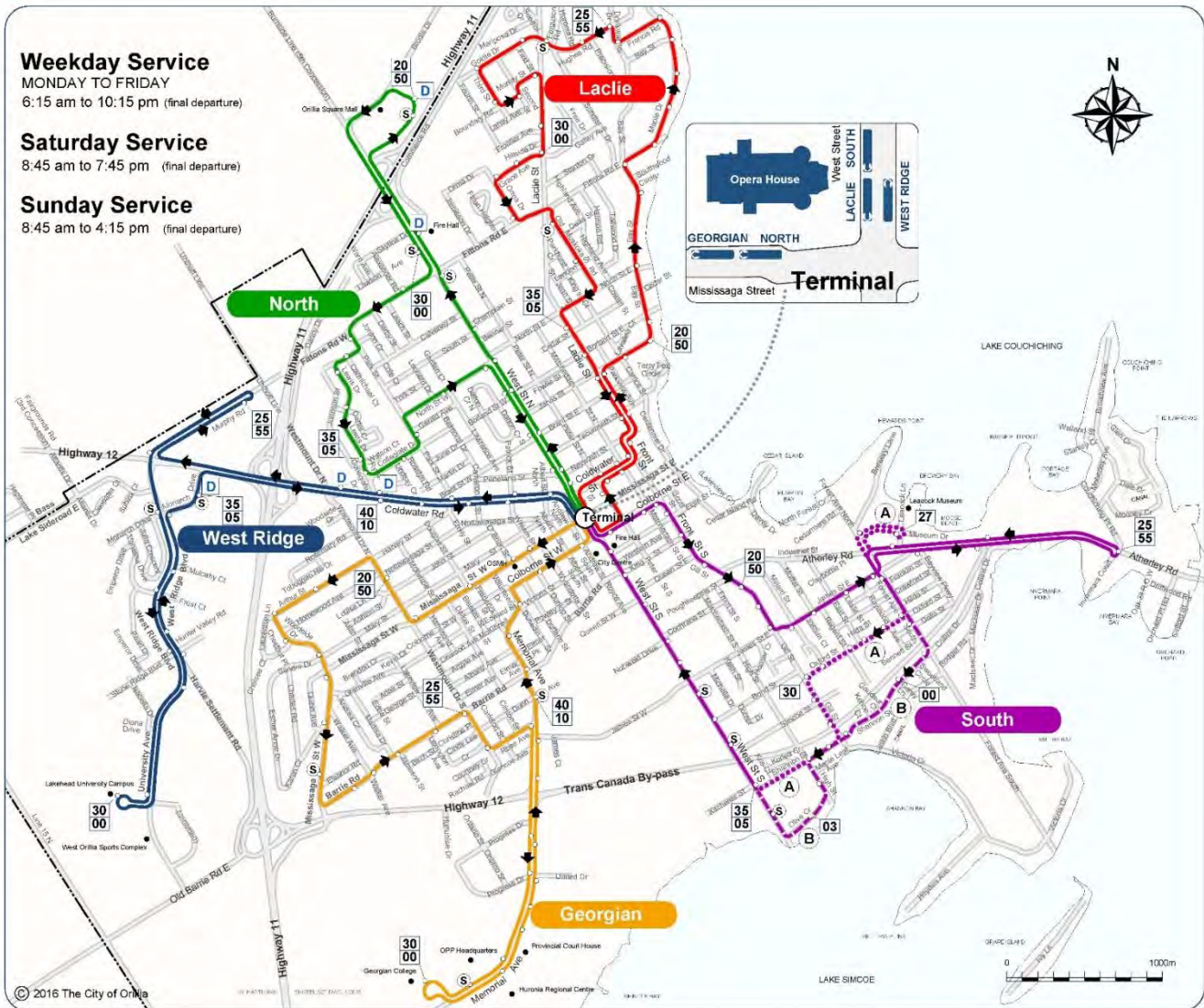


Exhibit 18: Existing Route Network

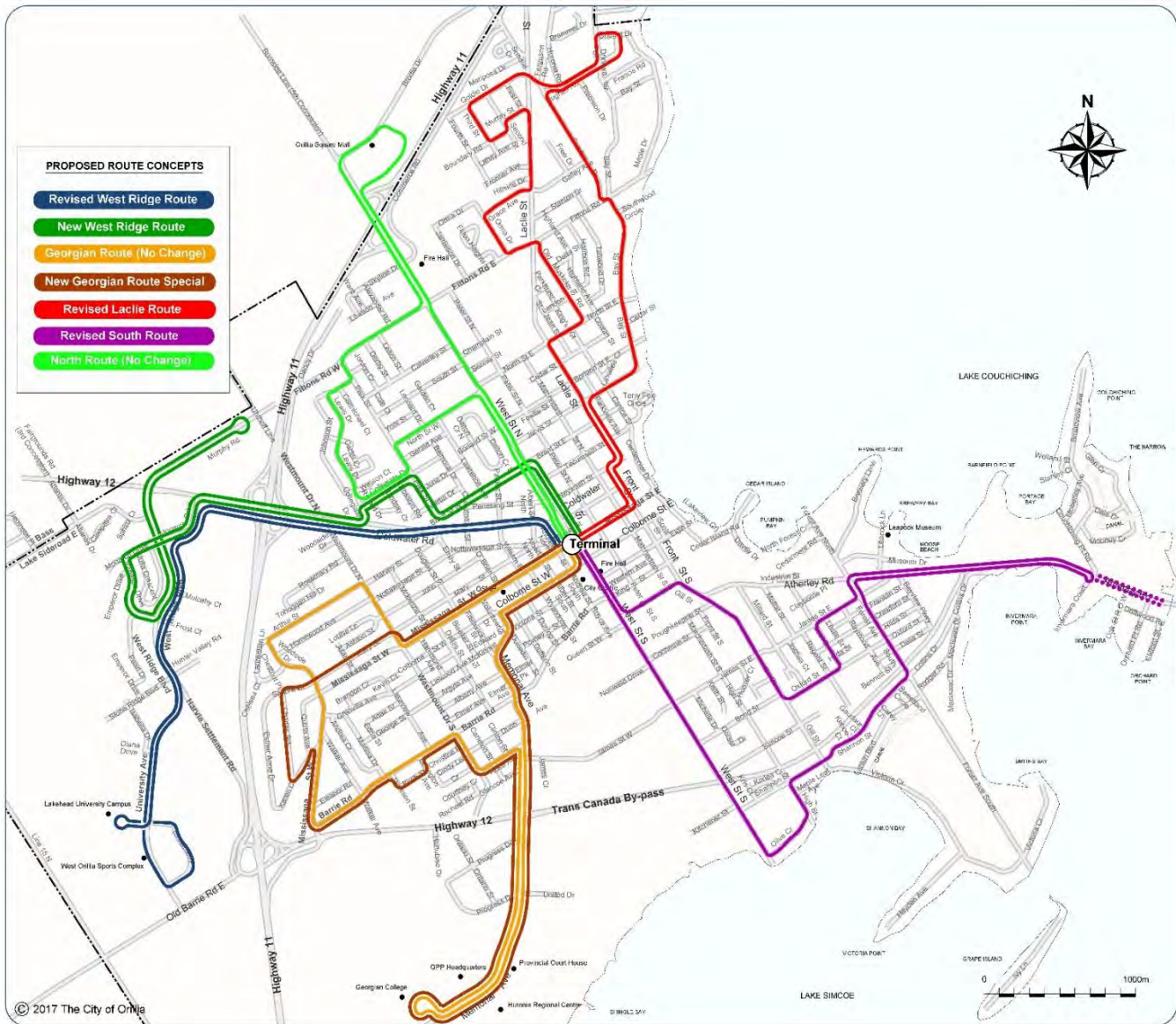


Exhibit 19: Proposed Route Network Concepts

3.5.2.1 Redesigned West Ridge Route

The current West Ridge Route distance needs to be reduced in length and as such, the only logical solution is to eliminate West Ridge Route service to Walmart while serving Walmart with a separate route.



The current West Ridge Route has a 13.2km roundtrip distance. Service is not reliable nor does it provide two-way service to Walmart, forcing those travelling to Walmart to travel downtown first. Adding to the challenge is development growth – both residential and commercial (e.g. Costco) - along and in proximity to West Ridge Blvd., which will increase demand and jeopardize service reliability further.

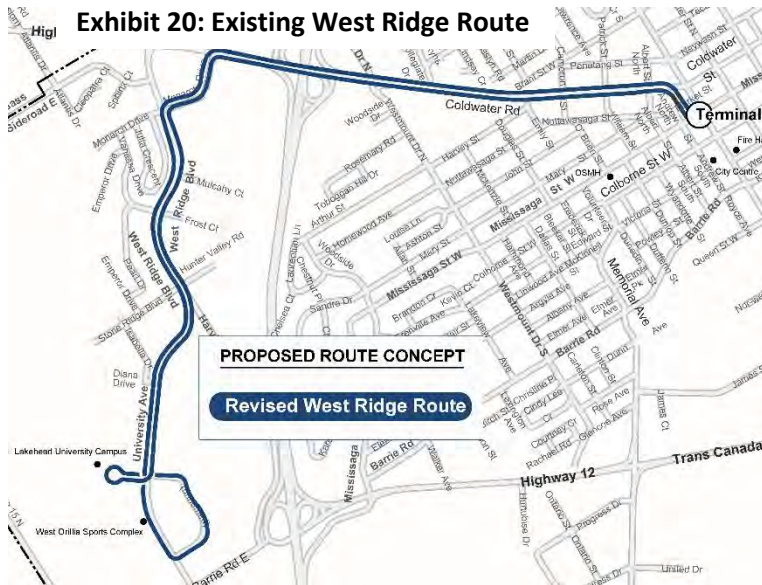


Exhibit 21: Revised West Ridge Route

The revised West Ridge Route concept provides direct service to Lakehead University and the Horne Business Park along Swimmer Dr. when development warrants the service in the future.

More important, the route distance round trip has been reduced to approximately 11.8 km, which brings design travels speeds averaging 23.6 rather than the current 26.4 km/ hour. Although not ideal, the time consuming deviation to Walmart is eliminated and replaced with the New Route Option.

3.5.2.2 New Route

With the elimination of West Ridge Route service to Walmart, a new route concept is proposed to replace the service.

New Route Option 1 (Preferred)

The proposed New Route concept would duplicate some of the North Route via Brant St. W, Park St., Collegiate Dr., Lewis Dr. then travel to Walmart via Coldwater Rd., Monarch Drive and West Ridge Blvd. The route concept will duplicate a part of North Route at Orillia Secondary School, which can support a transit ridership growth strategy aimed at attracting more high school students.



Exhibit 22: Existing North Route

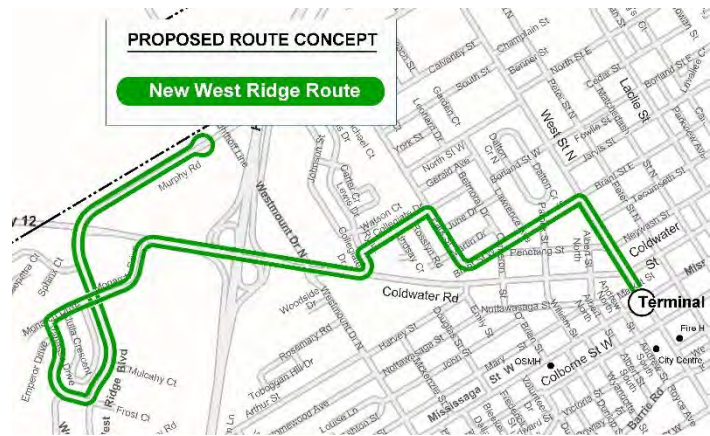


Exhibit 23: Proposed New Route

Initially during the off-peak only, service can be extended along West Ridge Blvd. to serve Vanessa Blvd. before travelling to Walmart. Schedules may be developed to accommodate transfers to Walmart for passengers boarding the revised West Ridge Route. As actual travel times are known, the off-peak extension could be offered all day if sufficient time is available.

While the West Ridge Route and other existing routes in the system would depart the downtown terminal on 15 minutes and 45 minutes after the hour, the proposed New Route can depart the terminal on 30 minutes after the hour and on the hour as an option. This would avoid duplication to some extent and provide a higher level of service to the West Ridge area. On the downside, other routes would not have a direct transfer to Walmart; however, the 15-minute wait time may be considered acceptable when one considers the connection with the proposed New Georgian Route.

3.5.2.3 New Georgian Route Special

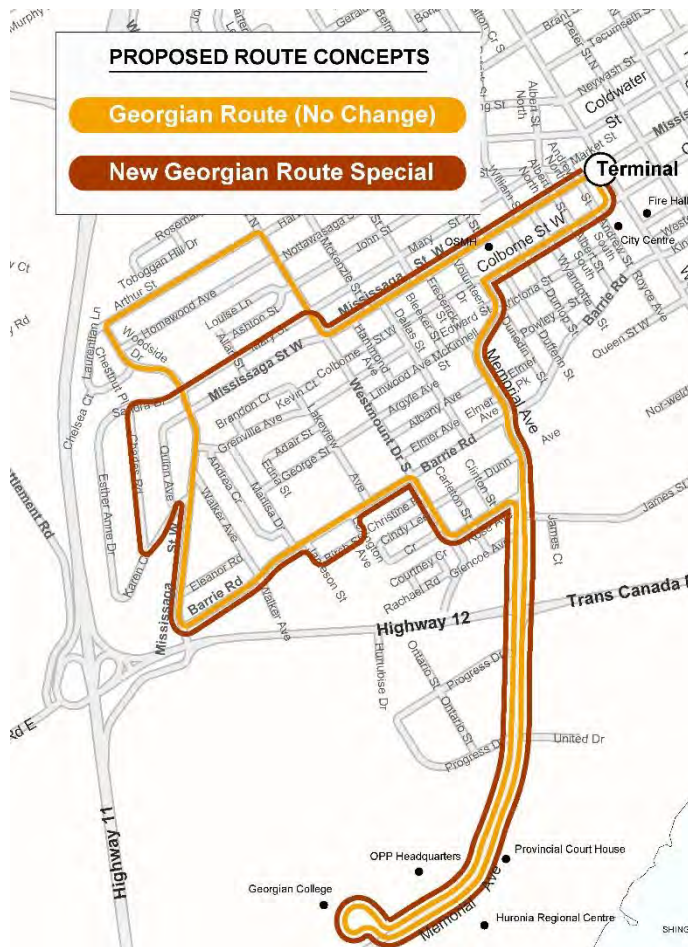


Exhibit 24: Proposed Georgian Route Special

The existing Georgian Route has significant schedule adherence problems during the school year. Demand is high, requiring frequent stops, and the 12.1 km route is too long. In addition, the one-way service design forces many transit customers to travel out of direction to get home, to the downtown or to Georgian College. One-way service longer than 2 km should be avoided, which is a best practices route design guideline. Further, in order to provide a service where residents can travel to anywhere in the City by bus in 45 minutes or less, service must be provided in both directions along existing travelways.

In order to maximize schedule reliability and improve coverage, it will be necessary to add a bus during times when demand to and from Georgian College is the greatest, namely, weekdays 7:30am – 9:30am, 11:30am – 1:30pm and 3:30pm – 5:30pm to coincide with class times. This bus can operate independent of the timed transfers at the downtown terminal, thereby providing a 15-minute service frequency to Georgian College and the downtown when combined with the regular Georgian Route.

The New Georgian Route Special can deviate from the existing Georgian Route to provide a more westerly service that was requested during the public consultation process. In this regard, the existing Georgian Route travelways would be followed with the following exceptions:

- The section between Mississauga St. W. at Mary St. to Mississauga St. W. at Karen Cr. would not be served
- Service would be provided along Mary St., Charles Rd., and Karen Cres. then serve Twin Lakes Secondary School on Birch St.

The added Georgian Route bus could be interlined to connect with the New Route (Option 1), which would also depart the terminal 30 minutes after the hour and on the hour. This would also benefit students travelling to Twin Lakes Secondary School on the New Route.

The existing Georgian Route is proposed to convert from one-way service to two-way service to coincide with the proposed New Georgian Route.

3.5.2.4 Redesigned South Route

The South Route currently has a reliable schedule with an average roundtrip distance of 11.4 km for the A and B routing. The proposed South Route redesign illustrated in Exhibit 23 provides for a roundtrip distance of 11.25 km. Although the distance slightly exceeds the more acceptable roundtrip distance of 10 to 11 km, higher travel speeds along Atherley Rd. can compensate for this.

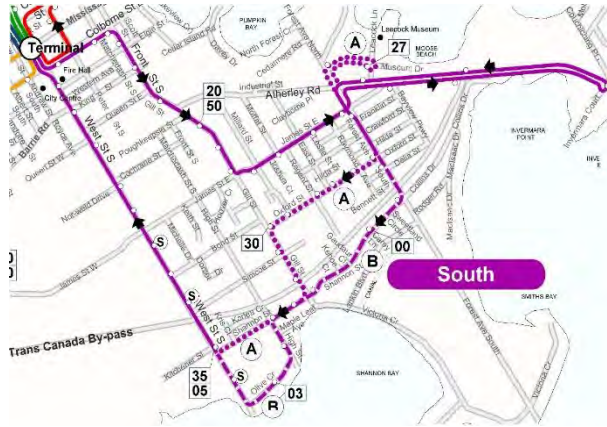


Exhibit 25: Existing One-way South Route

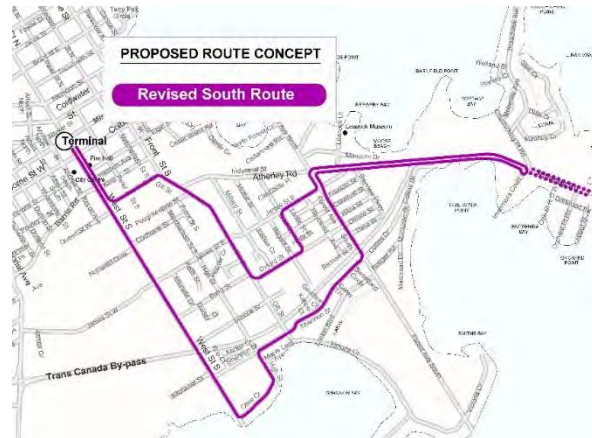


Exhibit 26: Redesigned Two-way South Route

Highlights of the changes to the South Route are:

- The bus departs the terminal along West St. S. rather than Colborne St. E., which would be served by a redesigned Laclie Route
- The A and B routing is eliminated in favour of two-way service along the same travelways
- Service to the Leacock Museum would be eliminated since the current bus stop is less than 50 metres from the main entrance; however, consideration could be given to maintaining service to the Leacock Centre in the off-peak, if actual travel times allow it.
- Two-way service is provided (one hour per direction)
- Service can be extended to the Orchard Point Rd. area in the future

3.5.2.5 Redesigned Laclie Route

Laclie Route has a roundtrip distance of 10.3 km and with very good schedule adherence. To accommodate the slight change in the South Route, the Laclie Route would be rerouted out of the downtown to Colborne St. E. then Front St. S. and continue with the current routing until Fittons Rd. E. where the bus would then turn left to travel along Sundial Dr. to Hughes Rd. and Bridget Dr. Service along Maple Dr. and Francis Rd. would be eliminated. Service would change from a 30-minute one-way route only to a 60-minute two-way route, which still provides for a combined 30-minute frequency. Service may also be extended to serve newer housing in the Sundial Drive area, if required.

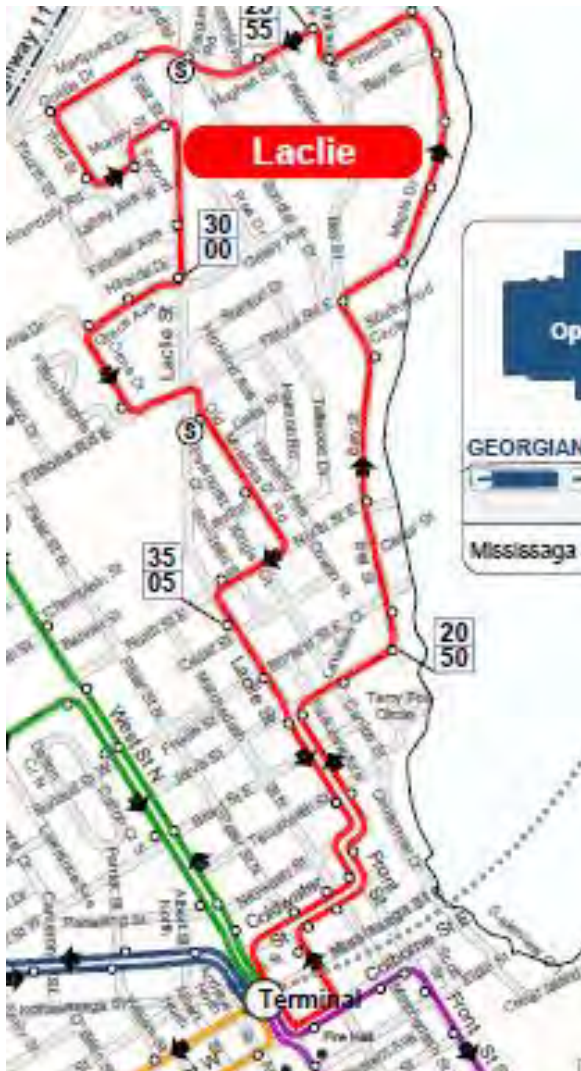


Exhibit 27: Existing Laclie Route



Exhibit 28: Revised Laclie Route

3.5.2.6 North Route

North Route connects the downtown with Orillia Square Mall and has the shortest roundtrip distance at 9.9 km. No change is being recommended in the route design, including the one-way only service east of West St. N. since the New Route would provide two-way service in most of the service area. This route would be a candidate for route inter-lining with another route that has less downtown layover time built into their schedule.

3.5.2.7 Alternative Route Designs

The route concepts suggested by Transit Consulting Network are subject to modifications to reflect further public input. The concepts were developed to ensure schedules can be met and provide 95% of residents with no more than a 5-minute walk to a bus stop as a guideline. In doing so, the route design process attempted to ensure that existing bus travelways were maintained to the extent possible.

In this regard, there were other options assessed for the New Route and Revised West Ridge Route as illustrated in the system map Exhibit 19: West Ridge and New Route Option 2

New Route Option 2

This route option would follow that of New Route Option 1 (Exhibit 29) for the most with the exception of service to Walmart, which would be covered by West Ridge Option 2. The route would then be extended to Lakehead University via Vanessa Dr.

West Ridge Route Option 2

To be considered with New Route Option 2, the existing West Ridge Route bus would be followed to Lakehead University. The bus would then continue to the downtown terminal via University Ave., Old Barrie Rd. and Mississaga St. W. The 30-minute one-way trip would require the bus to travel in the reverse direction on the return trip, providing hourly two-way service.

This option is not recommended for two reasons:

- Only one-way service to Walmart is provided
- Duplication of bus service with the proposed New Georgian Bus Route service area

3.5.2.8 Service Requests Not Accommodated with Route Plan

During the public consultations, there were requests to extend or deviate some routes to serve residents that are not directly served, that is, they wanted walk times to existing bus stops reduced. Unfortunately, some requests cannot be accommodated that would negatively affect far more residents than the number that would benefit or where there is insufficient running time to have reliable schedules. Two examples are requests for service to residents in the Shannon Bay area near the South



Exhibit 29: West Ridge and New Route Option 2

Route and residents along Sandra Dr., which was at one time served by the Georgian Route; however, the New Georgian Route will provide a closer service.

The elimination of service to the Leacock Museum will also affect some residents; however, this was necessary to ensure reliability of service to the newly designed South Route. Once the South Route has been in place and actual travel times are tracked, a route deviation to the Leacock Museum could be re-evaluated.

Given that ‘transit cannot be all things to all people’, it is reasonable to expect that some residents cannot be accommodated to their satisfaction with the fixed route service; however, other options exist that can be explored. Specialized Transit (i.e. OWLS) could be considered for individuals that are unable to walk to an existing bus stop. This would require a modification to the OWLS eligibility criteria. Another option is to introduce a community bus service that links outlying areas not currently served with seniors’ residences, shopping centres, medical facilities, recreation centres, and the downtown.

3.5.2.9 Downtown Terminal Routing and Inter-lining

The existing five bus bays will accommodate the route network over the next five years since the added Georgian Route Bus and New Route to Walmart would be scheduled to arrive and depart the terminal between the existing route departures of the other five bus routes. To help ensure that routes are able to maintain service reliability, it is recommended that route interlining take place to:

- Balance route travel times
- Minimize bus circulation within the downtown

Once the route network is updated and in place, a consistent pairing of routes based on actual running times should be implemented bearing in mind the route inter-lining strategy can be implemented today. Although only five bus bays are required for scheduled service, it is recommended that a sixth bus bay be made available to provide more opportunities for route inter-lining.

3.5.2.10 Summary of Proposed Route Network

The proposed routes were developed based on a number of criteria such as:

- Improving service reliability, where required
- Increased transit service coverage
- Better accommodation of high schools and post-secondary institutions
- Enhanced service for two of the most heavily travelled routes – West Ridge and Georgian
- Ease of understanding
- Meeting walk distance criteria (i.e. maximum 5 minute walk to bus stop for 95% of residents)
- Safer travel speeds
- Reducing passenger travel times so that a transit customer can board a bus and get off at their destination bus stop anywhere in the City within 45 minutes.

In order to accommodate the redesigned route network, it is estimated that an estimated 125 bus stops would need to be added to the system. Approximately 95 bus stops would be placed on the opposite side of the roadway where existing stops of one-way routes are provided. An additional 30 bus stops would be provided on new travelways for the proposed New Route, redesigned West Ridge Route and the Georgian Route Special. It is also recognized that as implementation takes place, slight modifications can be expected.

When developing the route concepts, it is recognized that slight modifications may be required to the proposed route travelways and schedules prior to and during service implementation.

4. PHASE III: FINAL TRANSIT SERVICE PLAN AND FINANCIAL PLAN

4.1 Five-year Transit Service Plan

A five-year (2017-2021) transit service expansion and improvement plan has been developed that is guided by the transit policy framework based on extensive community consultations and best practices.

The proposed service expansion and improvement plan is summarized for the five years from 2018 to 2022 for budgeting purposes; however, there are no-cost, 'quick win' service improvements that could take place during the interim such as:

- Inter-lining routes such that bus circulation in the downtown is minimized and routes that are experiencing schedule adherence problems (i.e. West Ridge and Georgian) are inter-lined with routes with excess layover time (e.g. Laclie and North)
- Adjust West Ridge and Georgian routes slightly to improve schedule adherence
- Improving traffic signal timings at intersections along Coldwater Rd. (e.g. at Monarch Dr. and West Ridge Blvd./Murphy Rd.)

For reference and comparison purposes, there were 25,942 hours of transit service in 2015 and 2016, which will be considered the base quantity of service for comparison purposes.

The transit service expansion plan has been developed to meet urgent community needs within three years, which is considered the short-term. Thereafter and for longer-term budgeting purposes, it has been assumed that service hours would keep pace with population growth. As results of the implementation of the short-term plan are realized and quantified, adjustments can be made to modify service as budgets and transit demand dictate.

4.1.1 Proposed Year 1 Transit Service Changes

The proposed service expansion for 2018 is summarized as follows:

- Add Georgian Route Special bus to provide 15 minute service 2 hours in the morning peak, 2 hours in the mid-day and 2 hours in the afternoon peak
- Add New Route September 1, with full service to match other bus routes
- Extend evening service

The impact of the changes are:

- 2,732 additional hours in Year 1 for a total of 28,674 hours; this represents an increase of 10.5% over 2017
- 6,180 additional hours of added service on an annualized basis for a total of 32,122 hours; this represents an annualized increase of 23.8% over the base year

4.1.2 Proposed Year 2 Transit Service Changes

The proposed service expansion in Year 2 is summarized as follows:

- Annualized New Route implemented in September would be in effect for the full year
- Begin Saturday service 90 minutes earlier (from 8:45am to 7:15am) effective January 1 to accommodate 8:00am (or earlier) work start times

- Extend Sunday service by one hour (from 4:45pm to 5:45pm) effective January 1

The impact of the changes over Year 1 are:

- 4,228 hours additional hours over Year 1 attributed to the annualized service hours related to the new route and expanded hours of operation (1,068 hours)
- Total of 34,244 hours of service in Year 2 represents an increase of 4,228 hours (14.7%) over the hours budgeted in Year 1.

4.1.3 Proposed Year 3 Transit Service Changes

The proposed service expansion for Year 3 is summarized as follows:

- Extend weekday service by one hour to 11:45pm to accommodate 11:00pm shifts
- End Sunday service 30 minutes later (from 6:15pm to 6:45pm)

The extended hours of operation results in 1,668 additional hours of service, which is 5.1% over Year 2 for a total of 34,570 service hours annually.

4.1.4 Proposed Year 4 and Year 5 Transit Service Changes

For budgeting purposes, it is recommended that annual service hour increases match population growth. In this regard, the service hours will be maintained at a rate of 1.0 hours of service per capita. The projected 2020 population supplied by the City of Orillia, this equates to 35,413 hours of service – an increase of 843 hours or 2.4% over Year 3. In Year 4, service hours would increase by 587 hours or 1.7% to 36,000 hours of service annually.

4.1.5 Summary of Five-year Transit Service Expansion Plan

The proposed service improvements over the five years equates to an increase of 39%. Although significant, the increase is primarily attributed to the introduction of a sixth route. It is also worth noting that service hours remained relatively static from 2012 (25,361 hours) to 2016 (25,942), representing an increase of only 2.3% in four years.

The proposed transit service expansion is designed to meet community priorities (e.g. service reliability and extended hours of operation) within a three-year period then somewhat stabilize thereafter with modest increases to keep pace with population growth.

4.2 Five-Year Transit Operating Budget

For cost estimating purposes over the next five years, the fixed and variable operating cost components reported to the Province for dedicated transit gas tax funding in 2015 were used. Fixed costs are realized regardless of the service quantity (e.g. administration) while variable costs are incurred based on service quantity (e.g. hours of service). The five-year transit operating budget is illustrated in Table 4

4.2.1 Transit Ridership Projections

With the transit service increased to meet community needs, ridership is expected to grow. In 2015 and 2016, there were 750,000 transit trips reported, which represents 22.77 trips per capita. With increased service levels, the Orillia Transit target is to increase transit use to 30 trips per capita by 2021; however, a more conservative budget target has been established at 28 trips per capita by 2021. This has been

applied to the revenue projections over the next five years with transit ridership estimated to reach over 1,000,000 passengers by 2021.

There is a clear correlation between transit use and the amount of service provided, recognizing that service quality is also a factor, that is, the more reliable the service, the higher the ridership.

4.2.2 Transit Ridership Revenues

Transit fares are proposed as follows:

- Year 1: \$2.25 cash fare, \$1.80 current ticket price, \$53 monthly pass (transferable); free transfers on any route and in any direction within 60 minutes of boarding a bus
- Year 2: \$2.50 cash fare, \$2.00 ticket price; \$59 monthly pass
- Year 3 to Year 5: base increases on transit cost inflation (e.g. cost per hour of service); revisit cost of monthly pass

In order to properly estimate revenues, a detailed fare payment survey would need to be undertaken (i.e. referred to as an ‘average fare’ study). For revenue estimating purposes, it has been assumed that the average fare would increase from \$1.07 in 2015 to \$1.35 by 2021. A summary of the proposed annual transit service hours and estimated revenues used for budgeting purposes is illustrated in Table 4 below.

Transit Ridership and Revenue Projections: 2017 to 2021	2015 CUTA Submission	Year				
		2017	2018	2019	2020	2021
Total Population	32,945	34,141	34,556	34,980	35,413	36,000
Transit Trips per Capita	22.77	23.50	25.00	26.00	27.00	28.00
Annual Transit Ridership	750,000	802,314	863,900	909,480	956,151	1,008,000
Average Fare	\$1.07	\$1.15	\$1.20	\$1.25	\$1.30	\$1.35
Total Passenger Fare Revenues	\$798,825	\$922,661	\$1,036,680	\$1,136,850	\$1,242,996	\$1,360,800

Table 4: 2017-2021 Estimated Transit Ridership and Revenue

4.2.3 Dedicated Gas Tax

For every litre of gasoline sold, Ontario currently provides two cents to municipalities to help fund local public transit improvements. For the 2015 operating year, the City of Orillia received \$437,000. On January 27, 2017 the Province of Ontario announced that beginning in 2019, Ontario will gradually double the municipal share of gas tax funds to a total of four cents per litre in 2021-22.

In 2016, 99 municipalities received a share of a dedicated transit tax collected by the Province, which is determined by a formula of 70% ridership and 30% cent population. In this regard, if the number of municipalities receiving the dedicated gas tax remains constant, maintain their existing ridership levels and population, that the doubling of the gas tax would also double the City of Orillia’s contribution. Given the unknowns that exist – number of municipal transit systems, population growth, ridership growth, litres of gasoline sold in any given year – it was determined by City of Orillia staff to be conservative in the gas tax amount estimated for budgeting purposes.

While 2017 and 2018 are assumed to remain constant (\$437,000 per year), a factor of 75% of the additional gas tax would be used for conservative budgeting purposes, which is calculated as follows:

City of Orillia Operational Review of Orillia Transit Service

Operating Year	Dedicated Gas Tax	Funding based on 100% of gas tax	\$437,000 existing gas tax + 75% additional gas tax
2017	2.0 cents	N/A	\$437,000
2018	2.0 cents	N/A	\$437,000
2019	2.5 cents	\$109,000	\$519,000
2020	3.0 cents	\$218,000	\$600,000
2021	3.5 cents	\$327,000	\$682,000
2022	4.0 cents	\$437,000	\$764,000

Going forward, since the gas tax allocation among municipalities is heavier on transit ridership growth (i.e. 70%) than population (30%), transit ridership growth strategies take on a more important role. If transit system effectiveness (revenue passengers per capita) improves better than the provincial average, the City will benefit in two ways:

- Increased passenger revenues
- Increased gas tax revenue attributed to transit ridership gains

Another factor that comes into play is the amount of gasoline sold. Ironically, if more gasoline is sold, this adds to the carbon footprint; however, more gas tax revenues will be collected by the Province of Ontario and as such, Ontario transit systems will benefit further.

The impact of the estimated transit ridership growth and the existing and conservatively estimated increase in gas tax revenues are incorporated in Section 4.2.4 Proposed Five Year Transit Operating Budget.

It is worth noting that the service plan as proposed was not influenced by the increase in the dedicated gas tax.

4.2.4 Proposed Five Year Transit Operating Budget

Table 5 below provides a summary of the projected transit operating budget.

Five Year Orillia Transit Operating Budget*	Year 1	Year 2	Year 3	Year 4	Year 5
Total Population	34,141	34,556	34,980	35,413	36,000
Transit Trips per Capita	23.50	25.00	26.00	27.00	28.00
Annual Transit Ridership	802,314	863,900	909,480	956,151	1,008,000
Annual Revenue Hours of Service	28,684	32,902	34,570	35,413	36,000
Service Hours per Capita	0.84	0.95	0.99	1.00	1.00
Variable service delivery cost					
Estimated Contractor Costs	1,912,075	2,193,247	2,304,436	2,360,631	2,399,760
Vehicle Registration	\$4,600	\$4,600	\$4,600	\$4,600	\$4,600
Cross-boundary costs					
Total Variable Operating Costs	\$1,916,675.44	\$2,197,847.32	\$2,309,036.20	\$2,365,230.58	\$2,404,360
Fixed Operating Costs					
Staff Salary + Benefits*	\$156,000	\$156,000	\$156,000	\$156,000	\$156,000
Advertising and Promotion	\$24,056	\$24,056	\$24,056	\$24,056	\$24,056
Memberships	\$1,119	\$1,119	\$1,119	\$1,119	\$1,119
Telephone and Office supplies	\$1,959	\$1,959	\$1,959	\$1,959	\$1,959
Shelter Maintenance	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Fare Collection Expenses	\$12,709	\$12,709	\$12,709	\$12,709	\$12,709
Total Fixed Costs	\$200,843	\$200,843	\$200,843	\$200,843	\$200,843
Total Operating Cost (Fixed + Variable)	\$2,117,518.44	\$2,398,690.32	\$2,509,879.20	\$2,566,073.58	\$2,605,203
Revenues					
Average Fare	\$1.15	\$1.20	\$1.25	\$1.30	\$1.35
Total Passenger Fare Revenues	922,661	1,036,680	1,136,850	1,242,996	1,360,800
Orillia Square Mall (constant)	\$43,367	\$43,367	\$43,367	\$43,367	\$43,367
Advertising Revenues (constant)	\$43,342	\$43,342	\$43,342	\$43,342	\$43,342
Total Revenue	1,009,370	1,123,389	1,223,559	1,329,705	1,447,509
Net Operating Cost	1,108,149	1,275,301	1,286,320	1,236,368	1,157,694
Dedicated Provincial Transit Gas Tax	\$437,000	\$437,000	\$519,000	\$600,000	\$682,000
Net Cost to City of Orillia	671,149	838,301	767,320	636,368	475,694
Net Annual Investment per Capita	\$19.66	\$24.26	\$21.94	\$17.97	\$13.21

Table 5: Proposed Five Year Transit Operating Budget

* Transit operating budget reflects values that would be realized assuming 2017 as Year 1.

The following assumptions have been made relative to the costs and revenues:

- 2016 costs including hourly contractor cost of \$66.66 per hour of service (Note: this value will need to be adjusted to reflect a new negotiated Contractor operating agreement during 2017).
- Fixed operating costs remain constant with the exception of the portion of the Transportation Manager’s increased from 25% to 75%
- Average fare prices to be increased annually
- Increased dedicated gas tax revenues attributed to increases in population and transit ridership

In 2015, the Net Operating Cost of Orillia Transit was \$983,275. The estimated provincial gas tax of \$437,000 leaves a balance (Net Cost to City of Orillia) of \$546,275, which is \$16.58 on a per capita basis. Based on the proposed service, this is expected to increase to \$671,149 (\$24.26 per capita) in 2017. It is worth noting that the \$24.26 net cost per capita is still below the 2014 peer group average of \$28.60 per capita.

By 2021, the net operating cost will decrease to \$475,694 (\$13.21 per capita) by 2022 with the increased dedicated gas tax contribution reaching 3.5 cents per litre. This represents a significant 45% reduction in the per capita cost. This will improve further in 2022 as the full 4.0 cents per litre gas tax is place, which is estimated to reduce the cost to the City by an additional \$82,000.

The estimated financial performance improvement is predicated on the ridership growth attributed to increased service, expanded hours of operation, service reliability, improved transit infrastructure, and population growth. It is, therefore, important that the City realizes that investments made today will bear fruit in the future. And the added gas tax will provide the City of Orillia with the flexibility to enhance transit service and invest in needed transit infrastructure in the coming years.

4.2.5 Specialized Transit

In order to meet Accessibility for Ontarians Disability Act (AODA), the service hours of Orillia Accessible Transit (OWLS) must be expanded to match that of the Orillia Transit hours of operation. The added cost for the service has not been addressed in this study.

4.3 Five-Year Capital Budget

A five-year capital budget has been developed to support the recommended Transit Ridership Growth Plan, which addresses the following:

- Fleet requirements to ensure adequate rolling stock is in place
- Bus stop infrastructure
- Downtown terminal modifications and potential relocation and construction
- Transit maintenance facility ownership
- Smart card technology

4.3.1 Fleet

The City of Orillia owns 11 buses, which are listed by model and year:

Number	Model Year	Description
1	2004	9.2 metre Eldorado
1	2007	9.2 metre Eldorado
2	2008	12.2 metre New Flyer
4	2010	12.2 metre New Flyer
3	2017	12.2 metre Nova
11 buses	Total	

There are 11 buses in the fleet as of December, 2016 - five buses operate in peak service, leaving 6 buses as spares. Unfortunately, not all buses are available for service recently due to buses remaining out of service for extended maintenance periods. The contractor, First Student, provides additional spare vehicles when

required; however, the cost is at a premium. The three new 12.2 metre Nova buses delivered in December, 2016 should eliminate the use of contractor vehicles and lower maintenance costs overall since the three new buses will be covered by warranty.

With the New Route and added New Georgian Route, seven buses will be needed during the peak period, leaving four spare buses. The 2004 and 2007 Eldorado buses will continue to be licensed; however, they will be parked on City-owned property and used, as required.

Maintaining the 11-vehicle fleet will provide the City of Orillia with the flexibility to:

- Ensure there is no need to use a contractor supplied vehicle
- Be available for additional peak revenue service, if required, in the future (e.g. used as high school specials or be available for charter services)

The design life span of a conventional transit vehicle is 12 years; however, some transit systems operate buses well beyond the 12-year life cycle. In the case of the City of Orillia, the two Eldorado buses (2004 and 2007) are reported to be in average condition and are expected to remain in the fleet over the next three to five years. In the longer term, older transit vehicles should be assessed by a licensed third party to determine whether buses should be retired and replaced, refurbished, cannibalized for parts, or remain active. In this regard, it is not always the age of the vehicle that is the determining factor.

The 2008 New Flyer bus has travelled approximately 1,000,000 kilometres, which is excessive for a bus in service for only nine years; the bus had a new engine replacement. Since the current eight buses should be rotated for revenue service, each of the buses should average 66,000 kilometres per year based on 530,000 total kilometres of service reported in 2014. Assuming the 2007 New Flyer has been in service for nine years, this equates to approximately 110,000 kilometres of travel each year.

After 8 to 10 years of normal use, bus refurbishments may be required to extend vehicle life by up to 6 years (i.e. from 12 years to up to 18 years). Other Ontario transit systems that have moved to an 18-year life cycle include Barrie Transit, Brampton Transit, York Region Transit, Sault Ste. Marie Transit, and Stratford Transit while others such as North Bay Transit, Thunder Bay Transit, and Sudbury Transit may follow suit to extend vehicle life from 12 years to 15 and up to 18 years as a cost efficiency measure. A budget of \$120,000 per bus should be set aside for a bus refurbishment program.

It is recommended that a long-term and predictable capital funding strategy be set up for both bus replacement and service expansion. Rather than purchasing three buses in one year at a total cost of approximately \$1.5 million, the purchase should take place over three years at a cost of \$500,000 per year. This would help ensure a balanced fleet replacement plan. Of course, this would be subject to external funding available. In this regard, two additional buses are expected to be purchased in 2018 through the federal government's Public Transit Infrastructure Fund. These two buses can be used to replace the 2004 and 2005 Eldorado buses. If funding does not materialize, the City of Orillia should add the capital funding needed.

4.3.2 Electric, Hybrid and Compressed Natural Gas Buses

Alternatives to purchasing conventional transit vehicles that have diesel propulsion engines consist of full electric vehicles (EV), electric/ diesel (hybrid) and compressed natural gas (CNG) buses. Based on CUTA statistics, fuel costs for all Ontario transit systems in municipalities with a population under 50,000 was reported to be \$3,864,107 in 2015. This represents 8.1% of total direct operating expense of \$47,446,779. Although relatively marginal, efforts continue to be made throughout Canada towards the procurement of propulsion systems that are more environmentally friendly than diesel. At the same time, improvements to diesel fuel economy are being realized as well through, for example, the use of lighter vehicle materials to reduce overall vehicle weight.

EV buses are in their relative infancy and show promise; however, re-charging of buses would need to occur on the road or at the transit garage for overnight charging. Since EV buses are zero emission, studies have been recently commissioned to investigate electric buses in Canada (e.g. York Region Transit, Metro Transit in Halifax, N.S. and elsewhere). Given its infancy and environmental benefits, it would be prudent to monitor the progress of electric bus technology in the coming years.

Hybrid buses have a much longer track record than EV buses and greater range. In December 2016, the City of Orillia purchased three new 12.2 metre diesel buses at a cost of \$485,000 per bus. Depending upon the options selected, a hybrid bus would cost up to an estimated \$800,000 per bus, excluding any infrastructure modifications and additional parts inventory.

Based on research from Transport Canada (<http://data.tc.gc.ca/archive/eng/programs/environment-utsp-casestudy-cs71e-hybridbuses-272.htm>), hybrid bus technology has matured, is commercially viable and has a number of advantages and disadvantages.

Hybrid buses offer the following advantages compared to conventional diesel buses:

- Reduced fuel consumption in the order of 10% to 40%.
- Reduced noise level due to either a smaller internal combustion engine or lower RPMs
- Extended brake life due to regenerative braking
- Potential for reduced maintenance (fewer oil changes, less engine wear-and-tear)
- Better acceleration from a stop
- Passenger acceptance due to smooth ride and environmental friendliness
- Reduced emissions

There are several disadvantages to hybrid buses:

- The capital cost for hybrid buses is 50% to 70% more than comparable diesel buses, depending on the options ordered and the order size. It remains to be seen how much the price difference will close as hybrid buses gain wider usage.
- Battery life has been a significant cost and operational factor. There are three types of batteries typically used for hybrid buses and they offer different costs, advantages, and disadvantages.
- Some changes in maintenance procedures are required. For examples, additional parts need to be inventoried and equipment is required for the servicing of roof-mounted battery packs.

An alternative to hybrid engines compressed natural gas (CNG) engines, which are also more environmentally friendly than diesel. CNG bus technology in the past was unreliable; however, the technology has improved to a point that the purchase CNG buses are becoming more common.

All alternative propulsion systems will require modifications to maintenance facilities (charging or storage facilities) and additional parts and equipment inventories. Given the small Orillia Transit fleet size, the significantly higher cost to purchase hybrid or electric buses, and the marginal financial benefits over hybrid, it is recommended that the City maintain the use of diesel for the time being and continue to monitor the performance of hybrid, CNG and electric buses. However, should the City decide to build its own maintenance facility, consideration should be given to the alternative propulsion systems that may be used when designing the facility.

4.3.3 Bus Stop Infrastructure

4.3.3.1 Bus Stops

It is estimated that approximately 100 bus stops will be needed to accommodate the change from one-way to two-way service. Costs will vary significantly. Some new stops may simply require a bus stop sign on an existing post while other bus stops would require an accessible concrete bus stop landing pad linked to a nearby sidewalk. An average of 30 bus stops/ year at \$500 per bus stop has been estimated over a 3-year period. This would require more in-depth onsite assessment, which is not covered in the scope of this study.

It became very clear during the transit focus group consultations that service quality was by far the largest complaint. In fact, the on-line survey response to the question: “What are the (three) most important improvements that would encourage you to use Transit more than you currently do?” had 23.8% of the responses indicating need for better buses while 57.7% selected better schedule adherence, expanded hours of operation, more route coverage, and more frequent service as their response. The remaining 18.5% were attributed to requiring improvements to the downtown terminal, improved customer service, reduced fares, and better access to bus information. This will change should the City of Orillia implement the transit service and expansion plan.

4.3.3.2 Bus Shelters

The new routes and schedules recommended are designed to significantly address service coverage and quality issues. The arrival of three new buses will significantly reduce bus quality complaints. As the service improvements take hold, there will, no doubt be a significant reduction in complaints. Typically, bus stop infrastructure requests for items such as new shelters and safe access will become relatively more important over time as service improves. It is recommended that the City set aside the additional funds to provide for three new shelters each year at a cost of approximately \$7,500 per shelter.

Exhibit 30: Bus Stop Shelter Priorities, identifies current city-owned bus shelters in place in relation to the number of weekday boardings. Going forward, shelter location priorities should be based on boarding volumes, bearing in mind that stops in front of seniors’ centres and medical centres may take priority. In any event, bus stop boardings will need to be updated once the new or reconfigured routes have had time to establish consistent demand.

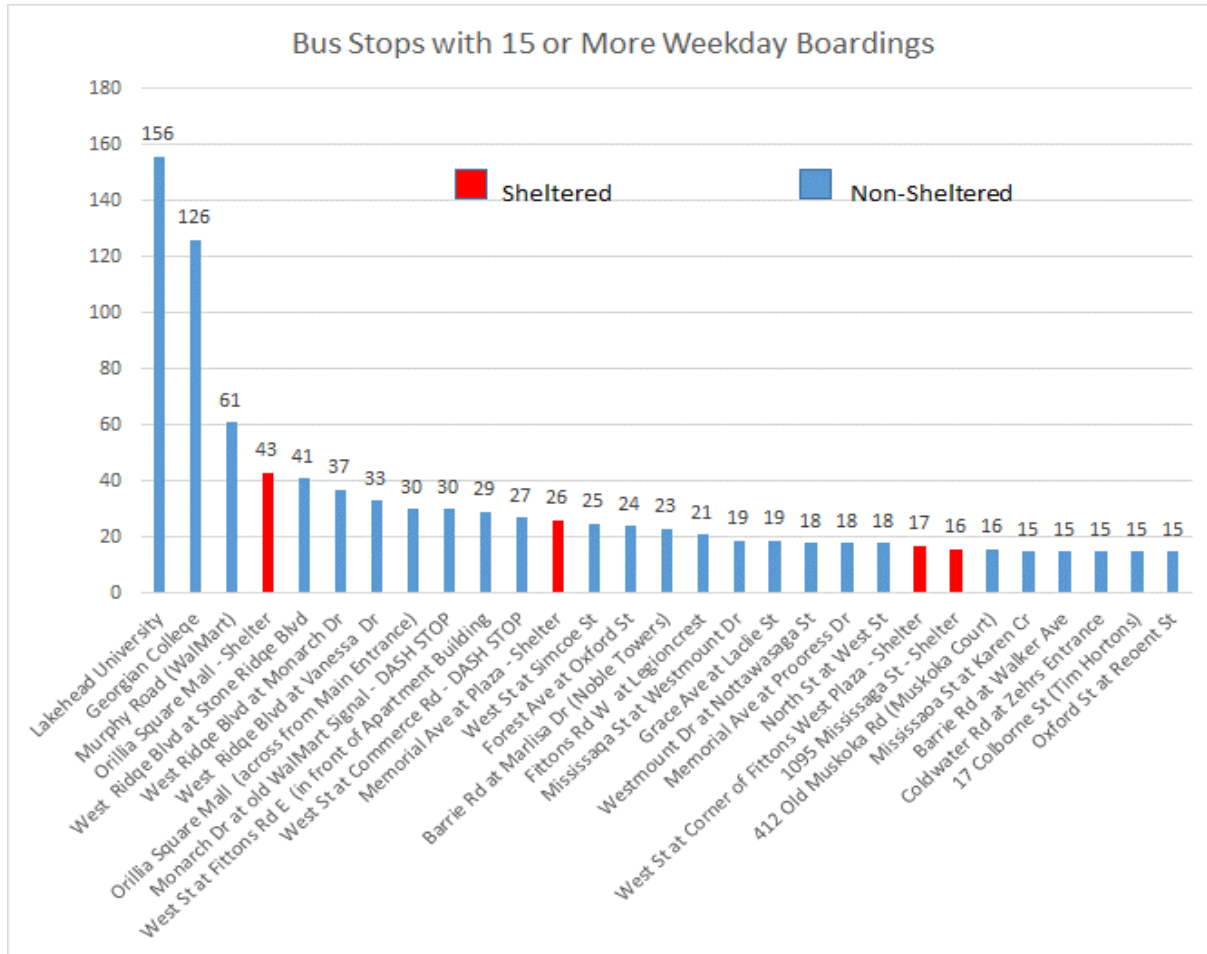


Exhibit 30: Bus Stop Shelter Priorities

4.3.3.3 Heated Downtown Bus Shelter

Since the current on-street downtown bus terminal is the major transit hub of the radial route network where all transfers take place. Since there is no heated waiting area, a single large heated shelter should be installed that is in proximity to the north-west corner of Mississauga St. W. and West St. N. A budget of \$40,000 has been set aside for the heated shelter, which could be relocated at a future date, if an alternative downtown terminal site is selected.

4.3.4 Downtown Bus Terminal

As the City of Orillia expands and transit ridership growth continues to outpace population growth, a safer, more functional bus terminal will be needed in the downtown given the appropriate radial route design of the transit system.

The City of Orillia has three options relative to accommodating transfers between buses:

- Alternative 1: Improve the existing on-street terminal area by converting to saw-tooth bus bays, where possible, and adding one bus bay, heated shelter and public washroom facilities.
- Alternative 2: Build a new off-street or on-street bus terminal and required amenities as close to the existing terminal as possible
- Alternative 3: Retrofit an existing building and property that may be available in the downtown

A new bus terminal would ensure that passengers:

- Do not have to cross a street to transfer
- Have a comfortable climate controlled waiting area
- Have access to public washroom facilities
- Have a short walk to destinations within the downtown

Ideally, a future downtown bus terminal/ mobility hub would be able to house inter-city bus services and support future Simcoe County public transportation initiatives. Best practices dictate that downtown bus terminals should be located in close proximity to high density and mixed-use transit-oriented development.

Given the growing importance of transit, a high-level downtown bus terminal location and functional design study should be undertaken in 2018 since it would be prudent for the City of Orillia to identify and secure an appropriate site as soon as possible. The \$25,000 to \$30,000 study recommended will help determine the appropriate option and relative costs, which can range significantly. During the interim, the downtown bus terminal should be identified in the budget.

4.3.5 Transit Maintenance Facility Ownership

The current transit business model forces the City of Orillia to rely on a local service provider to supply maintenance and storage facilities for the transit fleet. This model is similar to the one in the Town of Bradford West Gwillimbury. While the City of Orillia owns the rolling stock, the service provider owns the maintenance facility and supplies spare vehicles when the municipally owned vehicles are out of service for repairs. This has resulted in non-accessible school buses being used too often in regular service and is a significant irritant to many transit customers.

Given the size of the fleet and future expansion of transit expected over the next 10 to 20 years, there are likely few, if any, local facilities available that would be able to accommodate Orillia Transit. There are economies of scale with the existing service provider since the maintenance facility and staff is also shared with school bus operations; however, one disadvantage is the potential lack of competition for future transit contracts. If the City of Orillia owned its own maintenance facility through the purchase of an existing building or the construction of a new transit facility, the City would have other options.

One option is to bring transit in-house and be 100% municipally owned and operated while a second option would be to own a new maintenance facility and still contract out the service, which has financial benefits. The current contract has resulted in concerns with lack of accountability; however, this can easily be overcome through the implementation of monitoring tools readily available. These same tools can be used to develop performance-based transit agreements for both transit operations and maintenance. The bottom line is that if the City owns the infrastructure and rolling stock, private sector transit operating agreements can be more competitive while the necessary accountability is in place.

The 2017 fleet will consist of 11 conventional transit buses. If a long-term transit garage is to be constructed or secured, the facility should meet Orillia Transit needs for the next 20 years with the ability to expand, as required. The City of Orillia should explore transit maintenance garage options available as soon as possible since the contract with First Student expires mid 2017(end of June).

Given recent transit funding announcements at the Provincial and Federal levels, the City of Orillia could undertake a high-level study to assess the merits and costs of building or leasing a transit facility and, if feasible, undertake a detailed design study that would better position the City to better qualify for external transit infrastructure funding programs. During the interim the maintenance facility should at

least be identified as a cost item in the capital budget. Based on a current study involving Transit Consulting Network, approximately 230 square metres (2500 sq. ft.) are required per bus in a maintenance facility. Based on a long-term Orillia Transit fleet size of 30 buses, an estimated 6,900 square metres of maintenance and vehicle storage area would be required. Assuming a cost of \$2,700 per sq. m. (\$250 per sq. ft.), a transit maintenance facility would cost approximately \$18,000,000, excluding land.

Recommendation: That the City evaluate the options available to have a transit maintenance facility that is not owned by the contracted service provider.

4.3.6 Bike Racks on Buses

Bike racks on transit buses are increasingly the norm in the transit industry as active transportation has taken a more important role in community development. The availability of bike racks enables transit customers to ride to bus stops when boarding and ride from their last bus stop to their destination; this is known as the 'first mile/last mile', which reduces a person's travel time. The demand for bike racks on buses is universal while the presence of Lakehead University and Georgian College students adds to the demand. In terms of a business case for purchasing bike racks (i.e. costs versus benefits), the approximate \$2,000 per bike rack should be considered a long-term investment to build transit ridership and revenues rather than quantifying a business case (i.e. return on investment). It is recommended that all 11 buses be retrofitted with bike racks in 2018.

4.3.7 Transit Technology

4.3.7.1 Smart Card Technology

Smart card technology has come a long way since 2004 and, more important, costs are far more affordable. By also tying smart cards into GPS, the City of Orillia will no longer need to print tickets, transfers or passes nor will it need to undertake annual transit boarding counts (saves \$10,000 per year). Further, the integrated platform will provide revenue and route performance data, boardings by bus stop and time period, transfer data, and schedule adherence data that it needs to help monitor and manage the transit system. The technology can also be adapted to mobility payments from smart phones.

Installing a smart card system and newer fareboxes have been estimated at \$10,000 to \$15,000 per bus including installation, back-end software, and training. To offset the cost of the smart card system, a larger transit fare increase could be considered.

4.3.7.2 On-board Security Cameras

Onboard security cameras can be used to record incidents within a bus and on the exterior to record incidents and accidents should they occur. This will provide enhanced passenger and bus operator security and can minimize accident liability. Cameras for both interior and exterior use has been estimated at \$5,000 per bus.

4.3.8 Five-year Capital Budget

The estimated five-year capital budget of \$937,000 (2016 dollars) summarized below does not include potential investments in the downtown bus terminal or a city-owned transit maintenance facility.

Budget Item	2017	2018	2019	2020	2021	Total
Vehicle for Expansion Service*	\$0	\$0	\$0	\$0	\$0	\$0
Vehicle Replacement	\$0	\$0	\$0	\$0	\$0	\$0
Vehicle Refurbishment	\$0	\$120,000	\$120,000	\$120,000	\$120,000	\$480,000
Integrated Smart Card Fare Collection System	\$130,000					\$130,000
Bike Racks on buses (11)	\$22,000					\$22,000
Heated Downtown Bus Terminal Shelters		\$40,000				\$40,000
Bus Stop Infrastructure and shelters	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$150,000
Security Cameras			\$55,000			\$55,000
Terminal Location and Functional Design Study	\$30,000					\$30,000
Bus Maintenance Facility Study	\$30,000					\$30,000
Downtown Bus Terminal - to be determined						
Bus Maintenance Facility - to be determined						
Total	\$242,000	\$190,000	\$205,000	\$150,000	\$150,000	\$937,000

It is recommended that the City of Orillia set aside a capital reserve to accommodate vehicle replacement and expansion beginning in 2022. During the interim, \$120,000 should be set aside for bus refurbishments beginning in 2018 to extend vehicle life from 12 to 15 or up to 18 years each. The cost to refurbish four buses (\$480,000) to extend a vehicle’s life by 3 to 6 years approximates the cost of one bus (\$485,000) with a 12-year life cycle.

4.4 Recommendations

The City of Orillia has made significant progress from 2010 to 2016 based on all transit efficiency and effectiveness metrics and stands out in its peer group. Although the statistics show well, they do not necessarily mean things should not change.

Orillia Transit has entered into a new era in the provision of public transportation services:

- The aging population is growing and will require better access to public transportation
- A more transit-friendly millennial generation has emerged in recent years
- Businesses need improved access to employees
- Residents need access to affordable alternatives to reduce auto dependence
- A growing concern for the environment have all combined to support the need for a more responsive and quality transit system.

It is clear that Orillia Transit has become a more integral component of Orillia’s urban growth since transit use has far outpaced population growth. Ridership is up by 67% since 2010, which has strained the transit system, resulting in service reliability issues and higher customer complaints; this was clearly evident in the community engagement process. To meet demand today and in the future, a 5-year transit service plan has been developed, which is based on best practices relative to route design, service standards, transit operation policies, and transit ridership growth strategies.

The route concepts developed, the proposed transit operating budget and capital investments over the next 5 years are to be used as a guide for municipal staff to better address the needs of residents and business alike. It is, therefore, recommended that the City of Orillia:

- 1. Approve, in principle, the proposed 2018-2022 Transit Service Plan, Operating and Capital and Budget**
- 2. Direct staff to prepare budgets and forecasts for 2018 and beyond reflecting the Transit Service Plan**

4.5 Next Steps

Subject to Council approval, the following action plan is suggested for 2018:

- Inter-line existing bus routes to improve schedule reliability
 - City meets with select bus operators
 - Identify downtown bus interlining and bus bay allocation
 - Public notifications and
- Determine new fare pricing strategy and confirm date to take effect:
 - Approve pricing strategy
 - Procure and install integrated smart card system, test, and install in 2018
- Develop a bus stop location and installation plan using acceptable bus stop design guidelines then install prior to new service plan taking effect
- Prepare service provider contract based on the proposed transit service plan
- Identify alternatives to a contractor owned maintenance and storage facility
- Undertake a bus terminal location and functional design study
- Secure bike racks and install in 2018
- Purchase heated shelter for existing downtown terminal

Going forward, increased investments are needed to meet community expectations and as such, enhanced accountability to Council should be expected. This can only be realized with increased day to day staff involvement with the assistance of the appropriate monitoring technology in place whether or not the transit system is contracted out.

APPENDIX A

On-line Public Questionnaire and Employer Survey

City of Orillia Public Transit Study

The City of Orillia is undertaking a comprehensive public transit study. The purpose of the study is to look at ways to expand and modernize Orillia's bus fleet and to plan bus services for the next five years and beyond. Regardless of where you live in the City and whether you take the bus or not, we want to hear from you about how we can improve your bus service. All information is treated in strict confidence and your **answers to this survey are protected by the Canadian Privacy Act**. Your participation in the survey is very much appreciated and will help determine how the City can improve its bus system.

Have you used the Orillia Transit System within the last month?

- Yes (Fill out Section **A** and **C** only) No (Fill out Section **B** and **C** only)

Section A: Orillia Transit Customers

A1. What bus route is closest to your home? West Ridge Georgian Lacie South North

A2. How often do you use Orillia Transit during a typical week (Monday through Sunday)?

- 1 day 2 days 3 days 4 days 5 days 6 days 7 days

A3. How many minutes does it take you to walk from your home to the nearest bus stop?

- 0 to 3 4 to 5 6 to 10 11-15 16 -20 More than 20 Not sure/ don't know

A.4 What are the three (3) main reasons you use Orillia Transit

<input type="radio"/> I do not have access to a car <input type="radio"/> I do not have a license to drive <input type="radio"/> A disability prevents me from driving <input type="radio"/> To save money by not owning a car	<input type="radio"/> Using transit is good for the environment <input type="radio"/> I did not have access to a car for my trip <input type="radio"/> Buses take me where I want to go <input type="radio"/> Not sure/ no opinion
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A.5 What are the most important improvements would encourage you to use Transit more often than you currently do? (Select up to **three** only)

<input type="radio"/> More frequent service <input type="radio"/> Shorter travel time to your destination <input type="radio"/> Later evening service <input type="radio"/> Earlier morning service <input type="radio"/> Service to more destinations	<input type="radio"/> Having bus service closer to home <input type="radio"/> Better buses <input type="radio"/> Improved downtown bus terminal/ transfers <input type="radio"/> Lower bus fares <input type="radio"/> Buses leaving on time	<input type="radio"/> Reduce the need to transfer between buses <input type="radio"/> Better access to bus service information <input type="radio"/> Improved customer service
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Section B: Non Orillia Transit customers

B.1 How are most of your local trips within Orillia currently made? (Select up to **three** only)

- A vehicle as a driver A vehicle as a passenger Taxi Walking Bicycle Other

B2. How many minutes does it take you to walk from your home to the nearest bus stop?

- 0 to 3 4 to 5 6 to 10 11-15 16 -20 More than 20 Not sure/ don't know

B.3 What are the main reasons you don't use Orillia Transit? (Select up to **three** only)

<input type="radio"/> Does not provide service to my area <input type="radio"/> Too slow <input type="radio"/> Too inconvenient <input type="radio"/> Does not come often enough	<input type="radio"/> Need to use my car/ vehicle <input type="radio"/> Buses not operate when I need to travel <input type="radio"/> Having bus service closer to home <input type="radio"/> Bus schedules are not reliable	<input type="radio"/> Prefer to use my car/ vehicle <input type="radio"/> Fares are too high <input type="radio"/> Safety or security concerns <input type="radio"/> Lack of bus information
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B.4 What features or improvements would encourage you to try Orillia Transit for at least some trips?

<input type="radio"/> More frequent bus service	<input type="radio"/> Buses leaving on time
<input type="radio"/> Shorter travel time to your destination	<input type="radio"/> Better buses
<input type="radio"/> Later evening service	<input type="radio"/> Improved customer service
<input type="radio"/> Earlier morning service	<input type="radio"/> Improved downtown bus terminal/ transfers
<input type="radio"/> Service to more destinations	<input type="radio"/> Lower bus fares
<input type="radio"/> Having bus service closer to home	<input type="radio"/> Better access to bus service information
<input type="radio"/> Reduce the need to transfer between buses	<input type="radio"/> Nothing could encourage me to try transit

Section C: All Respondents

C.1 What do you think should be the **three (3)** most important destinations for Orillia Transit service?

- Downtown
 College/ University
 Suburban malls
 Hospital/ medical centres
 Industrial areas
 Community centres
 Waterfront/ tourist areas
 Other (specify _____)

C.2 We would like to ask you the extent to which you agree or disagree with the following statements about Orillia Transit

	Strongly agree	Somewhat agree	Neither agree or disagree	Somewhat disagree	Strongly disagree	Don't Know/ No opinion
Orillia Transit is a safe and secure means of transportation.						
Orillia Transit provides convenient service to the destinations I need to get to.						
It is easy to get information on how to use Orillia Transit.						
Public transit is important in our community because it helps reduce road congestion.						
Public transit is important in our community because using transit improves the environment.						
Public transit is important in our community because public transit helps those without a car and those who cannot drive.						
Public transit is important in our community because public transit contributes to the town's economy.						
The Orillia Transit bus terminal is in a good location						
The downtown Orillia Transit bus terminal layout is convenient for transfers						
Bus fares are too high						
I support the idea of increasing transit service as a way to attract new riders, even if my taxes increase somewhat.						

1. Please provide your business name and address

Company

Address

Address 2

City/Town

2. What is the closest bus stop to your business?

- West Ridge
- Georgian
- Laclie
- South
- North

3. Please provide total number of full time and part time employees

- 1-10
- 11-20
- 21-50
- 51-100
- 101-200
- over 200

4. Is Orillia Transit currently serving the needs of your employees?

- Yes
- No
- Don't know

5. Type of Business

- Retail
- Manufacturing
- Medical
- Sports/recreational facility
- Restaurant/Fast Food
- Trades Industry/professional services
- Other (please specify)

6. Number of full and part time staff by shift (state shift start and end times and average number of employees for each shift; e.g: 7:00am - 3:00pm (10 employees); 3:00pm-11:00pm (8 employees)

Weekdays

Saturdays

Sundays

7. To get to and from work, do you provide free or subsidized:

- Parking
- Bus passes
- Other (please specify)

8. Please provide any comments or suggested improvements you may have about Orillia Transit services.

9. If you would like to be informed of the results of the Orillia Transit Study, please provide an email address.

APPENDIX A

On-line Public Questionnaire and Employer Survey

City of Orillia Public Transit Study

The City of Orillia is undertaking a comprehensive public transit study. The purpose of the study is to look at ways to expand and modernize Orillia’s bus fleet and to plan bus services for the next five years and beyond. Regardless of where you live in the City and whether you take the bus or not, we want to hear from you about how we can improve your bus service. All information is treated in strict confidence and your **answers to this survey are protected by the Canadian Privacy Act**. Your participation in the survey is very much appreciated and will help determine how the City can improve its bus system.

Have you used the Orillia Transit System within the last month?

- Yes (Fill out Section **A** and **C** only) No (Fill out Section **B** and **C** only)

Section A: Orillia Transit Customers

A1. What bus route is closest to your home? West Ridge Georgian Lacie South North

A2. How often do you use Orillia Transit during a typical week (Monday through Sunday)?

- 1 day 2 days 3 days 4 days 5 days 6 days 7 days

A3. How many minutes does it take you to walk from your home to the nearest bus stop?

- 0 to 3 4 to 5 6 to 10 11-15 16 -20 More than 20 Not sure/ don’t know

A.4 What are the three (3) main reasons you use Orillia Transit

<input type="radio"/> I do not have access to a car <input type="radio"/> I do not have a license to drive <input type="radio"/> A disability prevents me from driving <input type="radio"/> To save money by not owning a car	<input type="radio"/> Using transit is good for the environment <input type="radio"/> I did not have access to a car for my trip <input type="radio"/> Buses take me where I want to go <input type="radio"/> Not sure/ no opinion
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A.5 What are the most important improvements would encourage you to use Transit more often than you currently do? (Select up to **three** only)

<input type="radio"/> More frequent service <input type="radio"/> Shorter travel time to your destination <input type="radio"/> Later evening service <input type="radio"/> Earlier morning service <input type="radio"/> Service to more destinations	<input type="radio"/> Having bus service closer to home <input type="radio"/> Better buses <input type="radio"/> Improved downtown bus terminal/ transfers <input type="radio"/> Lower bus fares <input type="radio"/> Buses leaving on time	<input type="radio"/> Reduce the need to transfer between buses <input type="radio"/> Better access to bus service information <input type="radio"/> Improved customer service
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Section B: Non Orillia Transit customers

B.1 How are most of your local trips within Orillia currently made? (Select up to **three** only)

- A vehicle as a driver A vehicle as a passenger Taxi Walking Bicycle Other

B2. How many minutes does it take you to walk from your home to the nearest bus stop?

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B.3 What are the main reasons you don't use Orillia Transit? (Select up to **three** only)

<input type="radio"/> Does not provide service to my area <input type="radio"/> Too slow <input type="radio"/> Too inconvenient <input type="radio"/> Does not come often enough	<input type="radio"/> Need to use my car/ vehicle <input type="radio"/> Buses not operate when I need to travel <input type="radio"/> Having bus service closer to home <input type="radio"/> Bus schedules are not reliable	<input type="radio"/> Prefer to use my car/ vehicle <input type="radio"/> Fares are too high <input type="radio"/> Safety or security concerns <input type="radio"/> Lack of bus information
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B.4 What features or improvements would encourage you to try Orillia Transit for at least some trips?

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<input type="radio"/> Shorter travel time to your destination	<input type="radio"/> Better buses
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<input type="radio"/> Earlier morning service	<input type="radio"/> Improved downtown bus terminal/ transfers
<input type="radio"/> Service to more destinations	<input type="radio"/> Lower bus fares
<input type="radio"/> Having bus service closer to home	<input type="radio"/> Better access to bus service information
<input type="radio"/> Reduce the need to transfer between buses	<input type="radio"/> Nothing could encourage me to try transit

Section C: All Respondents

C.1 What do you think should be the **three (3)** most important destinations for Orillia Transit service?

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The downtown Orillia Transit bus terminal layout is convenient for transfers						
Bus fares are too high						
I support the idea of increasing transit service as a way to attract new riders, even if my taxes increase somewhat.						

1. Please provide your business name and address

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- 1-10
- 11-20
- 21-50
- 51-100
- 101-200
- over 200

4. Is Orillia Transit currently serving the needs of your employees?

- Yes
- No
- Don't know

5. Type of Business

- Retail
- Manufacturing
- Medical
- Sports/recreational facility
- Restaurant/Fast Food
- Trades Industry/professional services
- Other (please specify)

6. Number of full and part time staff by shift (state shift start and end times and average number of employees for each shift; e.g: 7:00am - 3:00pm (10 employees); 3:00pm-11:00pm (8 employees)

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Saturdays

Sundays

7. To get to and from work, do you provide free or subsidized:

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- Other (please specify)

8. Please provide any comments or suggested improvements you may have about Orillia Transit services.

9. If you would like to be informed of the results of the Orillia Transit Study, please provide an email address.