City of Sault Ste. Marie

The Corporation of the City of Sault Ste. Marie
Transit Route Optimization Study

Transit Consulting Network **March 5, 2018**

City of Sault Ste. Marie Project Team

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1 INTRODUCTION

1.1 Background

The City of Sault Ste. Marie is well known as a desirable and affordable place to live that also serves surrounding communities, complemented by the presence of Sault College and Algoma University. The population has decreased by 2.4 per cent since the last census in 2011 attributed mainly to challenges in the local steel industry, which was historically the core of the City's economy. To offset the impact of the steel industry's uncertainty in the past and present, the City has been successful in diversifying its employment base by attracting call centres, information technology firms, alternative energy companies, and forming partnerships such as the one with the Sault Ste. Marie Innovation Centre.

Sault Ste. Marie Transit (Sault Transit) ridership has been on the decline recently. Over the 2011-2015 five-year period, Sault Transit ridership dropped by 102,994 annual revenue passengers - a nominal 5.2% reduction from 1,990,583 passengers in 2011 to 1,887,639 passengers in 2015. This is not considered a large decline over 5 years; however, there was a significant recent drop of almost 10% (183,358 passengers) in just one year (from 2015 to 2016) to 1,694,358 passengers.

This additional decline in transit use can be largely attributed to the closure and relocation of St. Mary's College from the downtown, which was served by eight bus routes to Old Garden River Road north of Second Line where marginal transit is provided by only one route. This translates to reduced transit system revenues, which must be absorbed either through higher taxes, increased bus fares, reduced service, or a combination of all three. In 2016, the City of Sault Ste. Marie eliminated Sunday evening transit service as one measure to address the revenue shortfall. This resulted in additional ridership and revenue losses, and a loss of affordable mobility for residents that need it the most.

Transit Consulting Network was retained to undertake the 2018 City of Sault Ste. Marie Comprehensive Operation Review of Conventional Transit Services study, which was also branded as the City of Sault Ste. Marie Transit Route Optimization Study (Route Optimization Study). Although the study focused on conventional transit fixed route service, both ParaBus and Community Bus services were also addressed given the complementary roles they play in the city-wide public transportation network.

1.2 Study Objectives

To reverse the service and transit ridership decline in recent years, the study focus was in contrast to those taken during the 2006-2011 and 2012-2016 transit service reviews, which focussed on transit service expansion and ParaBus. Given the city's growth north of Second Line and along east-west routes in place, an increasing number of transit customers are taking over an hour to travel from home to their destination. The long travel times by bus for many transit customers is attributed to out-of-direction travel via the downtown terminal where all eight routes are timed to meet.

By looking at alternatives that can reduce the average travel time taken to get from point A to point B, amending transit service levels, and improving transit coverage to serve more residents, the City has the potential to work within existing resources to improve transit, including the reinstatement of late Sunday evening service and other measures to collectively increase transit ridership and revenues.

The Route Optimization Study addressed existing and future services relative to an updated policy framework and action plan customized for the City of Sault Ste. Marie that will:

- Focus on transit operations and the unique Sault Ste. Marie environment and roadway network
- Update route and service design principles based on what both transit customers and non-transit customers are saying to make transit more convenient and a mode of choice

- Reduce the need to travel to the downtown terminal to transfer
- Better serve St. Mary's College students
- Expanding the reach of transit beyond the City boundaries such as Garden River First Nation
- Understand growing expectations of seniors who are making up a larger portion of the population
- Appreciate the expectations of the millennial generation and new Canadians who, unlike previous generations, are more supportive of sustainability and the environment and as such, tend to defer auto ownership while some may choose to not own a car at all
- Maximize transit efficiency (how well our given resources are being allocated)
- Maximize transit effectiveness (the degree that transit meets resident needs)

Ultimately, the Route Optimization Study needed to reflect the input of a diverse group of stakeholders – transit customers, non-transit customers, front-line Sault Transit staff, businesses, senior management team, and Council. Recognizing that transit cannot be all things to all people, it was of paramount importance that the top priorities are met within the existing funding framework and that consensus is reached among all stakeholder groups.

The ultimate goal and challenge are to make adjustments to Sault Transit that will maintain the ability to meet community needs while operating effectively within available resources and 80,000 annual transit revenue hours of service. The study must find solid evidence on which to base recommendations that will lower the unit cost and/or improve the quality of conventional transit and community bus service, while ensuring full and timely compliance with AODA requirements.

Transit Route Optimization Plan Overall Objectives:

- Undertake a comprehensive analysis of Sault Transit routes and service levels
- Hear from transit passengers, staff, stakeholders, and the larger community about transit priorities.
- Consider all potential opportunities to improve route coverage and increase transit use.
- Identify and recommended transit service, infrastructure and related improvements.
- Build public awareness and support of Sault Transit and its services.
- Improve service without exceeding the 80,000 hours per year provided today.

1.3 Work Plan Summary

The study was undertaken in three phases:

- **Phase I: Critical Evaluation of Existing Transit Services** to fully understand Sault Transit relative to its performance and from the opinion of a wide range of stakeholders.
- **Phase II: Transit Service Plan** that was developed based on updated service standards, community priorities and best practices service design
- **Phase III: Transit Asset Management Plan** that ensures community-wide consensus is reached on the transit service plan that would be recommended by the study team

The study was launched on May 16, 2017.

In Focus: Route Optimization Plan Key Questions

Beyond its general goals, the Sault Transit Route Optimization Plan also set out to seek answers to the following specific questions:

- What is the **optimal route/ schedule design** for the short- and long-term?
- What **route design principals** and service standards should be employed moving forward?
- What transit **infrastructure** (e.g. bus stop**)** will be needed to support the transit service plan?
- What is a best practices **transit fare pricing** policy to reduce cash, grow ridership and increase revenues?
- How can the results of this study help the City better qualify for **future external funding** programs such as the Public Transit Infrastructure Fund?

To address the questions, the study addressed services relative to the route optimization plan that will:

- Focus on transit operations and the unique Sault Ste. Marie environment and roadway network.
- Update route and service design principles based on what both transit customers and non-transit customers are saying to make transit more convenient and, increasingly, the mode of choice.
- Understand growing expectations of seniors who are making up a larger portion of the population.
- Appreciate the expectations of the millennial generation and new Canadians who tend defer auto ownership and seek lifestyles less reliant on owning a car.

2 PHASE I: EVALUATION OF EXISTING TRANSIT SERVICE

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 Sault Transit performance over a 5-year period
- To assess how Sault Transit performed in relation to its peer group in 2015

2.1.1 2011-2015 Sault Transit Report Card and Peer Review

Exhibit 1: 2011-2015 Sault Transit Performance Data quantifies the change in performance over the five-year period.

2011 to 2015 CUTA Statistics - Sault Ste. Marie Report Card													
Year	Municipal Population	Ridership (revenue passengers)	Fleet Size	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
2011	74,200	1,990,583	30	$7,695,032	$2,270,247	82,594	$92.41	24.1	1.18	28.48	$61.57	$2.25	$1.14
2012	74,200	1,975,039	30	$8,312,536	$2,382,104	82,314	$100.06	23.99	1.18	28.26	$69.57	$2.50	$1.21
2013	74,200	1,950,893	29	$8,483,449	$2,384,306	83,548	$100.86	23.35	1.20	27.91	$73.83	$2.50	$1.22
2014	74,200	1,978,645	27	$8,325,653	$2,390,521	84,007	$98.51	23.55	1.20	28.31	$70.01	$2.50	$1.21
2015	74,200	1,877,639	29	$8,225,607	$2,285,144	84,153	$97.04	22.3	1.20	26.86	$71.78	$2.50	$1.22
% Change 2015 Vs 2011	0.0%	-5.7%	-3.3%	6.9%	0.7%	1.9%	5.0%	-7.4%	1.7%	-5.7%	16.6%	11.1%	7.0%

Exhibit 1: 2011– 2015 Sault Transit Report Card

Comparisons were made of the various operating, service performance and financial data. Caution should be exercised when assessing peer review statistics since the peer review only provides a high-level assessment of transit service levels and costs in other comparable jurisdictions. The peer reviews are also provided to help to understand transit industry statistics reported elsewhere for accountability and to identify the levels of local investment, which tend to drive the decision-making process relative to service quantity.

The criteria guiding the selection of peer review jurisdictions for comparison purposes with the City of Sault Ste. Marie were Ontario municipalities with a population between 50,000 and 150,000. Individual transit system statistics across Ontario can vary significantly due to factors such as:

- Local labour costs
- Population and population density
- 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

Eleven (11) Ontario municipal jurisdictions were selected and the data illustrated in Exhibit 2 below.

2015 Conventional Transit Fact Book Statistics Peer Review										
Jurisdiction	Municipal Population	Ridership (revenue passengers)	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
Sault Ste. Marie	**74,200**	**1,877,639**	**84,153**	**$97.04**	**22.3**	**1.20**	**26.9**	**$71.78**	**$2.50**	**$1.22**
Sudbury	160,274	4,263,622	166,715	$114.22	25.6	1.21	30.9	$77.97	$3.00	$1.76
Guelph	141,097	6,386,104	308,800	$82.26	20.7	2.19	45.3	$92.12	$3.00	$1.61
Barrie	142,000	2,539,382	172,049	$94.30	14.8	1.27	18.7	$70.90	$3.00	$2.00
Brantford	97,862	1,521,531	76,149	$115.53	20.0	0.78	15.6	$46.72	$3.00	$1.87
Milton	103,700	418,055	33,338	$112.29	12.5	0.39	4.9	$29.09	$3.25	$2.47
Kingston	127,250	4,659,300	219,323	$84.34	21.2	1.90	40.5	$111.68	$2.75	$1.35
Peterborough	80,000	3,404,333	122,639	$85.06	27.5	1.53	42.6	$60.03	$2.50	$1.38
Niagara Falls	85,000	2,258,555	79,949	$113.88	28.3	1.00	28.2	$73.63	$2.75	$0.61
St. Catherines	149,331	5,489,764	168,704	$108.35	32.5	1.13	36.8	$59.14	$3.00	$1.63
Thunder Bay	146,000	3,600,425	144,378	$106.27	24.9	1.32	33.0	$92.46	$2.65	$1.43
Peer Group Avg.	**123,251**	**3,454,107**	**149,204**	**$101.65**	**22.8**	**1.27**	**29.6**	**$71.37**	**$2.89**	**$1.61**

Exhibit 2: 2015 Sault Transit Peer Review

2.1.2 Assessment of Sault Transit Performance

2.1.2.1 Transit Ridership and Services Hours

As can be seen in Exhibits 3 and 4, while the amount of service provided increased marginally by 1.9% from 2011 to 2015 in Sault Ste. Marie, ridership had dropped by 5.7%. An additional drop of over 183,000 passengers (10%) in 2016 was experienced over 2015 where only 1,694,358 passengers were carried.

Exhibit 3: 2011-2015 Sault Transit Ridership

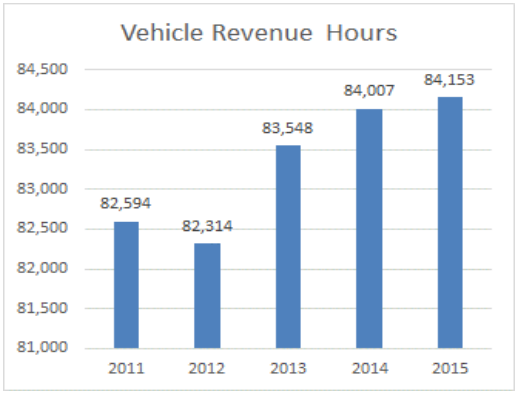


Exhibit 4: 2011-2015 Sault Transit Revenue Hours

The bulk of the transit ridership drop is attributed to the February 2015 relocation of St. Mary's College from the downtown, which was served by all 8 routes to Second Line East at Pine Street, which is only served by the North Route. In addition, the transit ridership drop is also attributed to the economic

downturn that was experienced such as the Tenaris Algoma Tubes plant shutdown, which resulted in an overall reduction in work travel by bus. To help mitigate the impact on the tax payer, in 2016 Sault Transit reduced its service by over 4,000 hours on an annualized basis (approximately 5%) by eliminating late night Sunday service. As expected, the reduction of late Sunday evening service met with negative reaction from the public since captive transit customers – those that have no alternative – are now forced to use cost prohibitive taxis or rely on friends and family.

To quantify the relative amount of service provided by the City of Sault Ste. Marie, 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 5 and 6.

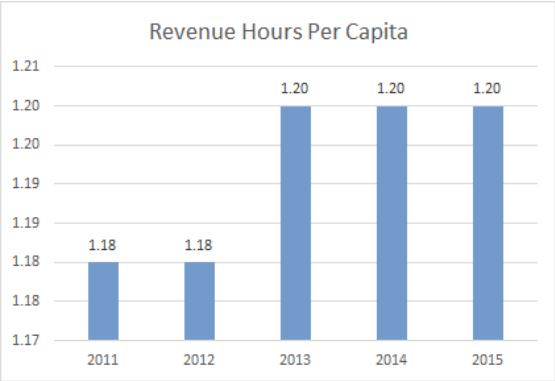


Exhibit 5: 2011-2015 Sault Transit Revenue Hours per Capita

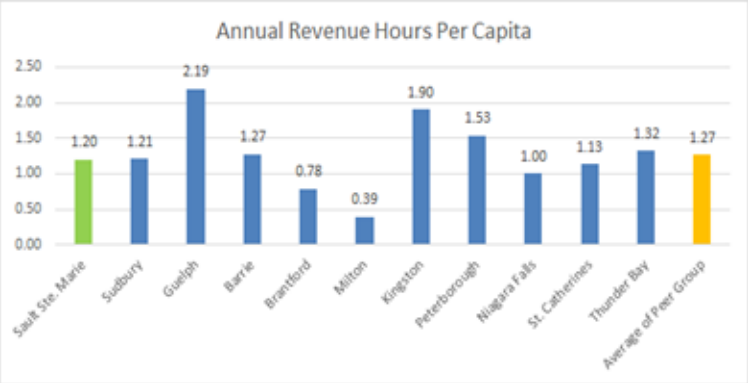


Exhibit 6: 2015 Peer Group Revenue Hours per Capita

On a per capita basis, Sault Transit increased service from 2011 to 2013 marginally by 1.7%, which remained constant through 2015. In comparison to its peer group in 2015, Sault Transit provided a nominal 5% less service hours per capita. If taking into consideration the 4,000 hours of reduced service in 2016, Sault Transit offered 1.08 hours of service per capita, which represents less service than was in place in 2012 and 15% less than the 2015 peer group average of 1.27 service hours per capita.

2.1.2.2 Sault 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 7 and Exhibit 8 illustrate Sault Transit's efficiency from 2011 to 2015 and in comparison, to its peer group, respectively.

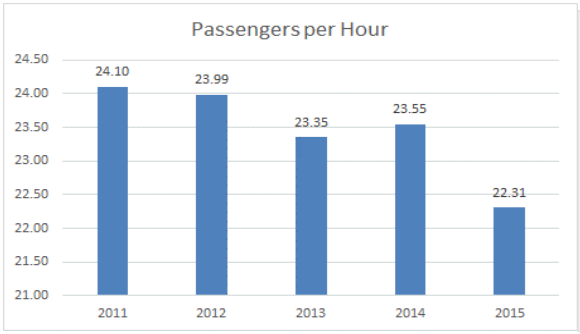


Exhibit 7: 2011-2015 Sault Transit Passengers per Hour

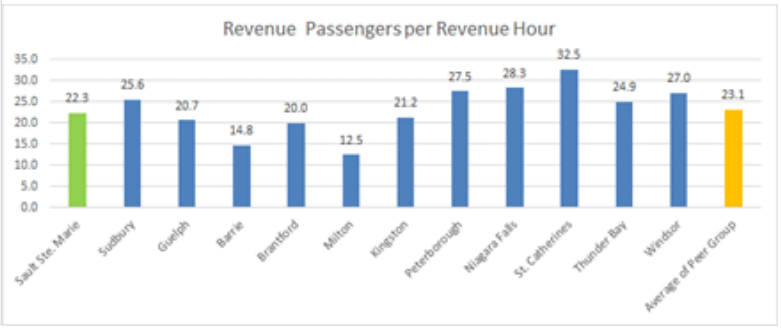


Exhibit 8: 2015 Peer Group Revenue Passengers per Hour

Sault Transit experienced a 7.4% reduction in service efficiency from 2011 to 2015 to 22.31 passengers per hour in 2015, which was 10% below its peer group average of 24.9 passengers. With further reductions in the passengers carried and the service offered in 2016, transit efficiencies declined a further 5% to approximately 21.2 passengers per hour.

The challenge is to now stabilize and even reverse the recent transit efficiency decline through implementation of transit ridership growth strategies and route optimization, which is what this study is all about.

2.1.2.3 Sault 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. 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.

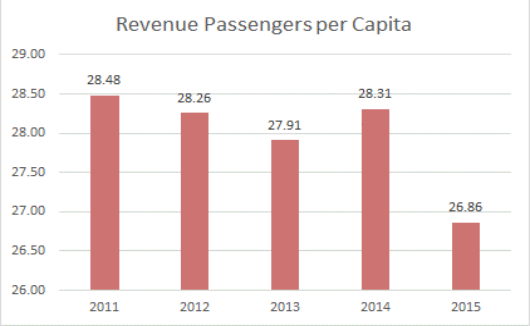


Exhibit 9: 2011-2015 Transit Revenue Passengers per Capita

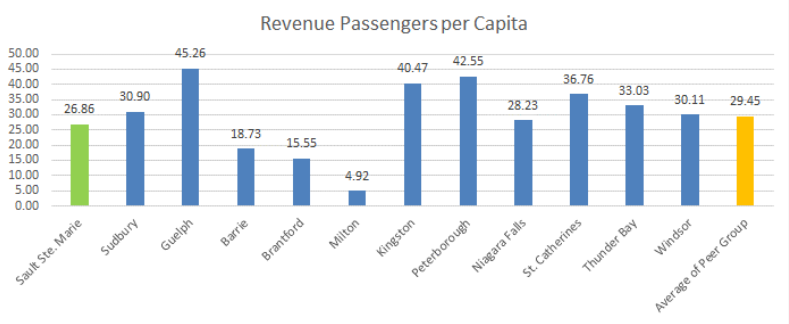


Exhibit 10: 2015 Peer Group Revenue Passengers per Capita

Exhibit 9 shows that on a per capita basis Sault Transit's effectiveness was relatively stable from 2011 to 2014 then dropped to 26.86 trips per capita in 2015 (5.7% less than in 2011) - 9% below that of Sault Transit's peer group average of 29.45 trips per capita. In 2016, there was a further reduction to 24.2 trips per capita, which was expected given service was reduced by 4,000 hours on an annualized basis.

2.1.3 Sault Transit Financial Indicators

A key metric that transit systems use to track financial performance is the direct and auxiliary operating expense in a given year divided by the total vehicle hours (i.e. revenue service, deadheading and charters), which can vary significantly between transit systems due to differences in operating environments. A more important comparison would be to look at an individual transit system's performance over time to identify trends while a peer group comparison provides an opportunity to determine whether or not a transit system costs are in line with the 'norm'.

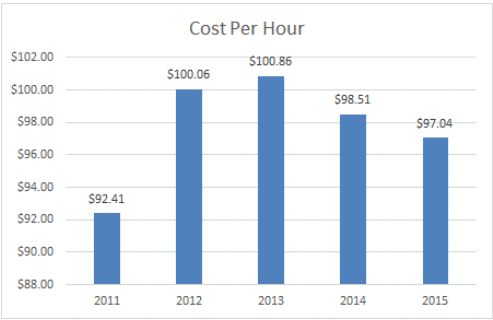


Exhibit 11: 2011-2015 Sault Transit Cost per Hour

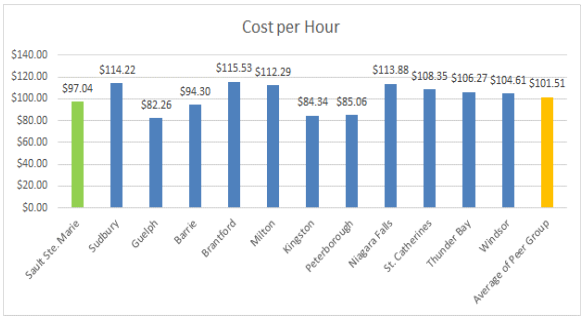


Exhibit 12: 2015 Peer Group Cost per Hour

Exhibit 11 illustrates that Sault Transit's hourly cost in had increased significantly from 2011 to 2012 primarily attributed to increased bus operator costs (6%) and a 28% jump in fuel prices in 2012 over 2011. After hitting a peak of $100.86 per hour in 2013, costs dropped 5% over 5 years to $97.04 primarily due to a $174,000 reduction in general administrations expenses. This can be attributed to $100,000 of TransCab service costs being transferred to the Community Bus account while the remaining $74,000 was primarily attributed to staff adjustments.

Sault Transit's 2015 hourly cost is 4.5% below the average of peer group at $101.23 per hour. The peer group values ranged from a low of $82.26 in Guelph to a high of $114.22 in Greater Sudbury. 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.

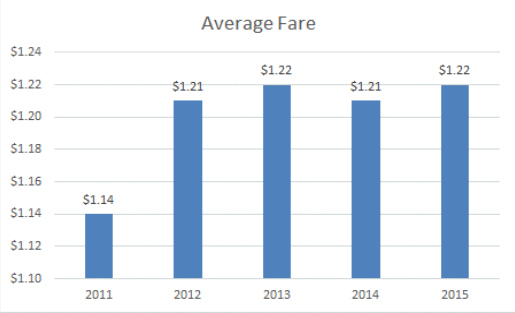


Exhibit 13: 2011-2015 Sault Transit Average Fare

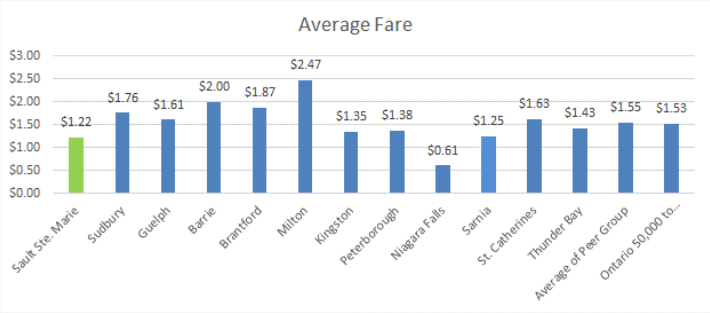


Exhibit 14: 2015 Peer Group Average Fare

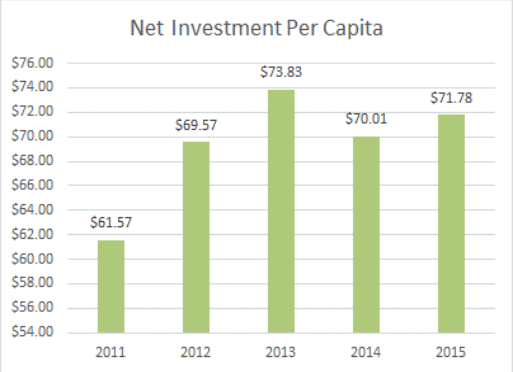
The adult cash fare reported in 2011 (Exhibit 13) was $2.25 while the average fare paid was $1.14. When the adult cash fare increased to $2.50 in 2012, it was unchanged through 2015; this explains why the average fare has remained relatively unchanged at $1.22. What is telling is that in Exhibit 14, the average transit fare of $1.22 is 21.3% below the peer group average of $1.53 in 2015. The Sault Transit average fare reported in 2016 increased marginally to $1.28. The relatively low average fare is worth pointing out since a fare increase could be more justified if service hours were to be expanded at the same time.

Of the total direct operating cost of $8,225,607 to operate Sault Transit 2015, $7,021,147 was attributed to variable operating costs – fuel, bus operators, maintenance – for the 84,761 total vehicle hours operated. This equates to $82.83 per vehicle hour travelled. With service reduced by 4,000 hours annually, this saves $331,320 in operating costs annually less revenues that would be lost due to the reduced service. To put this into perspective, if the average Sault Transit fare increased by 20 cents to $1.42, the average fare would still be below that of the peer group while Sault Transit revenues would have likely increased by $375,000 – well above the cost savings realized with the service cutback.

Although fare increases are unpopular, they are necessary to offset inflation and to maintain service levels; otherwise, increased municipal taxes are needed to support transit. As a rule, transit customers are less sensitive to fare increases if it means maintaining or expanding transit service. Since the vast majority of transit customers are captive to transit, it is logical to assume that the ability to get to and from work (including those who work Sunday evenings) or travelling for other trip purposes takes precedence over the transit fare price.

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 measure of the local municipal investment that is calculated using net transit costs (total direct operating costs less revenues) and dividing by the population served by transit. Since transit operates as deficit – not unlike other municipal services – the net cost per capita can also be expressed as the net investment per capita as illustrated in Exhibits 15 and 16 below.



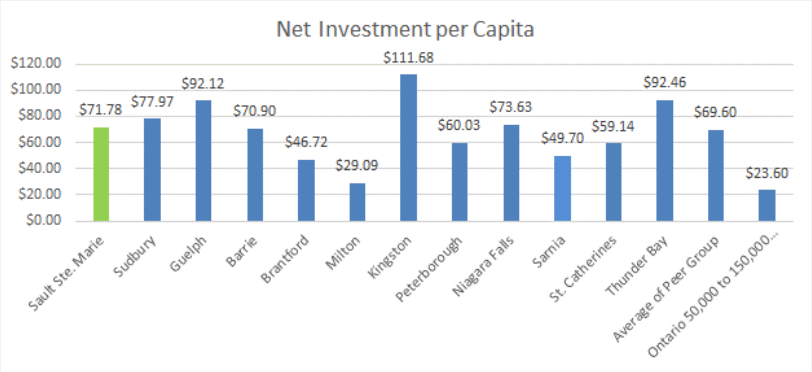


Exhibit 15: 2011-2015 Sault Transit Net Investment per Capita **Exhibit 16: 2015 Peer Group Net Investment per Capita**

As shown in Exhibit 15, the City of Sault Ste. Marie's net investment per capita jumped from $61.57 to $73.83 in 2012 then stabilized to $71.78 in 2015, which is relatively on par with the peer group average of $69.60. If the average fare had kept pace, it is likely that the net investment per capita would have resulted in lower net costs to the taxpayer.

2.1.4 Summary of Report Card and Peer Review

Over the 2011-2015 five-year period, Sault Transit's ridership and performance was fairly steady during the first four years (to 2014) but has since pared back due to factors beyond its control. For example, the closure of Tenaris Algoma Tubes resulted in fewer transit trips being taken. This also continued into 2016, which prompted the City to eliminate late evening service on Sundays in order to reduce the impact to the taxpayer. Although the service cutback affected the fewest transit customers, it continues to be an unpopular move for those affected.

In the 2015 Peer Review, Sault Transit's performance in terms of efficiency and effectiveness was at par with its peer group for the most part. What was notable is that while the hourly cost to provide service was less than that of the peer group, transit fares had not kept pace, being approximately 20% below the peer group value. Raising transit fares may be justified; however, a 20% jump to be at par with its peer group would, in our opinion, be too dramatic and result in a reduction in transit ridership even if the late evening Sunday service were to return.

The challenge for this study is, therefore, to maximize the return on investment through the introduction of transit ridership growth strategies that optimizes Sault Transit's route network and service design. For example, should duplication of service be eliminated in some cases and a transit customer's travel time to get from point A to point B is reduced, this can make transit travel more attractive and efficient. This, in turn, could enable Sault Transit to bring back late evening Sunday service while also attracting new transit customers.

2.2 Round 1 Community Engagement

Transit Consulting Network (TCN) initiated the first round of the study's community engagement process, which consisted of four components:

- Preliminary stakeholder consultations
- Public Information Centre (PIC) to launch the study and obtain preliminary comments
- Community-wide on-line and hard copy survey to obtain input from residents throughout the community whether or not they are transit customers
- Employer-based on-line survey

The purpose of the first round of consultations was to determine community-wide priorities at the outset of the study that would guide the development of route and service concepts that, when combined with industry best practices, would be short-listed and carried forward into a recommended route optimization and transit service plan.

2.2.1 Stakeholder Consultations

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. TCN 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 meeting 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 discussions enabled TCN to more fully understand community needs from a cross-section of interest groups.

A key study objective that was discussed with the participants is that the route optimization plan would be based on transit service plan that would not exceed the 80,000 revenue hours of service being offered today. It was made clear that consideration would be given to reallocating the 80,000 hours of transit service in a strategy that would improve service levels where they were needed and reduce service hours where they were not justified based on community priorities. Ultimately, the route optimization and service plan would be designed to increase transit ridership and overall transit system efficiencies within the existing funding framework.

TCN and Sault Transit staff facilitated eight stakeholder meeting, open houses:

- Bus Operations Working Group (May 16)
- Sault Ste. Marie Innovation Centre (May 17)
- Bus Operator Open House during shift change (June 12)
- Garden River First Nation (June 13)
- Senior Management Meeting (June 13)
- Union Taxi - ParaBus operator (June 14)
- Accessibility Advisory Committee (June 14)
- Steelton Seniors Centre (July 10)

The objective of the stakeholder meetings was to provide Transit Consulting Network with a preliminary understanding of community priorities from a wide range of perspectives. The meeting agendas were kept simple. Participants were provided with an overview of the objectives of the Route Optimization Study then invited to express to Transit Consulting Network and Sault Transit staff what services offered by Sault Transit worked well and what areas needed improvement.

Bus Operations Working Group

The bus operations working group was established for the study to obtain input on potential route optimization concepts from the perspectives of bus operators and transit supervisors. This input is deemed critical to ensure that what is brought forward to the public is reasonable and could be implemented based on their more detailed knowledge of the transit operating environment. The first meeting on May 16, 2017 was to advise the working group about the study launch and the role they would play throughout the study.

Sault Ste. Marie Integrated Geomatics Innovation Centre

TCN met with four Innovation Centre staff and was provided with an overview of the extensive GIS data layers available that could be used to help optimize the transit route network. In this regard, the benefits of the data layers that could prove to be useful for the study includes but is not limited to the following:

- GIS data is updated monthly
- Stats Canada data is likely to be updated during the course of the study; however, if not available, the current data will suffice
- All bus stop infrastructure is identified
- Since all property addresses are registered and sidewalks/ walkways coordinates are in place, actual walk distances to bus stops can be obtained; this can be used to calculate the percentage of homes and businesses within acceptable walk distances of a bus stop
- Demographic data such as by income and age can help to assess the impact of alternative transit route designs
- The planned automatic passenger counter (APC) data collection to provide the number of ons and offs by bus stop could be correlated with other GIS data layers (e.g. average transit use by household)

In addition to the aforementioned, the advent of smart card technology will provide data such as individual card user information (e.g. age, frequency of transit use by bus stop and time period, origin-destination information) can prove useful for future planning purposes.

Bus Operator Open House

Given the smaller size of the Bus Operations Working Group, it was deemed important that all bus operators and supervisors had an opportunity to provide their individual input to the study. Bus operators were invited to attend a bus operator open house during from 2:00 to 4:00pm June 12, 2017 to accommodate the afternoon shift change. Approximately 14 bus operators participated and provided initial verbal input with the opportunity to provide additional written input to the study.

Garden River First Nation Meeting

TCN and Sault Transit staff met with Garden River First Nation at their request to assess what their needs were and whether or not the route optimization plan could accommodate them given their close proximity to the Route 4 Riverside endpoint on Fournier Road at Trunk Road. The desire to have service extended into the Garden River community was deemed necessary to enable residents to have access to and from goods and services within Sault Ste. Marie while also enabling residents of Sault Ste. Marie to travel to destinations within Garden River such as the bingo hall.

Garden River First Nation residents that were identified as needing public transit were elders so they could become more socially active and post-secondary students so they can have affordable access to and from school. The additional cost of the service would be borne by Garden River First Nation.

Senior Management Meeting
TCN met with Albert Horsman (CAO) and Thomas Vair (Deputy CAO) and Don Scott (Manager of Transit and Parking) to review the Route Optimization study objectives. Key transit service issues discussed were the return of Sunday evening service and the financial challenges being faced by the City. Although the study objective to provide a maximum 80,000 of revenue service was stated, there may be some flexibility provided the net financial impact (cost less revenues) was not exceeded. For example, small fare increases or changes to increase transit ridership could be considered.

Discussions about the transit fleet revealed that Council would be interested in identifying the potential for using mid-size buses on regular transit routes. It was also pointed out that Sault Transit has one of the oldest transit fleets in Canada, averaging approximately 12 years of age while buses have a life cycle of 12 years, which can be extended up to 16-18 years with scheduled refurbishment after 9 to 10 years. Although previous studies recommended a fleet replacement budget in order to modernize the fleet, Sault Transit was only able to secure funding for used transit buses, which results in a larger spare ratio, higher maintenance costs and higher than acceptable bus breakdowns, which negatively impacts service reliability.

Union Taxi Meeting
Union Taxi provides the ParaBus service on behalf of the City of Sault Ste. Marie with three accessible vans and an accessible 14-passenger bus. Sault Transit ParaBus staff book the trip requests and send in a schedule to Union Taxi on a daily basis. The meeting with TCN revealed that Union Taxi could, if required, have the ability to provide fixed-route service to areas where demand for fixed-route transit may not be warranted.

Accessibility Advisory Committee
TCN met with Diane Morrelle, representing the Accessibility Advisory Committee plus one ParaBus customer to discuss how Sault Transit may be better able to meet ParaBus registrant needs. Highlights of the issues and opportunities discussed were:

- The requirement to book two weeks ahead for trips is considered a challenge for eligible ParaBus registrants if it is for travel outside of regularly scheduled trips such as work
- If ParaBus has ‘last minute’ cancellations, other eligible residents are not aware of the change and as such, previously scheduled trips would go unfulfilled
- Community Bus does meet some of their needs where bus stop accessibility is not an issue (e.g. Cambrian Mall)
- There are trips made by some ParaBus registrants on fixed-route transit and Community Bus service, which is encouraged by the 6-punch pass that provides free transit; however, it was pointed out that many ParaBus registrants are not aware of the program

Improvements are sought in the area of travel training to encourage ParaBus registrants to use Sault Transit where ‘feasible’. In order to maximize feasibility, the Accessibility Advisory Committee would like to see additional funds invested in making the bus stop infrastructure more accessible so that reliance on ParaBus by some registrants can be reduced during milder weather conditions. In addition, the concept of a ‘fixed flex-route’ service – a fixed route that can deviate from route to accommodate a ParaBus registrant - was supported.

Social Services – Sault Ste. Marie District
Meeting was held with Mike Nadeau, Chief Administration Officer, who provided an overview of a Social Services management group meeting that provided input to the Route Optimization Study. Social Services' primary responsibilities are Ontario Works (job training and placement), social housing, child care, and emergency medical services. The City of Sault Ste. Marie pays 88% of the cost of the Social Services budget.

Highlights of the discussion with Transit Consulting Network revealed the following:

- Social Services started to de-centralize their offices to be closer to where people reside in response to the reality that, in some cases, some clients needing to begin their transit journey up two hours ahead of their appointment time.
- Elimination of late evening Sunday service has impacted some clients' ability to take transit to, for example, call centres, forcing them to walk long distances or use cost-prohibitive taxis or leave their place of employment altogether;
- When a client accesses emergency medical services, they have no affordable means of returning home once they leave the hospital
- Social Services provides over $50,000 per month to clients to purchase bus passes, which Social Services must track administratively (e.g. confirmation of bus pass receipts). 10,209 passes in 2016 and 5,489 from January – July 2017.
- Would consider a bus pass program that covers the cost of other client family members to accommodate, for example, affordable travel by family member students that are 12 years or older (e.g. youth bus pass); this would assist the family financially by eliminating one expense and allocating the money saved for other necessities

A key objective for Social Services is to 'help people move off the system' through learning centres, job skills training, and assistance when starting out with an employer. It is also recognized that quality of life can be improved for lower income families if bus transportation can be subsidized or provided free for family members other than the adult client. In this regard, Social Services would consider simply transferring, and possibly increasing, financial resources to accommodate subsidized or free bus travel for qualifying residents and family members. This would help enable low household income to increase their participation in the community and to access part time jobs by other family members (e.g. students).

Social Services suggested that the bus pass program administration be transferred to Sault Ste. Marie Transit with the funds transferred directly to the City.

2.2.2 Public Information Centres

To launch the study to the general public, a Public Information Centre (PIC) was held at the downtown bus terminal 3:30-5:30pm on Tuesday, June 13, 2017 to advise transit customers of the study launch and to provide them with an opportunity for input early in the study. Two Transit Network Consultant staff and three Sault Transit staff were in attendance to answer questions and assist with recording comments and concerns for those that could not fill out a comments form.

Following the main PIC, Sault Transit staff hosted three additional PICs:

- Downtown Transit Terminal (July 4: 10:00am – 12 noon)
- Station Mall (July 5: 1:30pm – 3:30pm)
- Sault Area Hospital (July 6, 1:30pm – 3:30pm)

The three added PICs were well received and helped to build the response rate to the on-line community-wide survey that was underway and it provided an opportunity for Sault Transit staff to assist residents with the filling out of the form.

The initial June 13, 2017 PIC resulted in 53 comments received in addition to email inquiries, which were summarized as follows:

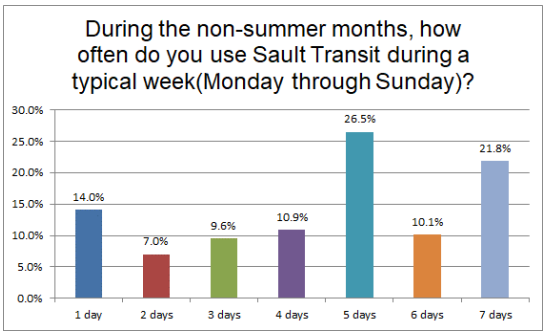
Suggestions	
More Sunday Service	21
Newer Buses with Air-conditioning	5
More Transfer Points	2
Later Evening service	2
Want Cheaper fares	2
More locations to purchase E-Pass	1
More Shelters	1
Smart Card	1
Other	14
Positives	
Drivers are courteous and helpful	4

2.2.3 On-line Transit Surveys

An on-line general public transit survey for both transit customers and on-transit customers were launched on June 29, 2017 and closed on July 21, 2017. There was a total of 837 respondents to the online and hard copy transit survey; this represents a 1.1% sample of the total population of Sault Ste. Marie. To complement the survey, a separate employer survey was distributed to businesses on August 9, 2017 by transit staff with 58 companies participating, including Algoma Steel who also conducted an employee poll and passed on their findings to the study team.

2.2.3.1 On-line Survey for Transit Customers

Two-thirds responded that they used Sault Transit within the last 3 months (considered transit customers) while one-third did not, which are considered to be non-transit customers. It is the non-transit resident that represents Sault Transit's relatively untapped and largest market potential.

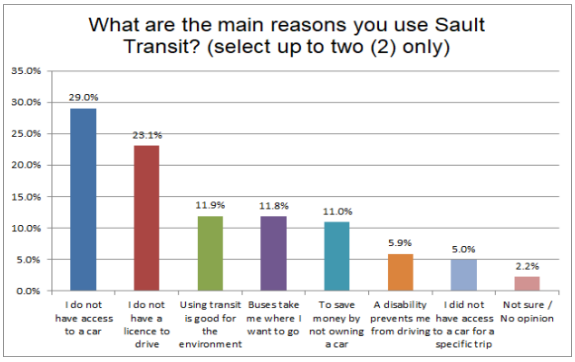


Although the on-line survey is not statistically significant, it does offer a snapshot of the total Sault Transit market, which can then be compared to the information received during the workshops and public information centres.

A large majority (58.4%) reported they used transit at least 5 days per week with a significant 21.8% indicating they use transit seven days a week, which would help to explain the importance of returning late evening service on Sundays based on the feedback received prior to the launch of the online survey.

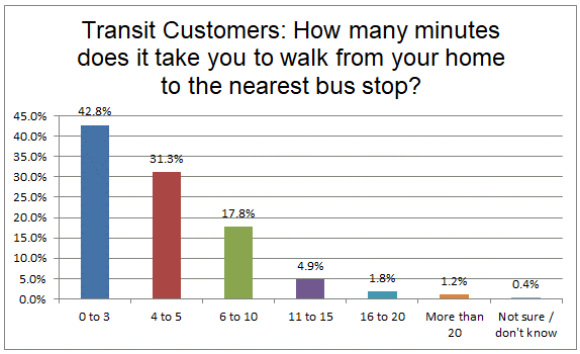
During the non-summer months, how often do you use Sault Transit during a typical week (Monday through Sunday)?		
Answer Choices	Responses	
1 day	14.0%	72
2 days	7.0%	36
3 days	9.6%	49
4 days	10.9%	56
5 days	26.5%	136
6 days	10.1%	52
7 days	21.8%	112
	Answered	**513**
	Skipped	**324**

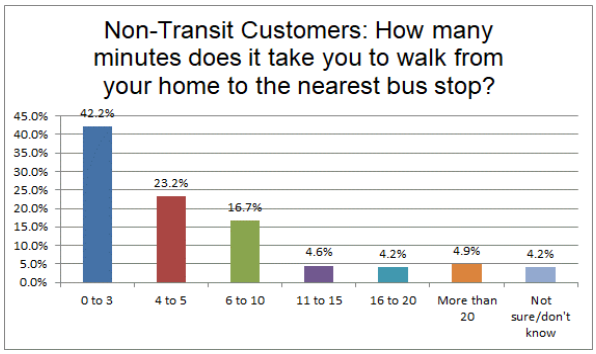
What are the main reasons you use Sault Transit? (select up to two (2) only)		
Answer Choices	Responses	
I do not have access to a car	29.0%	246
I do not have a licence to drive	23.1%	196
Using transit is good for the environment	11.9%	101
Buses take me where I want to go	11.8%	100
To save money by not owning a car	11.0%	93
A disability prevents me from driving	5.9%	50
I did not have access to a car for a specific trip	5.0%	42
Not sure / No opinion	2.2%	19
	Answered	**513**
	Skipped	**324**



When asked why transit was taken, over half of the 513 responses indicated not having a car or license, or they were unable to drive due to a disability. What is considered significant is that almost 11% indicated that it saved them money by not owning a car while 11.9% indicated environmental reasons; this is in line with the thinking of the emerging millennial generation; however, it also applies to the lower income cohort.

Of course, one of the most significant factors in determining whether or not one can or will use transit is the walk distance to the nearest bus stop. As a guide, transit bus stops should be within a 5-minute walk of 90% to 95% of residences, which equates to approximately 450 metres. Bearing in mind the 450-metre walk distance standard, the following responses are considered significant.



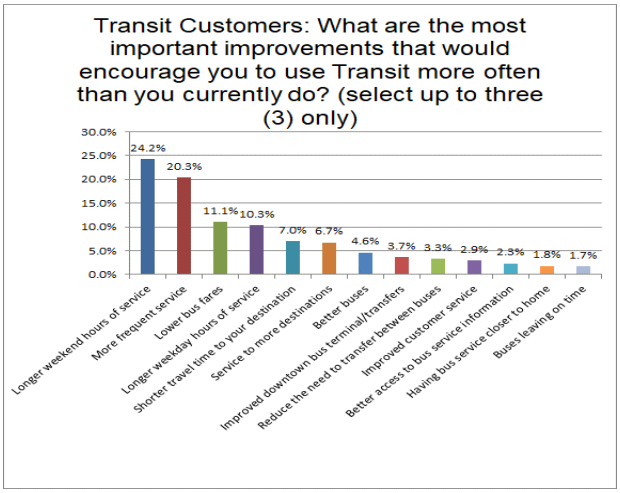


Only 74.1% of the respondents reported they were within a 5-minute walk to a bus stop compared to 65.4% of the 324 non-transit customers. Again, although the data is not statistically significant, the numbers provide a clear understanding of what needs to be overcome, namely, improving route

coverage where financially feasible. What the information does tell us is that improved service area coverage may need to be explored further. While reasonable walk distance access to transit is a priority based on industry best practices, transit customers are also sensitive to the need for other improvements, which they were able to select up to three when asked the question.

The breakdown of the improvement priorities from a transit customer perspective (up to 3 could be selected) would need to be addressed to the extent possible in the proposed route and schedule design. When listed in desired transit improvement priorities, transit customers listed longer weekend hours as the number one priority, which is double that of extending weekday evening hours. Again, this in line with input received during the public meetings held before the survey. More frequent service was the second most desired improvement.

It is interesting to note that only 7% of the respondents rated shorter travel time as a priority. This can be explained by the fact that over half of the transit customer responses related to not having access to a car or the inability to drive due to a disability.

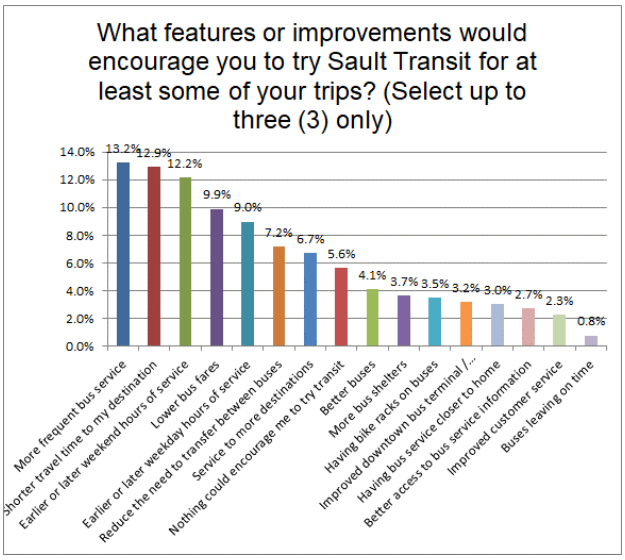


Transit Customers: What are the most important improvements that would ecourage you to use Transit more often than you currently do? (select up to three (3) only)		
Answer Choices	Responses	
Longer weekend hours of service	24.2%	334
More frequent service	20.3%	280
Lower bus fares	11.1%	153
Longer weekday hours of service	10.3%	142
Shorter travel time to your destination	7.0%	96
Service to more destinations	6.7%	93
Better buses	4.6%	64
Improved downtown bus terminal/transfers	3.7%	51
Reduce the need to transfer between buses	3.3%	45
Improved customer service	2.9%	40
Better access to bus service information	2.3%	32
Having bus service closer to home	1.8%	25
Buses leaving on time	1.7%	23
	Answered	**513**

2.2.3.2 On-line Survey for Non-Transit Customers

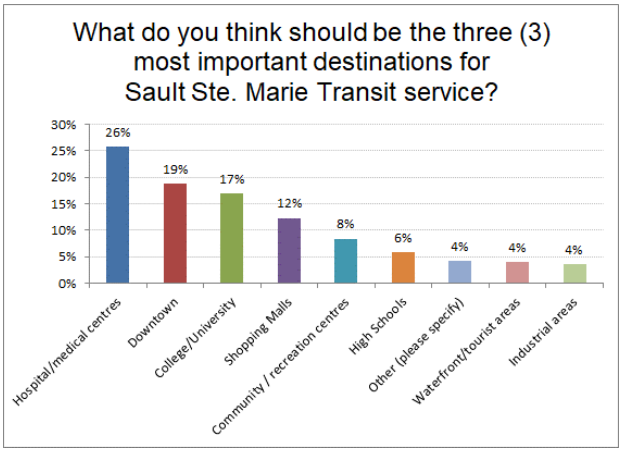
When non-transit customers were asked for the top three improvements they would like to see that would encourage them to use transit at least some of the time, 263 respondents answered (up to three reasons could be given). It is interesting to note that only 5.6% of the total responses given indicated transit would not be used, regardless of the improvements. This confirms that vast majority of the non-transit customer market may consider transit as an alternative to a private vehicle.

In order to determine what improvements to Sault Transit could be made to attract non-transit customers to transit for a least some of their trips, non-transit customers were asked to provide up to three improvements.



Non-transit Customers		
What features or improvements would encourage you to try Sault Transit for at least some of your trips? (Select up to three (3) only)		
Answer Choices	Responses	
More frequent bus service	13.2%	87
Shorter travel time to my destination	12.9%	85
Earlier or later weekend hours of service	12.2%	80
Lower bus fares	9.9%	65
Earlier or later weekday hours of service	9.0%	59
Reduce the need to transfer between buses	7.2%	47
Service to more destinations	6.7%	44
Nothing could encourage me to try transit	5.6%	37
Better buses	4.1%	27
More bus shelters	3.7%	24
Having bike racks on buses	3.5%	23
Improved downtown bus terminal / transfers	3.2%	21
Having bus service closer to home	3.0%	20
Better access to bus service information	2.7%	18
Improved customer service	2.3%	15
Buses leaving on time	0.8%	5
	Answered	**263**

More frequent service and shorter travel times were the two top reasons given followed by longer service hours and lower bus fares, which together represents 57.2% when looking at the top 3 priorities. It is interesting to note that the top five priorities selected for the non-transit customer are in line with the priorities being sought by transit customers such as longer service hours, more frequent service, shorter travel times, and lower bus fares; they represented 73.1% of the responses. What this indicates is that if improvements are made to Sault Transit to address transit customer priorities, the improvements will also meet the top priorities that non-transit customers would like to see.



Many comments received during the public consultation process were directed at improved service to the Sault Area Hospital, which is reflected the 'Hospital/ Medical Centres' as the highest priority destinations of those surveyed. This tells us that a route plan that improves service to the Hospital would be welcomed. The top three destinations point to the potential for better service linking the downtown to Sault Area Hospital via Sault College should be explored.

The following table provides a snapshot of the opinions expressed by both transit customers and non-transit customers when asked to what extent they agreed or disagreed with a number of statements.

Question	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree	Don't know /no opinion	Total Answers
Sault Transit is a safe and secure means of transportation.	26%	46%	11%	12%	3%	2%	726
Sault Transit provides convenient service to the destinations I need to get to.	14%	34%	14%	20%	15%	3%	723
It is easy to get information on how to use Sault Transit.	22%	28%	18%	18%	11%	3%	724
Public transit is important in our community because it helps reduce road congestion.	44%	31%	13%	5%	4%	2%	722
Public transit is important in our community because using transit improves the environment.	45%	32%	15%	3%	3%	3%	721
Public transit is important in our community because public transit helps those without a car and those who cannot drive.	83%	12%	2%	1%	1%	1%	723
Public transit is important in our community because public transit contributes to the City's economy.	41%	31%	18%	4%	3%	2%	723
The Sault Transit bus terminal is in a good location.	26%	29%	18%	13%	11%	2%	715
All buses should connect at the downtown terminal.	37%	21%	18%	10%	11%	4%	718
Bus fares are too high.	32%	24%	28%	8%	6%	3%	717
Sault Transit should have bike racks on buses	30%	27%	24%	5%	10%	5%	716
I support the idea of increasing transit service as a way to attract new riders, even if my taxes increase somewhat.	34%	28%	15%	8%	12%	2%	723

2.2.3.3 Community-wide Comments

An open-ended question provided an opportunity for respondents to comment, namely, 'Any other ideas on how we can make Sault Transit better?" Of the 837 respondents to the online transit survey, 331 respondents providing one or more comments about Sault Transit services. The on-line survey comments complemented the feedback provided by public open houses and transit focus groups prior to the on-line survey being launched.

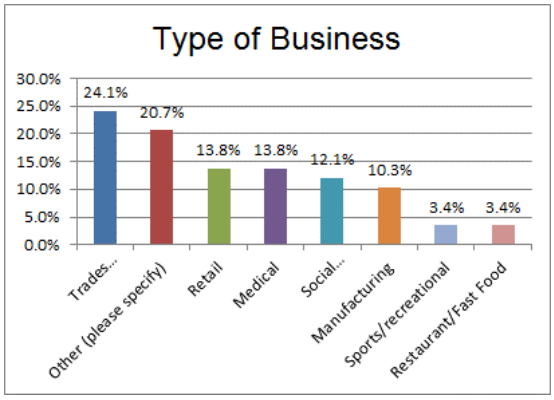
The feedback received by the on-line respondents pointed to a need to expand the hours of operation to better serve workers and businesses, improve directness of travel, increase frequency of service, and improve bus travel times. The service improvement priorities sought by transit customers and non-transit customers were similar in most respects. The comments and suggestions were also passed onto Sault Transit staff for review and consideration.

2.2.3.4 Summary of On-line Survey

In order to grow transit ridership and make transit more effective in the City of Sault Ste. Marie, it is clear that by addressing the transit service improvement priorities identified by existing customers and the priorities identified by non-transit customers (representing the largest market potential) are similar. It is reasonable to surmise that better accommodating existing transit customer priorities will result in growing their transit use; however, it will take time to attract other residents. As service improves and non-transit customer priorities are addressed and marketed appropriately, the need for high auto ownership is mitigated. Over time, existing household members may consider, for example, not replacing that second or third car.

2.2.4 Sault Ste. Marie Employer Survey

There were 58 business of various size ranging from 2 employees to 3,500 employees, that latter being Algoma Steel. Full survey responses were provided to Sault Transit staff in a separate document for future reference purposes. Of the employers whom responded, 24% represented Trades and Professional while 20.7% represented the 'other' category, which included various business types such as school maintenance, Hotel, and BPO Call Centre, in addition to automotive repair and cultural attractions.



Employer Shift Times

Employer shift times varied throughout the work day with shift times that are accommodated by Sault Transit for the 7:00am start time; however, some companies reported a start time of 6:00am, which is not accommodated by Sault Transit. The majority of employers stated that the lack of late Sunday evening service (i.e. after 7:00pm) negatively impacts some of their staff. For statutory holidays, there is concern that minimum wage earners cannot get to and from work without taking a taxi.

There were six companies that state they would consider changing their shift times to accommodate their employees taking transit. It is suggested that Sault Transit staff reach out to the six employers (as well as others) in the near future and while amending service and schedules in the future, determine the impact on shift start and end times.

Employer-subsidized Monthly Transit Passes

When asked the question with regards to supporting employer-subsidized monthly passes, one company already provides bus passes while six others reported they would be willing to provide subsidized bus passes. Based on this response, Sault Transit should consider approaching the six businesses as well as others throughout the City of Sault Ste. Marie to participate in an employer-subsidized bus pass program.

The City of Sault Ste. Marie may consider adding staff to its organization that would enable Sault Transit to build a stronger liaison with the business community, the many institutions in the City and the general public. This could more than off-set the employee costs. For example, if a number of businesses were approached and it resulted in the purchase of an additional 100 monthly transit passes at $60 per pass, this would result in an additional $72,000 revenue per year and may be considered a tax deduction for the employer. An additional benefit to the employer would be a reduction in employee parking requirements and expenses.

Employer Comments

Of the 58 employers that responded, 25 provided comments that addressed specific staff needs as well as the needs of their customers. While some employers stated that Sault Transit met their needs, other employers offered some insight to their needs and that of their employees and, in some cases, the needs of volunteers. The wide range of comments addressed hours of operation, route design, bus stop locations, the need to better accommodate low wage earners, etc.

Algoma Steel Employee Poll

It was interesting to note that Algoma Steel went beyond simply filling out the employer survey; they conducted an employee poll. Management asked their employees four questions:

- Do you take the City Bus to work?
- When you take it, is it on weekdays, Saturdays, or Sundays?
- Where do they get off at Algoma Steel? And
- Does the current City transit schedule work with your shift schedule?

Of the 57 Algoma Steel employees that responded to the poll, 41 or 72% stated that the current schedule does not work with their shift schedule. One can surmise that this can apply to all employees, including those that do not use transit. Although it is a challenge to meet the shift times of all employers in the City of Sault Ste. Marie, it should be stated that Sault Transit has and continues to work with industry to accommodate shift times as best they can. Since the Route Optimization Study will result in route and schedule changes, large employers could be consulted prior to designing schedules. Employers can also be requested to modify their shift times where a change of, for example, 15 minutes could make a difference. The change could also make it more palatable for some employees to use transit rather than driving to work.

Employer Survey Summary

Going forward, it is recommended that the City of Sault Ste. Marie continue to work with the business community and specific large employers to:

- Address route and schedules to better meet employee needs
- Change shift times, where possible
- Offer subsidized bus passes to employees
- Consider a low-cost service to accommodate the few employees that commence work before regular transit service begins (e.g. industrial bus or shared-ride taxi)

The employer survey is considered successful given the valuable feedback that complements the community-wide general public on-line survey results. The input received will go a long way to better enabling the Route Optimization Study to identify and take action transit improvement priorities. On-line employer surveys should continue to be undertaken and refined every year.

2.2.5 Summary of Round 1 Community Engagement

The stakeholder consultations held in mid-May and mid-June, 2017 were complemented by a successful public information centre (PIC) held on June 13, 2017 at the downtown bus terminal. This provided Transit Consulting Network and City of Sault Ste. Marie with the information needed to customize an on-line survey designed for both transit customers and non-transit customers, which resulted in 837 responses, representing 1.1% of the population. The business community also participated by responding to a separate on-line survey that attracted 58 responses, including the results of a poll conducted by Algoma Steel, representing 3,500 employees.

The input received was then analyzed to help the study team identify community-wide priorities in a revised route network and service plan that would eventually be brought back to the community for additional input and refinement.

2.3 Evaluation of Existing Transit Services

2.3.1 Description of Existing Services

The City of Sault Ste. Marie operates three services:

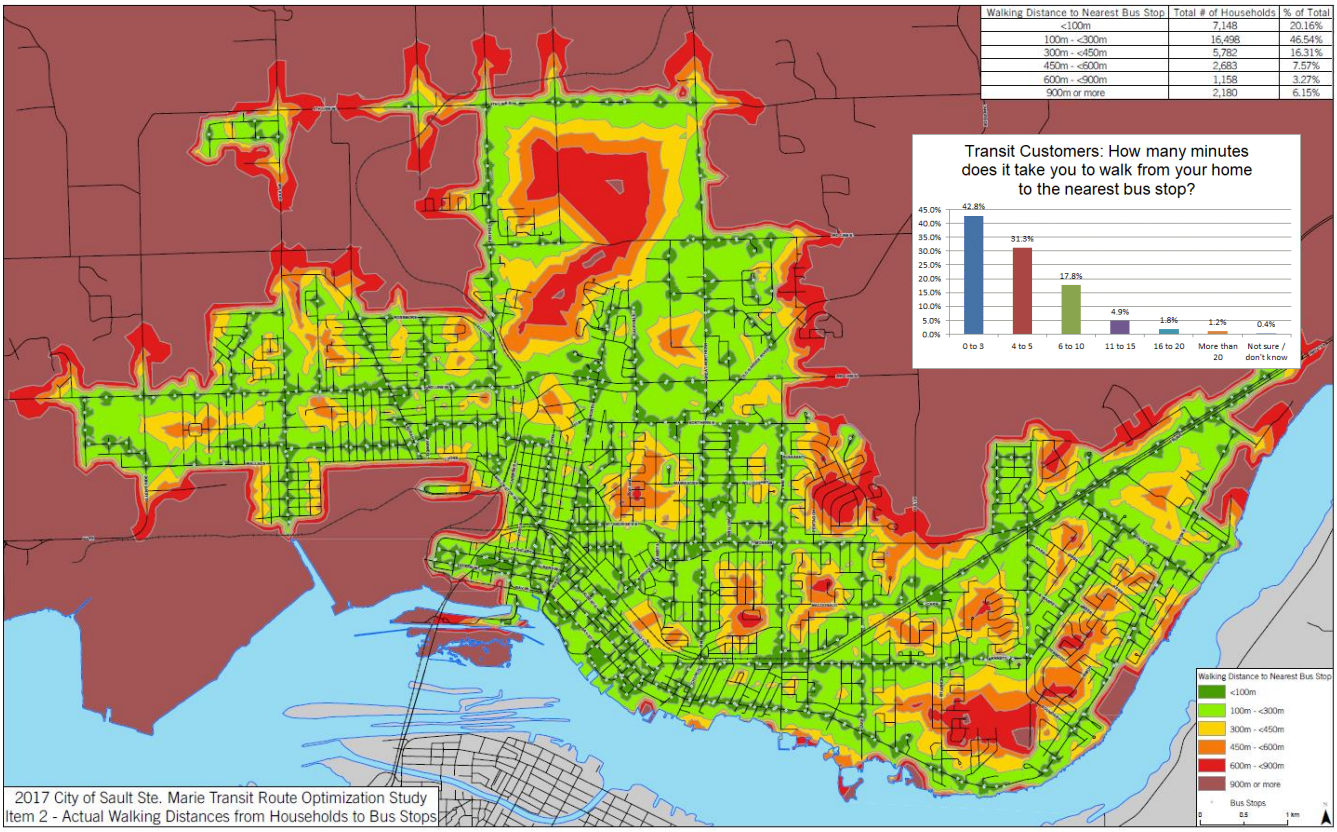
- Conventional Transit (Sault Transit): fixed route service using 12.2 metre (40-foot) low-floor heavy-duty conventional transit buses that provides service from approximately:
  - 6:00am – midnight Monday through Saturday
  - 7:00am – 7:00pm Sundays
- Community Bus: 8 metre (26-foot) low-floor medium-duty buses that provide weekday service from approximately 9:00am – 5:00pm weekdays only
- ParaBus: demand-responsive specialized transit for eligible persons that are unable to use Sault Transit or ParaBus service. ParaBus is available during the same days and hours as Sault Transit

Together, the family of services work together to accommodate all community needs. Low-floor conventional transit is designed for all trip purposes and has the most frequent service during peak hours to accommodate the work and school trip. The community bus can accommodate all transit customers, including ParaBus registrants; however, service is limited to hourly indirect service designed to serve seniors as well as those with mobility challenges.

Sault Transit operates a radial route network whereby all routes terminate in one location - the downtown terminal located at Dennis Street and Queen Street – to accommodate transfers. To accommodate quicker travel, other route transfers are available at nine other locations throughout the City where two or more routes meet.

2.3.2 Route Coverage

In order to determine whether or not transit routes provide adequate access to transit service for all residents, Transit Consulting Network worked closely with the City's Geomatics Centre staff and the Innovation Centre to quantify the actual walk distances from residences to the nearest bus stop. Fortunately, the level of detail available enabled the study team to quantify and illustrate the information, which is based on the actual walk distance from a street address to the nearest bus stop.



A transit route design guideline suggests that 95% of households should be within 450 metres of a bus stop, which represents a reasonable 5-minute walk. In the case of Sault Ste. Marie, 83% of households are within 450 metres of a bus stop as illustrated in 'heat' map and table above. This is considered very reasonable. What the heat map tells the study team is where to modify routes so that the walk distance guideline is better met.

Areas of the city that were identified as candidates for enhanced route coverage were:

- North of McNabb St./ west of Pine St. (e.g. along Lake St.)
- West of Boundary St./ south of South Market St.

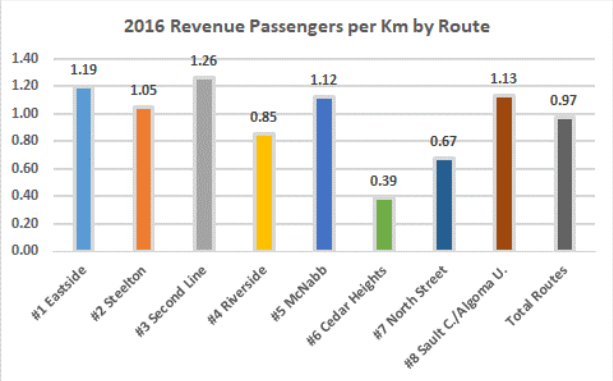
It is worth noting that many municipal GIS databases do not report on actual walk distances to a bus stop, rather, what is reported elsewhere is the straight line 'as the crow flies' distance around a bus stop. This does not account for the actual walk distance. In contrast, the Geomatics Centre data is provided at the level of accuracy that is needed for effective route design.

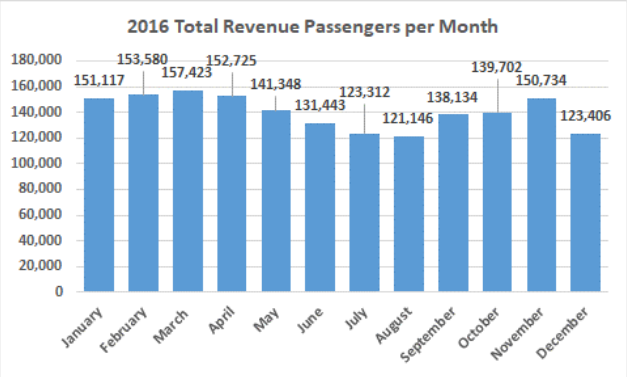
2.4 Data Collection and Analysis

2.4.1 Registering Farebox Data

Sault Transit owns and maintains electronic registering fareboxes that collect revenue passenger data on all routes for all trips. Although the registering fareboxes are due for replacement, the information available is adequate for planning and financial reporting purposes. Below is the 2016 year-end financial report that was made available by staff based on operating data and the registering farebox data.

Report of Route Analysis 2016										
Route	Mileage KM	Cost Per KM $4.38	Cash Revenue	Pass Revenue	Total Revenue	Return of Operating Cost %	No. Revenue Passengers	Cost per Passener	Deficit per Passenger	Passengers per Km
#1 Eastside	215,318	$942,751	$138,785	$214,058	$352,843	37%	256,834	$3.67	$1.17	1.19
#2 Steelton	242,740	$1,062,819	$129,078	$199,086	$328,164	31%	254,037	$4.18	$1.68	1.05
#3 Second Line	212,271	$929,410	$154,213	$237,855	$392,068	42%	268,415	$3.46	$0.96	1.26
#4 Riverside	243,756	$1,067,265	$103,075	$158,980	$262,056	25%	207,035	$5.16	$2.66	0.85
#5 McNabb	234,615	$1,027,243	$150,298	$231,816	$382,114	37%	262,632	$3.91	$1.41	1.12
#6 Cedar Heights	164,544	$720,442	$37,534	$57,892	$95,426	13%	64,183	$11.22	$8.72	0.39
#7 North Street	215,129	$941,925	$69,607	$107,360	$176,966	19%	144,740	$6.51	$4.01	0.67
#8 Sault C./Algoma U.	200,120	$876,209	$110,767	$170,843	$281,610	32%	226,194	$3.87	$1.37	1.13
Total Routes	**1,728,493**	**$7,568,064.18**	**$893,357**	**$1,377,890**	**$2,271,246**	**30%**	**1,684,070**	**$4.49**	**$1.99**	**0.97**





The Revenue Passengers per Kilometre – a measure of route and system-wide efficiency varies significantly by route and by month of the year. The graphs suggest that Route #6 Cedar Heights and Route #7 North Street are the least efficient routes and as such, should be assessed in detail during the Route Optimization Study. On a monthly basis, ridership drops over the summer period beginning in latter May up to the Labour Day weekend, which coincides with post-secondary and high-school summer months as well as being the peak holiday season for all other residents. The data suggests that consideration can be given to modifying the amount of service hours during the summer months, which could be reallocated elsewhere such as serving residents that have no service or reinstating Sunday evening service – two of the objectives of the Route Optimization Study.

2.4.2 Automatic Passenger Counters

Transit Consulting Network installed its GPS-equipped automatic passenger counters (APCs) on two conventional transit buses to record boardings and alightings (ons and offs) by trip on all routes. Normally, transit on-off data is collected manually on one typical weekday day for all routes, which may not be representative since driving conditions and passenger boarding and alighting numbers can vary significantly in one day and are subject to human error.

The APC-equipped buses were rotated on all conventional transit routes to obtain multiple day samples for weekdays, Saturdays and Sundays – an unprecedented sampling for Sault Transit. The APC equipment and data collection remained in place for the duration of the project to enable Sault Transit staff to build a significant data base for several months and undertake detailed analysis, as required.

During the month of October 2017, the two APCs were rotated throughout the transit system to calculate total boardings. Weekday value averages are reflected in Exhibit 17: Average Weekday Boardings on Sault Transit bus routes, excluding the Community Bus service.

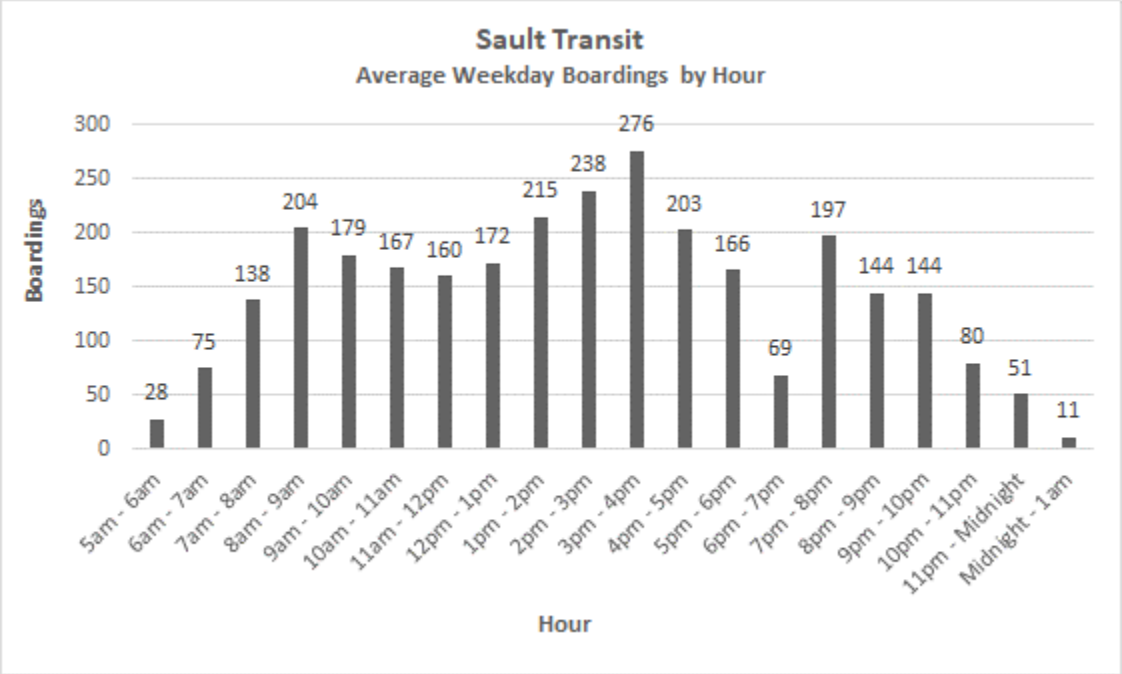


Exhibit 17: Average Weekday Sault Transit Boardings

There was an average of 2,917 weekday boardings recorded, which includes both passengers paying a fare (i.e. revenue passengers) and passengers boarding with a transfer. The value is based on the actual boarding time regardless of where the bus is along a route. The data is valuable – especially if collected year-round – because it assists in helping determine, at a high level, whether or not service should be modified based on established service standards. Transit management can now drill down to the seasonal level, month of the year, day of week, and by trip. It should be noted that Sault College faculty was on strike when the data was recorded; however, the graph is sufficient for illustration purposes.

3 PHASE II: TRANSIT SERVICE PLAN

The stakeholder consultations complemented by the APC data analysis provided the study team with a thorough understanding of the existing Sault Transit system from an operations perspective and, more importantly, from the perspective of the community at large in terms of transit improvement priorities.

In order to develop a preliminary transit service plan, it was necessary to review and update the existing transit policy framework that was developed in 2012 - 2016 Public Transit Operations Review study completed in January 2012.

The information obtained by Transit Consulting Network with the information needed to update the 2012-2016 transit policy framework. In turn, the service standards of the transit policy framework will then guide the development of preliminary transit service concepts that can be short-listed then carried forward to Phase III: Final Report and Recommendations.

3.1 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 reflect input from all stakeholders, including both transit users and non-transit users.

3.1.1 Goals and Objectives

The policy framework consists of:

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

Through the consensus-building process that the consultant team advocated throughout the study, Transit Consulting Network developed a number of goals and objectives based on the vision and mission statement that was developed in 2012.

Vision Statement

The preferred future of public transportation in Sault Ste. Marie:
"Sault Transit will increase transit ridership and provide a local public transportation system that is supported by residents, academic institutions and the business 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 Sault Ste. Marie to:

- Improve the quality of life of residents who do not have access to an automobile.
- Improve pedestrian access to transit service.

- Meet the travel demand generated by various target markets in the employment, academic, commercial, medical, and service industries.
- Recognize that transit is an integral component of urban growth.

Performance Goals
Transit performance targets have been updated and established for the next five years as follows:
- **Effectiveness:** Increase transit use by 10% - from 24.2 to 26.6 revenue passengers per capita served by 2023.
- **Efficiency:** Increase service utilization use by 15% from 21.2 to 24.5 passengers per hour of service by 2016.

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

Service Area Objective
Sault Transit should provide service within the urbanized area of the Sault Ste. Marie.

Service Objective
The minimum frequency of service and service hours to be provided shall be adequate to meet the various target markets within the community, including work shifts that begin at 7:00am and end at 11:00pm.

3.1.2 Transit Service Standards
The goals and objectives provide a general policy direction for the City to follow with respect to the provision of Transit service. Transit service standards are needed to guide Sault Ste. Marie Transit in determining when transit service will be provided, how frequent 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 Sault 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.

3.1.3 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. Furthermore, the service level policies have been developed to adapt to a maximum 80,000 hours of service in 2018.

Minimum Service Hours
The minimum hours of operation to accommodate the various target market groups identified shall be:
- 6:00am – midnight Monday through Saturday
- 7:00am – midnight Sundays

Minimum Frequency of Service

September through May		**June through August**	
Day and Span of Service	Frequency (minutes)	Day and Span of Service	Frequency (minutes)
Weekday			
6:00am-9:00am	30	6:00am-9:00am	30
9:00am-3:00pm	30	9:00am-3:00pm	**from 30 to 60**
3:00pm-6:00pm	30	3:00pm-6:00pm	30
6:00pm-midnight	60	6:00pm- midnight	60
Saturday			
6:00am-9:00am	30	6:00am-9:00am	60
9:00am-3:00pm	60	9:00am-3:00pm	60
3:00pm-6:00pm	30	3:00pm-6:00pm	60
6:00pm- midnight	60	6:00pm-midnight	60
Sunday			
7:00am – midnight	60	7:00am- midnight	60

Minimum Service Coverage

- 95% of residents within the urbanized area of Sault Ste. Marie shall be within a 450m walk (approximately five minutes) of a bus stop.
- Conventional bus service shall be provided to new subdivisions with 400 households or 1,000 residents; alternative forms of service delivery shall be considered for new subdivisions that do not meet the criteria.
- Areas outside the urban area should be provided with a low-cost form of service delivery such a TransCab at least two days per week.

Route Design

- All routes shall be provided in both directions to the extent possible. One-way service loops beyond 2km are unacceptable.
- Routes shall be located along major arterial and collector roads and only be provided along local residential roads in order to meet walk distance guidelines.

Route Performance

- Conventional transit routes must have a minimum 10 passengers per hour.
- ParaBus service should carry at least two persons per trip on average.

The most notable Service Standards change proposed is during the summer month when off-peak weekday service frequency changed from 30-minutes to 60-minutes; peak hour frequency to accommodate the work trip remained at 30 minutes.

3.2 Revised Route and Service Concepts

Transit Consulting Network and Sault Transit staff developed a number of route concept alternatives that culminated with a revised transit network based on route design principles that achieved the following:

- Ensure all Sault Transit routes have the same frequency
- Reduce out of direction travel by bus
- Expanded and improved service coverage
- Provision of two-way service on all routes to maximize the directness of travel
- Eliminating the need to transfer at the downtown terminal for many transit customers when travelling to other destinations (this reduces the time to be from point A to point B);
- Adding a new core service between the downtown, tourist areas, hotels and Sault Area Hospital
- Additional bus service to accommodate St. Mary's College students
- Enable residents to travel by bus from east side of the city to the west side of the City without needing to go downtown.
- Eliminating route deviations to areas where demand was virtually non-existent while still enabling the few transit customers affected to be within acceptable walk distance of a bus stop
- Ensuring that as few bus stops as possible would be impacted

It is worth noting that the proposed route and service concepts and revised scheduling of buses would ensure that all Sault Transit customers would be able to:

- Start work at 7:00am and get home after finishing work at 11:00pm Monday through Saturday by Sault Transit and 8:00m to 11:00pm on Sundays
- Require no more than 60 minutes to get to from their home any destination in the City
- Reduce the number of transfers being made today

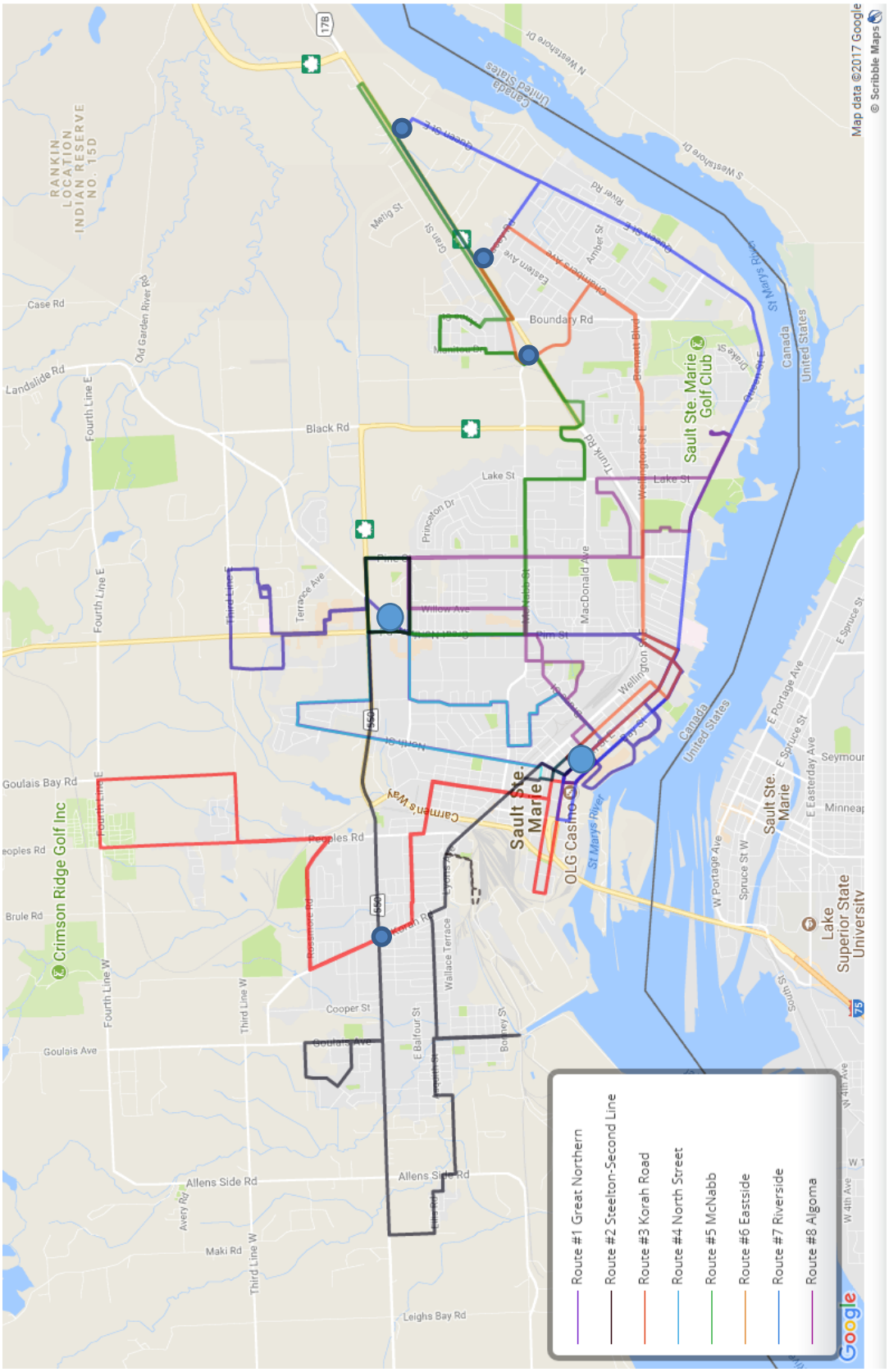
3.2.1 Round 2 Community Engagement

While the Round 1 Community Engagement process was designed to obtain feedback on what the transit priorities should be, the Round 2 Community Engagement process was designed to solicit input on whether or not our preliminary recommendations reflected their initial input. In this regard, the proposed route and service concepts were presented to the public at three open house venues for final input prior to presenting the transit service plan to Council:

- West End Community Centre: 9:00am – 11:00am January 17, 2017
- City Hall: 5:00pm – 7:00pm January 17, 2017
- John Rhodes Centre: 2:00pm – 4:00pm January 18, 2017

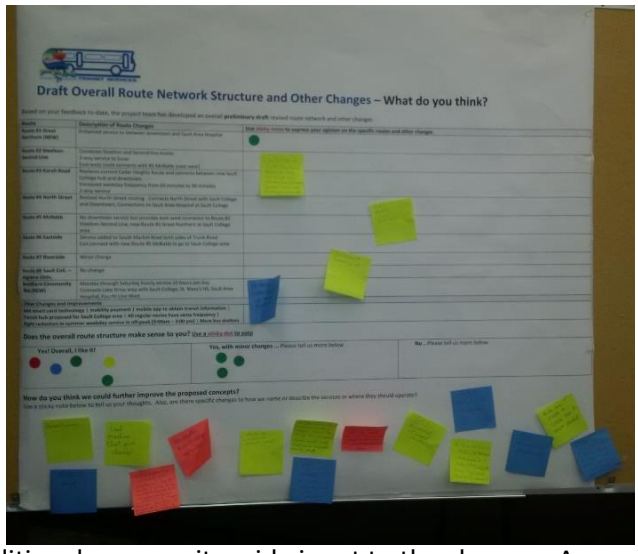
A total of 42 residents registered at the open houses where Transit Consulting Network provided a PowerPoint presentation of the proposed route concepts as illustrated in Exhibit 18: Preliminary Route Concepts as well as presenting a number of other recommendations to complement the open house boards. Four Sault Transit staff were on hand to assist with the community engagement and answer any questions.

Exhibit 18: Preliminary Route Concepts



Following the presentation, the open house participants were invited to vote on the overall changes with the results shown as follows:

- Yes, overall, I like it (60% of those that voted)
- Yes, with minor changes (40% of those that voted)
- No, please tell us more (no votes)

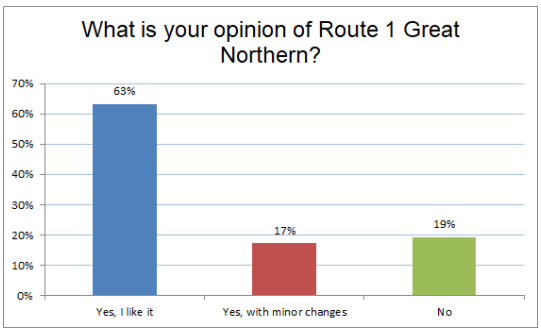


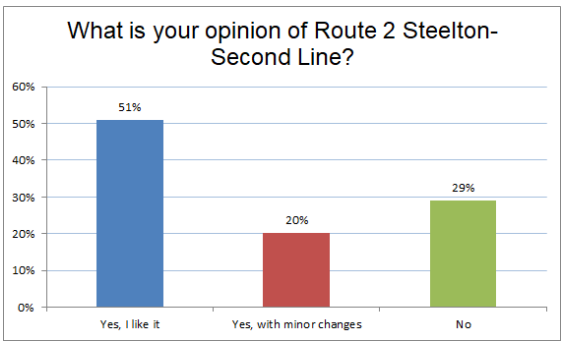
Sticky notes were also made available for participants to provide general comments as well as proposed route-specific input.

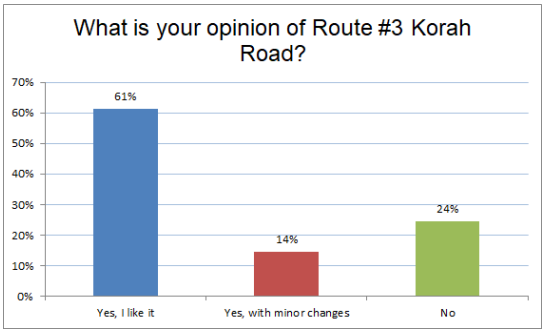
Following the open houses, the City of Sault Ste. Marie posted the PowerPoint presentation on the City's website from Friday, January 19 through Sunday, January 28, 2018 as well as a survey for additional community-wide input to the changes. A total of 312 residents viewed the information and provided a total of 361 comments.

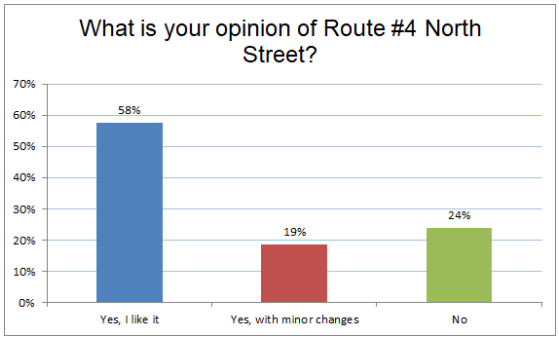
When asked to comment on each of the proposed routes, opinions were expressed by approximately 2/3 of the 312 survey participants for each route. Those that supported the changes, including support with minor changes, represented an average of 78% of the proposed eight routes.

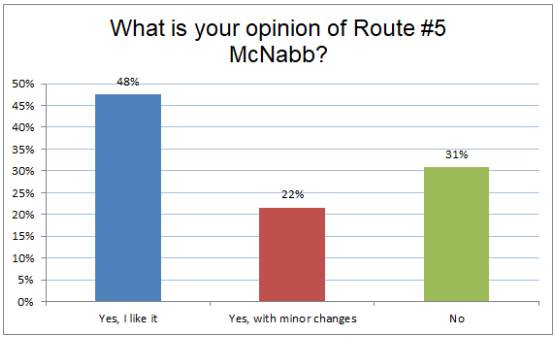
Route #	% Supportive	% Not-supportive	Comment
#1 Great Northern	80%	20%	Reinstatement of former bus route
#2 Steelton/ Second Line	71%	29%	Direct 2-way service to downtown of former routes
#3 Korah Road	75%	25%	More direct service + more frequent service (replaces 2nd lowest performing route – Cedar Hts.)
#4 North Street	77%	23%	No direct service to Sault Area Hospital (replaces poorest performing existing route)
#5 McNabb	70%	30%	No direct downtown service; however, Eastside route is an option for many while timed transfers to downtown area accommodated
#6 Eastside	81%	19%	Little change (added coverage)
#7 Riverside	78%	22%	Minor change
#8 Algoma U./ Sault College	90%	10%	No change to existing route
Northern Community Bus	74%	26%	New community bus route; adds service to Hospital

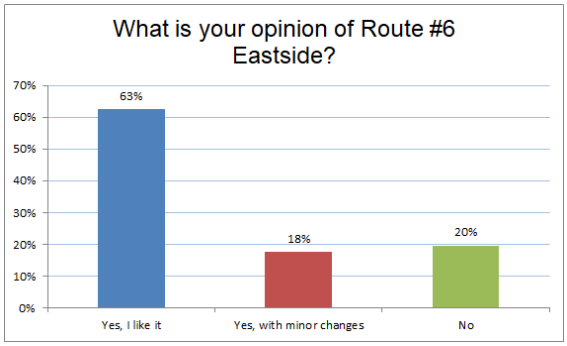


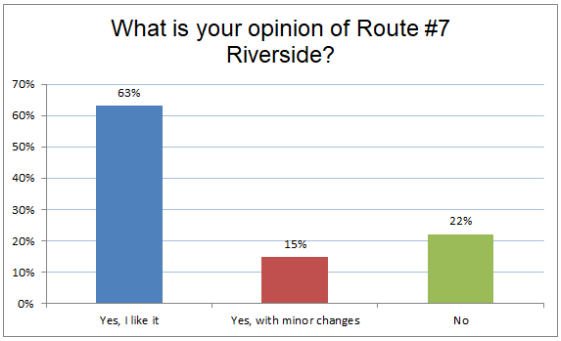


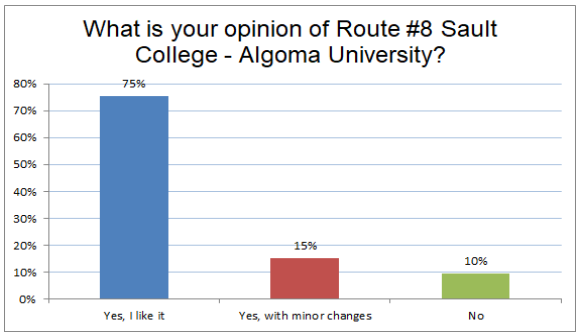


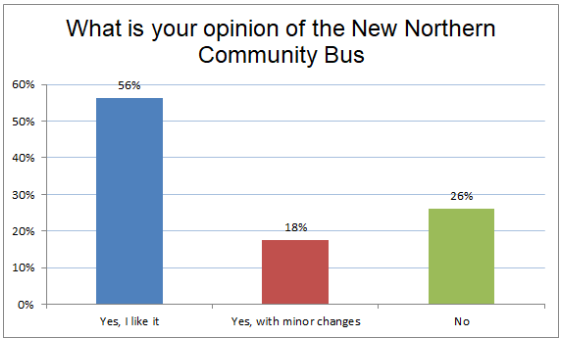












It is interesting to note that Routes 6, 7 and 8 remain relatively unchanged with an approval rating of 83% while those impacted somewhat – the remaining five routes - had an average approval rating of 74.6%. The study team used this information and reviewed the comments provided to then modify the preliminary route concepts and finalize them for implementation. In this regard, route-specific comments and opinions

varied. It was clear that in many cases, there were misunderstandings based on some comments from the on-line survey, which is expected since individual face-to-face explanations that were available at the open houses were not possible in the survey. For example, some respondents expected increases in service frequency even though there was a cap on the quantity of service available, which was set at the current 80,000 hours per year.

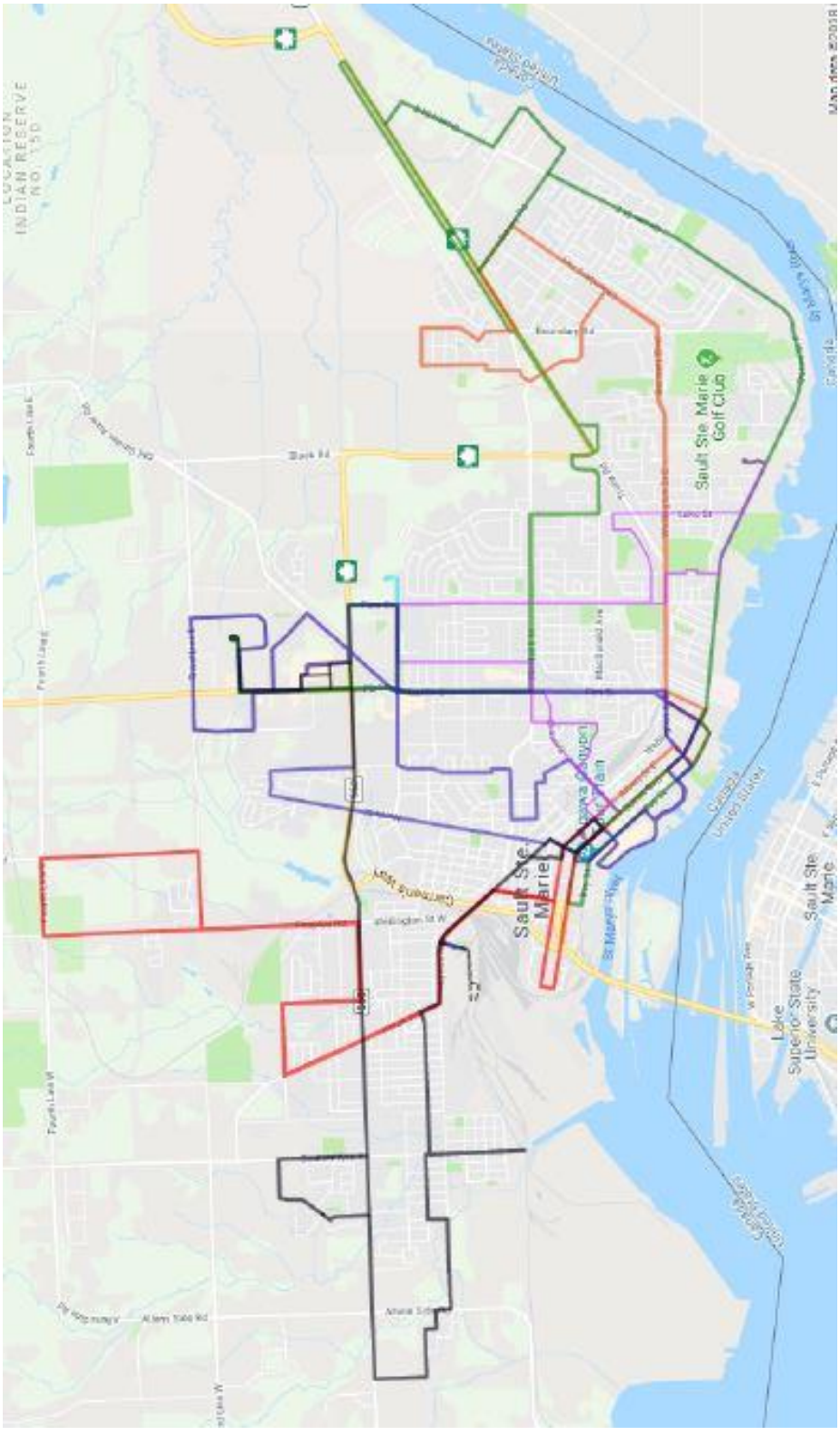
A much higher level of community-wide support could easily be attained by simply adding new routes to the existing service to reduce the need to go downtown, provide more direct routing to reduce the need to transfer, add a new east-west route that bypasses the downtown, etc. Rather, the proposed routes and schedules were designed to reallocate hours of service to meet the initial Round 1 Community Engagement priorities (e.g. better coverage, return of Sunday evening service, reduce the need to transfer, etc.)

While the open house and community on-line feedback was being addressed and modifications made to the preliminary route plan, Sault Transit staff conducted more detailed analysis of the proposed routes by undertaking test runs and assessing potential new route travel ways and bus stop locations. Every effort was made to accommodate concerns and suggestions from the public as possible. In doing so, several modifications were made to the preliminary route concepts.

The revised route network is illustrated in Exhibit 19: Revised and Proposed Route Network, followed by descriptions of the individual route changes and the new Community Bus routes. A key change made over the preliminary route network was the combining of the McNabb service with Riverside to form one route and enable more timed transfer opportunities for residents to reduce the need to travel downtown from the east side of the City, similar to that recommended for the combining of the Steelton and Second Line routes on the west side of the City.

3.3 Revised Transit System Network

Exhibit 19: Revised and Proposed Route Network

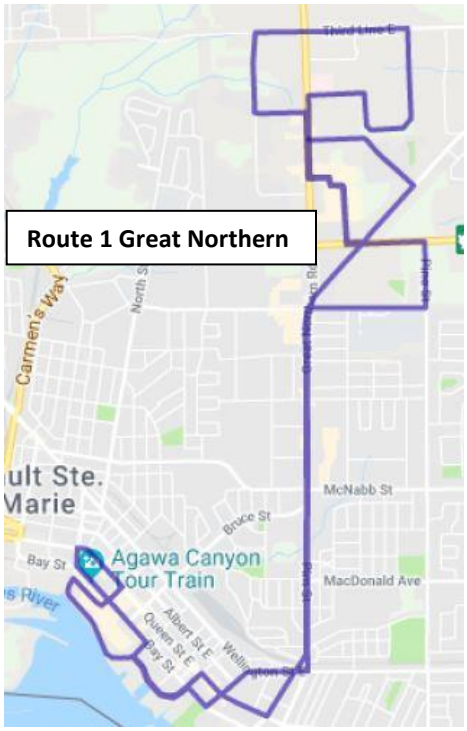


3.4 Final Individual Route Concepts

Highlights of the new routes are summarized as follows:

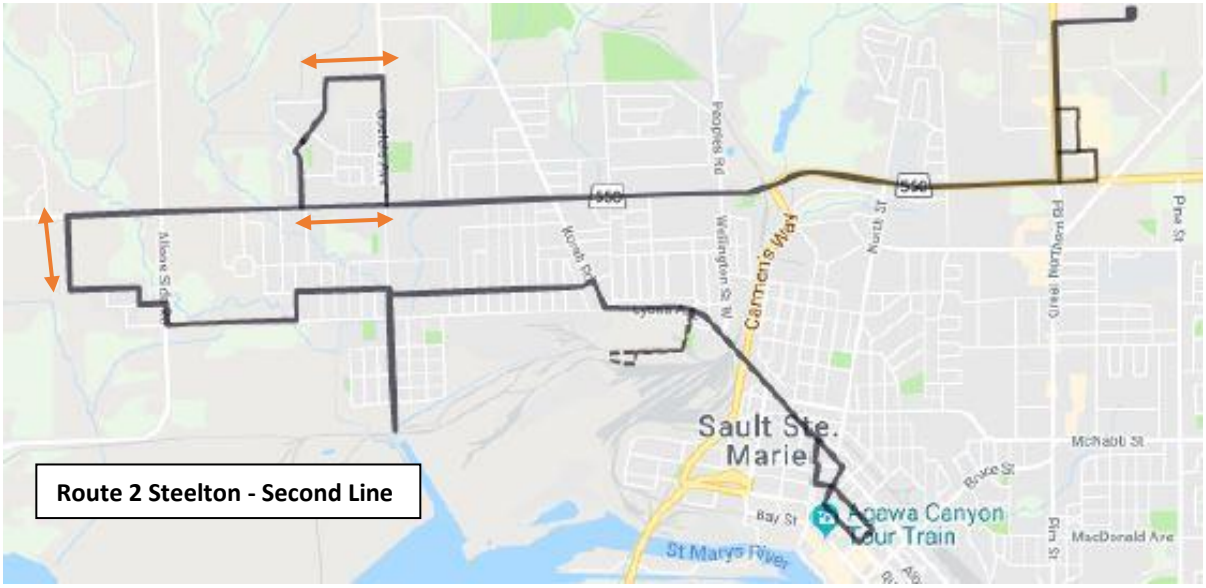
Route 1: Great Northern:

- Direct core route
- Links the downtown directly to the Sault Area Hospital
- Links numerous hotels to the downtown tourist destinations, shopping and the casino



Route 2: Steelton-Second Line:

- 4 buses in peak
- Combines previous Steelton and Second Line routes
- Eliminates the need for passengers to transfer at Second Line West at Goulais St.
- Two-way service all day enables transit customers the option to go downtown or along Second Line and to Great Northern and Sault Area Hospital
- Two-way service into Essar Steel Algoma Gate #4



Route 3 Korah

- 2 buses in peak
- Two-way service all day between downtown and Fourth Line
- Replaces previous Steelton Route with service to the James Street area
- Reduces the need for some areas to be served by the existing Community Bus service, which has difficulty meeting schedules

Route 4 North Street

- 1 bus peak
- Follows similar routing to existing Route 4 North, except for travel to Sault Area Hospital
- Service removed from Kitchener, Knox and Walnut in favour of Grand Blvd. to provide improved coverage
- Serves many seniors residences
- One-way 30-minute loop; exception to preferred 2-way service in order to better accommodate transfers

Route 5 McNabb - Riverside

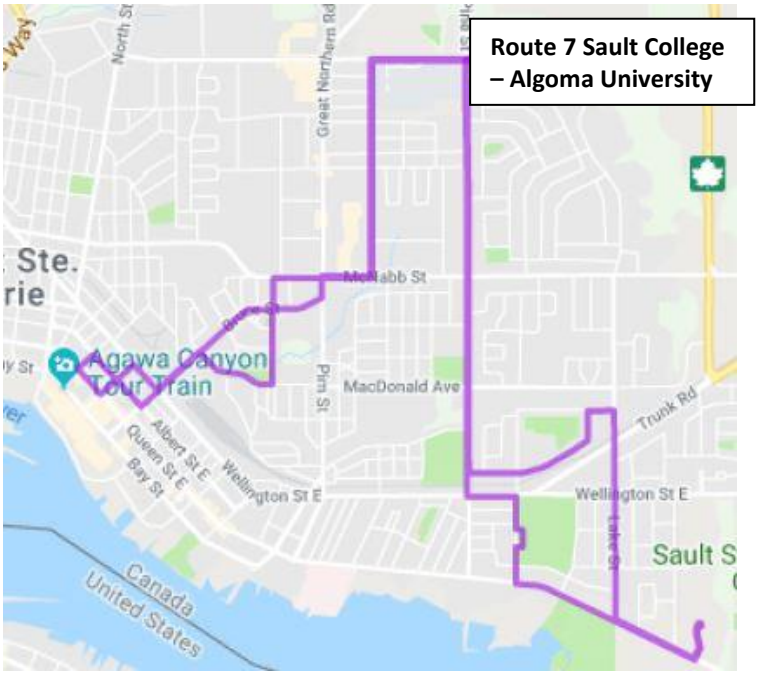
- 4 buses peak
- Serves north side of Sault College, Northern Transfer Point, St. Mary's College and Sault Area Hospital
- No service to Manitou Park (now served by new Route 6 Eastside where transfers can be made to downtown with Eastside and Riverside route transfer points)

Route 6 Eastside

- 2 buses peak
- Follows existing Eastside Route for the most part
- Service extended into Manitou Park previously served by McNabb Route
- Serves South Market Rd. on both sides of Trunk Rd., serving many residents that were more than a 5-minute walk to the nearest bus stop
- Timed transfers to Route 5 McNabb provides more direct service to northern destinations

Route 7 Sault College – Algoma University

- 2 buses peak
- No change in routing



Community Bus Routes

Although Community Bus routing is out of scope for the Route Optimization Study, the new route plan was seen as an opportunity to revise the Community A and Community B bus routes and also be able to serve residents that have inadequate community bus service to meet their needs.

Northern Community Bus

- Provide service to residents currently not served such as Lake Street and Pawating Co-op
- Provide service along roadways where service would be removed in the new route plan such as a section along Fourth Line currently served by the Cedar Heights Route (to be redesigned)
- Provide service close to St. Mary's College and Sault College
- Service to Sault Area Hospital provided on request
- Monday through Saturday service is provided with 10 one-hour round trips from approximately 7:00am to 10:00pm to accommodate work, shopping, school, and after school activity trips

Central Community Bus

- One-hour loop service to accommodate seniors' residences, Lake Street and Pawating Co-op
- Eight trips daily: Monday through Friday

3.4.1 Impact of Route Changes to Existing Transit Customers

To accommodate the new route concepts and redesigned route network, there were 10 bus stops that need to be eliminated out of the 461 bus stops throughout the city (excludes 172 community transit bus stops). Automatic Passenger Counter (APC) data was collected over 15 days to determine the number of persons that would be impacted on an average day, bearing in mind that new bus stops will be introduced to serve far more residents.

Average Number of Persons Impacted Daily by New Routes

Stop Location	Route	Boardings	Alightings	No. of days surveyed	Estimtaed No. of Persons Affected Daily	Impact on Customers
Boundary Rd near Eastern	Eastside	0	0	15	0.0	350 metre walk to bus stop
Boundary Rd @ Eastern	Eastside	2	6	15	0.3	220 metre walk to bus
Sault Hospital Emergency	Cedar Heights	13	16	7	2.1	Served by new route
Gino's Restaurant	Cedar Heights	1	1	7	0.0	Served by existing community bus and other
TMS	Cedar Heights	6	1	7	0.0	Served by existing community bus and other
Maitland Ford	Cedar Heights	1	1	7	0.0	Served by existing community bus and other
Kitchener Rd. @ Northern Ave	North Street	0	0	3	0.0	100 metre walk to bus stop
Kitchener Rd. @ Strand Ave.	North Street	7	1	3	1.3	260 metre walk to bus stop
15 Beech Street	North Street	5	1	3	1.0	250 metre walk to bus stop
55 Knox Ave.	North Street	0	0	3	0.0	270 metre walk to bus stop
Walnut Street @ 238 Birch Str	North Street	4	2	3	1.0	150 metre walk to bus stop
Walnut Street @ 35 St. Mary's	North Street	0	3	3	0.5	200 metre walk to bus stop
Walnut Street @ St. Georges A	North Street	9	3	3	2.0	230 metre walk to bus stop
Total		48	35	79	8.2	Average daily persons impacted

Only 8 persons, on average, would be slightly impacted on average per day by requiring an additional walk of 100 metres to 270 metres, which is considered to be well within reason since a 450-metre walk is considered acceptable.

3.4.2 Impact on Bus Transfer Facilities

In order to enable transit customers residing in both the east and west areas of Sault Ste. Marie to travel to destinations in the more northern area of the city (e.g. along and north of Northern Ave and Second Line) without going downtown, a bus transfer facility would be required. It was determined that a new terminal or bus transfer facility that should be located within or in close proximity to Sault College, a key destination.

Although the downtown is a major destination, the only route that requires transfers to go downtown is the McNabb Route; however, many existing customers will be able to board or transfer to an alternative route to travel downtown directly, namely the proposed Route #4 North Route #8 Sault C./ Algoma U. and the new Route #1 Great Northern that also connects to the Sault Area Hospital and, together, these options will reduce the time transit customers spend on a bus.

Other transfers can be accommodated at the following locations:

- Korah St. and Second Line West (NEW)
- Trunk Road at South Market (NEW)
- Frontenac Road at Adeline Avenue (existing)
- Dacey Road at Trunk Road (existing)
- Fournier Rd. at Trunk Rd. (existing)
- Peoples Road and Second Line East

3.4.3 Proposed Service Strategy

While the proposed route network concepts addressed a number of community priorities, the added challenge from a route design perspective, the added challenge was to do so within the existing funding framework, namely, not exceeding 80,000 revenue hours of service.

Transit Consulting Network worked closely with Sault staff to provide a service plan that would result in:

- Reinstatement of late evening Sunday service;
- Adding a new core service between the downtown and Sault Area Hospital using the Great Northern corridor that also better accommodates tourists
- Provide a higher level of transit service to St. Mary's College; and
- Provide improved service to Sault Area Hospital

A key strategy was to reduce the number of routes going downtown, provide an east-west connector along the northern area of the City while improving routes, schedules, and transfers. Through the review of data provided from APCs and farebox information, it was then determined that the summer levels of service could be reduced during off-peak periods in order to be reallocated where they are most needed. In this regard, the average monthly ridership during the summer months (June through August) is 14% less than the average of the non-summer months. The transit service plan reflects a reduction in weekday hours of service during the summer off-peak only since off-peak demand (generally non-work trips) is less critical than the peak demand, which is needed for the work trip.

In addition to the aforementioned benefits, the reduction in summer weekday service hours will enable Sault Transit bus operators and mechanics to select their vacations during the most popular summer period. This would eventually translate to less overtime to accommodate bus operator and mechanic vacations.

The service hours saved during the summer together with the service hours saved by reducing bus service to the downtown enabled the study team to address community transit priorities by reallocating resources within the existing funding framework for 80,000 hours of service.

4 PHASE III: TRANSIT ASSET MANAGEMENT PLAN

To support the Transit Service Plan, a number of investments were identified for this study:

- Smart card technology to improve transit efficiency and reduce revenue management costs
- Automatic Passenger Counters to monitor bus loads and eliminate future data collection costs
- Transit mobility hubs relative to the future of the existing downtown terminal and the need for a 'satellite' transfer location
- Bike racks on buses
- Fleet replacement and expansion

4.1.1 Smart Card System Technology

4.1.1.1 Smart Card System Overview

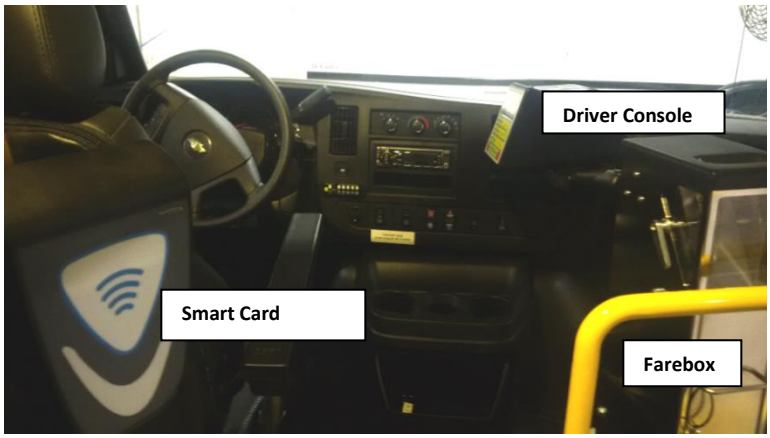
The existing registering fareboxes purchased in 2005 have served Sault Transit well; however, they have limited capability, are expensive to maintain, require ongoing maintenance, and consume an inordinate amount of staff time daily to reconcile revenues collected. During the community engagement process, both the bus operators and the public identified concerns with respect to farebox breakdowns while in service. The farebox equipment is also scheduled for replacement. Given the advent of low-cost smart card technology, it is an opportune time to upgrade or replace the fare collection equipment.

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 smart card has monetary value similar to those typical of retail sector loyalty cards; however, that's where the similarity ends.

What differentiates the transit smart card 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) smart card, as required. Transit smart cards 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. Smart cards also reduce or eliminate the revenues lost to fare evasion.

A number of transit systems throughout Ontario utilize low-cost fare collection technology that is integrated with GPS. The use of 'proximity' smart cards is considered to be a transit ridership growth strategy by the Province of Ontario given its ease of use (simply tap the card reader) and eliminating the need for exact cash fare. By integrating with GPS, the City of Sault Ste. Marie will be able to track smart card boarding transactions by bus stop, direction and time period (by trip, by hour, time of day, week, month, and annually).

Other benefits of the smart cards include:



- 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
- Built-in times for transfers, which do not have to be viewed by the bus operator
- Ridership boarding data for 100% of all trips
- Enables mobility payment from a smart phone
- Built-in GPS will enable Sault Transit to add real time schedule information to

Knowing bus stop boarding activities by passenger classification (student, senior, adult, mobility) will also help identify priorities for transit shelter enhancements such as benches and shelters. The data would complement the automatic passenger counter (APC) information that is being collected today. Sault Transit will not only be able to monitor bus stop activities, schedule adherence performance data can also be obtained. This would provide the information needed to adjust schedules, as required. Since cloud-based software is used, there is no ongoing requirement for a server or support required from City IT staff.

The current 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. In 2016, there were approximately 1,820,000 transit boardings, which includes transfers. Assuming 80% that board use a smart card and saves 3 seconds (minimum) per boarding, there would be over 1,500 hours per year reduced in transit customer boarding times. This can go a long way to improving service reliability or being able to extend service without adding buses in some cases.

4.1.1.2 The Business Case for the Transit Smart Card

Notwithstanding the obvious transit customer and bus operator benefits of a smart card system, there are significant financial benefits as well. The cost to maintain the existing registering fareboxes and fare media (tickets, passes, transfers), also referred to as revenue management system (RMS) is significant.

The existing registering fareboxes need to be replaced at an approximate cost of $20,000 per unit or approximately $600,000 for the transit fleet. In addition to this, monthly costs to maintain a registering farebox system based on previous research with Sault Ste. Marie are estimated to approximate $110,000 per year. These costs can be eliminated or reduced significantly with smart card technology.

Sault Transit had undertaken a Transit Fare Collection Technology Assessment 2004 and summarized the annual Revenue Management System (RMS) costs of registering fareboxes as illustrated below.

Cost Component	Total Cost	Description
Agency Software& Hardware	$ 1,000	Fare media computer
Farebox dumping	$ 2,300	Dumping fare revenues and upload data
In-service repair	$ 2,800	Repair farboxes while in service
Depot-based repair	$ 7,100	Maintenance repair and parts
Coin room operations	$ 39,640	Staffing and equipment repair
Printed fare media	$ 9,250	Costs of passes, tickets and transfers
Vendor network servicing	$ 22,880	Delivery of fare media/ revenue reconciliation
Marketing (Pass Products & Tickets)	$ 800	Handling customer fare-related inquiries
Customer Service (Fare Products)	$ 700	Portion of marketing related to fares
Total Labour and Expenses	**$ 86,470**	
Revenue Pasengers (2004)	**1,558,486**	
Transfers - Cash Passngers	266,266	231,536 + 15% under-reporting
Transfers - Monthly pass users	50,000	
Total Boardings	1,874,752	
Passes/20-Ride Multi-Tickets Sold	22,701	
Cash Rides	659,182	Cash fares @ $1.75 = $1,153,568
Total Revenue Collected	**$2,111,634**	Excludes $98,163 Charter Revenue
Cost Per Dollar Collected	$ 0.041	
Cost Per Revenue Passenger	$ 0.056	
Cost Per Boarding Passenger	$ 0.046	

Total labour and expenses attributed to the registering fareboxes in 2004 was $86,470. Assuming a conservative increase in costs over the 13-year period of 20%, the RMS costs would be approximate $110,000 per year in 2016. With the introduction of a smart card system, fares would be priced to encourage smart card use, which could represent approximately 80% of all fares paid.

In terms of costs that would be saved with a smart card system installation, the following has been conservatively estimated:

- $20,000 in equipment repair of registering fareboxes
- $20,000 elimination of fare media and revenue reconciliation
- $4,000 in depot-based repairs
- $5,000 for farebox repair while in service
- $11,000 in the cost of tickets, transfers and passes
- $20,000 in coin room operations costs (reduced by 50%)

If a smart card system was installed and integrated with the existing registering fareboxes, an estimated $80,000 per year could be saved in the transit budget. The current practice of charging a single fare for all transit customers is a proactive strategy that encourages frequent transit users to purchase pre-paid fares. Currently, approximately 40% of transit customers pay by cash and 60% board with prepaid fares.

A smart card system consisting of a card reader, bus operator console, and transfer issuing capabilities would likely be under $6,000 per unit installed, including back-end software. It should be noted that ParaBus vehicles would also require smart card technology due to AODA legislation. The cost to equip the 29 conventional and community buses and 9-vehicle ParaBus bus fleet would approximate $228,000. The existing registering fareboxes can be kept to handle cash fare payments only. The annual support cost of a smart card system is arbitrarily estimated at $5,000 per year.

The City could elect to finance the cost through a debenture debt. For example, assuming the annual cost for capital and interest of the smart card system approximates $40,000 per year over five years, there would still be an estimated savings of $27,000 ($80,000 per year to maintain existing system less $53,000 capital debenture cost over five years). After five years, the annual savings would approximate $80,000.

4.1.1.3 Other Municipal Smart Card Applications

Following the rollout of a smart card system for Sault Transit, the card reader equipment can also be placed at all municipal facilities that collect revenue such as at sports venues, library, etc. With modifications to the back-end software, the same transit smart card can be used for payment of other municipal services. If lost or stolen, registered smart cards can be replaced for a nominal fee and the value remaining would be loaded on the replacement card.

Recommendations: Given the existing fare collection system requires replacement and the ongoing savings to the transit operating budget, it is recommended that the Sault Ste. Marie Transit and ParaBus budget up to $230,000 to equip its fleet with smart card technology.

4.1.2 Automatic Passenger Counters

While smart card technology provides transit boarding data and other bus operating statistics, automatic passenger counters (APCs) record passenger ons and offs, which will provide bus load data by bus stop. The two APCs supplied by the consultant and in place during the study have provided Sault Transit staff with first-hand experience with APCs. The passenger load data is needed for passenger load monitoring during all hours of operation. The technology will help enable other user-friendly applications such as real time passenger information on mobility devices.

Recommendation: It is recommended that Sault Transit purchase 28 automatic passenger counters at a cost of up to $280,000, including software.

4.1.3 Transit Mobility Hubs

Currently, all eight transit routes terminate at one location - the downtown terminal – to accommodate transfers for all routes. There are approximately 700 boardings and alightings that take place at the terminal on an average weekday. Given the city's growth north of Second Line, and along east-west routes in place, an increasing number of transit customers take over an hour to travel from home to their destination simply because they have to travel out-of-direction via the downtown terminal. The study team assessed the need for a second transfer location to support the proposed route concepts as well as alternatives to the existing downtown bus terminal.

4.1.3.1 Northern Bus Transfer Location

Five of the seven routes proposed in the Transit Route Optimization Study will have routes connecting in proximity to the Second Line West and Great Northern Road intersection.

It was determined that a location in proximity to Sault College was the most transit-friendly given the high demand generated by Sault College students and employees, the relative ease of access and egress via Pine Street and Northern Avenue to an off-street transfer location, and the safety and security inherent in a busy college environment. It was also important that bus travel times would be minimized to the extent possible to ensure timed transfers could take place, which is not unlike the requirements of the downtown transit terminal.

The Ontario Northland Transportation Commission (Ontario Northland) is an agency of the Province of Ontario that provides vital transportation services to Northeastern Ontario. At the time of writing, Sault Ste. Marie Transit staff were advised that Ontario Northland will be providing service between Sault Ste. Marie and Greater Sudbury with Ontario Northland bus service beginning at Sault College. Should a bus transfer facility be constructed, consideration should be given to accommodating the inter-city coaches operated by Ontario Northland.

Several off-street locations were reviewed and would require discussions with Sault College following the study, namely:

- At an off-street location on Old Garden River Road
- Vacant property at the north-west corner of Pine St. and Northern Avenue
- On the Sault College property on either the:
    - North side undeveloped lot on Northern Avenue near Willow Avenue next to the Emergency Services exit onto Northern
    - of Northern Avenue - vacant lot at end of Wilson Avenue or utilizing some of the Sault Parking lot across the main college building; or
    - South side of Northern Avenue
- Smart Centres (herein referred to as the Walmart site)

The land selection process would need to take place following the study, which would require a more detailed functional design and negotiations to take place. In the meantime, buses can be parked on-street to accommodate transfers.

Each of the northern Sault Transit terminal options are briefly discussed as follows:

4.1.3.2 Old Garden River Road

Onsite investigations were undertaken by the study team, which looked at bus transfer on-street and off-street options in proximity to the north-west corner of Old Garden River and Second Line West (e.g. former Sault Star building). It was revealed that based on the Transportation Master Plan study underway there will likely be a signalized intersection at the Walmart access off Second Line that will connect the access with a new road connection southerly to Willow Avenue at Northern Avenue at Sault

College. An on-street or off-street option could be considered once the decision has been made. This connection will benefit Sault Transit and its customers by providing more direct service.

Recommendation: To be considered further.

4.1.3.3 Pine Street and Northern Avenue

The wooded privately-owned site would provide sufficient land and easy access. Unfortunately, the proposed bus routes from the east side of the City would need to travel further and could jeopardize schedule adherence; however, this could be considered with some minor route modifications.

Recommendation: Not preferred but can be considered further, if required.

4.1.3.4 Sault College

Consideration can be given to off-street options that would require relatively minimal property if the road right-of-way along Northern Avenue is incorporated in the design. The least disruptive would be to use the north side undeveloped lot across the end of Willow Avenue next to the Emergency Services exit onto Northern Avenue. The existing parking lot on the north side of Northern Avenue would also be able to accommodate Sault Transit buses with minimal impact on parking spaces. While the approximate 20 lost parking stalls may be compensated through reworking of the parking layout or using the empty Sault College land on the west side of the Emergency Vehicle access. To accommodate buses, the controlled access gate could be moved back. The most ideal location from a transit customer perspective is on the Sault College site as close to Willow Avenue as possible.

On an interim basis, consideration could be given to accommodating buses on-street along both Willow Avenue and Northern Avenue

Recommendation: Initiate discussions with Sault College regarding the accommodation for a bus terminal.

4.1.3.5 Walmart Site

Sault Transit currently accesses the Walmart site from Second Line East for service to Sault Area Hospital. This site would continue to be used; however, in order to accommodate a bus transfer area, additional space will be needed, which will eliminate some parking. From a route network design perspective, only four buses will need to be accommodated at least initially. The Walmart site could be considered as a short-term solution, if one could not be secured for the Sault College area.

Recommendation: To consider Walmart Site option as a potential temporary bus transfer location.

4.1.4 Downtown Terminal Options

The existing bus terminal accommodates eight bus bays and parking for ParaBus and Community Bus vehicles. The proposed route network will reduce the number of bus bays to seven. Given the one-way road network and the area adjacent to the existing bus terminal lost to parking for the Essar Centre, bus operators are forced to travel around the block to position themselves for their next trip.

The study team assessed the need for the existing terminal given the new route network proposed and to determine whether or not the City should continue to maintain, expand, or relocate the bus terminal. The following options were assessed:

- On-street bus parking along Queen Street
- On-street bus parking along Bay Street
- Provide a bus terminal/ transfer location at the Transit Centre located at 111 Huron Street
- Maintain existing downtown terminal

4.1.4.1 On-street Parking along Queen Street

To accommodate transfers between buses. Buses would have to park in tandem, requiring approximately 150 to 200 metres of Queen Street frontage, which is considered to be too long since some customers such as seniors would need to walk up to 3 minutes to transfer. Alternatively, a cross street that can accommodate three of the four bus bays would be considered. On-street vehicle parking would, of course, need to be reduced. Up to three heated shelters (approximately $30,000 each) could be provided to protect transit customers from inclement weather.

Recommendation: Not to be considered further.

4.1.4.2 On-street Parking along Bay Street

One option that would be similar to the on-street parking along Bay Street is to park buses on Bay Street in proximity to the train station at Station Mall. The current Agawa Canyon Tour Train Station is scheduled to be relocated. The railway line on the south side of Bay Street could provide the area needed to accommodate all Sault Transit buses. The Station Mall is a key destination and would continue to be served on-site by Sault Transit while the washroom facilities would be accessible to transit customers. The modest platform required would need to have a large heated shelter at a cost of approximately $50,000.

Recommendation: To be considered further as an option to the downtown terminal.

4.1.4.3 Huron Street Transit Centre

The transit facility at 111 Huron Street has sufficient land available to accommodate the 7 proposed bus routes and has the advantage of access to Sault Transit staff for customer service inquiries. The site is secure and would only require municipal building approvals. However, the additional distances to the proposed west side routes would result in route modifications being required. Although a bus terminal location as close as possible to the downtown is preferred from a transit customer perspective, the 111 Huron Street option could be considered further if the City elects to sell off the existing bus terminal property for financial purposes.

Recommendation: To be considered further as an option, if required.

4.1.4.4 Existing Downtown Terminal

The existing bus terminal at Dennis Street and Queen Street is in a prime downtown location from the perspective of being central to transit customer's destinations and residential development, and is a relative mid-point for routes travelling east and west. The terminal building provides a comfortable and secure waiting area with public washrooms and transit kiosk available.

One of the objectives of the Transit Route Optimization Study was to determine if the downtown terminal bus capacity could be reduced through re-designing of the route network to a point that the terminal would not be required. Although the number of bus routes in the proposed route network are less (7 versus 8 routes at the downtown terminal), a downtown transfer area with some terminal amenities would still be required. There is also a need to accommodate community buses and ParaBus, which also serve the terminal.

The consulting team was advised that repairs were needed to the existing terminal. The need for between $47,000 and $61,000 in repairs - primarily to undertake roof repairs. On an annual basis, the terminal operating costs approximate $100,000 for security, utilities, staffing, and maintenance. This is considered nominal, representing on 1.25% of the annual transit operating budget.

As a cost-cutting measure, the terminal could be sold and buses accommodated at one of the alternative sites discussed bearing in mind that construction costs for an alternative location would be incurred. Given the need to modify routes in 2018, it would make more sense to revisit the topic after the new services have been in place.

Recommendation: To assess the impact of relocating buses from the existing downtown bus terminal should an alternative location be secured.

4.1.4.5 Summary of Downtown Bus Terminal Options

It is the opinion of Transit Consulting Network that a central downtown bus terminal will always be required today and more so in the future primarily because Sault Transit operates a radial route network where bus transfers are co-ordinated. Where the terminal is located within the downtown is flexible.

The implementation of the proposed route structure and future bus terminal location will likely be impacted by the findings of the Transportation Master Plan study underway at the time of this study since it will be addressing traffic circulation within the downtown. The impact of the Agawa Canyon Tour Train station relocation will also have an impact on potential land availability and amenities that can be accommodated. Notwithstanding the aforementioned, if the desire is to eliminate $100,000 from the transit budget attributed to maintaining the existing bus terminal and to sell off the property, this can be done. It is our opinion; however, that in the long-term, the need for a central terminal will not diminish and may, in fact, need to be expanded.

For the time being, it is recommended that the bus terminal continue to operate until an alternate location is secured that offers comparable amenities such as heated waiting areas, washroom facilities (at least nearby), bike storage, security features, and passenger information.

Recommendation: It is recommended that the City of Sault Ste. Marie budget up to $500,000 to undertake the necessary construction to accommodate bus transfers and provide for passenger amenities should the bus terminal be relocated.

4.1.5 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 Sault Transit. Bike racks on buses are now becoming the norm for public transit systems.

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 available at key transit destinations and bus transfer locations.

Sault Transit currently allows bikes on buses. Given the modest passenger loads experienced, Sault Transit staff would like to see higher transit ridership prior to installing bike racks. An average cost of $2,000 per bike rack would include the purchase of modest bike storage facilities. Bike racks should be placed on all 29 buses, costing approximately $58,000.

Recommendation: It is recommended the City of Sault Ste. Marie budget up to $60,000 for bike racks for installation in 2020 subject to a staff review in 2019.

4.1.6 Improved Bus Stop Amenities and Standardization

Citizens who may consider riding transit, especially those who have the option to drive, may be deterred by the unfamiliarity of the transit system (where it goes, the fare collection, the boarding process) – basically every aspect of using it. The following information should be available where feasible at bus stops:

Minimum

- Name or Identification number of the stop (i.e. 4-digit I.D. number)
- Routes that serve the stop by posting each route number
- Decals providing high tonal contrast colours for easy viewing by persons with low visibility
- Bus stop signs should be double sided with the international bus pictogram, so prospective customers may see the location of the bus stop from 2 directions
- Bus stop signs should use 3M reflective sheeting material (similar to other traffic signs) to enable bus drivers to easily view them during nighttime and low visibility periods.

At Major (busy) Bus Stops

- Schedule departure times (see example from Burlington Transit)
- Route map
- Fare information
- Phone number (to access transit information)
- Website addresses to link to a future Sault Transit GPS/Real time application and other information about transit (fares, hours of service, routes, etc.)

At Transit Shelter Locations

- Same information as above
- Transit system map

Posted Schedules at Bus Stops

Bus Stop Area Improvements

There is a total of 633 bus stops served by conventional transit (461 bus stops) and community bus (172 bus stops). There are also 85 bus shelters with a ratio of approximately one shelter for every 7.5 bus stops (13%). Municipal transit systems typically strive to have 25% to 50% of total bus stop locations with transit shelters. For example, Mississauga's transit system has 3,634 bus stops and 950 transit shelters or 26% of the total bus stops, but has an objective of achieving 40% of the bus stops with shelters. Given the colder winter weather in Sault Ste. Marie, it is suggested that one bus shelter be installed for every two bus stops as a long-term objective.

For budgeting purposes, there will need to be a requirement for bus stops that are spaced at an average of every 250-300 metres on both sides of future bus travel ways. For every 1.0 km of bus route, the City should budget for up to 8 bus stops with landing pads and two shelters.

For budgeting purposes, the following unit costs have been estimated for the supply and installation of various bus stop area components:

- $300 Bus stop post and sign
- $300 Bench
- $1,000 Concrete bus pad (12-metre length)
- $6,500 4 ft. X 8 ft. standard shelter

It is recommended that the City of Sault Ste. Marie budget a minimum of $30,000 per year to accommodate new bus stops, the addition of shelters and bus stop retrofits. With the use smart card boarding data by bus stop, shelter location priorities can be determined by passenger volumes and passenger classification (e.g. seniors and ParaBus registrant use of bus stops).

4.1.7 Fleet Replacement and Expansion

Given the modest growth in the City and the improved coverage attained by the proposed new route network, there will be no need to increase the transit fleet size over the next five years unless bus loads exceed capacity. In this regard, Sault Transit average bus loads can increase significantly without needing to increase the 30-minute frequency of buses during the peak period.

It was determined by Sault Transit staff that the 10-year transit fleet plan should reflect an 18-year bus life with refurbishments undertaken at an average bus age of 9 years, subject to a detailed assessment.

4.1.7.1 Current Sault Transit Fleet Age

In 2016, Sault Transit currently had one of the oldest bus fleets in Ontario with an average age of 11.4 years, which is 56% older than the average bus age in Ontario (see Exhibit 20: Ontario Average Vs Sault Transit Fleet and Bus Age.

A common complaint from the public based on the experience with Sault Ste. Marie transit focus groups and surveys undertaken by the study Project Manager since 2006, is the Sault Transit's bus appearance, lack of comfort and frequent breakdowns. This, in itself, lessens the transit image which negatively impacts transit ridership growth. Conventional transit buses - heavy duty 12.2 metre (40') buses – have a 12-year life cycle; however, many transit systems have opted for a 15 to 18-year life cycle with a bus refurbishment taking place in the 9th or 10th year.

Another fleet replacement option to have a longer bus life is that of purchasing stainless steel buses at a premium of $100,000 or 20% of the $500,000 cost of a 12.2 metre bus. Non-stainless-steel buses, at $500,000, have an average purchase cost of $41,666 per year over their 12-year life while a stainless-steel bus at $600,000 have an average purchase cost of $33,333 per year over their 18-year life.

Accessible Transit Bus Fleet Ages in Ontario - MTO-CUTA Transit Fact Book				
	Ontario Municpal Bus Fleets		Sault Ste. Marie Transit	
Year	No. Buses	Average Age (years)	No. Buses	Average Age (years)
2016	6,294	7.3	28	11.4
2015	5,964	7.0	27	11.4
2014	5,977	6.6	27	11.6
2013	5,864	6.2	29	12.1
2012	5,767	5.7	29	12.1
2011	5,575	5.2	29	13.2
2010	5,387	4.6	30	14.4

Exhibit 20: 2010-2016 Ontario Average Vs Sault Transit Fleet and Bus Age

In 2017, the Sault Transit fleet consists of 18 Orion buses – two are currently being replaced in 2018, two are 9 years of age while the remaining 14 buses are 21 years of age. Orion buses have not been made since 2012 since the business closed down. New Flyer Industries assumed the responsibility to provide Orion parts to transit systems across Canada and the US for 12 to 15 years, Thereafter, there is no obligation to supply Orion bus parts. Replacement parts for these older buses are either not available or when they are available, are very expensive.

In 2018, the City of Sault Ste. Marie will be purchasing one new bus (Nova) in 2018 plus four (4) used buses (2004 Orion) from Thunder Bay which has a much younger transit fleet (8.0-year average vehicle age in 2016 versus 11.4 years for Sault Transit); it is very clear that the City of Sault Ste. Marie will need to accelerate its bus replacement plan.

Recommendation: It is recommended the City of Sault Ste. Marie reduce the average fleet age from 11.4 years to 9 years through the purchase of 12.2 metre stainless steel conventional transit buses.

4.1.7.2 Fleet Spare Ratio

In order to ensure there is a sufficient number of vehicles to provide service during peak periods, additional buses are needed to accommodate:

- Preventative maintenance programs
- Major repairs
- Unforeseen bus breakdowns
- Long-term repairs (e.g. due to accidents, etc.)

In Ontario, there were 6,294 transit buses with 4,970 buses operated during peak scheduled service while 1,324 vehicles were set aside as spares; this represents a 21% vehicle spare ratio. In Sault Ste. Marie, there were 28 buses with 17 buses operating during the peak during 2016, which represents a spare ratio of 36% (10 buses). The 36% ratio can primarily be attributed to the much higher average fleet age of the Sault Transit fleet compared to the average of all transit fleets in Ontario. A target spare ratio of 25-30% is suggested for long-term budgeting purposes, which should be further assessed by staff.

Recommendation: It is recommended the City of Sault Ste. Marie reduce the fleet spare ratio target from 36% to 25%.

4.1.7.3 Transit Vehicle Size

In terms of fleet size and vehicle type, in 2017 Sault Transit operated 25 conventional transit buses plus two 19-passenger community buses. Conventional transit buses are 12.2 metre (40') heavy duty buses, which cost approximately $500K each and have a 12-year life cycle. The lighter-duty 8.2 metre (27') community buses cost approximately $200K each; however, they only have a 5 to 7-year life cycle. Transit vehicle technology has recently evolved with 9.2 metre (30') and 10.7 metre (35') heavy duty stainless steel mid-size community buses now available at an approximate cost of $500K with an 18-year life cycle.

Given that the larger heavy-duty buses offer a smoother ride and have three times the life cycle of the current community buses, it makes more sense to convert community buses to heavy duty vehicles, which is the norm at other transit systems across Canada. In addition to the business case to purchase heavy-duty community buses, the community engagement process indicated a desire for smaller vehicles on some routes; however, having a full fleet of 12.2 metre buses provides the flexibility needed in allocating vehicles to all routes on a daily basis.

The two 2015 community buses will need replacement in 2021 assuming a 6-year replacement cycle. In addition, the proposed Northern Community Bus Route will require a community bus in addition to the two community buses serving Community Bus Routes A and B. With a total of three community buses

there will be a need to ensure there are two community bus spares, bringing the total community bus complement to 4 vehicles. In this regard, following the implementation of the proposed route revisions, it would be prudent to purchase the larger community bus so that one of the community buses could be used in the regular Sault Transit routes, if necessary.

As automatic passenger counters are rotated throughout the Sault Transit service, passenger loads will be monitored to determine the applicability of using smaller buses in the regular service.

Recommendation: That Sault Transit staff purchase larger heavy-duty, mid-size, stainless steel community buses in place of the current lighter community buses.

Although not in the study scope, it is suggested that consideration be given to purchasing mid-size heavy duty buses for ParaBus due to the longer life-cycle and to enable the buses to be used in either ParaBus service regular fixed-route services that use the mid-size buses.

4.1.7.4 Fleet Replacement Plan

Based on a 12-year replacement plan on conventional transit buses and replacing existing community buses with heavy duty vehicles, the following bus replacement plan would be as follows:

- 2019: 11 conventional transit buses + 3 heavy-duty mid-size community buses
- 2021: 2 conventional transit buses + 1 heavy-duty mid-size community buses
- 2023: 4 conventional transit buses
- 2024: 1 conventional transit buses
- 2025: 1 conventional transit buses
- 2028: 1 conventional transit buses

Given the large purchase needed in 2019 based on the 12-year replacement cycle (for non-stainless-steel buses) and at an estimated $600K per bus, the purchase was spread over 2019 and 2020. It would be prudent to have a regular fleet replacement plan that balances annual fleet renewal budgets from year to year. The City of Sault Ste. Marie has the option to finance the purchase at once or through debenture debt payment, if desired.

For example, the City could finance vehicle purchases over half the vehicle

Sault Transit Fleet Replacement					
Vehicle Make	Bus No.	YEAR	Seating Capacity	Age (years)	Year of Replacement
ORION	119	1998	29	20	2019
ORION	120	1998	29	20	2019
ORION	131	2006	39	12	2019
ORION	132	2006	39	12	2019
ORION	133	2009	39	9	2021
ORION	134	2009	39	9	2021
NOVA	135	2011	34	7	2023
NOVA	136	2011	34	7	2023
NOVA	137	2011	34	7	2023
NOVA	138	2011	34	7	2023
NOVA	139	2012	34	6	2024
NOVA	140	2013	34	5	2025
ORION	141	1999	33	21	2019
ORION	142	1999	33	21	2019
ORION	143	1999	33	21	2019
ORION	144	1999	33	21	2019
ORION	146	1999	33	21	2019
ORION	147	1999	33	21	2019
ORION	148	1999	33	21	2019
ORION	149	1999	33	21	2019
ORION	150	1999	33	21	2019
ORION	151	1999	33	21	2019
ORION	152	1999	33	21	2019
ORION	153	1999	33	21	2019
GMC*	154	2015	19	3	2021
GMC*	155	2015	19	3	2021
NOVA	156	2016	31	2	2028
* Community Bus			Average Age	14.1	

Exhibit 21: 2018 Sault Transit Fleet 12-year Replacement Plan

life (i.e. 6 years) at an approximate cost of $85,000 per year per vehicle. Based on the 2017 vehicle capital expenditure of $600K, the City could purchase 7 conventional transit buses without increasing the capital budget if debentured. This could easily be accelerated based on enhanced external funding programs such as from the federal Public Transit Infrastructure Fund (PTIF). Regardless, Sault Transit should have a vehicle capital reserve fund established for long-term financial planning.

It was determined by the study team that the vehicle replacement plan over the next 10 years should reflect what is needed based on the 18-year life cycle of stainless steel buses and determine how the capital purchases would be scheduled by the City following completion of the study.

Recommendation: That the City budget for the purchase of 20 conventional transit stainless steel buses plus 5 heavy-duty mid-size stainless steel community buses over the next 10 years.

4.1.8 Ten-year (2018-2027) Capital Budget

The proposed 2018-2027 capital budget is estimated at $14,210M with approximately 70% required for fleet renewal.

Budget Item	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
Vehicle Replacement 12.2 m conventional transit bus		$3,000,000	$3,600,000	$1,200,000	$0	$2,400,000	$600,000	$600,000	$0	$0	$11,400,000
Vehicle Replacement heavy-duty community bus		$1,500,000		$100,000							$1,600,000
Integrated Smart Card Fare Collection System		$250,000									$250,000
Automatic Passenger Counters		$80,000									$80,000
Other Transit Technologies and Apps		$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$180,000
Sault College Area Terminal design and construction		$100,000	$300,000	$100,000							$500,000
Bus Stop Infrastructure and shelters	$30,000	$50,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$320,000
Downton Terminal Location and Functional Design		$40,000									$40,000
Downtown Bus Terminal - to be determined			$500,000	$500,000							$1,000,000

At the time of writing, the City of Sault Ste. Marie received notice of capital funding from the Federal Public Transit Infrastructure Fund (PTIF) to support transit infrastructure over the next 11 years. The Federal government is providing 40% of the funding while the Province would fund 33%, leaving 27% to be funded by the City of Sault Ste. Marie. The financial assistance will go a long way to modernizing Sault Transit.

5 SUMMARY AND RECOMMENDATIONS

The City of Sault Ste. Marie Transit Route Optimization Study was developed to meet the expectations of the diverse community stakeholders that use transit today or could use transit in the future. The challenge for the study team was to improve transit services within the current 80,000 hours of revenue service.

5.1 Work Plan Summary

There were three phases to the study:

- **Study Phase I: Critical Evaluation of Existing Transit Services** consisted an assessment of the transit services offered by Sault Transit, which involved a technical analysis of Sault Transit operations and an in-depth evaluation of the services from the perspective of transit customers, non-transit customers and the business community. The findings then formed the basis of developing a preliminary transit service plan.

- **Study Phase II: Transit Service Plan** involved the development of updated service standards based on community priorities identified in Phase I and best practices in service design to develop a preliminary route concepts and service plan. The preliminary service plan was then presented to the public, resulting in 78% support in whole or in part of the proposed service plan. The comments received were then reviewed by the study team, which resulted in the development of the revised route network and transit service plan.

- **Study Phase III: Transit Asset Management Plan** identified the technology, rolling stock (transit fleet) and infrastructure needed to support implementation of the transit service.

Going forward, the revised routes of proposed transit service plan will be further tested prior to implementation and as such, additional minor modifications to the plan may be required.

5.2 Summary of Consultations

Key to the development of the proposed route network and service plan, Transit Consulting Network and Sault Transit staff embarked on the most comprehensive community engagement process undertaken to date with both transit customers and non-transit customers with the latter group representing the largest potential market. The community engagement process included two rounds of extensive public consultations.

5.2.1 Round 1 Community Engagement Summary

The first round of community engagement process was to determine priorities with respect to route and schedule design, as well as identifying other improvements that would be needed. There were eight (8) Transit Focus Group/ Stakeholder meetings and four (4) Public Information Centres to start off the consultation process. This was complemented by two on-line surveys that resulted in a response from

837 members of the public and 58 businesses. Over 500 specific comments were received by 331 persons that provided comments.

Based on the analysis undertaken on the Sault Transit services, best practices in route and service design were then applied to the Sault Transit network in an effort to meet community priorities identified during the initial community engagement process.

5.2.2 Round 2 Community Engagement Summary

The preliminary route and service concepts, and other improvements were presented to the community at three public open houses. The purpose of the open houses was to determine to what degree the route and service concepts met the community priorities identified during Round 1 community engagement process. A PowerPoint presentation was provided at the open houses, complemented by open house boards and individual route maps were then posted on the City's website along with an opportunity for residents to provide input to the preliminary recommendations.

Based on the feedback received, the study team revised some of the preliminary recommendations and had undertaken trial runs to determine final routings, travel times and to ensure timely transfers can be made at the downtown bus terminal and other bus transfer locations.

5.2.3 Summary of Community Engagement

In total, there were 1,208 respondents to the on-line community surveys as well as over 900 comments received. The feedback was then used to refine the service plan further prior to presenting to City of Sault Ste. Marie Council for approval. Given the extensive feedback, it was clear that not all resident concerns can be met; however, changes to the preliminary service plan did address many concerns expressed during the Round community engagement process.

Although transit cannot be all things to all people, the 80,000 revenue hours of transit service were redesigned to:

- Reduce the need to transfer and rely less on the downtown terminal
- Reduce customer travel times
- Bring back Sunday evening service
- Enable workers in the City of Sault Ste. Marie to get to work for 7:00am shifts and return home after an 11:00pm shift
- Service residents that currently do not have reasonable access to bus service

Improving the efficiency and effectiveness of the existing Route 6 Cedar Heights and Route 7 North Street was also a consideration in the route and schedule design since they are the two lowest performing routes today. Route 6 carries 60% fewer passengers per hour than the total transit system average while Route 7 carries 31% less than the system-wide average.

The service and infrastructure improvements are likely to result in transit ridership and revenue growth over time, which can be closely monitored with the proposed passenger counting technology that would be in place. For example, long one-way routes result in extensive out-of-direction bus travel while two-way routes provide more direct travel. This will, over time, increase transit use.

5.3 Recommendations and Next Steps

The City of Sault Ste. Marie Transit Route Optimization Study culminated with a number of proposed improvements that address community priorities:

- Return of late evening Sunday service
- East-west connectors to reduce the need to travel downtown to transfer
- The feasibility of establishing a central northern transit mobility hub in proximity to Second Line and Great Northern (e.g. potentially Sault College)
- Reduce the time needed to get from point A to point B (i.e. getting anywhere in the City by bus within 60 minutes
- Transit fare pricing policy based on the use of smart card technology
- Confirmation that a downtown transit terminal should be retained
- Accelerated fleet renewal/ modernization program
- Embracing technology to improve fare collection, provide real time schedule information, and the ongoing monitoring of passenger loads and bus schedule adherence

Recognizing that transit cannot be all things to all people, especially given the cap on the number of service hours, every effort was made by the study team to accommodate the public.

5.3.1 Recommendation

The proposed route plan and asset management plan was developed to not only reflect community priorities but to also reflect best practices in route design.

It is recommended that the City of Sault Ste. Marie approve, in principle, the recommendations of the Sault Ste. Marie Transit Route Optimization Study and take steps to implement changes in 2018.

5.3.2 Next Steps

In meeting the aforementioned requirements, it was necessary to make some modifications to most existing routes and no changes to other routes; however, very few bus stops need to be eliminated and far more bus stops will need to be added. Given that the route changes can be considered significant by some, the implementation phase will require extensive marketing efforts to educate the existing transit customers and to new transit customers that will be receiving transit for the first time.

It should be pointed out that during the implementation phase, further route and schedule modifications can be expected; this is normal. Consideration can be given to a ‘walk before you run approach’ to the implementation plan whereby the off-peak weekday summer service could take place while adding service where it is needed such as the reinstatement of Sunday evening service.

As the route and service changes are rolled out, it will be important to monitor the impact of the changes and recognize that while some current customers may be negatively impacted, far more existing and new transit customers will benefit in the longer term.