Presented To:	City Council
Presented:	Tuesday, Feb 12, 2019
Report Date	Monday, Jan 28, 2019
Type:	Presentations

Request for Decision

Greater Sudbury Transit Action Plan - Better Routes. Better Schedules. Better Service

Resolution

Resolution #1:

THAT the City of Greater Sudbury approves the Transit Master Plan, as outlined in the report entitled “Greater Sudbury Transit Action Plan - Better Routes. Better Schedules. Better Service”, from the General Manager of Community Development, presented at the City Council meeting on February 12, 2019; and

FURTHER, that staff be directed to provide updates on the results of the implementation of the Greater Sudbury Transit Action Plan in September 2019 and September 2020.

Resolution #2:

THAT the City of Greater Sudbury directs staff to implement changes to transit route structure, effective August 26, 2019, as outlined in the report entitled “Greater Sudbury Transit Action Plan - Better Routes. Better Schedules. Better Service”, from the General Manager of Community Development, presented at the City Council meeting on February 12, 2019.

Resolution #3:

THAT the City of Greater Sudbury approves the proposed Fare Policy and corresponding Fare Structure effective July 1st, 2019, as outlined in the report entitled “Greater Sudbury Transit Action Plan - Better Routes. Better Schedules. Better Service”, from the General Manager of Community Development, presented at the City Council meeting on February 12, 2019.

Resolution #4:

THAT the City of Greater Sudbury approves the Family Travel Program and Transferrable Adult Monthly Pass Program as Pilot Projects to be implemented as of July 1st, 2019, as outlined in the report entitled “Greater Sudbury Transit Action Plan - Better Routes. Better Schedules. Better Service”, from the General Manager of Community Development, presented at the City Council meeting on February 12, 2019.

Resolution #5:

Signed By

Report Prepared By
Michelle Ferrigan
Director of Transit Services
Digitally Signed Jan 28, 19

Division Review
Michelle Ferrigan
Director of Transit Services
Digitally Signed Jan 28, 19

Financial Implications
Jim Lister
Manager of Financial Planning and Budgeting
Digitally Signed Jan 28, 19

Recommended by the Department
Ian Wood
Interim General Manager of Community Development
Digitally Signed Jan 28, 19

Recommended by the C.A.O.
Ed Archer
Chief Administrative Officer
Digitally Signed Jan 29, 19

THAT staff be directed to conduct the planning required to undertake the supporting infrastructure improvements and service level changes presented in the Future Expansion Options to achieve the Long-Term Transit strategy as outlined in the report entitled “Greater Sudbury Transit Action Plan - Better Routes. Better Schedules. Better Service”, from the General Manager of Community Development, presented at the City Council meeting on February 12, 2019.

Relationship to the Strategic Plan / Health Impact Assessment

This report addresses an identified action item in Council’s Strategic Plan under the pillar of Sustainable Infrastructure and it aligns with the Population Health Priority of Healthy Streets. The Greater Sudbury Transit Action Plan provides a framework for a stronger transit system which over time will result in improved reliability, convenience and safety, as well as better connected neighborhoods and communities.

Report Summary

The Greater Sudbury Transit Action Plan outlines recommendations for the City to implement in order to transform its transit network and services provided within existing resources. The report also outlines future expansion options to meet a long-term goal of providing high-order transit services.

Financial Implications

The immediate changes proposed will be implemented within Council approved operating budgets and the changes in fare structure to be implemented in July 2019, are anticipated to be revenue neutral.

Since the Greater Sudbury Transit Action plan establishes a new standard for transit operations it is reasonable to anticipate a change compared to historic investment trends. Any additional financial requirements will be communicated in future updates to Council and, if required, through the regular budget process.

Executive Summary

Following Council's direction to develop a Transit Master Plan, and in collaboration with the community and its partners, the City of Greater Sudbury (City) has undertaken a comprehensive review of the Greater Sudbury Transit System; the first since amalgamation in 2001. Entitled the "Greater Sudbury Transit Action Plan" and framed by its goal of "Better Routes. Better Schedules. Better Service" the project and its resulting recommendations outline key service, infrastructure and supporting measures the City can take immediately and into the future to improve how transit services and connects Greater Sudbury.

This report provides Council with an outline of the Greater Sudbury Transit Action Plan's study objectives and highlights key recommendations that are recommended for Council's consideration. The Plan (Appendix A – Greater Sudbury Transit Action Plan) proposes implementation of improvements over three phases and includes a robust community engagement and communications component. The recommendations are initially summarized; with details available in the balance of this report and the appendices.

Phase 1 – Immediate/Near-Term Recommendations (0-2 years)

The following Staff recommendations aim to implement immediate changes that can be undertaken within existing system resources, and are complemented by near-term recommendations relating to fare policy, infrastructure priorities and customer care strategies.

System-Wide Service Improvements: Restructure the transit network system according to the overall strategy and service standards proposed in the Transit Action Plan with an implementation date of August 26, 2019.

Fare Policy and Structure: Implement a new Fare Structure as outlined below as of July 1, 2019 and review impacts to ridership and revenue levels prior to 2020 budget deliberations. The following Fare Structure seeks to reward frequent transit customers, offer equitable discounts, encourage ridership and is easy to implement, comprehend and operate.

Recommended Fare Structure (effective July 1, 2019)

Category	Fee		Fare Details
Base Cash Fare	$	3.50	Plus 90 minute transfer
Day Pass	$	10.50	1 Adult + 4 Youths Ride all day
Ticket Unit Price	$	2.90	Get 6 rides for the price of 5
Ticket Unit Price - Concession	$	2.50	Get 6 rides for the price of 5, less 15%
Monthly Pass	$	88.00	Pay for 25 rides
Monthly Pass - Students	$	75.00	Pay for 25 Rides, less 15%
Monthly Pass - Concession	$	56.00	Pay for 16 Rides
Upass	$	200.00	8 Month Pass

Infrastructure Improvements: Immediate infrastructure improvement recommendations have been addressed through the Public Transit Infrastructure Fund (PTIF) approved in 2016. Specifically, bike racks have been installed on all buses, wayfinding materials will be refreshed according to new service delivery and Smart Card implementation is expected to be in place by March 2020.

Customer Care: Recommendations focus on improvements which can be undertaken to improve customer care and community outreach. This includes future consideration to adding a Community Liaison Coordinator to oversee community outreach, travel training and communication efforts. Further, operational needs will be reviewed in the areas of security, shelter maintenance and bus cleanliness to meet customer care priorities.

Communications and Community Engagement: Execute a robust Communication and Community Engagement Plan to support the transition, which includes a refresh of the look and feel of the transit system and its customer information.

Policy Framework: The Plan should be reinforced through a robust policy framework that clearly states how decisions are made and creates community conditions for ongoing success. Recommendations to amend the CGS Official Plan and to develop consistent stop and service standards to ensure they continue to meet City's objectives.

Phase 2 & 3 - Future Expansion Recommendations (1-10 Years)

Further to the immediate changes that can occur within existing resources, the Transit Action Plan provides a series of service enhancement options which should be reviewed in the short-term (Phase 2) and medium-term (Phase 3).

Priority Service Expansion Options. The recommended future service options for the next 1-3 years build on the foundation of network-wide route restructuring and address immediate issues and opportunities, while further evolving the system towards the long-term strategy.

Medium-Term Service Expansion Options The medium-term proposals continue to improve transit services and support the gradual evolution to higher-order Bus Rapid Transit that includes transit priority measures.

Planning for future expansion: Staff will need to conduct the planning to undertake the supporting infrastructure improvements and service level changes presented in the Future Expansion Options to achieve the Long-Term Transit strategy as outlined in the plan

Long-Term Infrastructure Strategy

Based on future funding opportunities, the Transit Action Plan provides infrastructure priorities that span the shorter and longer term to support the immediate transition of service and build towards elements of Bus Rapid Transit on major corridors and links to outlying communities.

1. Transit Action Plan Overview

1.1 Objectives & Goals:

The Greater Sudbury Transit Action Plan objectives have been to:

- Undertake a comprehensive analysis of Greater Sudbury transit routes, service levels and service models, including Handi-Transit and TransCab services.
- Hear from transit passengers, staff, stakeholders and the larger community about how transit can continue to improve to meet the City's diverse transportation needs.
- Consider all potential opportunities to improve the efficiency and effectiveness of Greater Sudbury Transit.
- Identify potential recommended service, infrastructure and related improvements, now and over the long-term.
- Build public awareness and support of Greater Sudbury Transit and its services.

The initial goal of the Transit Action Plan was focused on identifying how the system's existing resources could immediately be deployed differently to meet community needs to the extent possible. This work has also been conducted within the overarching objective of creating a long term framework for future improvements to serve the City's long term needs. To meet these goals, the project team sought information by:

- Identifying 'Community Priorities' by gathering information from community leaders and staff, existing transit users and future users through a wide array of in-person and on-line techniques.
- Looking at existing long term Greater Sudbury community plans (Official Plan, Transportation Master Plan, Greater Together: Strategic Plan, etc.) to ensure that recommendations align with the long term vision of the City.
- Conducting an analysis of Greater Sudbury Transit's performance compared against other Canadian transit systems and communities of similar size using data from the Canadian Urban Transit Association (CUTA).
- Conducting an in-depth analysis of historical ridership and performance information to support the identified community and long term community plan priorities.

This information was used to substantiate key findings and recommendations which are presented below and detailed in Appendix A – "Greater Sudbury Transit Action Plan. Better Routes. Better Schedules. Better Service.".

2. Recommendation Details

The Greater Sudbury Transit Action Plan (Transit Action Plan) outlines recommended steps over three phases for the City to undertake to transform its transit network:

Phase 1: Immediate/Near-Term Recommendations: These recommendations aim to implement immediate changes that can be undertaken within existing system resources to improve the performance of service and which begin to create the desired long-term route structure. It also provides short-term recommendations for supporting initiatives which relate to fare policy, infrastructure priorities and customer care strategies.

Phase 2: Priority Service Expansion Options. The recommended future service options for the next 1-3 years (pending funding) build on the foundation of network-wide route restructuring and address immediate issues and opportunities, while further evolving the system towards the long-term strategy.

Phase 3: Medium-Term Service Expansion Options The longer term proposals continue to improve transit services and support the gradual evolution to higher-order Bus Rapid Transit that include transit priority measures.

An overarching Long-Term Transit Strategy is also presented within the Transit Action Plan that articulates how service expansion options and long-term infrastructure investments can best be coordinated over these time frames.

2.1 Phase 1 Immediate/Near-Term Recommendations (0-2 Years)

The Transit Action Plan proposes that the entire network be restructured as a base for further improvements and investments. Overall, this strategy focusses on significantly restructuring the Conventional and TransCab services to make the service easier to use, more reliable and better matched with ridership.

2.1.1 Recommendation 1: System-Wide Service Improvements, Implementation date August 26, 2019

An overall strategy has been developed to meet community priorities which:

- Restructures the transit network system into layers of different service design types, building upon revised service standards, and matches service to demand (See Appendix B – Regional and Urban Area Network Overview).
- Allows for changes within existing resources to deliver a service that will be easier to understand and use, puts service where it is needed most, and which will be more attractive to passengers.
- Adopts a family of service approach and designates key corridors for highest frequency service and connection points that will form "Mobility Hubs", enabling a focus on infrastructure investments, connection of pedestrian and cycling links and further land development in these areas.

- Continues to use and expand the use of on-demand services (TransCab) and seeks opportunities to source innovations in dispatch and real-time scheduling technology to combine service with vehicles within the family of service.
- Creates a detailed implementation plan which also includes a refresh of all supporting customer information materials and public outreach efforts.
- Includes a plan to continually monitor system performance and identify opportunities for system improvements.

Specifically, Staff is seeking Council approval to adopt the overall strategy and Service Standards as proposed in the Transit Action Plan and:

- Undertake the detailed planning and changes required to implement revised service on August 26, 2019
- Prepare and execute a detailed service implementation and communication plan to support a smooth transition for front-line staff and passengers. This includes a refresh of the look and feel of the transit system and its customer information.
- Modify the Route Network to the specific changes recommended to each route.
- Revise route schedules and frequencies as required within the system's proposed revised Service Standards and available existing service hours to meet the new route network, align with ridership patterns and improve reliability.
- Expand the on-demand TransCab routes in selected areas, and add time points to increase access within available resources.
- Adjust bus stop placement to meet new route service.
- Undertake further communications and public engagement as required to refine all of the above in preparation for implementation.
- Seek opportunities to improve how the suite of transportation services are organized, deployed and communicated in areas of low ridership demand.
- Seek opportunities to improve how Handi-Transit service delivery could be improved though the service review.

2.1.2 Recommendation 2: Fare Policy and Structure, Implementation date July 1st, 2019

The proposed Transit Fare Policy and Structure have been carefully selected to align with:

- Council's desire to provide affordable access to transit.
- Transit industry best practice as described in the Transit Action Plan.
- Peer average rates and corresponding discounts for target groups.
- Consideration of minimizing transit deficit while meeting operational needs.

The proposed Transit Fare Policy is based on the following guiding principles:

- Reward frequent transit customers;
- Equitable in its offering of discounts;
- Encourage ridership growth; and
- Easy to implement, comprehend and operate.

To further support the above, the proposed Transit Fare Policy goals are to:

- Support a mission of providing high-quality and accessible public transportation services for the benefit of the individuals and the community that it serves.
- Apply to the family of services provided by Greater Sudbury Transit, which includes Conventional, Specialized and On-Demand services.
- Contribute to and support ridership growth strategies that result in net new ridership and revenue, and provides a social good.
- Provide discounts through concession fares, while recognizing the need to meet business objectives and affordable access to transit service.

Given the above-mentioned framework, the table below provides the proposed new fare structure.

Recommended Fare Structure

Category	Fee		Fare Details
Base Cash Fare	$	3.50	Plus 90 minute transfer
Day Pass	$	10.50	1 Adult + 4 Youths Ride all day
Ticket Unit Price	$	2.90	Get 6 rides for the price of 5
Ticket Unit Price - Concession	$	2.50	Get 6 rides for the price of 5, less 15%
Monthly Pass	$	88.00	Pay for 25 rides
Monthly Pass - Students	$	75.00	Pay for 25 Rides, less 15%
Monthly Pass - Concession	$	56.00	Pay for 16 Rides
Upass	$	200.00	8 Month Pass

Supplementing the fare structure, the following describes the conditions and other incentives which should be updated in the Miscellaneous User Fee By-Law.

Targeted Groups will include the following:

- "Student" means a person who presents a current and valid student identification card from a high school or post-secondary educational institution;
- "Youth" means a person who is between the ages of 5 and 12;
- "Children" means a person who is less than 5 years of age;
- "Senior" means a person who is 65 years of age or older;
- "Disability Pensioner" means a person who is a recipient of the Ontario Disability Support Program (O.D.S.P), Assistance for Children with Severe Disabilities (A.C.S.D), Canada Pension Plan Disability (C.P.P.D), Veteran's Disability Pension or Canadian Institute for the Blind (C.N.I.B).

Base cash fare applies to all those accessing Transit Services. Concession fare discounts do not apply and 1-ride cards will no longer be available.

Transfer times are extended to 90 minutes and offer the customer the ability to travel in any direction. By providing the extended transfer, the increase in cash and ticket fares should reasonably compensate for the loss of revenue which result in extending the transfer time, and will provide an additional incentive for those choosing the higher cash/ticket rate.

Day Pass offers unlimited travel for one service day to one (1) adult and up to four (4) youths. Concession discounts do not apply.

Six (6) Ride Cards offer six (6) trips for the price of five (5) and offer an additional discount of 15% to all target groups, including Students.

> To note, for those who are price sensitive and have previously received a discount on cash fare, the additional 15% offers a unit price of $2.50 which equals to the current concession cash fare.

Monthly passes are valid for 31 days from date of activation. The Adult pass is priced at 25 base cash fares at which point all other rides would be free. Student monthly passes offer an additional 15% and all other target groups remain at the current price equivalent to 16 cash fares.

> Based on the ridership collected by fare type and applied to the number of monthly passes sold in 2018, the average card use is 57 rides per month, with the highest use realized by Adults at 66 times per month and the lowest by Seniors at 52 rides per month. Translated into cost per ride, the unit price for an Adult is $1.54, Students $1.32 and other target groups $0.98. This type of information is useful to ensure that it meets Council's objective of providing affordable access to transit for the community. For those who heavily rely on transit services as their mode of transportation, the monthly pass is therefore the most economical option available. In order to mitigate revenue losses, it is recommended that the Affordable Transit Pass program be discontinued. The cost of the program has instead been absorbed through the reduction in fare price of the Adult passes. Should Council wish to continue the program, Staff recommends adjusting the Monthly Pass rate to the current rate of $93.

Employer Pass program offers an employer the ability to purchase 100 or more Adult passes at a 10% discount, if they agree to provide an additional 10% discount to the employee. This would mean that an employee could receive an additional 20% discount and could obtain these passes through a payroll deduction should the employer have the capability.

Support Person Assistance Card is available to persons who require assistance while travelling on Conventional Services through an application process. The Card belongs to the cardholder and permits one support person to travel with them free of charge.

U-Pass program provides access to all transit services at a deeply discounted rate during the academic year between September and April. The discount is considered reasonable since there is full participation of full-time students, and it provides the City with a sustainable revenue source.

> On January 17th, 2019, the Government of Ontario announced an initiative to reduce tuition fees for Ontario postsecondary students. The impact of this announcement on U-Pass agreements is not clear. Once further information has been received, Council will be updated accordingly.
>
> Currently, the City holds an agreement with Laurentian University Student Associations only. Efforts to extend the program to Cambrian College and Collège Boréal will continue. In the meantime, negotiations for a four (4) year extension to the program is underway with Laurentian University Student Associations, who are favorable to extending the agreement.

Miscellaneous User Fee By-Law: All other conditions in the current Miscellaneous User Fee By-Law would be extended. In addition, it is recommended that a new Target Category be added for not-for-profit organizations that currently purchase 1-ride cards for clients at the concession price (per historical practice). This category would enable these organizations to purchase 6 Ride Cards at the concession price, up to a $50,000 total budget amount. The 1-Ride cards would no longer be offered and would be replaced by this alternate program.

Additional Affordable Fare Program: Should Council wish to provide additional incentives, the following programs may be considered. It is expected that these programs would have a negative impact on revenue, and until such impact is confirmed against increase in ridership, the recommended approach would be to carry out the programs on a pilot basis and review prior to 2020 budget deliberations.

- **Family Travel Program** would enable any adult or senior travelling with a Monthly Pass to bring up to four youths age 12 and under to ride for free.
- **Transferrable Adult Monthly Pass Program** would provide an incentive to families by issuing a photo-free adult monthly pass that allows family-members to share the pass when not travelling together.

Supporting Information to Recommended Fare Structure Results

As stated above, the recommended fare structure was carefully selected to align with Council priorities, a peer review analysis and operational needs. The following section provides supporting findings to provide Council context on the recommended rates.

Peer Review: To compare how Greater Sudbury Transit's fare structure measures to other Canadian cities, data was collected from the Canadian Urban Transit Association's 2017 Canadian Transit Fact Book, the most recent comparative document available. The book lists all reporting transit agencies in Canada, grouping them according to population size. To note, comparisons between transit systems are difficult to interpret because the factors affecting transit policies and fare policies in particular vary considerably from city to city based on their Council goals and operational requirements. This analysis however provides a threshold measure which can be used to assess if fares are appropriate based on a community's size.

2017 CUTA Transit Fact Book

2017 Greater Sudbury Transit	Cash	Tickets Unit Price	Monthly Pass
Adult	$ 3.20	$ 2.50	$ 87.00
Children	$ 2.30	$ 1.90	$ 52.00
Students	$ 3.20	$ 2.50	$ 80.00
Seniors (includes Disability Pensioners)	$ 2.30	$ 1.90	$ 52.00
2017 Popultation Group 3 (150,001-400,000)	**Cash**	**Tickets Unit Price**	**Monthly Pass**
Adult	$ 3.38	$ 2.75	$ 98.06
Children	$ 2.50	$ 1.79	$ 55.00
Students	$ 3.22	$ 2.41	$ 68.38
Seniors	$ 3.10	$ 2.36	$ 54.92
Difference	**Cash**	**Tickets Unit Price**	**Monthly Pass**
Adult	-6%	-10%	-13%
Children	-9%	**6%**	-6%
Students	-1%	**4%**	**15%**
Seniors	-35%	-24%	-6%

Peer Analysis: Based on the table above, the following information was considered when determining rates for the recommended fare structure:

- Greater Sudbury Transit compared to peer municipalities generally offers an affordable fare structure, however has gaps which are consistent with the recommendations found in the Transit Action Plan.
- Adult fares are lower than municipal peers but generally within the same threshold.
- There is a gap between Greater Sudbury Transit and other comparators for Student pricing, indicating that this target group could be further discounted.
- Greater Sudbury Transit offers steep discounts to Seniors and Children, and also include Disability Pensioners in the Target Group receiving concession fares. It is therefore reasonable to increase the rates for the concession group, as suggested in the Transit Action Plan. At a minimum, the fares should stay at the current rate.

- A detailed review of individual peer municipalities indicates that most services offer the same cash fare for all categories, and discounts to encourage loyalty though the purchase of multi-ride cards and passes. This is consistent with the recommendations of the Transit Action Plan.

Difference in fare price to customer: The table below provides a comparison of the difference in current and recommended rates by fare category and customer group. Although there are proposed increases to cash fare and ticket prices for individuals, the noted benefits of the structure as a whole have been considered to meet the goals of the Fare Policy. Additionally, the recommended concession pricing for 6-Ride cards enables Children, Seniors and Disability Pensioners to travel at the same rate as the existing cash fare, thereby mitigating the increase for regular users.

Comparison of Current Fee vs. New Fee by Category

Category	Current 2019 Fee	New Fee	Difference	Proposed policy and additional incentives
Base Cash Fare - Adult & Student	$ 3.40	$ 3.50	$ 0.10	All passengers pay same fare but receive 90 minute transfer
Base Cash Fare (Concession)	$ 2.50	$ 3.50	$ 1.00	All passengers pay same fare but receive 90 minute transfer
Day Pass	$ 10.50	$ 10.50	$ -	Up to 4 Youths can ride with Day Pass holder
Ticket Unit Price - Adult	$ 2.70	$ 2.90	$ 0.20	Adult pay $0.20 more but receive 90 minute transfer
Ticket Unit Price - Students	$ 2.70	$ 2.50	$ (0.20)	Students pay $0.20 less and receive 90 minute transfer
Ticket Unit Price - Concession	$ 2.10	$ 2.50	$ 0.40	Concession Groups pay $.40 more and receive 90 minute transfer
Monthly Pass	$ 93.00	$ 88.00	$ (5.00)	Reduction realized by eliminating Affordable Transit Pass program and distributing savings to all Adults. Further incentive for Council's consideration - Family travel program and transferrable adult monthly pass program, to meet affordable access to transit Council objectives.
Monthly Pass - Students	$ 84.00	$ 75.00	$ (9.00)	Reduction of Student pass to meet peer group average and industry best practice. This rate provides access to transit services for a 31 day period at the rate of 25 paid rides, less 15%.
Monthly Pass - Concession	$ 56.00	$ 56.00	$ -	The current rate is much lower than peer groups, confirming Council's goal of providing affordable access to transit to seniors, children and disability pensioners. This rate provides access to transit service for a 31 day period at the rate of 16 paid rides.
Upass	$ 200.00	$ 200.00	$ -	8 Month Pass - under negotiation with LU students. Efforts to extend the program to other institutions will continue.

Impact on Revenue:

Projected Revenues (for 12 months)

Category	Fare	2018 Units Sold	Projected Revenue
Cash	$ 3.50	575,000	$ 2,012,500.00
Day Pass	$ 10.50	1,300	$ 13,650.00
6 Ride Card	$ 17.50	54,000	$ 945,000.00
6 Ride Card - Concession	$ 15.00	91,000	$ 1,365,000.00
Monthly Pass	$ 88.00	10,500	$ 924,000.00
Monthly Pass - Students	$ 75.00	15,700	$ 1,177,500.00
Monthly Pass - Concession	$ 56.00	13,000	$ 728,000.00
Upass	$ 200.00	6,550	$ 1,310,000.00

Revenues projected based on proposed rates	**$ 8,475,650.00**
2019 budgeted revenue	**$ 8,290,000.00**
	$ 185,650.00

The table above uses the 2018 unit sales and the new rate structure to calculate the projected revenue for a 12-month period. When compared to twelve months of 2019 budgeted revenue, there is indication that an increase in revenue could be realized. This comparison however does not incorporate the impact of the supporting 90-minute transfer policy which may have a negative impact on revenue. Based on this analysis, and the mid-year implementation of the new fare structure, the fare structure is estimated to be revenue neutral.

Any risk of revenue loss is supported by a possible increase in ridership, which in turn increases the City's share of Provincial Gas Tax Funding. Should Council proceed with Affordable Access Pilot Programs (Family Travel Program and Transferrable Adult Monthly Pass), there is a higher risk of negative revenue impact. If approved, the impact of the new programs on fare revenue will be provided to Council in September 2019.

2.1.3 Recommendation 3: Infrastructure Improvements, Implementation Date by March 2020

In August 2016, the Federal Public Transit Infrastructure Fund (PTIF) provided Phase I funding for transit rolling stock, infrastructure and technology across Canada for municipalities that invest in public transit. The formula provides for 50% funding by the Federal government and 50% by the Municipality. The City of Greater Sudbury was awarded $14.6M of eligible costs to be invested in 16 projects which must be completed by March 2020.

The following list highlights some of the infrastructure improvements that have been undertaken which directly address recommendations found in the Transit Action Plan.

- Bike Racks have been placed on all conventional transit buses.
- Forty-five (45) shelters were rehabilitated.
- A Crime Prevention Through Environmental Design (CPTED) analysis and resulting renovations were undertaken at the Transit Terminal to improve safety and security and increase customer experience.
- Purchase of transit staff scheduling software which will assist in the system implementation process.
- Lasalle Nodes & Corridor, Travel Demand Management and Intelligent Transportation System Studies have all been undertaken.
- Active Transportation improvements on key corridors (Kingsway, Paris, Notre-Dame and Westmount)

The following two remaining initiatives will take place to complement the Transit Action Plan implementation:

- A refresh of wayfinding materials including bus stop information will be implemented along with a Communication Plan to ensure the community is provided with the proper tools and information to understand the new system.
- Smart Card implementation is expected to be in place by March 2020.

2.1.4 Recommendation 4: Customer Care (Review within 2 years)

Many of the Community Priorities identified through public engagement were related to increasing customer care and experience within the services. Improvements have begun within existing resources to address some of these priorities, while others will require Council approval for increased staffing. The following section speaks to the various improvements which can have a positive impact on service levels:

Community Outreach Coordinator

Existing staffing levels do not provide the resources to address the key opportunities and areas of growth identified in the Transit Action and heard through the public engagement process. Many community stakeholders highlighted the need to create partnerships, promote the service, and create incentives to encourage people to take Transit. Communication to the public was seen as a priority that needs to be addressed and customer satisfaction is of utmost importance in order to retain and increase the ridership base. To this end, it is recommended that Council directs Staff to prepare a business case for a full-time position within the Transit Department for 2020 budget deliberations.

Security – Transit Safety and Security

Reports have been presented to Council and the Community Services Committee outlining a series of actions that could improve security and safety for both passengers and employees. A system lacking in safety and security measures results in declining ridership and affects employees' health and morale. The Transit Action Plan endorses the recent staff reports, specifically as it relates to introducing a Transit-By-Law which is enforced by Municipal Transit By-Law Officers. These officers would support operators and passengers by enforcing the rules and regulations governing the use of the Transit System by issuing offence notices to those contravening the By-Law, thereby providing a deterrent to undesirable behavior at terminals, on board buses and at future developing Mobility Hubs.

Bus Cleanliness

In order to keep appropriate cleanliness of the fleet, a daily vehicle cleaning practice where buses are washed on the outside, thoroughly wiped down throughout, garbage picked up, floors swept, and major spills washed should be employed. Detailing of buses--where windows, walls, and all areas that are hard to reach are cleaned—should be undertaken on a regularly scheduled basis. In support of implementing and monitoring this level of cleaning schedule, bus cleaning staff positions have recently been transitioned from the Fleet Section to the Transit Section. A review of operational needs to meet bus cleaning schedules will be undertaken, and recommendations for additional resources will be prepared for the 2020 budget deliberation, if required.

Bus Shelter Maintenance

The process for reporting bus shelter and bench damage should be clearly articulated and a maintenance schedule set to monitor and clean bus shelters. In particular, higher usage shelters may require more frequent monitoring and cleaning than lower usage ones and the maintenance rates should be reflective. Bus shelter maintenance staffing resources have recently transitioned to the City's Transit Section and a review of operational needs will be undertaken, and recommendations for additional resources will be prepared for the 2020 budget deliberation, if required.

2.1.5 Recommendation 5: Policy Framework, Review as needed

The Transit Action Plan reinforces the need to support the Transit Service through a robust policy framework that clearly states how decisions are made and creates community conditions for ongoing success. The Plan suggests that the following key documents be reviewed or developed:

Official Plan should be carefully reviewed and amended to reflect the final recommendations of the Transit Action Plan, in particular with respect to focusing infrastructure investment and intensification of land use on Frequent and Core route corridors as well as at Mobility Hubs. These recommendations will require further review

and reports to the Planning Committee and Council. Any changes to the Official Plan would proceed by way of a publicly initiated amendment subject to the statutory requirements of the Planning Act.

Bus Stop Standards should be developed to enhance the consistency of stop placement and accessibility. These standards will be outlined in a report to Council for consideration and adoption.

Transit Service Standards have been developed and provided within the Transit Action Plan which guide the service delivery and design of network. These standards will be reviewed after implementation through a report to Council to ensure they continue to meet the requirements and objectives of Council.

2.2 Phase 2 & 3 - Future Expansion Recommendations (1-10 Years)

The first phase of implementation looks at reallocating and reinvesting existing resources to formulate a framework that will evolve through further investments. The Transit Action Plan also provides a series of service enhancement options which should be reviewed in the short- to medium-term, with adjustments to long-term options, as needed, to ultimately meet the recommendation of building higher order transit.

2.2.1 Recommendation 6: Priority Service Expansion Options, Review within 1-3 Years

The immediate system-wide recommendations, which is provided by maintaining resources, will address most of the Community Priorities and, as a package of changes, will generally be perceived positively. There are however areas which require improvement and additional service hours.

The Transit Action Plan has outlined four key future expansion options to address immediate issues and opportunities, and which would help meet the desired Service Standards. These expansions are recommended for consideration within 1-3 years as follows:

Option 1 –Increase in service hours to add frequency and longer service span to select routes and trips in order to meet desired service standards and provide resources to undertake any critical fixes that arise from the implementation of the revised route structure. Implementation of some or all of this option would also help mitigate issues that may arise due to the proposed immediate changes working within an existing budget that has historically not been adequate to operate service reliably. Total annual net municipal estimate for this option is $787,500.

Option 2 – Increase in service hours to ensure that all services on Frequent, Core and Community Connector routes begin earlier to facilitate 7:00 a.m. work start times on weekdays to downtown and at key employment destinations. Total annual net municipal estimate for this option is $349,900.

Option 3 –Further increase across all family of transit services to increase Sunday service levels to align more closely with the frequencies offered on Saturdays, particularly between 10:00am and 6:00pm when ridership is highest. Total annual net municipal estimate for this option is $299,400.

Option 4 –Provides a package of improvements that would further develop the system's structure and improve connection to Laurentian University from Mobility Hubs throughout Greater Sudbury. Total annual net municipal estimate $545,800 and one-time capital cost for this option is $1,710,000.

All other medium-term service expansion options outlined in the Transit Action Plan would follow those provided above and are proposed for consideration over the next 4-10 years as the system matures and ridership demand increases.

2.3 Long Term Infrastructure Strategy - Pending PTIF Phase II Funding Intake

During the course of the study, a new funding program was announced that could expedite the Long Term Strategy of reaching higher order transit with Bus Rapid Transit (BRT) measures.

On March 14, 2018 the Governments of Canada and Ontario signed an Integrated Bilateral Agreement for the Investing in Canada Infrastructure Program. The program has an end date of March 31, 2028 and encompasses several investment streams. The Public Transit stream allocates a maximum contribution of $39.8 million in federal funding and $32.8 million provincial over the time period to the City of Greater Sudbury. Assuming a municipal contribution of 27%, this provides for potential total funding of up to $99.4 million to fund public transit infrastructure projects over the next ten years for the City of Greater Sudbury.

Based on this funding opportunity, the Transit Action Plan provides infrastructure priorities that span the shorter and longer term to support the immediate transition of service and build towards elements of Bus Rapid Transit on major corridors and links to outlying communities.

The identified infrastructure priorities include:

- Purchase of shelters, benches and wayfinding amenities.
- Identification and analysis of all proposed major connecting Mobility Hubs, including corresponding infrastructure improvements.
- Identification and analysis of corridor planning on the Frequent Transit corridors, including corresponding infrastructure improvements.
- Transit priority treatment along Frequent Transit corridors such as transit signal priority for transit vehicles, optimized signal timing, queue jump lanes and future separate transit right of way where feasible.
- Articulated buses and right sizing vehicles to replace existing fleet and expand as per approved service improvements.

Transit Action Plan

Greater Sudbury

FINAL REPORT

2019

Greater | Grand Sudbury

Transit Consulting Network

Better Routes. Better Schedules. Better Service.

Acknowledgements

In collaboration with the City of Greater Sudbury, the Transit Consulting Network and its project partners would like to thank all those Greater Sudbury-area community members who provided their feedback and ideas into this process. In particular, the residents, staff, community leaders and organizations that provided input at Transit Action Plan open houses, workshops, through online surveys and through one-on-one interviews.

The project also gratefully acknowledges the support of the the Canada-Ontario Public Transit Infrastructure Fund (PTIF).

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EXECUTIVE SUMMARY

Greater Sudbury's Transit Action Plan

EXECUTIVE SUMMARY

Introduction

The **Greater Sudbury Transit Action Plan** is a comprehensive review of the local public transit system with the goal of achieving better routes, schedules and overall service, now and over the long term. Led on behalf of the City by the Transit Consulting Network (TCN), a consortium of public transit specialists from across the country, the Transit Action Plan has been collaboratively developed with City staff, community leaders, passengers, stakeholders, and the community at large.

Encompassing all types of service and all areas of the community, the Transit Action Plan is the most comprehensive review of public transit in the City's history. Originally initiated to examine ways to optimize existing service, the Transit Action Plan also looks long term. It designates the key corridors and connection points where the City should focus development, infrastructure investment and service improvements to maximize ridership and the long-term effectiveness of the system in helping to achieve community goals.

The objective of the study has been to develop an integrated transit service plan that undertakes a detailed analysis of the existing system and builds on the many examples of existing successes. Even more importantly, the goal of the Plan is to create an actionable path to implementing improvements to the system – Better routes. Better schedules. Better service. These improvements incorporate best practices in route/ service design, infrastructure and technology tailored to meet the unique needs and environment of Greater Sudbury and its resident and business priorities.

The project is made possible through the Canada-Ontario Public Transit Infrastructure Fund (PTIF). The Government of Canada is cost-matching a municipal investment of $620,000 for the plan and resulting infrastructure improvements under the administration of the Ontario Ministry of Transportation.

Greater Sudbury Transit Action Plan
Overall Objectives:

- Undertake a comprehensive analysis of Greater Sudbury Transit routes, service levels and service models, including Handi-Transit and TransCab service.
- Hear from transit passengers, staff, stakeholders and the larger community about how transit can continue to improve to meet the City's diverse transportation needs.
- Consider all potential opportunities to improve the efficiency and effectiveness of Greater Sudbury Transit.
- Identify potential recommended service, infrastructure and related improvements, now and over the long term.
- Build public awareness and support of Greater Sudbury Transit and its services.

Plan Process and Timeline

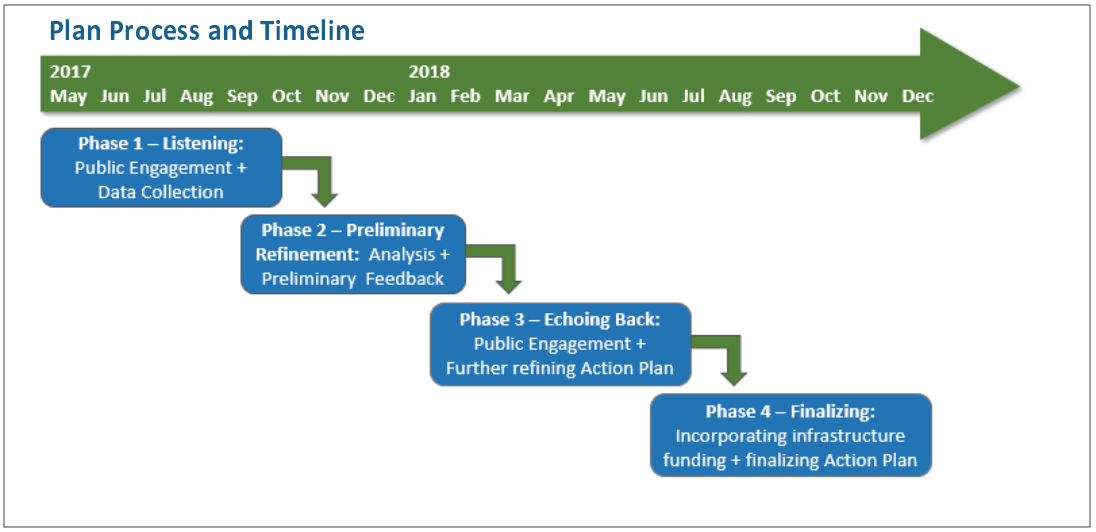
Building community-wide support for the Greater Sudbury Transit System and this Plan's resulting recommendations has been of paramount importance. So, too, has been building a plan founded on detailed analysis of existing services, comparison to peer communities and transfer of best practices to Greater Sudbury.

Some of the many open houses and workshop events held as part of the Transit Action Plan's engagement.

Three streams of information were used to develop the plan:

- **Community Priorities**: The Transit Action Plan heard from community leaders and staff, existing transit users and future users through a wide array of in-person and on-line techniques. These techniques included online and paper surveys, stakeholder workshops, open houses at the system's main transit terminal and potential hub areas, post-secondary schools, major employment centres and "pop up" open houses at high traffic locations around the community (grocery stores, libraries, shopping centres, etc.). This analysis also looked at existing long-term Greater Sudbury community plans (Official Plan, Transportation Master Plan, Greater Together: Strategic Plan, etc.) to ensure that recommendations align with the long-term vision of the City.
- **Detailed Performance Analysis:** Existing and historical ridership and performance information was analyzed for all components of the system, including comparison against Greater Sudbury Transit's service design standards for both Urban and Commuter Routes.
- **Peer Review:** Greater Sudbury Transit's performance was compared and analyzed against other Canadian transit systems and communities of a similar size using data from the Canadian Urban Transit Association (CUTA).

The public engagement results for the two major phases of community engagement are presented in **Appendix A and B,** while the detailed performance results of the analysis of existing services and peer review can be found in **Appendix C.**



Transit Today and Key Areas for Improvement

Greater Sudbury Transit today **encompasses three main types of service** to serve the diverse needs of the community's land area and its population. Some of these services are operated by the City of Greater Sudbury's transit department while others are provided through contract with private operating companies. Together, these various types of transit serve over four million customers per year.

- **Conventional Transit Service** is operated by Greater Sudbury Transit and delivered by standard-sized 12.2 metre (40-foot) buses serving routes and stops in higher population areas through a regularly scheduled fixed route network system.
- **TransCab Service** supplements the Conventional Transit Service by providing door-to-door shared service in nine lower population density and outlying communities within the City that are not easily accessible by Greater Sudbury Transit conventional buses and which offer connection to Conventional Transit at key points. The service is delivered by partner taxi companies.
- **Handi-Transit Service** provides transportation to persons who have physical disabilities and are unable to use the Conventional Transit services. Handi-Transit operates under contract and uses 15 specialized accessible buses to serve the same area as Greater Sudbury Transit buses and TransCabs, within boundaries that extend three kilometres.

In Focus: What the Existing Transit System Does Well and Key Areas Identified for Improvement

Through the analysis and public feedback gathered on the system, some key themes emerged:

What Greater Sudbury Transit Does Well:

- Greater Sudbury Transit's ridership and performance has been **fairly consistent** over time.
- The system's transit efficiency (passengers carried per hour of service) and transit effectiveness (passengers carried per capita) was **better than the average of its peers**.
- The TransCab operating model **efficiently serves** areas with lower populations and Handi-Transit has a high level of service with comparatively good service quality when compared to its peers.
- The system has an **existing loyal customer base and knowledgeable staff** who care deeply about the system. This and the above means that there is a solid foundation for further improvement to the system.

Key Opportunities for Improvement:

- **Make service easier to understand, more direct and reliable.** The system should move away from the existing confusing route structure that dilutes potential frequency across many streets and instead focus heavier ridership service on key corridors with complementing feeder services. This will enable the system to put more frequency where it is needed most, shorten travel times and improve reliability.
- **Improve frequency of services**, particularly on Sundays (to gain further ridership from existing users) and at commuter times (to attract new users).
- **Improve coordination of services to outlying areas**, including creating Local Mobility Hubs that make it more convenient for connections to take place, Park & Rides, improved coordination and technology with on-demand services and potentially integration with some regularly scheduled Handi-Transit services.
- **Implement a more integrated approach to accessible service**, including improving customer booking options and travel experience, eligibility processes and how Handi-Transit integrates with other services.
- **Implement complementing infrastructure, fare, customer information and policy improvements** to leverage the ridership gained through recommended changes to routing, schedules and service levels.

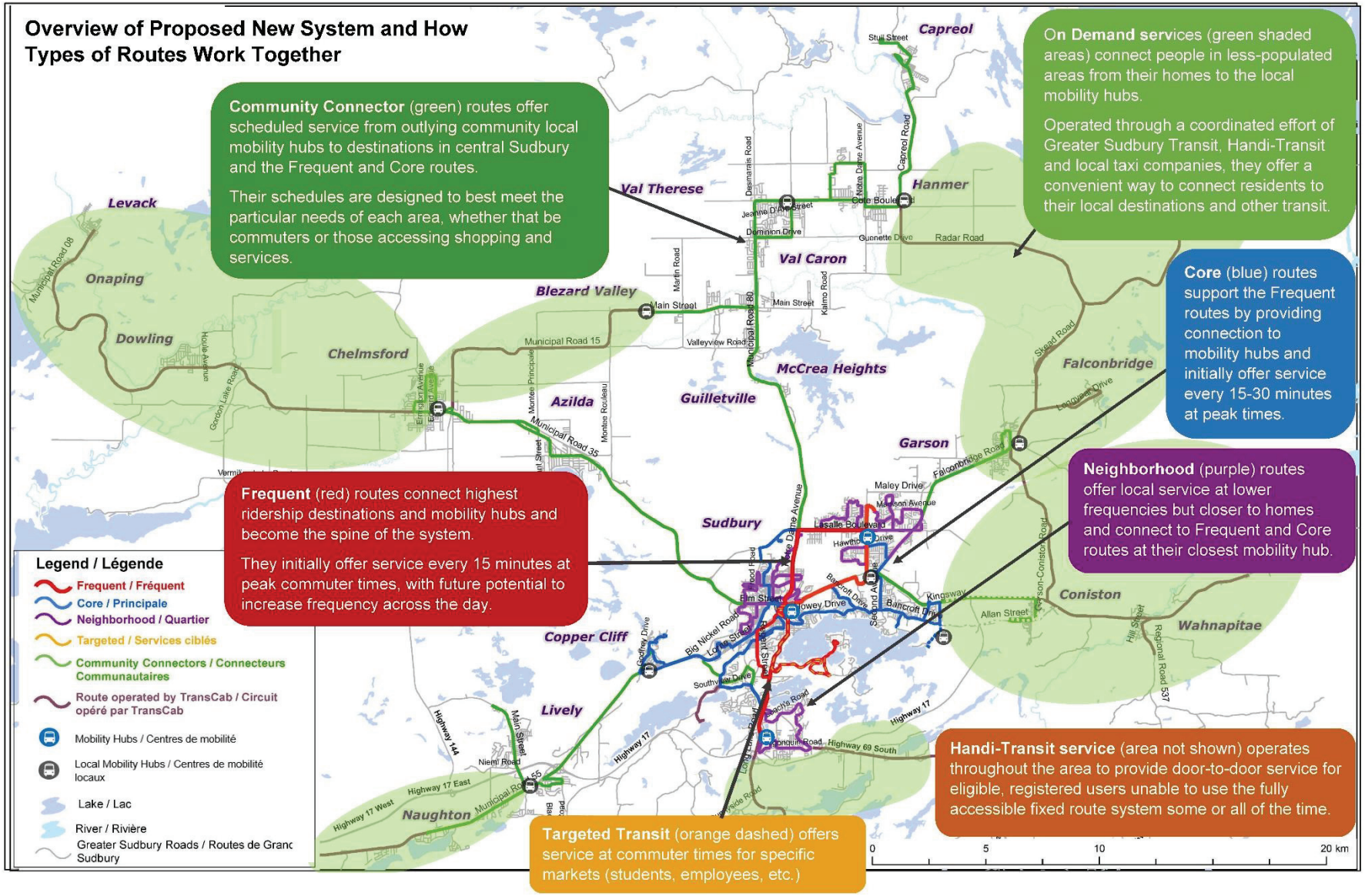
System Wide Service Proposals and Network Strategy

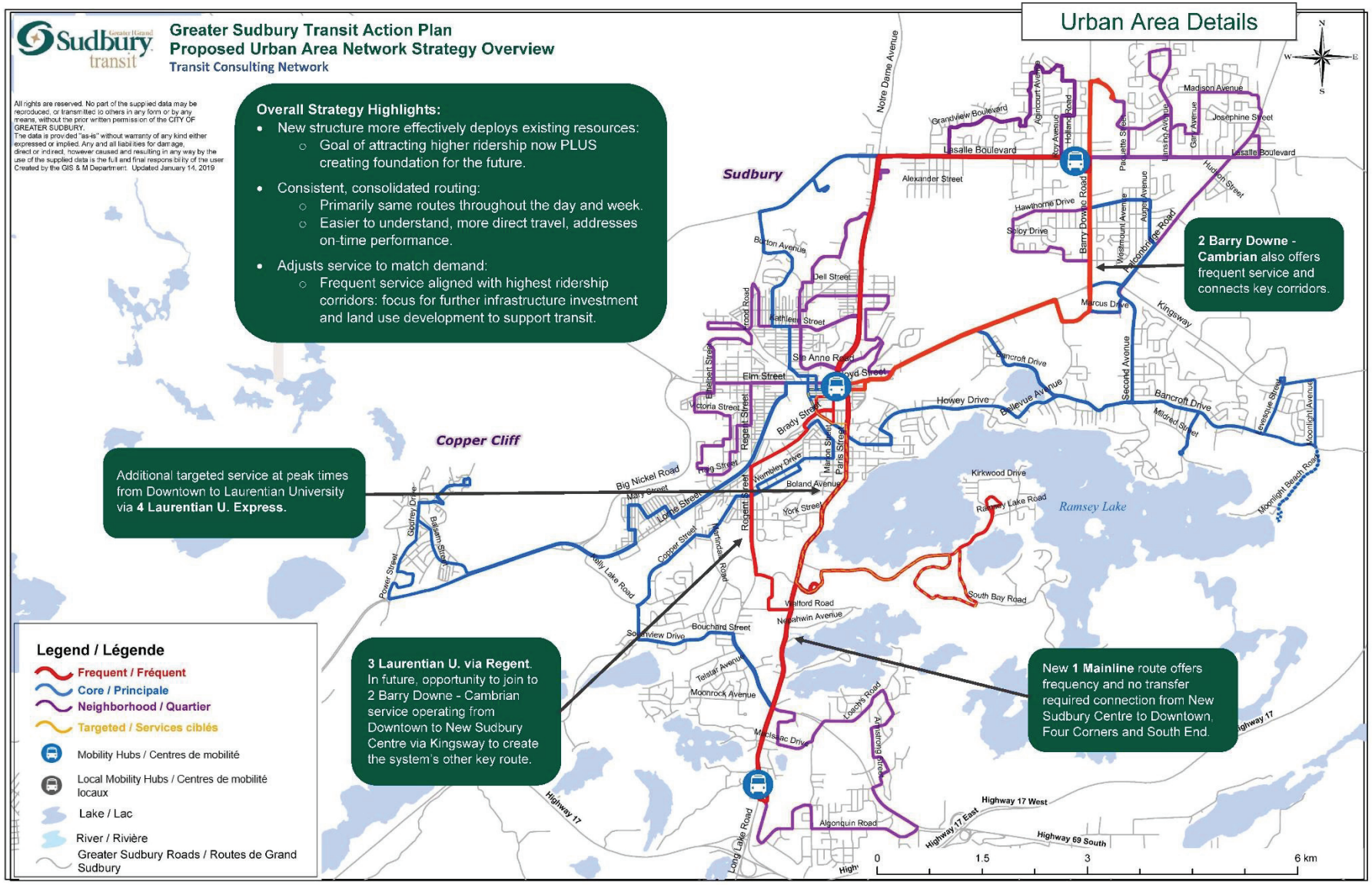
The Greater Sudbury Transit Action Plan proposes that the entire network be restructured as a base for further improvement and investment. Overall, this strategy focusses on significantly restructuring the Conventional and TransCab services to make the service easier to use, more reliable and better matched with ridership. This restructuring is complemented by other infrastructure, fare, customer information/marketing, and policy recommendations.

Central to the revised network strategy is a comprehensive restructuring of the system into layers of different service types that can be consistently portrayed to passengers and which can enable the system to align long term land use and investment in service and infrastructure. The table below and the following map provides an overview of the proposed transit service layers for the City of Greater Sudbury's transit network structure:

Greater Sudbury Transit Proposed Restructured Service Layers

Service Layer	Definition	Service Types	Frequency
Frequent / Circuit haute fréquence	Highest frequency service connecting major destinations and corridors.	• Fixed route • Ability to evolve to Bus Rapid Transit	To start: 15 min peak Future: 15 min or better, 7am-7pm
Core / Circuit principal	Supporting higher frequency routes in the urban core.	• Fixed route	To start: 15/30 min peak Future: 15 min or better at peak
Neighborhood / Circuit de quartier	Local service within urban neighbourhoods connecting to the Frequent and Core routes.	• Fixed route • Fixed route delivered with smaller vehicles	To start: 60 min all day Future: 30 min peak where warranted by demand
Community Connectors / Circuit de correspondance communautaire	Connection between outlying communities to the Frequent and Core routes.	• Fixed route • Fixed route delivered with TransCab	Service levels vary based on demand.
On Demand / Services sur demande	Connects people in less-populated areas from their homes to key services and transit connection points in outlying communities.	• Uses TransCab or combined Handi-Transit on some trips.	Service levels vary based on demand.
Targeted / Services ciblés	Service targeted for specific users and markets, such as work and education commuter special trips.	• Fixed route • Fixed route delivered with smaller vehicles	Service levels vary based on demand.
Handi-Transit / Service Handi-Transit	Service for eligible, registered users unable to use the fully accessible fixed route system some or all of the time.	• On demand	Service levels vary based on demand.


Overview of Proposed New System and How Types of Routes Work Together
Community Connector (green) routes offer scheduled service from outlying community local mobility hubs to destinations in central Sudbury and the Frequent and Core routes.
Their schedules are designed to best meet the particular needs of each area, whether that be commuters or those accessing shopping and services.
On Demand services (green shaded areas) connect people in less-populated areas from their homes to the local mobility hubs.
Operated through a coordinated effort of Greater Sudbury Transit, Handi-Transit and local taxi companies, they offer a convenient way to connect residents to their local destinations and other transit.
Core (blue) routes support the Frequent routes by providing connection to mobility hubs and initially offer service every 15-30 minutes at peak times.
Neighborhood (purple) routes offer local service at lower frequencies but closer to homes and connect to Frequent and Core routes at their closest mobility hub.
Frequent (red) routes connect highest ridership destinations and mobility hubs and become the spine of the system.
They initially offer service every 15 minutes at peak commuter times, with future potential to increase frequency across the day.
Handi-Transit service (area not shown) operates throughout the area to provide door-to-door service for eligible, registered users unable to use the fully accessible fixed route system some or all of the time.
Targeted Transit (orange dashed) offers service at commuter times for specific markets (students, employees, etc.)
Legend / Légende
Frequent / Fréquent
Core / Principale
Neighborhood / Quartier
Targeted / Services ciblés
Community Connectors / Connecteurs Communautaires
Route operated by TransCab / Circuit opéré par TransCab
Mobility Hubs / Centres de mobilité
Local Mobility Hubs / Centres de mobilité locaux
Lake / Lac
River / Rivière
Greater Sudbury Roads / Routes de Grand Sudbury
Capreol
Hanmer
Val Therese
Val Caron
Levack
Onaping
Dowling
Chelmsford
Blezard Valley
Azilda
Guilletville
McCrea Heights
Falconbridge
Garson
Sudbury
Coniston
Wahnapitae
Copper Cliff
Lively
Naughton
0
5
10
20 km


Greater Sudbury Transit Action Plan
Proposed Urban Area Network Strategy Overview
Transit Consulting Network
Urban Area Details
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The data is provided "as-is" without warranty of any kind either expressed or implied. Any and all liabilities for damage, direct or indirect, however caused and resulting in any way by the use of the supplied data is the full and final responsibility of the user
Created by the GIS & M Department. Updated January 14, 2019
Overall Strategy Highlights:
New structure more effectively deploys existing resources:
Goal of attracting higher ridership now PLUS creating foundation for the future.
Consistent, consolidated routing:
Primarily same routes throughout the day and week.
Easier to understand, more direct travel, addresses on-time performance.
Adjusts service to match demand:
Frequent service aligned with highest ridership corridors: focus for further infrastructure investment and land use development to support transit.
2 Barry Downe - Cambrian also offers frequent service and connects key corridors.
Additional targeted service at peak times from Downtown to Laurentian University via 4 Laurentian U. Express.
3 Laurentian U. via Regent. In future, opportunity to join to 2 Barry Downe - Cambrian service operating from Downtown to New Sudbury Centre via Kingsway to create the system's other key route.
New 1 Mainline route offers frequency and no transfer required connection from New Sudbury Centre to Downtown, Four Corners and South End.
Sudbury
Copper Cliff
Ramsey Lake
Legend / Légende
Frequent / Fréquent
Core / Principale
Neighborhood / Quartier
Targeted / Services ciblés
Mobility Hubs / Centres de mobilité
Local Mobility Hubs / Centres de mobilité locaux
Lake / Lac
River / Rivière
Greater Sudbury Roads / Routes de Grand Sudbury
0
1.5
3
6 km

Long Term Investment Plan

The following presents the outline of a logical order of service and infrastructure investment to move the transit system forward and progress it towards delivering even more value to the community.

As a starting point, these options look to reallocate and reinvest existing resources. These options also align with the Integrated Bilateral Agreement for the Investing in Canada Infrastructure Program signed by the federal and provincial governments and which provides a potential total funding maximum of $99.4 million towards public transit infrastructure projects over the next ten years within the City of Greater Sudbury. Costs are based on 2019 budgeted amounts for existing transit services within the City or peer averages for new services and would be in addition.

Greater Sudbury Transit Action Plan
Consolidated Long Term Transit Investment Strategy

Service Option	Vehicles **	Annual Service Hours	Total One Time Capital Costs	Annual Operating Costs	Annual Net Municipal Costs
Capital / Infrastructure Investment Already Underway or Completed (PTIF Phase 1)					
Transit Action Plan Study	0		$300,000		
Bike racks on buses	0		$20,000		
Upgrade to Transit Automatic Vehicle Location Units	0		$100,000		
Ongoing Fleet Refurbishment	0		$1,480,000		
Restoration/Rehabilitation Program of 45 Transit Shelters	0		$120,000		
Replacement of five 40 foot buses	0		$2,843,000		
Transit Garage upgrades and rehabilitation.	0		$3,500,000		
Upgrade and rehabilitation to Transit Terminal.	0		$1,225,000		
Purchase of new transit staff scheduling software	0		$165,000		
LaSalle Corridor Study	0		$200,000		
Travel Demand Management Study	0		$55,000		
Intelligent Transportation System Study	0		$55,000		
Paris/Notre Dame Active Transportation Improvements	0		$735,000		
Kingsway Active Transportation Improvements	0		$2,700,000		
Westmount Avenue Active Transportation Improvements	0		$255,000		
Initiatives Proposed for Immediate Consideration					
Service Options					
Immediate Network-Wide Route Restructuring	Accomplished entirely through reallocation of existing resources and vehicles.				
Complementing Capital / Infrastructure Investment					
Bus Stop Changes and Public Information Refresh	0		$250,000		
Smart Card Implementation	0		$600,000		
Priority Expansion Options (Optimally Next 1-3 Years, Pending Funding)					
Service Options					
Option 1: Critical Fixes to Frequency, Capacity and Span of Service	0	8,100	$0	$905,300	$787,500
Option 2: Earlier Weekday Service	0	3,600	$0	$402,300	$349,900
Option 3: Additional Sunday and Statutory Holiday Frequency & Span	0	3,200	$0	$357,600	$299,400
Option 4: Comprehensive Laurentian University Service Improvements	3	6,100	$1,710,000	$701,100	$545,800
Complementing Capital / Infrastructure Investment					
Existing Fleet Replacement	0		$11,000,000		
Preliminary Bus Rapid Transit (BRT) Corridor and Station Designs Review	0		$1,000,000		
Transit Signal Priority (Incl. Engineering Support)	0		$1,200,000		
BRT Transit Priority Measures (Queue Jump Lanes, etc).	0		$7,600,000		
Other Majority and Local Mobility Hub Functional Design	0		$200,000		

Notes:

* Based on 2016 system actuals and peer averages. Final costs may vary based on detailed budgets, year of implementation and final operational details.

** Vehicle requirements shown include spares and may vary at time of implementation based on system fleet standards.

*** The City's municipal share of one-time capital costs was 50% for the first phase of PTIF funding and is currently projected to be 27% for the second phase.

Greater Sudbury Transit Action Plan

Consolidated Long Term Transit Investment Strategy, Continued

Service Option	Vehicles **	Annual Service Hours	Total One Time Capital Costs***	Annual Operating Costs	Annual Net Municipal Costs
Other Medium-Term Expansion Options (Next 4-10 Years, Pending Funding)					
Service Options					
Option 5: Consistent and Extended Frequent Route 15-Minute Service	2	7,200	$1,140,000	$817,600	$660,500
Option 6: Community Connector Frequency Improvements	2	3,000	$400,000	$348,200	$304,500
Option 7: Weekday Commuter Frequency Improvements	7	10,100	$3,250,000	$1,242,900	$1,059,400
Option 8: Schedule Reliability Maintenance	3	8,800	$1,710,000	$1,002,800	$842,800
Option 9: Further Frequent Transit Improvements	11	28,000	$6,270,000	$3,200,300	$2,386,000
Option 10: Targeted Commuter Improvements on Other Routes	5	10,100	$2,110,000	$1,195,500	$938,500
Option 11: Implementation of Community Shuttle Route	2	2,500	$400,000	$292,300	$265,000
Option 12: Implementation of Additional Community Connector Route	1	2,800	$200,000	$319,400	$288,800
Option 13: Additional Midday and Weekend Handi-Transit Capacity	3	7,900	$600,000	$902,300	$866,000
Option 14: Additional On-Demand (TransCab) Service	0	0	$0	$69,000	$55,900
Complementing Capital / Infrastructure Investment					
Existing Fleet Replacement	0		$22,000,000		
Downtown Major Mobility Hub Construction / Improvement	0		$900,000		
Other Mobility Hub and Station Construction	0		$27,000,000		
Park & Ride Construction	0		$1,200,000		
Bus Rapid Transit Vehilces (Articulated 60')	9		$6,900,000		
Ongoing Technology improvements	0		$900,000		
Total of All Options	**51**	**122,400**	**$114,003,000**	**$14,122,900**	**$11,632,600**

Notes:

* Based on 2016 system actuals and peer averages. Final costs may vary based on detailed budgets, year of implementation and final operational details.

** Vehicle requirements shown include spares and may vary at time of implementation based on system fleet standards.

*** The City's municipal share of one-time capital costs was 50% for the first phase of PTIF funding and is currently projected to be 27% for the second phase.

In Focus: Other Supporting Strategies

In addition to the specific service and infrastructure improvements outlined in the Long Term Investment Plan, some of the complementing strategies recommended include:

- **Implementing fare changes to reward and attract regular riders** and make the system more equitable and easier to use, including lowering the cost of adult and student monthly passes and increasing the time available for transfers.
- Implementing **Smart Card** fare technology.
- **Increasing customer care and passenger information** through refreshed customer information materials, expanding the Mobility Training Program and creating a municipal staff and community liaison to help promote the system and support customer outreach and care.
- Improving **system security** and sense of safety for passengers and transit system staff.
- Improving **bus stop amenities**, a refresh to all system customer information, and standardization of stops.
- Implementing **bike racks** on all transit vehicles.
- Aligning **land use planning, road infrastructure changes** and transit to accommodate future Bus Rapid Transit.

Moving Forward: Next Steps and Recommendations

The Transit Action Plan outlines the activities that the City should take to transform its transit network by first prudently using existing transit resources to make things better to attract more riders. A blueprint has also been laid out to take Greater Sudbury Transit to the next level, which is in line with the City of Greater Sudbury vision and its values.

The Greater Sudbury Transit Action Plan is being provided to the City of Greater Sudbury Council for its consideration, selection of service options as applicable, and approval to move forward to implementation.

It is recommended that the City of Greater Sudbury approve, in principle, the recommendations of the Transit Action Plan and take steps to implement the immediate changes, conduct the planning required to undertake the supporting infrastructure improvements, and better align land use with these investments.

1 INTRODUCTION

Greater Sudbury's Transit Action Plan

1 INTRODUCTION: GREATER SUDBURY'S TRANSIT ACTION PLAN

Connection is at the heart of great cities.

Whether it be connecting to each other, to employment and education opportunities, healthcare or the daily basics of life, that connection is what makes communities thrive.

As a fundamental part of the City of Greater Sudbury's transportation network, Greater Sudbury Transit already plays a key role in making connection possible for residents: the system provides safe, reliable and affordable transportation service for more than 4 million passengers each year. Positioning the City for further prosperity and success means celebrating the role that transit already serves and also taking the time to carefully consider how it can meet even more resident needs now and into the future.

Greater Sudbury Transit Action Plan
Overall Objectives:

- Undertake a comprehensive analysis of Greater Sudbury Transit routes, service levels and service models, including Handi-Transit and TransCab service.
- Hear from transit passengers, staff, stakeholders and the larger community about how transit can continue to improve to meet the City's diverse transportation needs.
- Consider all potential opportunities to improve the efficiency and effectiveness of Greater Sudbury Transit.
- Identify potential recommended service, infrastructure and related improvements, now and over the long term.
- Build public awareness and support of Greater Sudbury Transit and its services.

The **Greater Sudbury Transit Action Plan** is a comprehensive review of the local public transit system with the goal of achieving better routes, schedules and overall service, now and over the long term. Led on behalf of the City by the Transit Consulting Network (TCN), a consortium of public transit specialists from across the country, the Transit Action Plan has been collaboratively developed with City staff, community leaders, passengers, stakeholders, and the community at large. Encompassing all types of service and all areas of the community, the Transit Action Plan is the most comprehensive review of public transit in the City's history. Originally initiated to examine ways to optimize existing service, the Transit Action Plan also looks long term. It designates the key corridors and connection points where the City should focus development, infrastructure investment and service improvements to maximize ridership and the long-term effectiveness of the system in helping to achieve community goals.

The objective of the study has been to develop an integrated transit service plan that undertakes a detailed analysis of the existing system and builds on the many examples of existing successes. Even more importantly, the goal of the Plan is to create an actionable path to implementing improvements to

the system – Better routes. Better schedules. Better service. These improvements incorporate best practices in route/ service design, infrastructure and technology tailored to meet the unique needs and environment of Greater Sudbury and its resident and business priorities.

The project is made possible through the Canada-Ontario Public Transit Infrastructure Fund (PTIF). The Government of Canada is cost-matching a municipal investment of $620,000 for the plan and resulting infrastructure improvements under the administration of the Ontario Ministry of Transportation.

1.1 Project Key Questions

A successful transit system is made up of many different components that must all function together and be at their best in order to serve people well. This includes routes, schedules, infrastructure like bus stops and terminals, vehicles, fares, customer information, supporting technology, and policies.

At the same time, a community's population, the location of its key destinations, economic factors and its physical shape and road network– today and in the future–also influences how efficiently and effectively its transit system can perform. Creating a viable path to improving transit depends on carefully considering all of these system-level and community aspects together.

Therefore, the Greater Sudbury Transit Action Plan has considered all of these components individually and in a holistic way. The highlight box below describes some of the key questions that the project team has asked during this process to guide the Plan's development.

The initial goal of the Transit Action Plan has been focussed on how the system's existing resources—buses, staff and hours of service—can immediately be deployed differently: **How do we make adjustments to Greater Sudbury Transit that will meet community needs to the extent possible within the existing 170,000 revenue hours of transit service provided today?**

On March 14, 2018 the Governments of Canada and Ontario signed an Integrated Bilateral Agreement for the Investing in Canada Infrastructure Program. With an end date of March 31, 2028 and assuming a municipal contribution of 27%, this program provides a potential total funding maximum of $99.4 million towards public transit infrastructure projects over the next ten years within the City of Greater Sudbury. This Transit Action Plan was expanded to encompass a longer-term approach by building on the transit infrastructure funding.

Through all of its analysis and recommendations, the Greater Sudbury Transit Action Plan has sought to answer that key framing question of how to use existing transit resources more wisely now, as well as determine the transit system structure and investment priorities that can leverage the enhanced infrastructure funding to deliver the best possible value to Greater Sudbury.

In Focus: Transit Action Plan Key Questions

Beyond its general goals, the Transit Action 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 principles** and service standards should be employed moving forward?
- What transit **infrastructure** (e.g. bus stop location and design**)** 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 will **Accessibility** for Ontarians with Disability Act (AODA) legislation impact conventional transit and specialized transit operations?
- How can **technology** deliver better decision-making information and make the system easier to use for customers?
- How can the results of this study help the City better qualify for **future external funding** programs such as the Public Transit Infrastructure Fund?
- How can the City's **land use and development policies** also be refined to enhance transit?

To address the questions, the study addressed future services relative to an action plan that will:

- Focus on transit operations and the unique Greater Sudbury environment and roadway network.
- Update route and service design principles based on what both transit customers and non-transit users are saying to make transit more convenient and, increasingly, the mode of choice.
- Embrace the 'family of services' transit concept that provides layers of different types of transit services to best serve Greater Sudbury's diverse resident needs and development patterns within the community.

1.2 Project Collaborative Process and Timeline

Building community-wide support for the Greater Sudbury Transit System and this Plan's resulting recommendations has been of paramount importance. Therefore, the Transit Action Plan process has been based on unprecedented community engagement that has been inclusive and transparent.

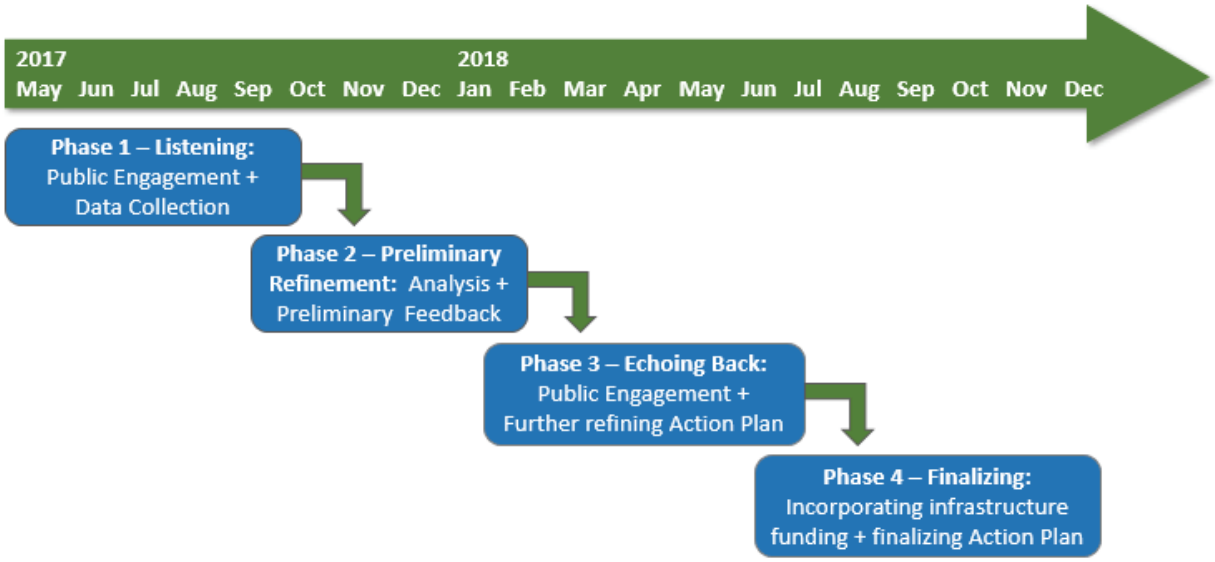
The Transit Action Plan has heard from community leaders and staff, existing transit users and future users through a wide array of in-person and on-line techniques. These techniques have included online and paper surveys, stakeholder workshops, open houses at the system's main transit terminal and potential hub areas, post-secondary schools, major employment centres and "pop up" open houses at high traffic locations around the community (grocery stores, libraries, shopping centres, etc.).

Some of the many open houses and workshop events held as part of the Transit Action Plan's Phase I engagement.

The overall Transit Action Plan process consisted of four phases:

- **Phase 1: Critical Evaluation of Existing Transit Issues and Opportunities** - This phase analyzed the system's current performance, documented community needs and determined the system issues and opportunities that were used to form recommendations in Phase 2. The focus of engagement in this phase was on hearing from the public to tell us what's working and what's not. Data was collected and analyzed to support what was brought forward by the public, and was used to substantiate key findings and draft recommendations.
- **Phase 2: Creation of Draft Report and Preliminary Proposals** – Building from the information collected in Phase I, this phase culminated with the development of preliminary recommendations for the system. This included creating the draft long term and short-term route networks, service plans, policies, infrastructure and supporting measures that will be used to further improve Greater Sudbury Transit over the short, medium and long term. Engagement in this phase was undertaken to refine the detailed preliminary proposals with transit system staff, City leaders and key community representatives.
- **Phase 3: Collaboratively Refine Draft Recommendations and Refine Report** – This phase presented the information collected to date and resulting preliminary recommendations back to the public to enable the community to help refine and prioritize proposals. This public feedback was used to make numerous adjustments to the proposals found in this final report.
- **Phase 4: Incorporate Longer Term Infrastructure Elements and Finalize Action Plan** – This phase incorporated final routing and infrastructure recommendations to align with new long-term funding for transit infrastructure and the development of key corridors. It also finalized the Transit Action Plan. Appendices A and B provide information on the methodologies and results of public engagement undertaken in Phases 1 and 3 and how this feedback helped shape the final Plan. The results of the detailed analysis of existing services undertaken in Phase 1 are presented in Appendix C.

Project Key Phases and Timeline:



2 FOUNDATIONS:

The Link Between Transit and the Community

2 FOUNDATIONS: THE LINK BETWEEN TRANSIT AND THE COMMUNITY

In order to succeed, there must be a clear interrelationship between the larger goals and objectives of the City of Greater Sudbury, its residents and those of the transit system.

This section describes how larger community plans and goals shape the Transit Action Plan and, in turn, how a robust and healthy transit system benefits the community. The changing demographics and economic picture of the City are also explored, along with their implications for future transit passenger markets and growth.

2.1 Greater Together – Transit and Greater Sudbury's Larger Strategic Goals

The City of Greater Sudbury is well known as a desirable place to live given its evolving and growing diverse economy, multiple post-secondary education institutions, status as a Northern Health Centre, and its prominence as an international centre for mining research. This overall economic picture means that transportation patterns within the region are fairly diverse and encompass many different potential passenger markets for transit.

At the same time, Greater Sudbury is a "community of communities," with a population of over 160,000 residents spread over an area of 3,267 km^2. Again, the diversity of these population centres and the scale of the overall City makes it unique. It also means that any transit solution needs to align with this diversity and balance best practices from elsewhere with the specific goals and context of the City to create a truly "Made in Greater Sudbury" approach.

To ensure that the Transit Action Plan builds on and is in line with recent municipal initiatives, the Plan process has examined how key recent City documents have provided direction with respect to transit system goals. These City of Greater Sudbury documents include *Greater Together 2015-2018 Corporate Strategic Plan*, *Greater Sudbury Transportation Master Plan Report Executive Summary* (January 2017 TMP) and *Greater Sudbury Official Plan* (2016).

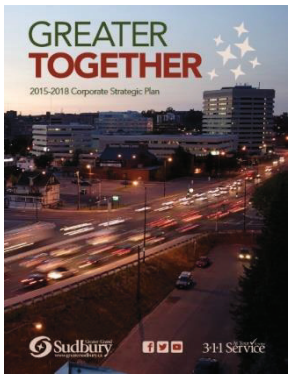
The following provides an overview of each of those documents and how they interrelate with and guide the Transit Action Plan.

In Focus: Overall Guiding Direction to the Transit Action Plan from Existing City Documents

When considered together, the key directives to the Transit Action Plan from the City's *2015-2018 Corporate Strategic Plan*, *Transportation Master Plan* (2017) and *Official Plan* (2016) are as follows:

- Creating a transit system that focuses on **reliability**, **convenience** and **safety**, as well as **connecting neighborhoods and communities** within Greater Sudbury.
- Providing **quality multimodal transportation alternatives** for roads, transit, trails, paths and sidewalks, and supporting multi-modal strategies.
- Meeting '**complete street**' and **active transportation** requirements since all transit customers are pedestrians while some are bicyclists.
- Offering **more direct transit travel** so that transit can better compete with auto travel.
- Implementing **transit supportive land use** and site design guidelines that in turn support the effectiveness of transit.
- Recognizing that Greater Sudbury has transitioned to a **service-based economy**.
- Expanding employment opportunities especially for **younger persons**.
- Meeting transit expectations of many **new Canadians** who have immigrated to Sudbury from other places with high usage of transit.
- Having the **infrastructure in place to support transit** service initiatives and service expansion into new planned developments.

Greater Together, 2015-2018 Corporate Strategic Plan[1]



This Strategic Plan sets out the City of Greater Sudbury's overall priorities, goals & initiatives. Sustainable Infrastructure, is one of four key pillars with Priority D, "Provide quality multi-modal transportation alternative for roads, transit, trails, paths and sidewalks and connect neighbourhoods and communities within Greater Sudbury."

This document is important to the Transit Action Plan because it provides strategic Council support for transit in Greater Sudbury, as well as the specific direction to complete the Transit Master Plan and review and modify the transit system with a focus on reliability, convenience, safety and connecting neighbourhoods and communities.

City of Greater Sudbury, Official Plan (Updated October 2017) [2]

The Official Plan (The OP) is a blueprint to help guide Greater Sudbury's development over the next twenty years. It establishes the City's long-term goals, shapes policies and outlines social, economic, natural, and built environment strategies.

The Official Plan is important to the Transit Action Plan because it provides transit supportive land use and transportation policies to encourage and promote transit use. It also notes that increased transit use can help the City improve air quality and achieve Kyoto air emission targets and alleviate traffic congestion on arterial roads.

Some of the specific directions related to transit in the Official Plan include:

- Clearly stating that "public transit remains a key component of the transportation network."
- Outlining policies that increase capacity, the attractiveness and operational efficiency of transit.
- Focusing development proposals within 500 metres walk distance of a bus stops.
- Siting buildings close to the street to reduce walk distances.
- Integrating walkways with transit stops and trail systems.
- Intensifying residential development (higher densities) within existing urban areas.

In Focus: The Critical Link Between Land Use and Transit

A key element of the Official Plan is determining the zoning and policies for land use and development that guide how intensively areas will be used.

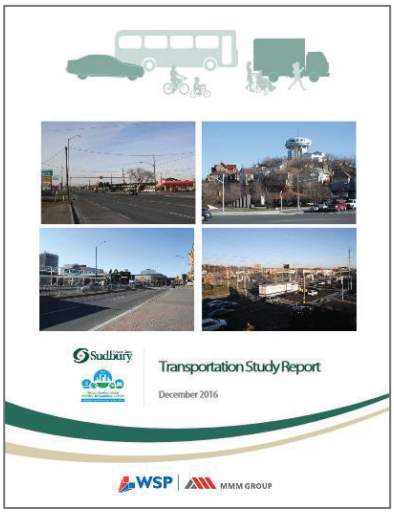
While "density" is relative and will look different in each community--apartment buildings in some areas, smaller houses or in-fill houses in others—in general, the more people who live and work within proximity to existing transit services, the more effective and efficient those services will be.

Besides supporting transit, focussing new development in these existing areas also tends to help create communities where residents can more easily access services by walking and the continued support of healthy, vibrant places.

[1] Greater Together 2015-2018 Corporate Strategic Plan:
https://www.greatersudbury.ca/sudburyen/assets/File/Comms/2015%20Council%20Strategic%20Plan%20EN%20(2).pdf
[2] City of Greater Sudbury, Official Plan (2016):
https://www.greatersudbury.ca/sudburyen/assets/File/Comms/2015%20Council%20Strategic%20Plan%20EN%20(2).pdf

- Providing pedestrian walkways to transit stops.
- Providing transit service economically to new institutional uses.
- Creating road improvements that support transit, such as exclusive transit links or lanes.
- Improving fare collection methods.
- Introducing transit passes and other tools to promote transit.
- Expanding transit routes as part of new subdivision design.
- Improving bus stops integrated with shelters, route information displays, bus bay construction, and addition of bike racks on buses.
- Improving overall accessibility of service consistent with the City's Accessibility Plan.
- Promoting the use of alternative fuels.

Transportation Master Plan, City of Greater Sudbury (2016)[3]



The City of Greater Sudbury's Transportation Master Plan proposes a sustainable transportation network for pedestrians, cyclists, transit and vehicles that accommodates projected demands to the year 2031.

Some of the key findings from the Transportation Master Plan include:

- Transit ridership from 2003 to 2013 has grown 20% and transit trips per capital increased 23% between 2003 and 2011 (census), while the City population increased 2.6%. Much of this increased ridership is attributed to the introduction of the U-Pass (full-time undergrad students).
- Most transit trips are between New Sudbury or Laurentian University and the downtown core.
- That in general, transit trips mirror the overall travel demand findings that the majority of afternoon peak period trips are within the City of Sudbury, followed by trips to Nickel Centre, Valley East, Walden, Rayside-Balfour, Capreol, and Onaping Falls, respectively.
- Alternatives to the South Bay Road extension include a focus on improving transit and high occupancy vehicle (HOV) access.

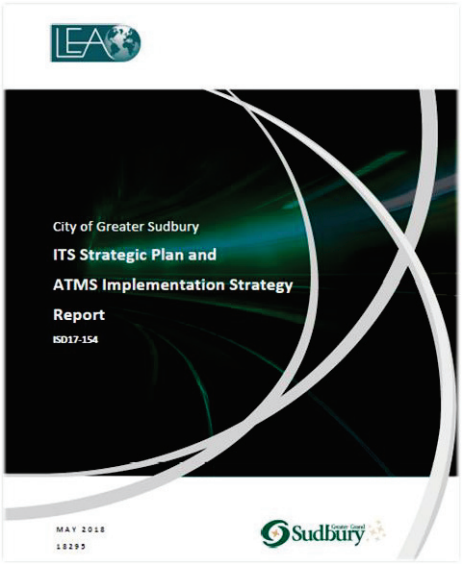
Key recommendations from the Transportation Master Plan which have been considered as part of the Transit Action Plan include the implementation of:

- Transit priority signals at the Ramsey Lake Road intersection and transit-only queue jump lanes.
- Increased transit frequency
- Parking policies at Laurentian University and Hospital that support higher occupancy vehicle use and other Transportation Demand Management (TDM) measures.
- Development of a comprehensive and connected sidewalk system.

[3] City of Greater Sudbury, Transportation Master Plan (2016): https://www.greatersudbury.ca/live/transportation-parking-and-roads/roads/draft-transportation-master-plan1/

ITS Strategic Plan and ATMS Implementation Strategy (2018)

The City of Greater Sudbury Intelligent Transportation System (ITS) focusses on improvements to the existing systems while the Advanced Traffic Management System (ATMS) Implementation Strategy proposes a rollout strategy to modernize and maximize traffic signal control operations.



Key recommendations from the ITS Strategic Plan and ATMS which have been considered as part of the Transit Action Plan include the implementation of measures to:

- Proactively manage traffic to help facilitate the reliability of transit through transit signal priority
- Detect incidents
- Provide CCTV and video monitoring, real-time travel time monitoring and road weather information

As the ITS Strategic Plan and ATMS Implementation Strategy moves forward for implementation, they should align with the future Bus Rapid Transit corridors identified in this plan, particularly those of the Frequent Transit and Community Connector routes, as well as the enhancement of overall turning movements for transit identified in this Plan where ATMS can play a proactive role.

Transit Long-term Capital Financial Plan (2016): 2016-2055

The City of Greater Sudbury Transit Long-term Capital Financial Plan was developed in 2016, which was an update to the plan presented to Council in 2011.

The updated plan provided capital for:

- 12.2 metre (40') conventional transit buses
- 18.3 meter (60') articulated buses
- Bus rebuilds
- Service trucks and vans
- Bus stop infrastructure
- Transit technology such as smart cards and automated vehicle location and control

Since the time the 2011 capital plan was updated in 2016, there were two funding announcements made, namely:

- In August 2016 the Federal Public Transit Infrastructure Fund (PTIF) provided Phase I funding for transit rolling stock, infrastructure and technology across Canada for municipalities that invest in public transit. The formula provides for 50% funding by the Federal government, and 50% Municipal. The City of Greater Sudbury was awarded $14.6M of eligible costs to be invested in 16 projects which must be completed by March 2020.

- On March 14, 2018 the Governments of Canada and Ontario signed an Integrated Bilateral Agreement for the Investing in Canada Infrastructure Program. With an end date of March 31, 2028, the Program encompasses several investment streams. The Public Transit stream allocates a maximum contribution over that time period to the City of Greater Sudbury of $39.8 million in federal funding and $32.8 million provincial. Assuming a municipal contribution of 27%, this provides a potential total funding maximum of $99.4 million towards public transit infrastructure projects over the next ten years within the City of Greater Sudbury.

The Transit Action Plan, therefore, has been refined to consider the transit capital plan priorities over the 10-year (2019-2028) based on logical investment in the system to meet best practices and reach the desired outcomes heard in the community engagement process.

2.2 The Case to Support Transit Investment

As shown in the above larger strategic plans, transit is seen by the community to be an integral part of City services and the continued success of Greater Sudbury. Supporting these, there are a number of ways that investment in transit supports key City environmental, social and economic goals.

How Transit Investment Benefits Greater Sudbury

- Improving economic and social development by enabling access to employment, education, healthcare and services, and by providing businesses with better access to employees and markets.
- Improving the development of Greater Sudbury as a livable community by encouraging more efficient and pedestrian friendly land use patterns that reduce automobile dependence.
- Improving mobility, independent living, accessibility, and civic participation for all citizens, regardless of age, ability or income.
- Reducing environmental impacts and congestion since an average transit trip results in less energy use and pollution per person than the same trip made by private automobile.
- Reducing infrastructure costs by decreasing the land, construction, and maintenance costs for expanded roadways and parking facilities.

In Focus: Family Economic Gains Through Reduced Need to Own Multiple Cars

The ability to reduce car ownership can have a profound effect on a household's finances and quality of life. The table below from the Canadian Automobile Association shows the true cost of car ownership using a Camry LE.

ANNUAL DRIVING COSTS – based on the Camry LE

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

For auto owners that drive 24,000 kilometres per year, the total annual cost reported to own and operate a vehicle is $11,751. Even adjusting this conservatively by 75%, this would still equate to $8,813 per year or $734 per month compared to a Greater Sudbury Transit monthly bus pass at $87 for adults, saving residents $647 per month.

The savings would likely be spent on local goods and services, improving the quality of life of residents and supporting local businesses.

"I'm 15 and this is my main mode of transportation."

"I choose to use the bus to get to work, better for environment and more economical so I don't have to pay for parking."

"...I love the transit system and wish more people would use it."

" I can collect my grandkids from daycare and bring them home."

Some of the many participant comments from the first phase of public engagement on how they believe Greater Sudbury Transit benefits the City.

2.3 Emerging Markets: Meeting Greater Sudbury's Changing Population

The table at right shows how Greater Sudbury's population has changed over the last two Statistics Canada Census periods. Age categories highlighted have been aggregated to align with typical transit markets. Total population and the number of recent immigrants—those who have migrated to the City from other countries over the previous five years—are also shown.

In general, this table shows:

	Ontario			Greater Sudbury		
Characteristics	2011	2016	% Change	2011	2016	% Change
Total private dwellings	5,308,785	5,598,391	5%	72,420	76,619	6%
Total Population	12,851,821	13,448,494	5%	163,067	164,689	1%
Average age of the population	-	41		-	42.2	
Population by Age Group						
0 to 14 years	2,180,770	2,207,970	1%	24,980	25,580	2%
15 to 24 years	1,716,545	1,706,060	-1%	21,015	20,025	-5%
25 to 59 years	6,310,535	6,436,665	2%	78,175	77,735	-1%
60 to 74 years	1,769,920	2,112,535	19%	24,295	27,950	15%
75 years and over	874,060	985,270	13%	11,840	13,395	13%
Immigration	2006-2010	2011-2016		2006-2010	2011-2016	
Number of Recent Immigrants*	463,170	472,170	2%	765	1,005	31%

* Number of people who have immigrated to the location from other countries since the previous census.

Source: Statistics Canada Census Community Profiles, 2011, 2016

The number of youth (aged 15-24 years) who would typically include secondary and post-secondary students has declined somewhat (-5%) but the population of younger children has grown slightly (2%).

- Since younger children are growing into the youth category, this means this market will still continue to be a factor in the system.
- Millennials are by far the most transit-supportive population in decades, environmentally conscious and more technology savvy. Retaining and building on this youth market as they grow older will be key, particularly by continuing to improve frequencies at commuting times and continuing to improve the convenience of the transit experience through technology.

The number of younger seniors (age 60-74 years) and older seniors (75 years and older) are growing substantially (15% and 13%, respectively).

- People are living longer and preferring to age-in-place. In this case, continuing to improve the convenience of transit throughout the day, direct outreach to younger seniors who might not yet have acquired the habit of taking transit or lost their ability to drive, and ongoing accessibility improvements to vehicles and infrastructure can help attract and retain this market.
- Older seniors also have implications for Handi-Transit demand, which can best be supported and managed through clear eligibility guidelines and application processes that ensure that seniors are aware of the full suite of transit services (conventional, TransCab and Handi-Transit) that may be available to them.

While low in absolute numbers, recent immigrants to Greater Sudbury from other countries, as well as internal migrants within Ontario from larger centres, also are a key potential ridership market as these populations often arrive from places where good public transit is the norm. Continued outreach to these groups and development of transit convenience and frequency helps attract and retain these markets.

Beyond just the changes shown to population, Greater Sudbury's economy has also continued to evolve in terms of its diversity and movement to be more service-based. Again, continuing to develop the simplicity of the system and its clear and frequent service to key commercial, service and institutional employers enables residents to use transit to commute. A strong transit system can also be a factor in attracting new employers to the area and it is wise to ensure that any City economic development plans also consider transit as a tool to help attract businesses to fulfill its prosperity goals.

Key Observation: A robust policy framework supports the transit system by clearly stating how decisions are made and by creating the community conditions for its ongoing success**.**

However, to best support transit, plans must align in both directions. Key supporting documents such as the Official Plan and the Advanced Traffic Management System Implementation Strategy should be carefully reviewed and amended to reflect the final recommendations of the Transit Action Plan, in particular with respect to focusing infrastructure investment and intensification of land use on Frequent Transit and Community Connectors and Major and Local Mobility Hubs.

Summing it Up: The Link Between Transit and the Community Key Findings

- Greater Sudbury's major plans--including its Corporate Strategic Plan, Official Plan and Transportation Master Plan—note the importance of supporting transit and improved multi-modal choice for residents.
- Increasing the directness and reliability of transit travel and creating supportive land use and infrastructure are seen as some of the key priorities.
- Increased investment in transit benefits the social, economic and environmental well-being of the community in multiple ways, and these benefits were recognized by participants in recent Transit Action Plan engagements.
- Greater Sudbury's population is changing. Improvements to the Transit Action Plan and its service strategies need to address emerging travel needs for a growing population of seniors, a younger generation that is more open and willing to take transit and the arrival within the City of many new Canadians who are already transit savvy based on their experiences in their countries of origin.

3 EVALUATION OF EXISTING TRANSIT SERVICES

3 EVALUATION OF EXISTING TRANSIT SERVICES

3.1 Overview of Existing Family of Services

As detailed in the table below, Greater Sudbury Transit today encompasses three main types of service to serve the diverse needs of the community's land area and its population. Some of these services are operated by the City of Greater Sudbury's transit department while others are provided through contract with private operating companies.

Together, these various types of transit serve over four million customers per year. This existing level of ridership and the diversity of service and operating entities already in place presents a strong foundation to build from. The recommendations presented in the Transit Action Plan start from the position of first redeploying the current 170,000 hours of service per year to attract and carry even more passengers. Additional priority investment then builds from this base.

Table 1 – Greater Sudbury Transit's Existing Family of Transit Services

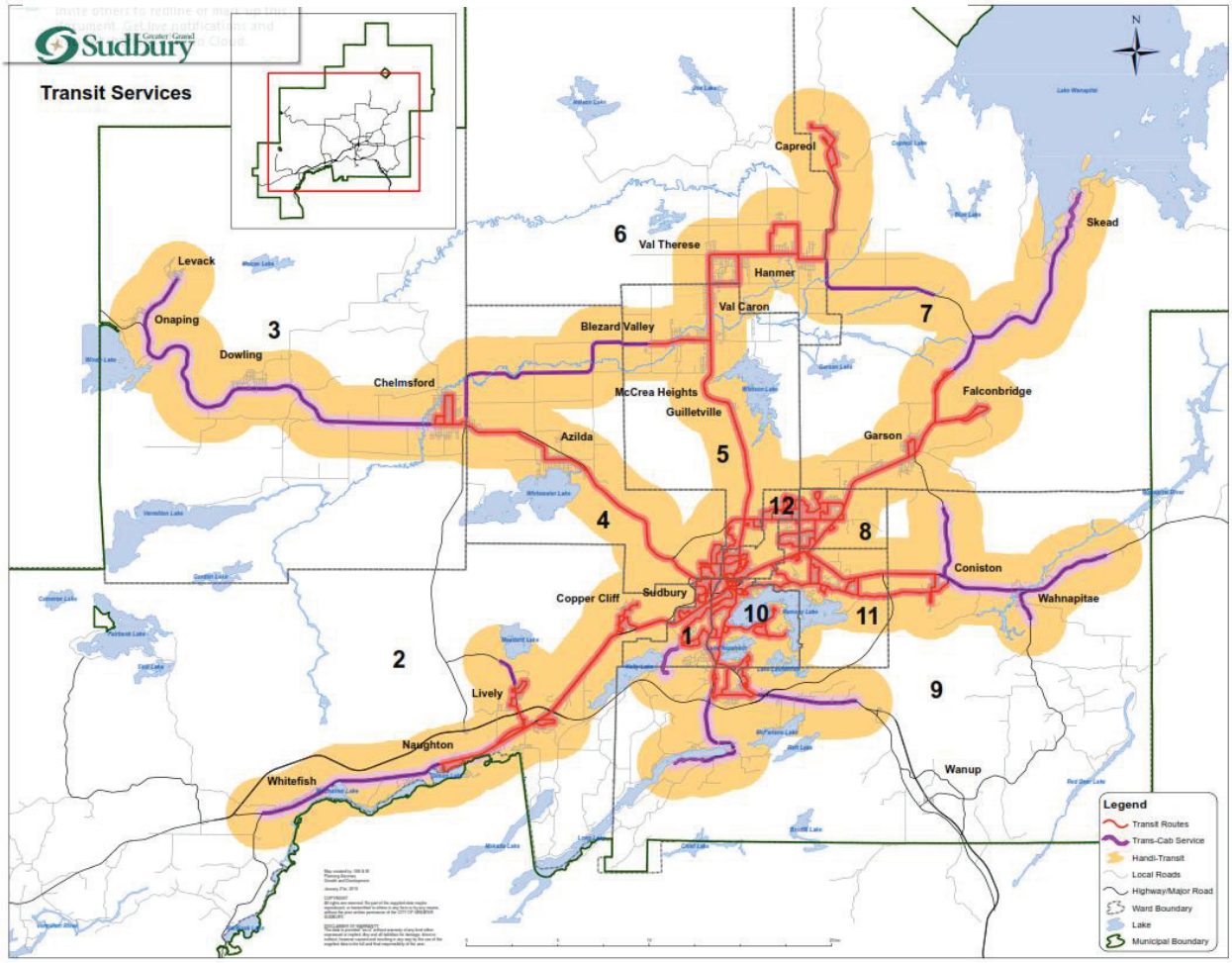
Service Type	Description and Market Served	How Service Operates
Conventional Transit	Serves stops in higher population areas using "fixed routes" (i.e. routes that are published) and regularly scheduled trips.	Service is operated by City of Greater Sudbury staff and uses standard-sized (12.2m) fully accessible transit vehicles.
TransCab	Serves lower density and outlying communities within the City that are not easily accessible by Greater Sudbury Transit conventional buses and which offer connection to Conventional Transit at key points.	TransCab trips are contracted to local taxi companies and consist of two types of services: • **On-Demand TransCab** provides service to any point within designated areas and operates on a call-in 90-minute advance booking basis using sedans or vans. • **Fixed-Route TransCab** uses smaller (7.3m) buses as part of a current pilot project, picking up at designated 'bus stops' on a regular schedule and feeding into Conventional Transit.
Handi-Transit (also known as "Specialized Transit)	Provides on-demand transportation to and from accessible building entrances to persons who have physical disabilities and are unable to use the Conventional Transit services.	Handi-Transit services are operated through contract by a private operating company and use smaller buses to deliver services. Handi-Transit users must be eligible and registered with the system and call ahead to book trips.

The **Conventional Transit Service is** delivered by 12.2 metre (40-foot) buses serving routes and stops in higher population areas through a regularly scheduled fixed route network system. Greater Sudbury Transit operates with a fleet of 59 accessible buses on 38 routes, seven days a week. These routes cover more than 4.2 million kilometres and provide approximately 4.5 million passenger trips on an annual basis.

Supplementing the Conventional Service, **TransCab Service** serves lower population density and outlying communities within the City that are not easily accessible by Greater Sudbury Transit conventional buses and which offer connection to Conventional Transit at key points. The TransCab Service is a door-to-door demand response shared service and is delivered by partner taxi companies to nine designated areas. Collectively the TransCab routes cover more than 240,000 kilometres and provide approximately 38,000 trips on an annual basis.

Handi-Transit Service provides transportation to persons who have physical disabilities and are unable to use the Conventional Transit services. Handi-Transit services the same area as Greater Sudbury Transit buses and TransCabs, with boundaries that extend three kilometres. The service operates with 15 specialized accessible buses, supplemented with conventional taxi services when necessary. The service covers more than 1.3 million kilometres and provides approximately 130,000 passenger trips on an annual basis.

Figure 1 - Greater Sudbury Transit Services



In Focus: What Methods Were Used to Analyze Existing Services?

The proposed changes in the Transit Action Plan were the result of a process of evaluation using many different sources, including:

- **Community Priorities** gathered from front line transit staff, passengers and the public through various methods, as described in the overview of engagement process and outcomes in Appendices A and B. This analysis also looked at existing long-term Greater Sudbury community plans (Official Plan, Transportation Master Plan, Greater Together: Strategic Plan, etc.) to ensure that recommendations align with the long-term vision of the City.
- **Existing and Historical Data** on ridership and performance from a variety of sources (See Appendix C for detailed results), including ridership, fare and schedule data from various technologies on board buses (Automated Passenger Counters, fareboxes, GPS units), information from the City's Geographic Information System and ongoing reporting from TransCab and Handi-Transit services.
- **Comparison to Transit System Peers** by looking at how Greater Sudbury Transit compares to that of Canadian peers similar in size to Greater Sudbury Transit, as well as perspective provided by multiple site visits and field work by the Transit Consulting Network team members (See Appendix C for detailed results).

3.2 Analysis by Existing Service Type

3.2.1 Conventional Transit Services

The following section provides an overview of the existing conventional service attributes and opportunities for improvement, with further detailed analysis also provided in Appendix C.

- **Service Span**: Greater Sudbury's existing conventional transit system operates daily with the exception of Christmas Day. As stated in the system's service standards, service spans from approximately 7:00am to 10:00pm, with early and later trips based on customer demand and a slightly later start time on Sundays and Statutory Holidays.
- **Service Frequencies**: Service frequencies range substantially between routes, with some operating 15-minute service at peak commuting periods (roughly 6:00am to 9:00am and 3:00pm to 6:00pm) and others operate three trips per day. While ongoing routing adjustments to the system have been made, the conventional transit system has not been substantially altered for many years.
- **Walking Distances**: Looking at the area covered by existing transit services in any system can provide a sense of the extent to which services are easily available to residents by a short walk. In the case of Greater Sudbury, this analysis also illustrates the immense scale of the community served.

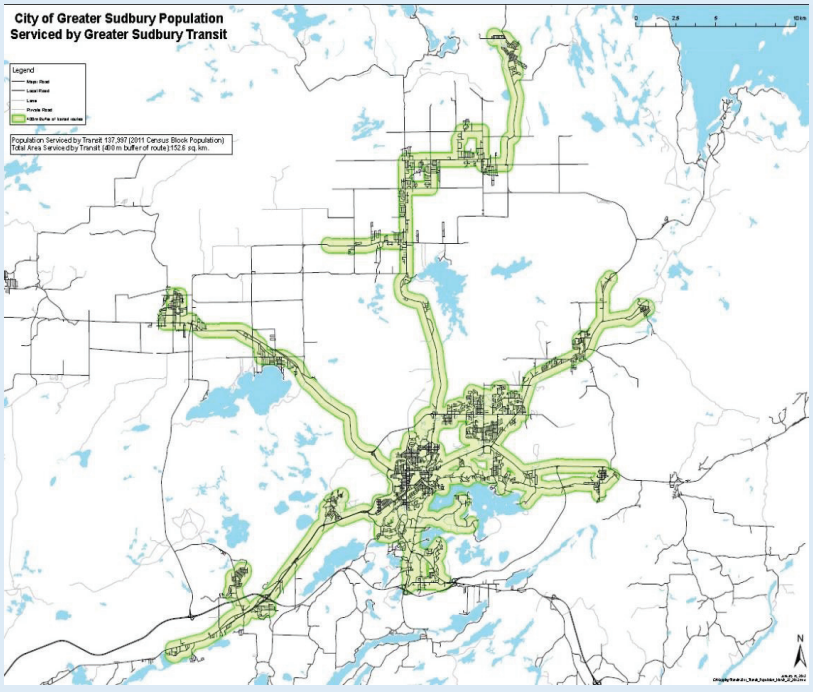
In Focus: Community Priorities for Conventional Service

The public engagement components of the Transit Action Plan identified the following three priority areas for improvement desired by the community:

- **Frequency** - More frequency especially during peak time and midday. There is a very strong desire to see Sunday Services improved.
- **Timely Travel** - More direct, faster routing including better connections, improved on-time performance and earlier morning service.
- **Improved Routing** - Easier to understand routes and schedules with less need to always travel via the Downtown Terminal and more service to the South End.

In Focus: Walking Distance

Figure 2 provides an overview of the population served within a 400m walking distance of the Conventional Route system. When also considering TransCab Services, approximately 90% of the population is within 400m crow-fly walking distances which is in line with the currently Service Design Standards. This means that while there may be still opportunity to improve access to transit, the general placement of fixed-route services – which always operate most efficiently when they are focused on higher population areas – is in an appropriate range.



- **Current Route Structure**: Greater Sudbury Transit's existing route structure is confusing, inefficient and does not clearly indicate the level of service on each corridor.
  Table 2 summarizes the system's routes and current characteristics by Service Area (Commuter and Urban). The large number of routes coupled with the varying service designs lends to the complexity of the network, which was reflected in the community priorities as an area of concern. Routes are not easily recognizable as being after 10pm, Holiday and Sunday schedule only, and the route numbering doesn't reflect an easy to recognize structure based on service design.

Table 2 – Route Service Summary by Service Area

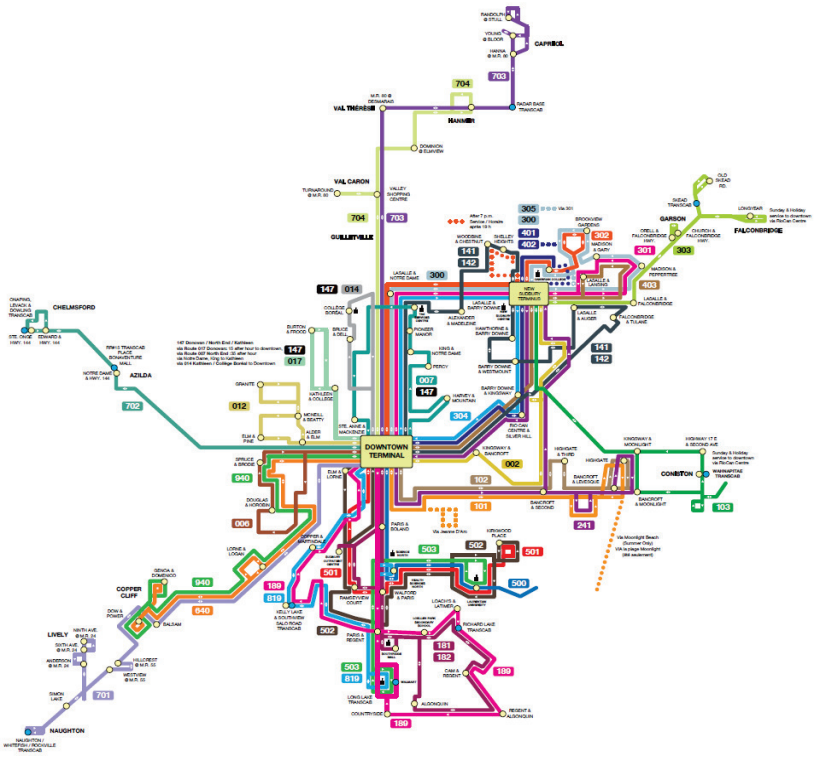
Commuter Route Service Summary		Weekday					Saturday					Sunday				
Route #	Route Name	First Trip	Last Trip	Service Frequency (Minutes) Peak/Off Peak/Evening	Cycle Time	# Vehicles Peak	First Trip	Last Trip	Service Frequency (Minutes) Peak/Off Peak/Evening	Cycle Time	# Vehicles Peak	First Trip	Last Trip	Service Frequency (Minutes) Peak/Off Peak/Evening	Cycle Time	# Vehicles Peak
103	Coniston	6:30	1:15	60/120/120	60	1	6:30	1:15	60/120/120	60	1	6:40	1:15	120/120/120	60	0.5
303	Garson/Falconbridge	6:25	1:15	30/120/120	60	2	6:25	1:15	60/120/120	60	1	6:26	0:30	120/120/120	60	0.5
701	Lively	6:15	1:30	90/120/60	120	1	6:15	1:30	60/120/60	120	2	6:00	1:30	120/120/120	120	1
702	Azilda/Chelmsford	6:25	1:30	75/90/120	120	2	6:25	1:30	90/90/120	120	1	6:20	1:30	120/120/120	120	1
703	Val Caron/Hanmer/Capreol	6:00	1:40	30/120/60	120	4	6:13	1:40	75/120/60	120	2	6:06	1:30	120/120/120	120	1
704	Blezard/Elmview	6:10	22:00	75/120/150	120	2	6:10	22:00	75/180/0	120	2	-	-	-	-	-
	Commuter Route Total	6:00	1:40	Varies	120	12	6:10	1:40	Varies	120	9	6:00	1:30	120	120	4

Urban Route Service Summary		Weekday					Saturday					Sunday				
Route #	Route Name	First Trip	Last Trip	Service Frequency (Minutes) Peak/Off Peak/Evening	Cycle Time	# Vehicles Peak	First Trip	Last Trip	Service Frequency (Minutes) Peak/Off Peak/Evening	Cycle Time	# Vehicles Peak	First Trip	Last Trip	Service Frequency (Minutes) Peak/Off Peak/Evening	Cycle Time	# Vehicles Peak
2	Second Avenue/Shopping Centre	6:15	22:15	30/30/30	60	2	6:15	22:15	30/30/30	60	2	-	-	-	-	-
6	West End	6:45	22:15	30/30/60	30	1	6:45	22:15	30/30/60	30	1	-	-	-	-	-
7	North End	7:30	22:00	60/60/60	30	0.5	7:30	22:00	60/60/60	30	0.5	-	-	-	-	-
12	McKim	7:00	21:30	60/60/60	30	0.5	7:00	21:30	60/60/60	30	0.5	-	-	-	-	-
14	Kathleen/College Boreal	6:45	22:15	15/30/60	30	2	6:45	22:15	30/30/60	30	1	-	-	-	-	-
15	Taxation Special	15:15	15:45	1 Trip	30	-	-	-	-	-	-	-	-	-	-	-
17	Donovan	6:23	21:45	30/30/60	30	1	6:23	21:45	30/30/60	30	1	-	-	-	-	-
101	Howey/Moonlight	6:40	22:15	60/60/60	60	1	6:40	22:15	60/60/60	60	1	-	-	-	-	-
102	Howey/Third Avenue	7:10	18:45	60/0/0	60	1	-	-	-	-	-	-	-	-	-	-
141	Westmount/Shopping Centre	6:40	10:15	60/0/0	60	1	-	-	-	-	-	-	-	-	-	-
142	Grandview/Shopping Centre	14:45	18:45	-	60	-	-	-	-	-	-	-	-	-	-	-
147	Donovan/North End/Kathleen	22:30	1:30	0/0/60	60	-	22:30	1:30	0/0/60	60	-	6:15	1:30	60/60/60	60	1
181	Paris/LoEllen	6:34	22:45	30/60/60	60	2	6:34	22:45	60/60/60	60	1	-	-	-	-	-
182	Ramsey View/Algonquin	6:45	22:15	30/60/60	60	2	7:15	22:15	60/60/60	60	1	-	-	-	-	-
189	Paris/LoEllen/Four Corners	22:30	1:30	0/0/60	60	-	22:30	1:30	0/0/60	60	-	6:15	1:30	60/60/60	60	1
241	Howey/Moonlight/Shopping Centre	22:30	1:30	0/0/60	60	-	22:30	1:30	0/0/60	60	-	6:40	1:30	60/60/60	60	1
300	Lasalle/Madison/Cambrian	22:30	1:30	0/0/60	60	-	22:30	1:30	0/0/60	60	-	6:35	1:15	60/60/60	60	1
301	Lasalle/Madison	6:12	22:45	30/30/30	60	2	6:12	22:45	30/30/30	60	2	-	-	-	-	-
302	Lasalle Cambrian	7:00	22:00	30/30/60	60	2	7:00	22:00	30/30/60	60	2	-	-	-	-	-
304	Lasalle/Shopping Centre	15:15	19:00	45/0/0	45	1	-	-	-	-	-	-	-	-		
305	Lasalle/Peppertree	-	-	-	-	-	-	-	-	-	-	6:15	1:30	60/0/60	60	1
400	Cambrian Express	7:15	10:00	30/0/0	30	1	-	-	-	30	-	-	-	-	-	-
401	Barrydowne/Cambrian	6:50	22:30	15/15/30	45	3	7:05	22:30	30/30/30	45	1.5	-	-	-	-	-
402	Barrydowne/Shopping Centre	-	-	-	-	-	-	-	-	-	-	11:15	19:15	0/60/0	60	-
403	Barrydowne/Madison	14:45	18:45	0/0/0	60	-	-	-	-	60	-	-	-	0/0/0	-	-
500	University via Paris	6:40	22:45	15/15/30	60	4	-	-	-	30	-	-	-	0/0/0	-	-
501	Regent/University	6:33	22:00	30/30/60	60	2	6:38	22:00	30/30/60	60	2	7:15	1:30	0/0/0	-	-
502	Regent/University/Four Corners	22:30	1:30	0/0/60	60	-	22:30	1:30	0/0/60	60	-	6:38	1:00	60/60/60	60	1
503	University/South End	12:00	19:30	0/45/0	45	-	12:00	19:30	0/30/0	45	-	-	-	-	-	-
640	WestEnd/Gatchell/Copperdiff	22:30	1:30	0/0/60	60	-	22:30	1:30	0/0/60	60	-	6:15	1:30	60/60/60	60	1
819	Copper/Four Corners	6:15	22:15	30/60/60	60	2	6:15	22:15	60/60/60	60	1	-	-	-	-	-
940	Gatchell/Copper Cliff	6:15	22:15	30/60/60	60	2	6:15	22:15	60/60/60	60	1			-	-	-
	Urban Route Total	6:15	1:30	Varies	30-60	33	6:15	1:30	Varies	30-60	19	6:15	1:30	60	60	7

Figure 3 - Greater Sudbury Existing Transit Route Map

In Focus: Route Structure

As shown on the existing service map in Figure 3, the system encompasses a very large number of routes: 38 in total. Rather than serving distinct areas, this large number of routes is mainly due to the Greater Sudbury Transit existing practice of operating slightly different routes Monday to Saturday before 10:00pm, others after 10:00pm, and others on Sundays and giving these routes corresponding different names and numbers. The route patterns also seem to indicate that there is duplication of travel on main corridors, and some seem circuitous. There is opportunity to restructure the route patterns to improve route directness and timely travel to address Community Priorities.



Key Observations and Other Highlights from the Detailed Conventional Service Analysis

- The patterns shown by destinations and route ridership indicate **there are already key corridors in the system that are driving the overall performance of the service** and which would likely respond well to further frequency and investment. The (13) thirteen highest ridership routes in the system represent more than three quarters with 76.1% of the ridership, with the remaining (25) twenty-five accounting for 23.9%.
- **Existing high ridership destinations in the system that should form the basis of any service restructuring** include the major employment area of the downtown Greater Sudbury Core, New Sudbury Shopping Centre, Kingsway Shopping Area, Health Sciences North, the Four Corners as well as the three post-secondary institutions - Laurentian University, Cambrian College and College Boréal.
- A **higher level of service and coverage is warranted on weekends, particularly Sundays.**
- There are some routes within the outlying areas (particularly routes 103, 303, 701 and 704) that could **benefit from an on-demand service model some or all of the time** due to their low ridership per hour of service.
- There are specific routes and areas where **on-time performance could be improved**, which could be partially addressed by making routes more direct and reducing the number of stops that are too close together (<400m apart).
- In general, **Greater Sudbury Transit carries more passengers than its peers** (carrying more passengers per hour of service and per capita) but has a **lower level of investment** (service hours per capita) that has not kept pace with population growth, ridership or traffic congestion.

3.2.3 TransCab Services

Greater Sudbury Transit has a very effective and efficient way of providing public transit services to vast lower population density areas through the integration of fixed route conventional transit services with contracted taxi services, known as TransCab. TransCab operates where implementing standard transit conventional vehicles would not be economical due to the lower population densities and more dispersed population and ridership. The same transit fares used on fixed route services are also used on TransCab services at no extra cost to riders.

Two types of TransCab services are operated within Greater Sudbury depending on the overall population density and level of demand:

- **Demand responsive service –** In this case, a transit rider must call to reserve a TransCab trip at least 90 minutes before boarding a bus when the starting point is with the TransCab service. One single bus fare pays for both services.

- **Fixed Route TransCab –** In this case, the taxis operate similar to conventional buses on a fixed route and schedule, using a smaller 7.3 metre (24 ft.) bus and has been part of a "pilot" since February 29, 2016. Fixed route TransCab service does not include services to or from a person's home; they operate similar to conventional transit.

In Focus: Community Priorities for TransCab Services

The public engagement components of the Transit Action Plan identified the following three priority areas for improvement desired by the community for TransCab services:

- **Frequency** - More time points, corresponding to all schedules.
- **Coverage** - Easier access by expanding the TransCab network.
- **Booking** - Easier to book through improved booking process, with less lead time and use of a single telephone number or other technologies.

In general, there was also a strong desire for improved service to Greater Sudbury's many outlying communities. At the same time, each has different population sizes and demographic needs.

Many respondents noted that it would be good to improve how the suite of transportation services are organized, deployed and communicated in these areas. This might include potential creation of mobility hubs that make it more convenient for connections to take place, Park & Rides, improved coordination and technology with TransCab services, and potential integration with some regularly scheduled Handi-Transit services, where feasible.

The following section provides an overview of the existing TransCab service attributes and opportunities for improvement, with further detailed analysis also provided in Appendix C.

- **Service Coverage**: TransCab service areas are outlined in Figure 1 as purple lines. The service is available to persons within a 400m distance from the road identified as a TransCab Area. TransCab services connect with the following transit routes and destinations:
  - 702 Alzilda/Chelmsford - TransCab to Dowling/Onaping/Levack
  - 704 Blezard/Elmview - TransCab to Municipal Road 15
  - 703 Val Caron/Hanmer/Capreol - TransCab to Radar Base
  - 819 Copper/Four Corners - TransCab to Long Lake
  - 819 Copper/Four corners - TransCab to Salo
  - 181 Paris/Lo-Ellen - TransCab to Richard Lake
  - 701 Lively - TransCab to Whitefish & Rockville
  - 103 Coniston - TransCab to Whanapitae
  - 303 Garson/Falconbridge - TransCab to Skead

- **Frequency**: TransCab Connection time points are published on the schedule of the Conventional Route. The time points have been selected based on available budget and historical use. Any additional time points would require Council approval as it requires an increase in the Operational Budget.

- **Cost per trip -** The cost per trip for TransCab service varies by service area, ranging from $9.19 per trip to $42.61 per trip with an overall 2016 average cost per trip of $21.14. Based on the end point of the route, and the expectation that a Greater Sudbury Transit route would be required to travel along the whole route no matter if the service is needed, the cost per hour for Greater Sudbury Transit to provide the same level of service is approximately three times of the cost to provide the service with TransCab. **Expanding services to low population density areas with TransCab is, therefore, cost effective compared to operating a standard bus, which is measured in cost per hour at approximately $110/hr.**

Key Observation: The route review points to some areas of the city which could benefit from converting conventional service to TransCab service, for some or all of the time. There is an opportunity to grow this efficient service by partnering with a third party who would be able to provide accessible vehicles. By expanding TransCab service to the boundaries serviced by Handi-Transit, coinciding with accessible vehicles, TransCab could then become the extension for both Conventional and Specialized services, reducing the demand on Handi-Transit and improving the overall effectiveness of service.

3.2.4 Handi-Transit Services

The following section provides an overview of the existing Handi-Transit service attributes and opportunities for improvement, with further detailed analysis also provided in Appendix C.

- **Operating Structure** - The service configuration – contracted to a private sector provider who provides nearly 90% of the rides in its own buses, and dispatches the remaining 10% to taxis – is an excellent formula for cost-effectiveness. Trip booking is managed through RouteMatch software. Advance notice for bookings is 48 hours. Only a minimal number of same-day trips are provided. One of the impacts of this is that the capacity freed-up by advance cancellations of bookings is not re-used productively.

- **Service Quality** - On-site and ride-along observations, and telephone interviews with passengers indicate a high-quality, well-managed service that operates over a very large territory. The vehicles are clean and well-appointed; drivers are courteous and capable, and apparently well-liked by the passengers. Maintenance facilities are well-organized and capably managed.

In Focus: Community Priorities for Handi-Transit Services

The public engagement components of the Transit Action Plan identified the following three priority areas for improvement desired by the community for Handi-Transit:

- **Booking** - Reduce lead time before travel, which is currently a minimum of 48 business hours. Easier to book by increasing the days when trips can be booked (7 days a week as opposed to 5 days a week).
- **Eligibility** - Consider expanding eligibility process.
- **Coordination of Services** - Provide more options for passengers by making it easier to also use TransCab and the accessible Conventional Transit services, encouraging their use, and providing travel training that would be required.

- **AODA Considerations** – The Accessibility for Ontarians with Disability Act (AODA) requires that any person unable to use transit because of a disability must be eligible for the specialized service. Up to the present time, Handi-Transit has considered only physical disabilities when assessing applicant. A service review is being undertaken to review eligibility processes and the mandate, to include all disabilities.

  Under the AODA, a Conditional Eligible category is required for people who only need Handi-Transit under certain conditions, such as the presence of ice and snow, or the need to make a complex trip on transit with one or more transfers. Although Conditional Eligibility may open up the eligibility door even wider, it can also be used as the foundation of dynamic eligibility determination policy, under which a Conditionally Eligible eligibility is assessed for each trip requested.

  The dynamic eligibility determination policy would allow for the Reservation agent to compare the client's abilities and limitations with access barriers in the fixed route transit environment for that trip (stop location, presence or absence of shelter, etc.) and would then decide what service is required for the trip (Conventional, Transcab, Specialized or a combination of). This process reduces demand for specialized transit in some instances, especially when combined with a Transit Travel Training program. There are good models in the US of the trip-by-trip eligibility process that Handi-Transit could adopt.

In Focus: Handi-Transit Eligibility Criteria and Application Process

There are a number of factors that are leading to increased demand for specialized transit services in the City of Greater Sudbury which is in line with the experience of other municipalities in Canada. The primary reasons are changing demographics and legislative changes. As capacity constraints become increasingly challenging, it is important to recognize that increasing costs and ridership, together with trip denials are usually a rationale for making improvements to the specialized transit's eligibility programs.

Enhancing the accuracy of eligibility processes is the most equitable and cost-effective way of serving the mobility needs of individuals who have no other mobility choice than to rely on the Handi-Transit Service. A **Specialized Service Review (Handi-Transit)** is being undertaken at the same time as the Transit Action Plan. The Transit Action Plan aims to provide a framework to build on in the future, where all service levels integrate. The Specialized Service review aims to provide recommendations on how the City of Greater Sudbury can improve on identifying an individual's environmental barriers which prevents them from taking the conventional bus for some or all of their trips.

The AODA requires that all riders of specialized transit services have their eligibility categorized under one of three types; unconditional, conditional and temporary. In Greater Sudbury Transit, the current practice in over 90 percent of situations where ridership is granted is that the rider is granted either unconditional or temporary eligibility. This is due to the limited amount of information Greater Sudbury Transit currently asks the applicant to provide in its current form-based application process.

There is a missed opportunity to provide efficient and convenient service to system riders: the best practice for application process being adopted in many transit systems is to provide more of a conversation and objective assessment process as part of applying for specialized transit services. This conversation enables the system to get a clearer picture of their abilities and needs. By requesting more information in the application process and having a better understanding of where the applicant needs to travel, system staff can more easily provide service options and guidance to passengers.

"Conditional eligibility" allows the Rider to use specialized transit but also opens up the ability, potentially, for the Rider to utilize the fully accessible conventional transit system which allows more freedom to travel independently and sporadically without having to book trips at times two days in advance.

With the aging population and the move to serve persons with cognitive disabilities, introducing a more robust Handi-Transit application process in tandem with improvements to other system services can help tailor services to the specific needs of each Rider and also ensure that precious Handi-Transit resources are preserved for those who most need them.

"Clients just phone and are picked up – don't have to walk to a bus stop… drivers are very accommodating"

Handi-Transit clients can wait inside for their ride. The driver comes in to get them. At the destination, the driver escorts them to the door"

"They let me know in advance when my rides will be"

The following points were raised by Handi-Transit clients who were interviewed by the consultant relative to what they appreciated about the service.

- **Service Span –** Service span mirrors the Conventional System, with service provided between the hours of 7am and midnight.
- **Service Area –** The geographic area served by Handi-Transit is three (3) km outside of the area served by Greater Sudbury Transit's Conventional Service, including TransCab. Trips may be requested outside the service area, and are subject to availability and road conditions.
- **Service Frequencies –** The service is based on a first come first served basis, and must be booked in advance at a minimum of 48 business hours. This is due to the fact that schedules must be created on a daily basis, and vary based on the demand. The number of trips allocated to the outlying communities should mirror those provided by the Conventional system.
- **Peer Comparison –** In general, when compared with its peers, Greater Sudbury Handi-Transit showed higher direct operating expense, ridership and the number of registrants per capita, but a cost per hour that was in line with the peer average and a cost per passenger carried that was well below average, which suggests a highly efficient service.

Key Observation: The Transit Action Plan aims to provide a framework to build on in the future, where all service levels integrate. The Specialized Service review being undertaken by Greater Sudbury Transit staff will provide recommendations on how the City of Greater Sudbury can improve on identifying an individual's environmental barriers which prevents them from taking the conventional bus for some or all of their trips through a dynamic eligibility process. It will also provide recommendations to policy changes, which could impact the service levels for those requiring the service.

3.3 Analysis of Existing Infrastructure and Supporting Measures

A number of different supporting components complement the various service types, including infrastructure (bus stops, terminals, transit vehicle maintenance facilities), fares, public information and so on. The following section summarizes the existing state of these supporting measures plus provides feedback from recent engagement.

3.3.1 Infrastructure

In Focus: Community Priorities for Infrastructure

The public engagement components of the Transit Action Plan identified the following three priority areas for infrastructure improvement:

- **Bus Stops and Shelters** - Decrease number of bus stops as there are too many in close proximity, and increase number of shelters. Heated shelters would be considered at bus stop locations where boardings are high.
- **Amenities** - Bus stop waiting areas need to be accessible and include infrastructure elements such as wayfinding, benches, lighting and garbage disposals.
- **Maintenance and Safety** - Increase security at the Transit Centre and on buses. Improve on bus cleanliness and increase winter maintenance at bus stops.

Bus Stops and Shelter - The City currently has an inventory of 1,365 bus stop locations that are in a basic database consisting of the bus stop name, a unique 4-digit identification number and longitude and latitude coordinates, which is required for the transit AVL (Automated Vehicle Location) system. The City also has a spreadsheet listing of 119 transit shelters, representing 8.7% of total bus stops with transit shelters and is considered a low level by transit service best practices. In this regard, municipal transit systems typically strive to have at least 20%-30% of total bus stop locations with transit shelters.

The majority of bus stops in Sudbury are well established and marked throughout the urban areas. In some areas of outlying communities, transit passengers are picked up and dropped off on a request basis through the TransCab services that connect to and facilitate transfers to and from the conventional fixed route transit services. There are also locations in the urban area of the transit network with multiple stops within a short distance that was a cause of passenger and front-line staff concerns which were expressed during the first round of community engagement of the study.

Well in advance of the start of the Transit Action Plan study in 2016, the City had placed new bright fluorescent yellow decals with black font 4-digit bus stop identification numbers on every bus stop to allow the public access via the internet and smartphone apps to the transit system's Automated Vehicle Location (AVL-GPS) that provides customers with real time schedule departure times (mybus.greatersudbury.ca). The City also had a small annual ongoing program of transit shelter refurbishment and replacement, including the objective of achieving compliance with the AODA (Accessibility for Ontarians with Disabilities Act).

Amenities – Benches are provided in some of the shelters and at various bus stop locations during the spring and summer months through a contracted service with a third party. As with many municipalities, most bus stops are not accessible.

With available funding through the Canada-Ontario Public Transit Investment Fund (PTIF), there is an opportunity to review bus stop inventory and enhance the infrastructure to reach a more appropriate level of shelter inventory and address customer comfort. It is also an opportune time to create bus stop standards in order to provide consistency and accessibility at a stop level. Well positioned bus stops can also assist in achieving on-time performance.

Transit Centre – The Greater Sudbury Downtown Transit Centre is the main hub of the route network where thousands of people converge to transfer from one route to another on a daily basis. The terminal provides amenities to passengers such as information, kiosk, telephones, washroom facilities, and protection from the elements. Renovations have been completed this year, which not only addressed operational and maintenance requirements, but also reflected security requirements identified in a Crime Prevention Through Environmental Design (CPTED) audit.

With the recommended route network being presented by the Transit Network Consulting team, multiple hubs will be required where timed transfers will occur. Although these hubs will not require a full facility such as the one in the downtown core, infrastructure as well as safety and security should be addressed from the onset. A review of the existing Transit Centre location and design could be assessed in the near future based on the long-term transit route and service strategy being contemplated.

Cameras are a good way to capture incidents to be reviewed at a later date during investigations. Other measures should be reviewed to ensure transit customers feel safe while waiting for the bus. Some municipalities have a Transit By-Law which can be enforced by Municipal Transit by-law officers. These officers can support operators and passengers by enforcing the rules and regulations governing the use of the Transit system by issuing offence notices to those contravening the By-Law, thereby providing a deterrent to undesirable behavior at terminals, as well as vehicles.

In Focus: Enhancing System Safety and Security

In conjunction with the Transit Action Plan, Greater Sudbury Transit (Transit) is undertaking a number of initiatives and service reviews with a significant emphasis on enhancing customer experience. One of these initiatives consists of a review of security and safety practices both at the Transit Terminal and onboard Transit buses. Safety and Security is an important aspect of service delivery, as actual or perceived lack of safety has a negative effect on use of Transit services and affects employee's health and morale.

In support of this, the transit system has undertaken renovations to the Transit Terminal and has also recently established a Downtown Transit Area Working Group to review current safety management practices and make recommendations to enhance safety and security for City Employees, passengers and residents. The Downtown Transit Area Working Group consists of members with expertise in CPTED audits, Security/Surveillance, Landscaping, Community Outreach, Police Services, Long Term Planning and Transit Services.

The Working Group has developed a report with recommendations to improve safety and security within Greater Sudbury Transit services. Greater Sudbury Transit understands the significant impact that the perception of security and safety has on the use of a transit system and is taking clear steps to address this.

Bus Cleanliness – The Transit and Fleet Maintenance Facility can hold 70 transit buses, and could accommodate articulated buses or other types of transit vehicles in the future. With 28 repair bays, a welding shop, parts inventory room, tire bay, and body shop, the facility is well equipped and large enough to accommodate repairs and maintenance of all municipal vehicles and equipment. It is also in a position to properly detail buses with a fully equipped wash bay.

During the engagement process, concerns relating to bus cleanliness were heard from both customers and employees. In order to keep a fleet appropriately clean, there should be a daily vehicle cleaning practice where buses are washed on the outside, thoroughly wiped down throughout, garbage picked up, floors swept, and major spills washed. Detailing of buses--where windows, walls, and all areas that are hard to reach are cleaned—should be undertaken on a rotating basis.

Winter Maintenance Program – Approximately 480 bus stops including all shelters are cleared one to two days following the end of a snowstorm. The city plows approximately 425 km of sidewalks, which consists of approximately 75% of all the sidewalks in the city. Where a bus stop is not cleared of snow, a passenger can wait at a cleared area closest to their bus stop, and signal as the bus approaches to help the driver prepare to stop. When wanting to disembark at a cleared area, the request must be made to the Transit Operator, and he/she will stop in a safe location.

3.3.2 Fares

In Focus: Community Priorities for Fares

The public engagement components of the Transit Action Plan identified the following three priority areas for fares:

- **Cost** - Provide incentives for seniors and children (families) to use the service and review student fares. Wherever possible, link fare increases to coincide with service improvements.
- **Transfers** – Increase the time allowed on transfers.
- **Fare Media** - Make purchasing and using fare media more convenient through SmartCard technology.

Table 8 provides the 2019 fare structure as approved under the Miscellaneous User Fee By-Law. On an annual basis, the user fee increases by 3% of the individual category.

Table 8 – Cash Fare and Bus Pass Prices 2019

Cash Fares and Bus Pass Prices 2019	Cash	5 Ride	10 Ride	31 Day	Other
Adult	$ 3.40	$ 13.50	$ 27.00	$ 93.00	
Student	$ 3.40	$ 13.50	$ 27.00	$ 84.00	
Seniors	$ 2.50	$ 10.50	$ 21.00	$ 56.00	
Disability Pensioners	$ 2.50	$ 10.50	$ 21.00	$ 56.00	
Children	$ 2.50	$ 10.50	$ 21.00	$ 56.00	
Day Pass					$ 10.50
Family Pass					$ 16.50
Laurentian University Upass					$ 200.00

Cash Fares – Cash fare rate is the same for Adult and Student categories, and provides a 27% discount for all other categories.

Five (5) and Ten (10) Ride Cards – Typically, ride cards are priced at a discount against the cash fare. This would mean that anytime a passenger buys a ride card, they would be given a discount as a reward for using the service. The current fare structure provides a $0.70 discount per ride to Adults and Students and $0.40 discount per ride to Seniors, Disability Pensioners and Children based on their respective cash fare.

Passes - A 31-day pass provides unlimited rides to a single cardholder within a 31-day period. To calculate the incentive for the passenger, the pass fee is divided by the cash fare, which provides the number of rides paid for – any additional rides taken within the 31-day period would essentially be free. Adults are paying for 27 rides, Students for 25 Rides and Disability Pensioners, Seniors and Children pay for 23 rides with a 31-Day pass. Day Passes which provide unlimited rides in a 24-hour period cover 3 rides for one person, and 5 rides for up to five passengers, with a maximum of two adults under the Family Day Pass.

Transfers – Transfers are requested when paying fares by cash or when using five or ten ride cards. They are valid for the first available bus travelling in the direction of the destination and are not transferrable.

Fare Media – Cards and passes can be purchased with photo identification at the Downtown Transit Centre (Kiosk), all Citizen Service Centres, Public Libraries, and a number of retail locations across the City.

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 or travelling for other trip purposes takes precedence over the transit fare price.

Fare policies should be reviewed and discussed with Council to provide a well-balanced fee structure which will provide incentives to attract new riders; assist those in most need for further subsidy; and

ensure that operating requirements can be met. In particular, the fare structure should be simplified and restructured in accordance with transit industry best practices as discussed in Section 7.1.2.

3.3.3 Customer Care and Information

In Focus: Community Priorities for Customer Care and Information

The public engagement components of the Transit Action Plan identified the following three priority areas for customer information and care:

- **Wayfinding and Trip Planning** - Improve wayfinding and wayfinding technology to make it easier to access the system's services.
- **Travel Training** – Expand on the Senior Travel Training Program and offer training to people who are new to the City, persons with disabilities who would be better served with Conventional services, young students and community partners upon request.
- **Promotion of Services** - Promote, market services and create "community spaces" with art and culture. Collaborate with stakeholder groups and organizations to improve transit's links to the community.

Wayfinding – Transit systems are complex to navigate, and lack of sufficient wayfinding supports such as signage, maps, visual and audio cues, create a barrier to transit use. An effective wayfinding system provides users with an understanding of the coverage area of the transit network, the path of an individual route, the locations they are able to board and alight, the times that the services operate, and the rules and procedures for accessing the transit service. At interchange points, such as the Transit Terminal or other major landmarks, travelers need to be able to navigate to the correct bus. Good wayfinding systems are consistent, seamless, accessible and provide travelers with information throughout their journey.

Greater Sudbury Transit currently provides information in various forms and some of the information has recently been upgraded as part of a $50,000 one-time capital budget increase in 2015. Coordination of the information being published is overlooked by several Transit employees with the assistance of the Communications department. The following are examples of information provided to the public:

- A network map
- Individual pamphlets with route information
- Real-time feed with Google Map Trip Planner
- MyBus application
- In person and telephone customer care through Kiosk Staff and information clerk

Travel Training – In 2015 another budget option led to the creation of a "Senior's Travel Training Program". This program was well received and continues to be offered when resources are available. Transit Staff are not actively reaching out to their Community Partners to offer the program due to staff time constraints.

In Focus: Enhancing Customer Information and Outreach Through Improved Staffing

As described above and in the Phase I Public Engagement report, many of the components most desired by the public relate to increased promotion of the system and customer care. However, existing staffing levels for Greater Sudbury Transit do not provide the necessary resources to address these key opportunities and areas for growth.

The system is now of a size where a staff person dedicated to transit system outreach and customer care would typically be available. Particularly if the City moves forward with implementing the revised service structure outlined in later sections of this Plan, it is strongly recommended that an additional full-time position be created within the Greater Sudbury Transit Team to specifically lead the system's customer information and customer care programs.

Suggested roles for this position would include:

- **Leading outreach initiatives** to help promote the service, such as liaising with schools, post-secondary institutions and major employers to provide information, events and programs to help promote the transit service and how it can be used as a part of a suite of sustainable transportation options and a healthy lifestyle.
- **Leading and organizing travel training** to help teach individuals and groups (such as seniors programs organized through the City's recreation department) on how to use the fully accessible conventional transit system. Teaching Handi-Transit customers to use conventional transit for some of all of their trips can also take place as more bus stops become accessible.
- **Overseeing customer information tools and the customer complaint process** to identify ways that these processes can be as responsive as possible to citizen travel needs and to also ensure that feedback received from customers and front-line staff has a clear process to go back into further improving and revising the system.

In addition to a full-time staffing position, a number of systems have also had good experience with creating several "community liaison" positions for transit operators to help support these initiatives. These programs create resources to occasionally cover shifts of transit operators selected for the program so they can assist in community

3.4 Summary: Existing Key Service Issues and Opportunities

As shown in the comparison against its peers, Greater Sudbury Transit's ridership and performance has been fairly steady. Even more encouraging, the system's transit efficiency (passengers per hour) and transit effectiveness (passengers per capita) performance measures was better than the average of its peers even though there was a slight downturn in 2015 performance over 2014.

Likewise, the TransCab operating model seems to efficiently serve areas with lower populations and Handi-Transit has a high level of service with comparatively good service quality when compared to its peers. All of this means that there is a solid foundation for further improvement to the system.

However, the detailed analysis of service and public feedback shows that there are a number of key areas where existing system resources can be used differently to serve today's community needs, attract more customers and build a foundation for further transit system improvement and investment in the future. These include:

Update Land Use and Policy Framework - A robust policy framework supports the transit system by clearly stating how decisions are made and by creating the community conditions for its ongoing success.

System reorganization to improve clarity, directness, frequency, and reliability – Greater Sudbury's existing route structure is confusing, hard to understand for new users and dilutes potential frequency by spreading service across many streets. Focusing heavier ridership service on key corridors with complementing feeder services would enable the system to put more frequency where it is needed most, shorten travel times and provide the time necessary to improve reliability.

A balance of investment – There are two key strategies for attracting further ridership on the Greater Sudbury Transit System: [1] making it easier for *existing users* to take it more often; [2] attracting *new users*, particularly commuters. Priorities improvements should first centre on increasing frequency and hours of operation on Sundays. Priorities for the second focus on improving service on weekdays,

particularly during the peak commuting periods. As it moves forward, the system needs to strike a balance between both types of investment in order to diversify and grow its ridership.

A more organized and innovative approach to outlying areas – There is strong desire for improved service to Greater Sudbury's many outlying neighbourhoods. At the same time, each has different population sizes and demographic needs. Further, the Greater Sudbury Transit system needs to be maintained with 80% of service costs allocated to the urban areas, and 20% allocated to the outlying areas. As such, it is important to explore further approaches to improve how the suite of transportation services are organized, deployed and communicated in these areas. This includes potential creation of mobility hubs that make it more convenient for connections to take place, Park & Rides, improved coordination and technology with on-demand services and potential integration with some regularly scheduled Handi-Transit services, where feasible.

A more integrated accessible service – There are a number of strategies that will be needed to ensure that Handi-Transit services meet Accessibility for Ontarians Disability Act (AODA) requirements, improve customer booking options, customer travel experience and expand eligibility. Enhancements are also needed to better enable some registrants to use TransCab and Conventional transit to complete some or all of their trip needs that precludes the need for advance bookings so that trips can be taken dynamically; this would enable qualifying registrants to be more integrated with the community.

Integrated infrastructure, fare, customer information and policy improvements –There are many specific improvements that can be made to each of these components that will in turn leverage the ridership gained through recommended changes to routing, schedules and service levels.

4 SYSTEM-WIDE SERVICE PROPOSALS

4 SYSTEM-WIDE SERVICE PROPOSALS

A number of service changes are recommended to address issues and improve the overall effectiveness and efficiency of the Greater Sudbury Transit System. This section describes the proposed overarching approaches followed by the detailed proposed changes to routes.

4.1 Adapting to Change Through Innovation

Certainly, the community engagement results pointed to a need for improvement – to make things better and to do it today. The simplest and quickest way to accommodate residents and businesses is to do more of the same, increase the span of service and days of operation, and expand the reach of conventional transit to all areas of the City. However, that would be fiscally irresponsible and is viewed as a 'bandage solution'.

The ultimate goal should be to match the transit service to the demand at the lowest cost per trip. This approach is currently practiced by Greater Sudbury Transit today in some areas such as the use of TransCab services. The overarching best practice within the transit industry is to best match service to ridership demand through the provision of a hierarchy of service types known as a 'family of services." The recent strides made in communications and information technology now enable more flexible transit solutions to be applied.

As well, the family of service approach provides the opportunity to designate key corridors for the most frequent types of service and the connection points/destinations they serve that will form "Mobility Hubs." This enables the City to focus its infrastructure investment, connecting pedestrian and cycling links, and development on these corridors and hubs, which in turn supports the success of the transit system over time.

Therefore, the service models and principles used in the Transit Action Plan recommendations look at a suite of services that have innovation at their core. This includes:

- Clearly designating higher order services that will evolve to offer the highest frequency and directness of travel over time and which are matched with land use and densities. This includes **Frequent Transit** and **Core Transit** routes in the urban area of Greater Sudbury, as well as **Community Connector** routes targeted to meet the specific needs of outlying communities connecting to the core. **Importantly, the Frequent Transit routes offer the ability to evolve over time to become a "Made in Greater Sudbury" version of Bus Rapid Transit (BRT).**
- Continuing to use and expand the use of **On-Demand services** to connect areas with lower population density to their neighbourhood centres and to other connecting transit services at Local Mobility Hubs. Bolstered by the latest innovations in dispatch and real time scheduling technology—which may make use of a combination of vehicles formerly separated into "Handi-Transit" and "TransCab" categories—this service model provides the system with a way to offer

seamless travel to a wider share of residents that would otherwise be impossible to feasibly serve using traditional transit.

This overarching approach is further supported by other layers of service focussed on meeting the needs of specific travellers: **Neighbourhood services** that connect with other transit routes and while operating less frequently, bring vehicles closer to residences who may not be able to walk to more distant stops. **Targeted services** are honed to meet specific work and school commuter times and travel patterns. The continued presence of **Handi-Transit** door-to-door services would continue for people with a disability.

In addition to ensuring that the recommendations of the Transit Action Plan align with the most up-to-date technology and service provision transit practices, the project team was also cognizant that immediate changes must support the longer-term goals of the City.

Therefore, in an effort to improve transit within existing financial resources and ensure that transit can adapt to the future efficiently and effectively, the study team looked at how and where the City will develop over the next 10 to 20 years. This long-term transit planning approach seeks to accomplish four key objectives:

- Align transit solutions with the City of Greater Sudbury's largest strategic goals.
- Provide a long-term transit operations and infrastructure plan that shows how Greater Sudbury Transit can evolve with the City's own growth, take advantage of opportunities as they arise and leverage funding from other levels of government as it becomes available.
- Outline the most important corridors for future service expansion, infrastructure investment and transit-supportive land use and development so that these aspects so necessary for transit's success become self-reinforcing.
- Create a diverse "toolbox" of service approaches that speak to Greater Sudbury's own diversity as a "community of communities," and which enables the system to implement services that best match the population size and travel needs of each area, as well as test out and learn from innovative approaches to service.

The implementation of the short-term recommendations within this Transit Action Plan (TAP) will enable the City of Greater Sudbury residents and businesses to have better routes, better schedules and better service. They also create the foundation to further grow transit use in the longer term by better meeting the needs of the community throughout the Greater Sudbury Transit service area.

4.2 The Transit "Toolbox": Service Design Types

Transit system design draws from a suite of service types. These range based on the degree that service is fixed or flexible. Fixed services operate using a published schedule and route map with set bus stops whereas demand responsive services offer service to specific locations and times as need arises.

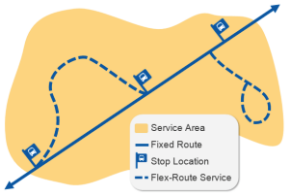
Each of these service design types may be used to serve specific community needs based on expected ridership and commonality of travel patterns, the land use and layout of communities and the level of physical mobility for passengers. They may also be layered together. Using several different types has advantages since fixed route options will normally carry more passengers for a lower cost than demand responsive options but will not meet all community needs.

As a foundation for the proposed network and service changes, the table below provides an overview of the palette of service design types that potentially could be applied in Greater Sudbury. A number of these are already established in the area, particularly conventional service and demand responsive service, fixed route and conventional transit express and demand responsive services (e.g., TransCab, Handi-Transit), in some cases with trip windows.

TRANSIT SERVICE DESIGN TYPES OVERVIEW

Service Type		Description	Stop Pattern	Notes
	Bus Rapid Transit (BRT) and BRT-Lite	Service operates on a fixed route and frequent schedule. At the highest order of the spectrum, BRT operates on a right-of-way separated from regular traffic. At the other end, introductory-level BRT may operate on corridors with transit priority measures (transit signal priority (TSP), queue jump lanes, etc.)	BRT stations are typically spaced more widely apart (600m – 1,200m). At the highest order of the spectrum, BRT operates independent of conventional transit bus stops. In other cases, there may be some sharing of separately branded stops/stations with other routes	• Full BRT can be phased in over time with TSP, queue-jump lanes, and transit-only turning movements at intersections (referred to as BRT-lite) • Service that uses higher quality buses and is branded separately from conventional transit. • BRT mobility hub stations located at existing and future high-density developments
	Conventional/ Fixed Route	Service operates on a fixed route and schedule.	Regular stop spacing (approximately every 400m in urban areas)	• Offers clarity and ease of use for passengers but is less flexible to accommodate other passenger needs. May not be suitable for lower densities. • Any type of transit vehicle may be used.

TRANSIT SERVICE DESIGN TYPES OVERVIEW

Service Type		Description	Stop Pattern	Notes
	**Deviated Service**	Service generally operates on a fixed route or schedule but enables the bus to deviate off route to serve a specific destination on a "by request" or limited basis.	Regular stop spacing (approximately every 400m in urban areas), with signage often at the deviated destination indicating it is "by request" and how to contact dispatch.	• Can be a good option to provide some level of service to lower ridership areas between key points as the bus only deviates if there are passengers. • Can use standard transit vehicles but more commonly uses medium-sized buses (<10.7m / 35 ft in length) or smaller.
	Flex-Route	Service operates on a general route or schedule, but may deviate off route at multiple points as needed to provide service.	May serve bus stops as well as deviate off route at any point to serve on-demand locations.	• Usually the amount of flex-route available is limited by time, distance and/or passenger type. For instance, service will specify that flex routing is only available during mid-days or evenings, within a 1.5km distance of the route or only for people with a disability registered with the system. • Typically uses smaller buses less than 9.1m/ 30 ft in length
	Demand Responsive / Dial-a-Ride with Trip Windows	Service operates door-to-door, but is clustered around specific "trip window" times to help passengers align travel together. For instance, service may be published as operating on specific weekdays or available from 8:00am to 9:00am and 2:00pm to 3:00pm.	Serves on-demand locations. In some cases, may also serve specific bus stops, particularly terminus points.	• Particularly for trips that have a longer intervening travel time (such as longer distance travel between communities), and is generally a more efficient way to provide service with a demand responsive component since it clusters similar trips together. It also offers better convenience for passengers as they have a sense ahead of time when transit might be available and can plan their appointments around that. • Typically uses smaller buses less than 9.1m/ 30 ft in length, vans or taxi sedan vehicles.
	Demand Responsive / Dial-a-Ride	Service is dispatched as needed and serves door-to-door locations. Trips are booked ahead of time by clients.	Serves on demand locations. May also provide connection to specific bus stops, particularly terminus points.	• Is best used for cases where passengers may not be able to use other services (such as Handi-Transit) or where other types of transit is not practical due to land use/population density. • Typically uses smaller buses less than 9.1m/ 30 ft in length, vans or taxi sedan vehicles.

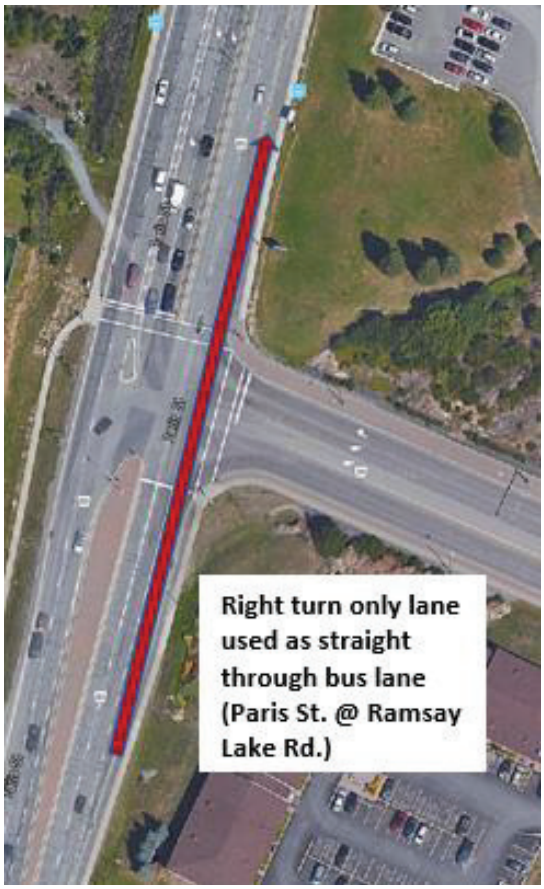
4.3 Evolving Forward: Outlook for Future Bus Rapid Transit

As transit systems build transit use along key corridors, many municipalities have embraced higher-order transit initiatives such as Bus Rapid Transit (BRT), which is designed to reduce bus travel times, increase transit use and revenues, and decrease costs. BRT buses can operate on their own right-of-way, in mixed traffic or in a combination of both.

Dedicated BRT Along Centre of Roadway

Bus Rapid Transit (BRT) promises to offer a higher-quality experience to customers and therefore can attract higher ridership. At one end of the spectrum, BRT offers fully separated lanes for transit vehicles, separate station, higher quality and usually higher capacity vehicles, and a fully-branded experience. They essentially offer many similar attributes to a light rail or subway line but operate at grade using buses and therefore have lower initial capital and construction costs.

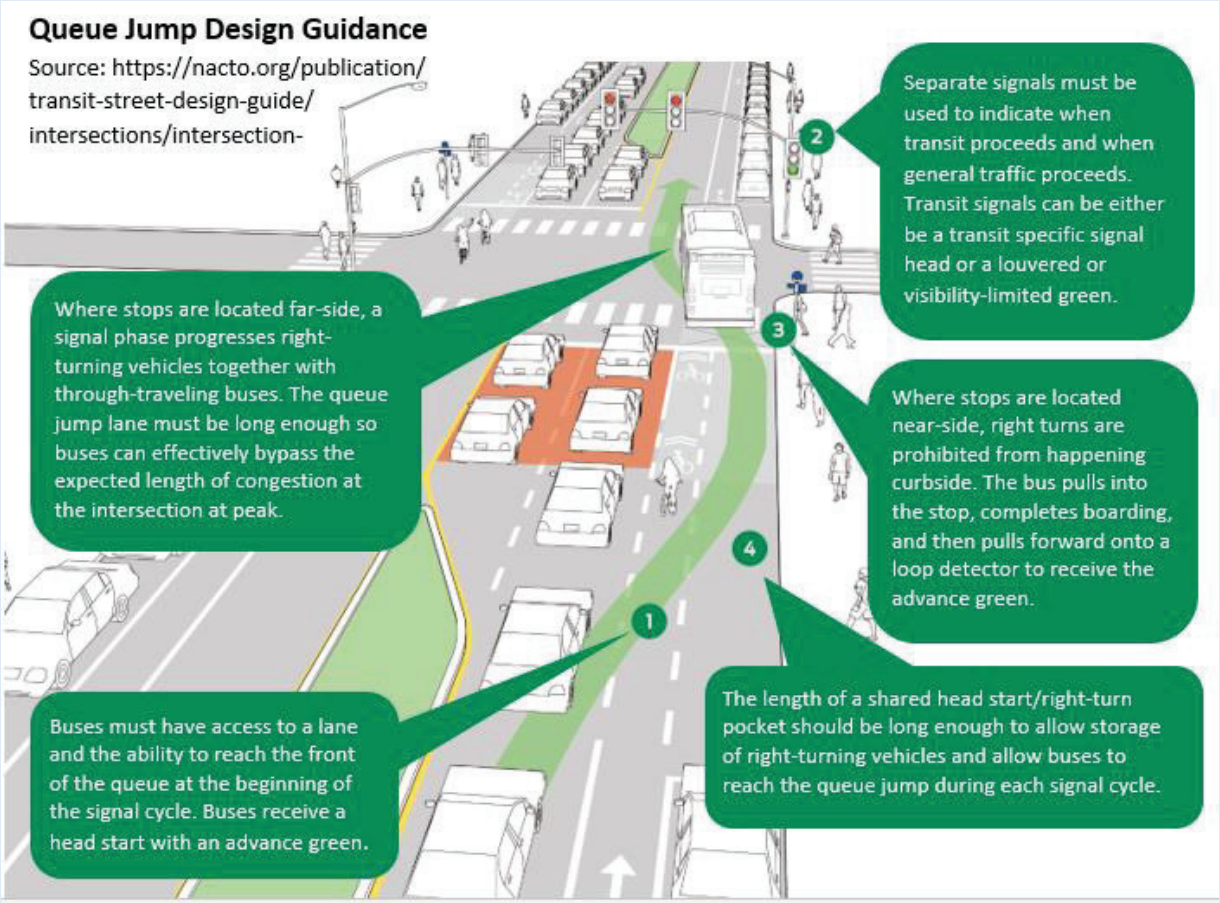
While a full BRT system may not be warranted in Greater Sudbury in the short- and medium-term, the community has key corridors that can take advantage of the "look and feel" of BRT without fully implementing full separate right of ways. Sometimes referred to as "BRT-Lite," this approach seeks to implement the directness and frequency of BRT and some of the branded elements, such as customer information materials and technology, separate signage, higher quality stops that function as "stations," and potentially separately branded vehicles. Ideally, BRT-Lite is also supported by transit priority measures that ensure that travel is as more direct, reliable and timely as possible. These measures may include:



- Transit signal priority (TSP), which will enable transit vehicles that are running behind schedule to shorten red lights or hold green lights at intersections.
- "Queue jump" lanes, which are separate bus-only curb lanes near intersections that allow transit vehicles to move past congestion on straight through movements to far side bus stops.
    - Separate right of way at key points, such as to access mobility hubs at existing and future higher density developments.

The following provides examples of these measures. The Frequent Transit lines proposed in later sections for implementation in Greater Sudbury have been designed to evolve over time to a Greater Sudbury version of BRT-Lite.

In Focus: Queue Jump Lane Examples



4.4 Proposed Revised System Structure

Building from the service design types and approved long term community land use and transportation plans, the following section describes the proposed revised network strategy and layers of transit service for Greater Sudbury. The changes presented here derive from the service design types previously presented in Section 4.2. Section 4.5 Immediate Network-Wide Route Restructuring describes the proposed immediate changes that can be undertaken within existing system resources to improve the performance of service and which begin to create the long-term route structure. Section 4.7 Future Expansion Options details options that build on this foundation and which reflect the strategic investments needed to evolve the system towards its longer-term structure that, in turn, is designed to leverage as much ridership as possible.

It should be underscored that this strategy is flexible and is based on showing how the different types of service work together to serve different passenger needs and land use patterns. It also shows the key corridors for transit, enabling future development and road network improvement decisions to reinforce them where possible. In the case of lower density areas served by on-demand transit (by TransCab or Handi-Transit) it also better shows to passengers how services are coordinated.

This network strategy is complemented by other system-wide changes proposed in Section 5 Infrastructure Needs, Section 6 Land Use and Policy Framework and Section 7 Other Supporting Measures. A number of service changes are recommended to address issues and improve the overall effectiveness and efficiency of the Greater Sudbury Transit System. Overall, this strategy focusses on **significantly restructuring the Conventional and TransCab services** to make the service easier to use, more reliable and better matched with ridership.

Today, there are approximately 170,000 annual hours of service in the Greater Sudbury Transit system that would need to be maintained with 80% of service hours allocated to the urban area and 20% allocated to the outlying communities. Transit Consulting Network worked with Greater Sudbury Transit staff to develop a new route network and service design based on best practices to address community-wide stakeholder priorities, which were then further refined through Phase III Engagement feedback. **The changes proposed in Section 4.5 work within those existing resources to deliver service that will be easier to understand and use, put service where it is needed most and overall be more attractive to passengers.**

Service Restructuring Highlights

This proposed service restructuring includes:

Reducing the overall number of routes and improve directness. The proposed revised structure creates high frequency routes on key corridors and also combines routes so that more origins and destinations are served without transfer. The changes mean that fewer routes will need to travel to the Downtown terminal to transfer. It reduces the number of routes from **38 to 27**, making it easier for customers to understand the services, plan their trip and navigate the system. To the extent possible, it will also eliminate one-way loops and low performing deviations to make service as direct as possible.

Providing Sunday service and weekday late evening service on most routes and maintaining as much consistency as possible across the week in terms of where routes operate. Currently, the existing system uses separate routes and numbering depending on when service is operating. The proposed revised service makes routing and numbering consistent throughout all days as much as possible. It also increases the level of Sunday service where feasible within existing resources and plans for future expansion. Simplifying and increasing Sunday and holiday service was a key point of feedback from the community.

Improving reliability. All proposals will use revised schedule trip length times (also known as "running times") that reflect the reality of current conditions to ensure that the new service can operate on-time and serve customers' needs reliably. Transfers will be coordinated to the extent possible and timed to reduce waiting times for customers and ensure seamless connections.

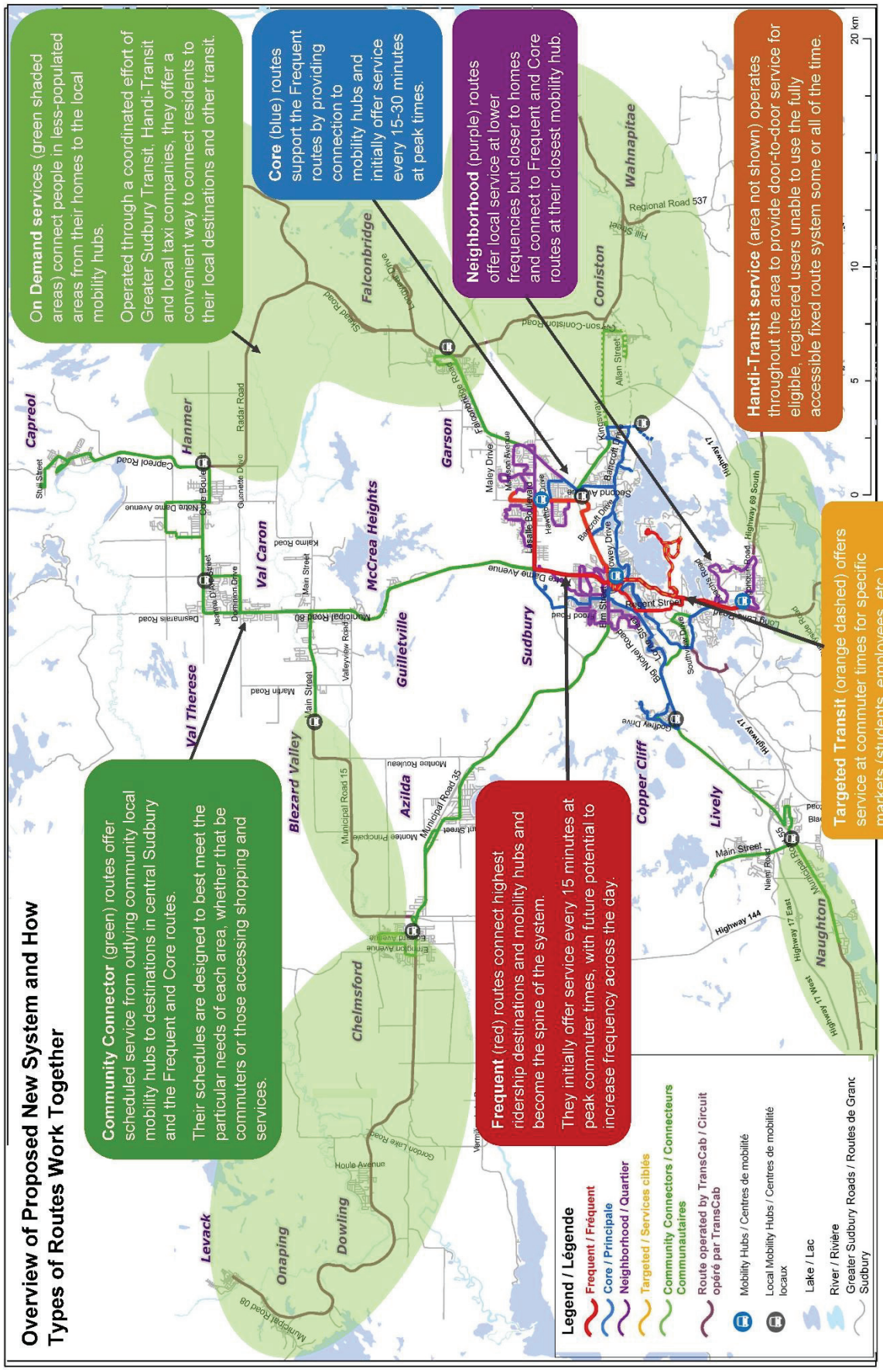
Matching service to demand. An overall network strategy has been developed that revises system structure and presents it in layers:

- **Frequent** routes to provide the most direct and highest frequency services to meet the most common travel patterns and highest ridership areas of the City. Mobility Hubs will be created along the routes, providing opportunity to coordinate other levels of service. This route layer becomes a blueprint for what could evolve into a Bus Rapid Transit system.
- **Core** routes to offer support to the higher frequency services in the urban core.
- **Neighbourhood** routes with slightly lower frequency to provide service closer to home for those who may be less able to access the frequent and core routes.
- **Targeted** routes offer services tailored to specific customer markets, particularly work and post-secondary school commuters travelling from specific neighbourhoods.
- **Community Connectors** to provide clear and easy-to-use connection between outlying communities and key destinations in the core.
- **On-Demand (TransCab) Service Areas** to provide convenient on-demand travel between homes in less-populated areas to Community Connectors or Handi-Transit services.
- **Handi-Transit** throughout the area for those eligible passengers with disabilities that prevent them from using the other services some or all of the time.

The key benefit of the proposed revised transit system network structure is that it reallocates service from areas with too much service to where it is needed most. It also uses coordinated combinations of

The table below and the following map provides an overview of the proposed transit service layers for the City of Greater Sudbury's transit network structure:

Service Layer	Definition	Service Types	Frequency
Frequent / Circuit haute fréquence	Highest frequency service connecting major destinations and corridors.	• Fixed route • Ability to evolve to Bus Rapid Transit	To start: 15 min peak Future: 15 min or better, 7am-7pm
Core / Circuit principal	Supporting higher frequency routes in the urban core.	• Fixed route	To start: 15/30 min peak Future: 15 min or better at peak
Neighborhood / Circuit de quartier	Local service within urban neighbourhoods connecting to the Frequent and Core routes.	• Fixed route • Fixed route delivered with smaller vehicles	To start: 60 min all day Future: 30 min peak where warranted by demand
Community Connectors / Circuit de correspondance communautaire	Connection between outlying communities to the Frequent and Core routes.	• Fixed route • Fixed route delivered with TransCab	Service levels vary based on demand.
On Demand / Services sur demande	Connects people in less-populated areas from their homes to key services and transit connection points in outlying communities.	• Uses TransCab or combined Handi-Transit on some trips.	Service levels vary based on demand.
Targeted / Services ciblés	Service targeted for specific users and markets, such as work and education commuter special trips.	• Fixed route • Fixed route delivered with smaller vehicles	Service levels vary based on demand.
Handi-Transit / Service Handi-Transit	Service for eligible, registered users unable to use the fully accessible fixed route system some or all of the time.	• On demand	Service levels vary based on demand.


Overview of Proposed New System and How Types of Routes Work Together
On Demand services (green shaded areas) connect people in less-populated areas from their homes to the local mobility hubs.
Operated through a coordinated effort of Greater Sudbury Transit, Handi-Transit and local taxi companies, they offer a convenient way to connect residents to their local destinations and other transit.
Core (blue) routes support the Frequent routes by providing connection to mobility hubs and initially offer service every 15-30 minutes at peak times.
Neighborhood (purple) routes offer local service at lower frequencies but closer to homes and connect to Frequent and Core routes at their closest mobility hub.
Handi-Transit service (area not shown) operates throughout the area to provide door-to-door service for eligible, registered users unable to use the fully accessible fixed route system some or all of the time.
Community Connector (green) routes offer scheduled service from outlying community local mobility hubs to destinations in central Sudbury and the Frequent and Core routes.
Their schedules are designed to best meet the particular needs of each area, whether that be commuters or those accessing shopping and services.
Frequent (red) routes connect highest ridership destinations and mobility hubs and become the spine of the system.
They initially offer service every 15 minutes at peak commuter times, with future potential to increase frequency across the day.
Targeted Transit (orange dashed) offers service at commuter times for specific markets (students, employees, etc.)
Legend / Légende
Frequent / Fréquent
Core / Principale
Neighborhood / Quartier
Targeted / Services ciblés
Community Connectors / Connecteurs Communautaires
Route operated by TransCab / Circuit opéré par TransCab
Mobility Hubs / Centres de mobilité
Local Mobility Hubs / Centres de mobilité locaux
Lake / Lac
River / Rivière
Greater Sudbury Roads / Routes de Grand Sudbury
Capreol
Hanmer
Val Therese
Val Caron
Blezard Valley
Chelmsford
Azilda
Levack
Onaping
Dowling
Falconbridge
Garson
McCrea Heights
Guilletville
Sudbury
Copper Cliff
Lively
Naughton
Coniston
Wahnapitae
Regional Road 537
Highway 17
Highway 144
Highway 17 West
Municipal Road 80
Municipal Road 15
Municipal Road 35
Main Street
Kingsway
Regent Street
Lasalle Boulevard
Notre Dame Avenue
Falconbridge Road
Maley Drive
Second Avenue
Bancroft Drive
Hawthorne Drive
Beaucage Drive
Rayside Balfour Drive
Bell Nicol Road
Godfrey Drive
Southview Avenue
Long Lake Road
Highway 69 South
Allen Street
Hill Street
Skead Road
Radar Road
Capreol Road
Skill Street
Gunnette Drive
Desmarais Road
Kalmo Road
Martin Road
Valleyview Road
Montee Principale
Montee Roulleau
Houle Avenue
Gordon Lake Road
Manitoulin Road 08
Main Street
Neelon Road
Manitoulin Road 55
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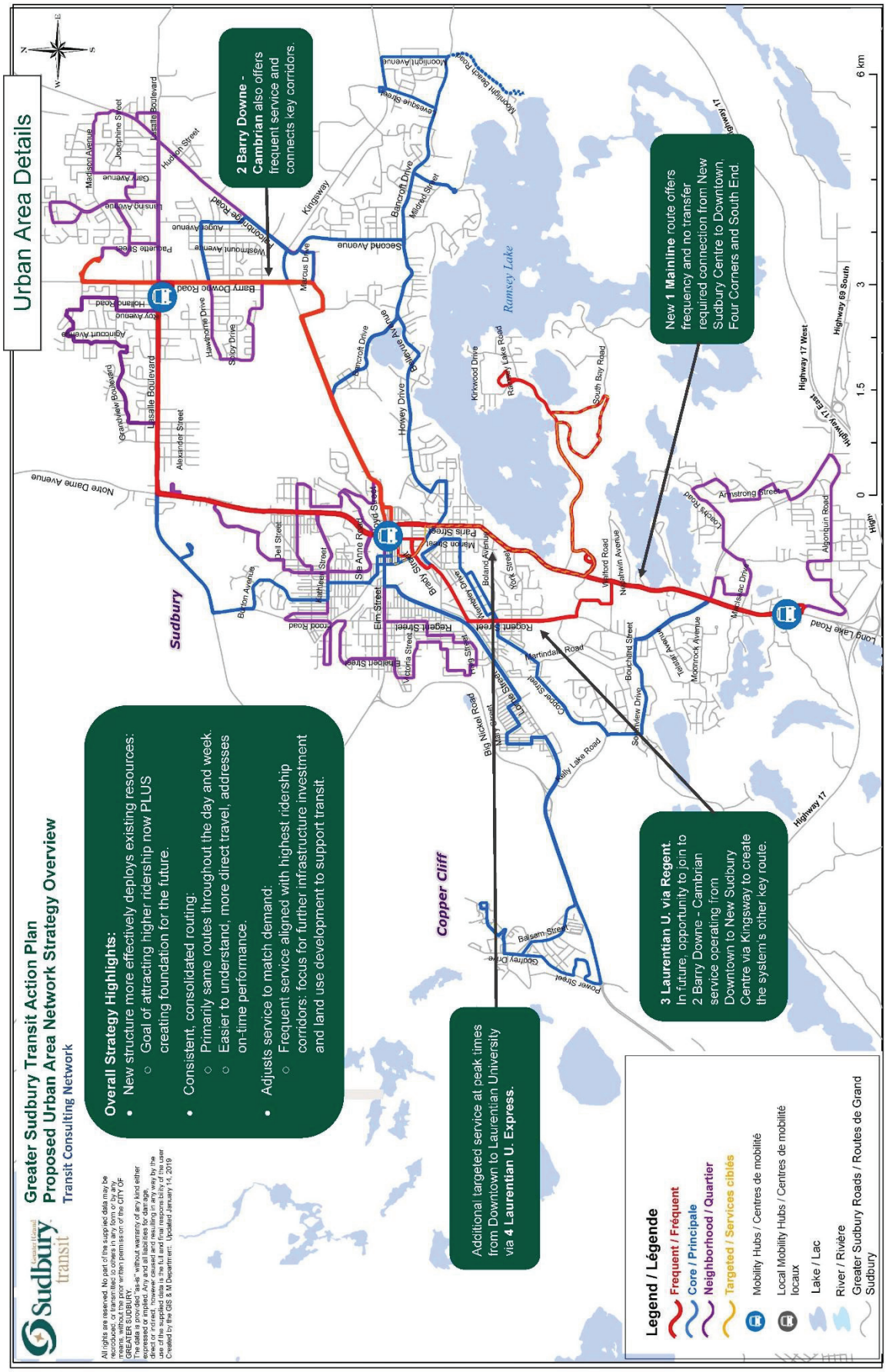
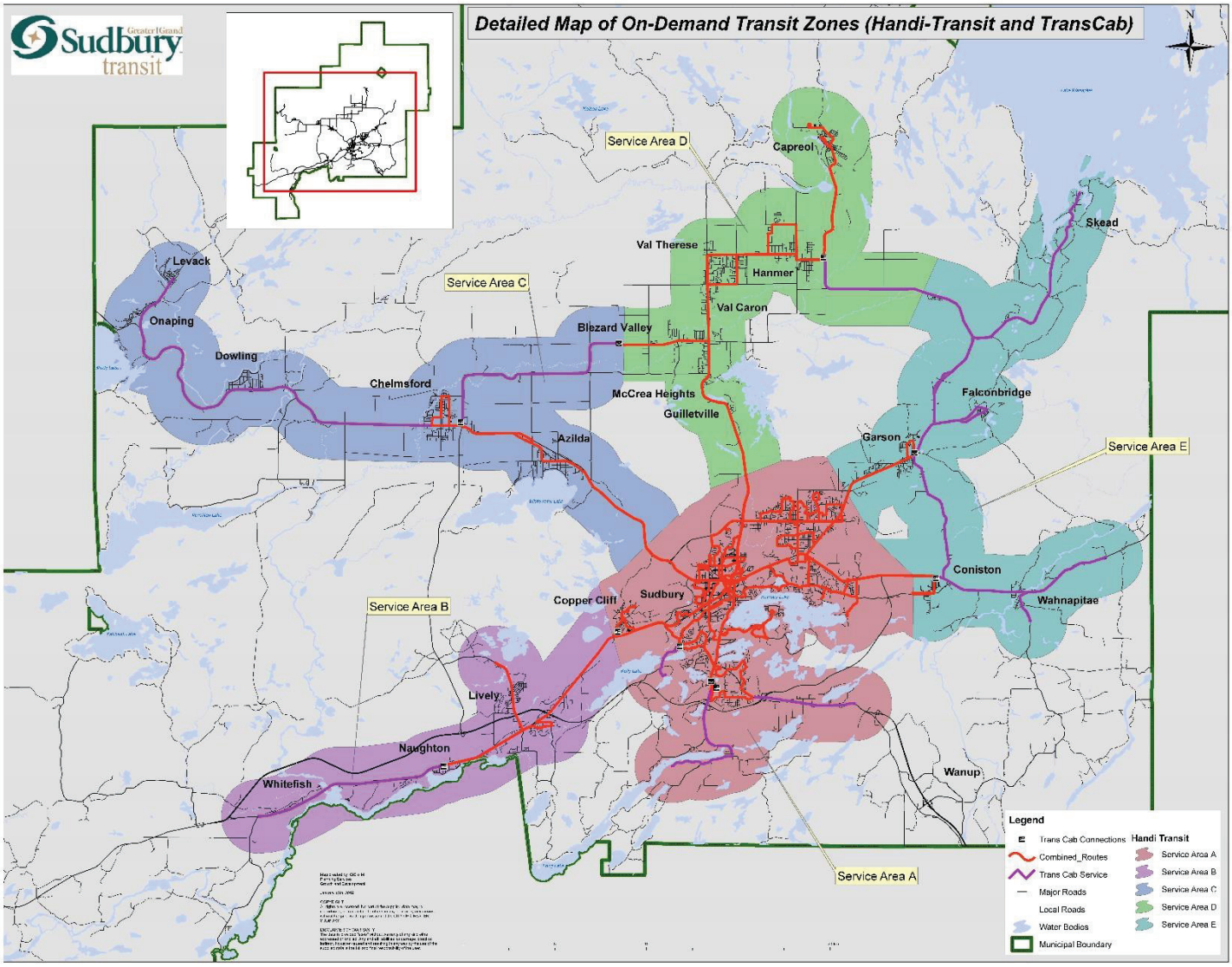
10
20 km


Urban Area Details
Greater Sudbury Transit Action Plan
Proposed Urban Area Network Strategy Overview
Transit Consulting Network
Overall Strategy Highlights:
New structure more effectively deploys existing resources:
Goal of attracting higher ridership now PLUS creating foundation for the future.
Consistent, consolidated routing:
Primarily same routes throughout the day and week.
Easier to understand, more direct travel, addresses on-time performance.
Adjusts service to match demand:
Frequent service aligned with highest ridership corridors: focus for further infrastructure investment and land use development to support transit.
2 Barry Downe - Cambrian also offers frequent service and connects key corridors.
New 1 Mainline route offers frequency and no transfer required connection from New Sudbury Centre to Downtown, Four Corners and South End.
3 Laurentian U. via Regent. In future, opportunity to join to 2 Barry Downe - Cambrian service operating from Downtown to New Sudbury Centre via Kingsway to create the system's other key route.
Additional targeted service at peak times from Downtown to Laurentian University via 4 Laurentian U. Express.
Legend / Légende
Frequent / Fréquent
Core / Principale
Neighborhood / Quartier
Targeted / Services ciblés
Mobility Hubs / Centres de mobilité
Local Mobility Hubs / Centres de mobilité locaux
Lake / Lac
River / Rivière
Greater Sudbury Roads / Routes de Grand Sudbury
Sudbury
Copper Cliff
Ramsey Lake
Barry Downe Road
Second Avenue
Kingsway
Regent Street
Paris Street
Elm Street
Long Lake Road
Highway 17
Highway 17 West
Highway 17 East
Highway 69 South
0
1.5
3
6 km

The following map shows the precise location and structure of proposed on-demand zones for Handi-Transit and TransCab services.



4.5 Immediate Network-Wide Route Restructuring

Specific immediate changes are recommended to each route within the overall revised network structure and proposed layers of service types. **These changes are designed to work within the existing resources (approximately 170,000 hours and vehicles) already allocated to the system.** The following table provides an overview of each new route, its relation to existing routes, and key changes incorporated. The preceding map provides an overview of the new route structure. **Final details for each route will be confirmed through the detailed service implementation process outlined in Section 9.1**

Minimum frequencies and spans of service for all proposed route types are provided in the revised system service standards presented in Section 6.3 Transit Service Standards. The following Section 4.6 also provides more discussion on recommended implementation sequencing as well as service trade-offs to remain within existing total package of service hours.

Route numbering reflects the route types (with Frequent routes listed first), and also the general distribution of routes from north to south within categories.

New Route Number, Route Type and Structure	Comments
Route #1 Mainline ▪ Frequent service ▪ Two-way service	▪ Links six key destinations: New Sudbury Centre, Canada Revenue Agency, Downtown Mobility Hub, Health Sciences North, Four Corners and Walmart in the South End. These coincide with highest ridership stops and the major corridors of Lasalle, Notre Dame, Paris and Long Lake. ▪ Mobility hubs and connections points are proposed to be created along the route, providing an opportunity to coordinate other levels of service. ▪ This route layer becomes a blueprint for what could evolve into one of the system's two key future bus rapid transit spines. ▪ The route provides seamless travel between New Sudbury, the Downtown Core and the South End. ▪ Highest frequency as budgets permit ▪ Increases transit use: Customers accept longer walk distances to access higher frequency corridors ▪ Can be connected to other routes through scheduling to offer no-transfer-required service at key times, such as to Cambrian College and its adjacent neighbourhoods.
Route #2 Barry Downe – Cambrian ▪ Frequent service ▪ Two-way service	▪ Complements the #1 Mainline by providing service between Cambrian College, New Sudbury Centre, Kingsway Shopping area and the Downtown Mobility Hub. Cambrian College. ▪ With future expansion to align frequencies between the two routes, can be joined to the #3 LU via Regent as a single route to create the system's other key Bus Rapid Transit spine, offering connection to high density residential areas, Health Sciences North and Laurentian University. ▪ In the meantime, suggestion is that routes #2 and #3 could operate in a connected fashion as much as possible to better facilitate travel.

New Route Number, Route Type and Structure	Comments
Route #3 Laurentian U. via Regent ▪ Frequent service ▪ Two-way service	▪ Retains existing well-utilized service to Laurentian University with slight modification to route pattern in the University area to improve schedule adherence. ▪ Downtown travel pattern also modified to ensure connection to LU School of Architecture. ▪ Increases frequencies to that previously provided by the Laurentian U. via Paris route to better utilize schedule resources, align service with destinations and dense residential areas. ▪ Focusing the majority of service on this single route also makes Laurentian University service more consistent and easier to understand. ▪ With future expansion, can be joined to #2 Barry Downe – Cambrian as a single route to create the system's other key Bus Rapid Transit spine.
Route #4 Laurentian U. Express ▪ Targeted Service ▪ Two-way service	▪ Retains existing well-utilized service to Laurentian University with slight modification to route pattern within the University and potential the Health Science North area to improve schedule adherence and directness of travel. ▪ Downtown travel pattern also modified to ensure connection to LU School of Architecture. ▪ Layers onto base #3 Laurentian U. via Regent service to provide additional 15-minute frequency between the Downtown Hub and Laurentian University at peak times during the fall and winter semesters. This creates service every 7-8 minutes.
Route #5 Second Avenue ▪ **Core** service ▪ Two-way service	▪ Builds from an existing high performing route. ▪ Adjusts service leaving the terminal as well as on Marcus Dr. and Donna Dr. to improve schedule adherence
Route #6 Donovan / Collège Boréal ▪ **Core** service ▪ Two-way service	▪ New route pattern provides direct travel to and from New Sudbury Shopping Centre Hub and the Downtown Mobility Hub for Collège Boréal students and residents of Donovan. ▪ Ability to connect #10 Graywood Local route to provide direct connection to Cambrian College.
Route #7 Minnow Lake ▪ **Core** service ▪ Two-way service	▪ Retains existing service to Minnow Lake area with slight modification to route pattern to ensure schedule adherence. ▪ Offers direct connection between these neighbourhoods and the Downtown Mobility Hub, with possible coordinated transfer available with #5 Second Avenue for connection to New Sudbury. ▪ Possible future extension to new Events Centre on Kingsway at Levesque St. ▪ Summer route access to Moonlight beach will still be extended.
Route #8 Copper Cliff ▪ **Core** service ▪ Two-way service	▪ Builds from an existing high performing route with slight modifications to route pattern in the Copper Cliff area to improve schedule adherence and directness of travel. Potential On-Demand (TransCab) connection to be created for on demand service to Lively after 9pm.
Route #9 Kelly Lake ▪ **Core** Service ▪ Two-way Service	▪ Builds from an existing high performing route with slight modifications to the route pattern to improve schedule adherence and provide access to South End Mobility Hub. ▪ Can be connected to #20 South End Local to provide seamless travel.
Route #10 Graywood Local ▪ Neighbourhood service ▪ One way loop	▪ Provides connection between the Graywood area, Cambrian College and New Sudbury Mobility Hub. ▪ Can be connected to #5 Donovan/Collège Boréal route to provide direct connection for Cambrian students to the Donovan neighborhood.

New Route Number, Route Type and Structure	Comments
Route #11 Madison Local ▪ Neighbourhood service ▪ One way loop	▪ Provides connection between the Madison area and the New Sudbury Mobility Hub. ▪ At key commuter times and where possible at other times, service may be connected to other routes (such as the #1 Mainline or #6 Donovan / Collège Boréal) to provide "no transfer required" service to downtown.
Route #12 Graywood/Madison Local ▪ Neighborhood service ▪ One-way loop	▪ This route combines #10 Graywood Local and #11 Madison Local to be deployed during off peak time when travel patterns are reduced to improve efficiency of service. ▪ Ridership on route #10 and #11 will be evaluated as the system progresses and this route may be deployed where the additional service is not warranted.
Route #13 Grandview Local ▪ Neighborhood service ▪ One-way loop	▪ Provides service across all days of the week as permitted to this neighborhood and connects to Frequent routes and other services at New Sudbury Mobility Hub. ▪ During weekday commuter times, service in this area is augmented by the #15 Grandview Commuter Local.
Route #14 New Sudbury Local ▪ Neighborhood service ▪ One-way loop	▪ Provides coverage to shopping destinations for those passengers unable to walk to other high frequency routes servicing the areas. ▪ Passengers can connect to other routes and services at the Kingsway shopping area and New Sudbury Mobility Hub.
Route #15 Grandview Commuter ▪ Targeted service ▪ One-way service operating in direction of peak travel	▪ Offers direct connection during weekday commuter times between the Grandview neighbourhood and the Canada Revenue Agency. ▪ At the Canada Revenue Agency, trips would become the #16 Cambrian Heights Local offering no-transfer-required service to downtown. ▪ As is currently the case in the Grandview area, service would operate in the direction of peak travel.
Route #16 Cambrian Heights Local ▪ Neighbourhood service ▪ Two-way service	▪ Serves the Canada Revenue Agency and Pioneer Manor and residents along Kathleen to Cambrian Heights. ▪ At commuter times on weekdays, connects with #15 Grandview Commuter route to provide direct connection for Kathleen area residents to Lasalle (facilitating connections to route #6 Donovan and Collège Boréal), as well as to the Cambrian College area.
Route #17 West End Local ▪ Neighborhood service ▪ One-way loop	▪ Route streamlined to improve coverage on both sides of Regent St. ▪ Additional walk distance for some customers is considered reasonable considering increased access for other side of Regent.
Route #18 McKim Local ▪ Neighborhood service ▪ One-way loop	▪ Provides coverage to residential areas for those passengers unable to walk to other higher frequency routes servicing the areas and provides connection to to the Downtown Mobility Hub.
Route #19 Flour Mill Local ▪ Neighborhood service ▪ One-way loop	▪ Provides coverage to residential areas for those passengers unable to walk to other higher frequency routes servicing the areas and provides connection to the Downtown Mobility Hub. ▪ Winter months operates via Louis Street, with service at other times via Mountain Street with potential to provide service with smaller vehicle year-round. ▪ No service to Canada Revenue Agency as transfers can be made to new Route #1 Mainline at King and Notre Dame.

New Route Number, Route Type and Structure	Comments
Route #20 South End Local ▪ Neighborhood service ▪ One-way service	▪ Provides connection from the Lo-Ellen and South End neighbourhood to the South End Mobility Hub (located at Walmart) and to the Four Corners. ▪ As there are no left turns out of the South End Mobility Hub, this route will remain one-way but has the possibility of becoming a two-way service if demand is warranted and road structure improvements are undertaken.
Route #101 Lively ▪ **Community Connector** service ▪ Proposed On-Demand service after 9pm ▪ Two-way Service	▪ Streamlines route to remove duplicate service, reduce travel time and make service more direct. ▪ Connects passengers directly to South End Mobility Hub where they can transfer to #1 Mainline, or alternatively have the option to transfer in Copper Cliff at the Local Mobility Hub if requiring a Downtown connection. ▪ Provides direct service for those living in Little Creighton ▪ Service after 9pm would be provided by On-Demand service via TransCab to provide service directly to resident homes and better match ridership levels and would connect to Route #9 in Copper Cliff.
Route #102 Garson ▪ **Community Connector** service ▪ Expanded On-Demand service (TransCab) zone ▪ Two-way Service	▪ Proposes to move the On-Demand service (TransCab) connection point to Garson to better coordinate with conventional service and provide expanded TransCab availability to areas in Skead and Falconbridge. ▪ Expands the On-Demand service (TransCab) zone to offer new connection between Garson and Hanmer. ▪ Offers new connection to Route #1 Mainline at the New Sudbury Mobility Hub
Route #103 Coniston ▪ **Community Connector** service ▪ Proposed On-Demand service after 7pm ▪ Two-way Service	▪ Streamlines route to remove duplicate service, reduce travel time and make service more direct. ▪ Offers connection to Route #1 Mainline and #2 Barry Downe-Cambrian at New Sudbury Mobility Hub. ▪ Service after 7pm would be provided by On-Demand service (Transcab) to provide service directly to resident homes and better match ridership levels.
Route #104 Azilda/ Chelmsford ▪ **Community Connector** service ▪ Two-way Service	▪ Relocates the On-Demand service (TransCab) connection point to Place Bonaventure to better match service to the places where people want to travel and shorten trip travel times. ▪ Makes current fixed-route pilot project service permanent, providing scheduled, routed service using TransCab vehicles to Dowling/Levack at peak times and on demand service off peak.
Route 105 Valley East Local ▪ Neighborhood service ▪ Expanded On-Demand service (TransCab) zone ▪ Two-way Service	▪ Serves and provides connection between the communities of Capreol, Hanmer, Val Therese, Val Caron and Blezard Valley. ▪ During peak commuter times, #105 and #106 have been designed to connect at the Hanmer Local Mobility Hub, with the possibility of offering direct no-transfer-required connection to downtown. ▪ Route modifications in Capreol will offer two-way service via Hanna, and extension on Main street to Elm to make service easier to understand and improve service to key ridership destinations ▪ Schedules will be revised to provide more consistent service across the day rather than instances where several buses travel at once. ▪ On-Demand Service (TransCab) will remain at the corner of Cote and MR 84, but will provide extended service to Garson.

New Route Number, Route Type and Structure	Comments
Route #106 Valley Express ▪ **Community Connector** service ▪ Two-way Service	▪ Provides direct travel from Hanmer Local Mobility Hub to Downtown Mobility Hub and opportunity to connect to new #1 Mainline route to other key destinations. ▪ During peak commuter times, #105 and #106 have been designed to connect at the Hanmer Local Mobility Hub, with the possibility of offering direct no-transfer-required connection to downtown. ▪ Schedules will be revised to provide more consistent service across the day rather than instances where several buses travel at once. ▪ Opportunity for Park and Ride at Hanmer Local Mobility Hub.
Route #107 Valley Combined ▪ **Community Connector** service ▪ Two-way Service	▪ During off-peak times, this route combines #105 Valley Local with #106 Valley Express to better match ridership demand.

In Focus: Route Level Trade-offs

It is inevitable that any transit process that tries to accomplish more within the same number of resources will have to make hard choices.

These choices will be especially difficult in systems like Greater Sudbury Transit, which have lower levels of investment (service hours per capita) than its peer group and where transit service levels have not kept pace with population and operating requirements (i.e. additional time required to ensure the system remains reliable in the face of increased traffic congestion, and growth in post-secondary student demand).

This means that while the entire package of changes will be generally perceived positively, there may be some existing users in lower ridership areas who may have a longer walk to service, a reduced span of service or a longer interval between trips.

A number of these issues are partially addressed through the future expansion options outlined in **Section 4.6**. **Many other systems have also cushioned the hard trade offs that emerge through service restructurings by allocating a modest increase of 2% to 4% in service hours (3,500-7,000 service hours)**

4.6 Future Expansion Options

The following presents high level transit service expansion options that address immediate issues and opportunities, which further evolve the system towards the longer term structure shown in the Network Overview Map and recommended in the revised Service Standards. The options build on community plans and the transit restructuring described in Section 4.5 and meet the highest priority requests from the public and strategic growth of the system.

Options are divided into two sections:

- **4.6.1 Priority Expansion Options** are those system changes that would optimally be implemented over the next 1-3 years, pending funding. These options build on and leverage the restructuring, improve overall ease of use and effectiveness, and are anticipated to result in significant gains in system ridership and performance.

- **4.6.2 Other Medium-term Expansion Options** follow those in the previous category and would optimally be considered over the next 4-10 year, pending funding. Many of these options build on previous investment and are focused on further developing the service.

The above options include measure that would work to evolve the Frequent Transit lines into Greater Sudbury version of BRT-Lite. These options represent higher-order transit strategies that would enable the City of Greater Sudbury to build upon the early success of the TAP initiatives by taking transit to the next level—including transit priority measures outlined in the Infrastructure Needs section 5 that are designed to reduce transit travel times, reduce operating costs significantly, and increase transit use. Pending funding, BRT and bus priority measures could be implemented based on the quantified impact of ridership growth attributed to the TAP implementation.

High level cost estimates for options are based on financial information drawn from the system's 2018 budget and would be in addition to the existing municipal transit budget. Actual costs may vary depending on order and timing of implementation and finalization of operating details at that time. A table summarizing total hours impact and vehicle requirements is also presented in **Section 4.7**.

The options also take into account reallocation of existing system resources and vehicles, where feasible. Vehicle estimates are based on operational requirements and also include a provision for spare vehicles where necessary to meet general transit industry best practices.

Any increase in transit operating costs would be limited to variable costs, that is, the expense related to bus operators, fuel and maintenance and would exclude most transit fixed costs such as general administration and transit facility (garage) expenses. Variable operating costs represent approximately 80% of total operating expenses, which can vary based on fuel and other unknown cost fluctuations.

4.6.1 Priority Expansion Options (Optimally Next 1-3 Years, Pending Funding)

- **Service Option 1: Critical Fixes to Frequency, Capacity and Span of Service**

  This option adds further funding and service to the system to add further frequency and longer service span to select routes and trips that would otherwise be desired as part of the immediate network-wide route restructuring (see Section 4.5) but which are not possible given the constraints of working within the existing system budget. This option also provides the resources to undertake any critical fixes that arise out of the implementation of the revised route structure.

Initial High Level Estimate – Additional Impacts

Option 1: Critical Fixes to Frequency, Capacity and Span of Service

0	Vehicles	$0	One-Time Vehicle Capital Cost
8,100	Annual Service Hours	$905,300	Annual Operating Cost
71,700	Annual Passengers	$117,800	Annual Revenue
		$787,500	Net Total Annual Operating Cost

- **Service Option 2: Earlier Weekday Service**

  This option would start service on the Frequent, Core and Community Connector routes earlier to facilitate 7:00 a.m. work starts downtown and at key employment destinations. This was one of the top requests heard in both phases of public engagement for the Transit Action Plan.

Initial High Level Estimate – Additional Impacts

Option 2: Earlier Weekday Service

0	Vehicles	$0	One-Time Vehicle Capital Cost
3,600	Annual Service Hours	$402,300	Annual Operating Cost
31,900	Annual Passengers	$52,400	Annual Revenue
		$349,900	Net Total Annual Operating Cost

- **Service Option 3: Additional Sunday and Statutory Holiday Frequency & Span**

  This option would further increase frequency across all services to offer identical service levels on Sundays between 10:00 a.m. and 6:00 p.m. to that offered during Saturdays. This option would also adjust routes as necessary to cease any final Sunday routing anomalies (routes that may operate on a separate pattern or be combined on Sundays due to working within the constraints of existing funding levels). In tandem with earlier weekday service, increased Sunday frequency was the other key request heard through public engagement.

Initial High Level Estimate – Additional Impacts

Option 3: Additional Sunday and Statutory Holiday Frequency & Span

0	Vehicles	$0	One-Time Vehicle Capital Cost
3,200	Annual Service Hours	$357,600	Annual Operating Cost
35,400	Annual Passengers	$58,200	Annual Revenue
		$299,400	Net Total Annual Operating Cost

- **Service Option 4: Comprehensive Laurentian University Service Improvements**

  This option contains a package of improvements that would further develop the system's structure and improve connection to Laurentian University from Mobility Hubs throughout Greater Sudbury. It includes:

  - Formal joining of the #2 Barry Downe – Cambrian and the #3 Laurentian U. via Regent route to create the system's other key spine, the #2 Cambrian-Laurentian U. serving the key corridors of Barry Downe, Kingsway and Regent and connecting multiple key destinations in the City.
  - Additional frequency as required to facilitate the route restructuring.
  - Implementation of a new targeted route—the #3 South End – Laurentian U. Express—that would offer no-transfer-required service at peak times from key higher density residential areas to the University.
  - Additional hours of operation as required on the #4 Laurentian U. via Paris Express to meet ridership demand, as well as extension to the days that the express routes operate to the end of the winter semester rather than just the start of the winter exam period.
  - Additional trips as needed on the Community Connector services to align investment across areas and meet ridership demand.

Initial High Level Estimate – Additional Impacts

Option 4: Comprehensive Laurentian University Service Improvements

3	Standard Vehicles	$1,710,000	One-Time Vehicle Capital Cost
6,100	Annual Service Hours	$701,100	Annual Operating Cost
94,500	Annual Passengers	$155,300	Annual Revenue
		$545,800	Net Total Annual Operating Cost

4.6.2 Other Medium-Term Expansion Options (Next 4-10 Years, Pending Funding)

- **Service Option 5: Consistent and Extended Frequent Route 15-Minute Service**

  This option adds frequency to the #1 Mainline and #2 Cambrian – Laurentian frequent routes to offer 15-minute service across all days from 7:00 a.m. to 9:00 p.m. At that level of frequency these two routes begin to take on the service profile that will enable them to eventually evolve into true Bus Rapid Transit lines. Infrastructure investment should be considered in tandem with the implementation of this option to begin creating higher quality "stations" from stops along their respective corridors.

Initial High Level Estimate – Additional Impacts

Option 5: Consistent and Extended Frequent Route 15-Minute Service

2	Standard Vehicles	$1,140,000	One-Time Vehicle Capital Cost
7,200	Annual Service Hours	$817,600	Annual Operating Cost
95,600	Annual Passengers	$157,100	Annual Revenue
		$660,500	Net Total Annual Operating Cost

- **Service Option 6: Community Connector Frequency Improvements**

  Proposed to occur in tandem with Option 6, this option would provided targeted frequency increases on select Community Connector routes at highest ridership times.

Initial High Level Estimate – Additional Impacts

Option 6: Community Connector Frequency Improvements

2	Smaller Vehicles	$400,000	One-Time Vehicle Capital Cost
3,000	Annual Service Hours	$348,200	Annual Operating Cost
26,600	Annual Passengers	$43,700	Annual Revenue
		$304,500	Net Total Annual Operating Cost

- **Service Option 7: Weekday Commuter Frequency Improvements**

  This option includes a package of improvements to further increase the frequency and ease of use of all system routes, including:

  - An increase to the overall hours of the day that additional commuter service is offered, i.e. for an additional hour longer in the morning and afternoon.
  - Increase to 15-minute frequency at commuter times on select Core routes (based on ridership).
  - Increase to at least 30-minute commuter frequency on all other routes.
  - Further funding as required to ensure sufficient On-Demand TransCab service to meet demand.
  - Additional Handi-Transit service at peak times to meet ridership demand.

Initial High Level Estimate – Additional Impacts

Option 7: Weekday Commuter Frequency Improvements

7	Mixed Vehicles*	$3,250,000	One-Time Vehicle Capital Cost
10,100	Annual Service Hours	$1,242,900	Annual Operating Cost
111,700	Annual Passengers	$183,500	Annual Revenue
		$1,059,400	Net Total Annual Operating Cost

* 5 standard, 2 smaller vehicles

- **Service Option 8: Schedule Reliability Maintenance**

  As the years progress, congestion and growing ridership will likely be impacting transit system travel times and making service late or less reliable. It is prudent to plan for additional vehicles and service hours at approximately this midpoint to ensure continued on-time performance.

Initial High Level Estimate – Additional Impacts

Option 8: Schedule Reliability Maintenance

3	Standard Vehicles	$1,710,000	One-Time Vehicle Capital Cost
8,800	Annual Service Hours	$1,002,800	Annual Operating Cost
97,400	Annual Passengers	$160,000	Annual Revenue
		$842,800	Net Total Annual Operating Cost

- **Service Option 9: Further Frequent Transit Improvements**

  This option adds additional service to the two Frequent Transit routes to bring service frequency to every 7-8 minutes during commuter times. It also extends the time that 15-minute service is available until after 11:00pm.

Initial High Level Estimate – Additional Impacts

Option 9: Further Frequent Transit Improvements

11	Standard Vehicles	$6,270,000	One-Time Vehicle Capital Cost
28,000	Annual Service Hours	$3,200,300	Annual Operating Cost
495,600	Annual Passengers	$814,300	Annual Revenue
		$2,386,000	Net Total Annual Operating Cost

- **Service Option 10: Targeted Commuter Improvements on Other Routes**

  This option creates provision to increase service frequency as warranted on select Core, Neighbourhood and Community Connector routes at commuter times.

Initial High Level Estimate – Additional Impacts			
Option 10: Targeted Commuter Improvements on Other Routes			
5	Mixed Vehicles*	$2,110,000	One-Time Vehicle Capital Cost
10,100	Annual Service Hours	$1,195,500	Annual Operating Cost
156,400	Annual Passengers	$257,000	Annual Revenue
		$938,500	Net Total Annual Operating Cost

* 3 standard, 2 smaller vehicles

- **Service Option 11: Implementation of Community Shuttle Route**

  A community bus shuttle is an indirect and infrequent off-peak route that links seniors with medical facilities, shopping and recreational centres. Service could be provided every 60 to 120 minutes.

Initial High Level Estimate – Additional Impacts			
Option 11: Implementation of Community Shuttle Route			
2	Smaller Vehicles	$400,000	One-Time Vehicle Capital Cost
2,500	Annual Service Hours	$292,300	Annual Operating Cost
16,600	Annual Passengers	$27,300	Annual Revenue
		$265,000	Net Total Annual Operating Cost

- **Service Option 12: Implementation of Additional Community Connector Route**

  This option would directly connect Val Caron, Blezard, Elmview, Chelmsford, and Azilda without going via Sudbury. Service would be limited to a few trips per day and would likely be provided by a fixed-route TransCab bus.

Initial High Level Estimate – Additional Impacts			
Option 12: Implementation of Additional Community Connector Route			
1	Smaller Vehicle	$200,000	One-Time Vehicle Capital Cost
2,800	Annual Service Hours	$319,400	Annual Operating Cost
18,600	Annual Passengers	$30,600	Annual Revenue
		$288,800	Net Total Annual Operating Cost

- **Service Option 13: Additional Midday and Weekend Handi-Transit Capacity**

  Complementing previous additions to Handi-Transit peak period service on weekdays, this option adds additional Handi-Transit service to keep pace with demand during weekday middays and on weekends.

Initial High Level Estimate – Additional Impacts

Option 13: Additional Midday and Weekend Handi-Transit Capacity

3	Smaller Vehicles	$600,000	One-Time Vehicle Capital Cost
7,900	Annual Service Hours	$902,300	Annual Operating Cost
22,100	Annual Passengers	$36,300	Annual Revenue
		$866,000	Net Total Annual Operating Cost

- **Service Option 14: Additional On-Demand (TransCab) Service**

  This option creates provision to add additional On-Demand service via TransCab to keep pace with demand and offer reliable connection to Community Connector services.

Initial High Level Estimate – Additional Impacts

Option 14: Additional On-Demand (TransCab) Service

0	Vehicles	$0	One-Time Vehicle Capital Cost
0	Annual Service Hours	$69,000	Annual Operating Cost
8,000	Annual Passengers	$13,100	Annual Revenue
		$55,900	Net Total Annual Operating Cost

4.7 Service Option Summary

The following presents the high level financial and performance estimates for all options presented in Sections 4.5-4.6. Costs are based on 2019 system budget factors and would be in addition to the existing municipal transit budget. All operational figures are annual and may vary at time of implementation based on timing and confirmation of operational details.

Greater Sudbury Transit Action Plan
Service Option Summary: Preliminary Estimated Additional Impacts*

Service Option	Vehicles **	Annual Service Hours	Annual Rides	Total One Time Vehicle Capital Costs	Annual Operating Costs	Annual Total Revenue	Annual Net Operating Costs
Servcie Reallocation Option for Immediate Consideration							
Immediate Network-Wide Route Restructuring	Accomplished entirely through reallocation of existing resources and vehicles.						
Priority Expansion Options (Optimally Next 1-3 Years, Pending Funding)							
Option 1: Critical Fixes to Frequency, Capacity and Span of Service	0	8,100	71,700	$0	$905,300	$117,800	$787,500
Option 2: Earlier Weekday Service	0	3,600	31,900	$0	$402,300	$52,400	$349,900
Option 3: Additional Sunday and Statutory Holiday Frequency & Span	0	3,200	35,400	$0	$357,600	$58,200	$299,400
Option 4: Comprehensive Laurentian University Service Improvements	3	6,100	94,500	$1,710,000	$701,100	$155,300	$545,800
Other Medium-Term Expansion Options (Next 4-10 Years, Pending Funding)							
Option 5: Consistent and Extended Frequent Route 15-Minute Service	2	7,200	95,600	$1,140,000	$817,600	$157,100	$660,500
Option 6: Community Connector Frequency Improvements	2	3,000	26,600	$400,000	$348,200	$43,700	$304,500
Option 7: Weekday Commuter Frequency Improvements	7	10,100	111,700	$3,250,000	$1,242,900	$183,500	$1,059,400
Option 8: Schedule Reliability Maintenance	3	8,800	97,400	$1,710,000	$1,002,800	$160,000	$842,800
Option 9: Further Frequent Transit Improvements	11	28,000	495,600	$6,270,000	$3,200,300	$814,300	$2,386,000
Option 10: Targeted Commuter Improvements on Other Routes	5	10,100	156,400	$2,110,000	$1,195,500	$257,000	$938,500
Option 11: Implementation of Community Shuttle Route	2	2,500	16,600	$400,000	$292,300	$27,300	$265,000
Option 12: Implementation of Additional Community Connector Route	1	2,800	18,600	$200,000	$319,400	$30,600	$288,800
Option 13: Additional Midday and Weekend Handi-Transit Capacity	3	7,900	22,100	$600,000	$902,300	$36,300	$866,000
Option 14: Additional On-Demand (TransCab) Service	0	0	8,000	$0	$69,000	$13,100	$55,900
Total of All Options	**39**	**101,400**	**1,282,100**	**$17,790,000**	**$11,756,600**	**$2,106,600**	**$9,650,000**

Notes:

* Based on 2019 system budgets and peer averages. Final costs may vary based on detailed budgets, year of implementation and final operational details.

** Vehicle requirements shown include spares and may vary at time of implementation based on system fleet standards.

5 INFRASTRUCTURE NEEDS

5 INFRASTRUCTURE NEEDS

Complementing the system-wide changes to service proposed in Section 4, a number of infrastructure improvements are proposed to supporting elements of the transit system. These include adding more shelters, benches, and information at stops and terminals.

Further to the key observations in Section 3, this includes a recommendation for standardizing bus stop infrastructure, to enhance the consistency of stop placement and accessibility. In these standards, bus stop information requirements should be clearly identified. Greater Sudbury Transit should undertake a customer information refresh and marketing strategy to update all wayfinding, promotional and infrastructure based on the new network service and route structure. Bike racks complement the system and should be placed on all conventional buses.

Implementing future Bus Rapid Transit (BRT) measures discussed in Section 4.7 Future Expansion Options do make operational sense. During the course of this study, a new funding program was announced that could expedite BRT measures in Greater Sudbury that can build on the previous Public Transit Infrastructure Fund.

On March 14, 2018 the Governments of Canada and Ontario signed an Integrated Bilateral Agreement for the Investing in Canada Infrastructure Program. With an end date of March 31, 2028, the Program encompasses several investment streams. The Public Transit stream allocates a maximum contribution over that time period to the City of Greater Sudbury of $39.8 million in federal funding and $32.8 million provincial. Assuming a municipal contribution of 27%, this provides a potential total funding maximum of $99.4 million towards public transit infrastructure projects over the next ten years within the City of Greater Sudbury.

The Agreement's stated overarching objective for the Public Transit stream is to "primarily build new urban transit networks and service extensions that will transform the way that Canadians live, move and work." Stated eligible project outcomes include:

- Improved capacity of public transit infrastructure.
- Improved quality and/or safety of existing or future transit systems.
- Improved access to a public transit system.

Stated Agreement targets related to the public transit stream include:

- Increase by at least 25% the modal share for public transit and active transportation.
- Increase to 95% the percentage of people in a municipality with a transit system that live in the service area of their transit system.

Ineligible projects land acquisition, operating costs and non-municipal inter-city transportation.

Based on this, the following sections look at infrastructure priorities spanning the short and longer term to support the immediate transition of service and build towards elements of Bus Rapid Transit on major corridors and links to outlying communities to attract new commuters.

5.1 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:

Minimum

- Name or Identification number of the stop (i.e. 4-digit existing 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 in 6)
- Route map
- Fare information
- Phone number (to access transit information)
- Website addresses to link to Greater Sudbury Transit's GPS/Real time application (mybus.greatersudbury.ca) and other information about transit (fares, hours of service, routes, etc.)

At Transit Shelter Locations

- Same information as above
- Transit system map

Figure 6 - Posted Schedules at Bus Stops

Recommendation: Further to the recommendation in Section 3, it is recommended that bus stop standards should be developed to enhance the consistency of stop placement and accessibility. In these standards, bus stop information requirements should be clearly identified.

5.2 Refreshed Transit System Customer Information and Consistency

With the implementation of new transit service improvements, including bus stop infrastructure, there is now an opportunity to refresh all customer information materials for the entire transit system by adopting clear and consistent messaging and a complementing marketing strategy. This customer information refresh will build and enhance transit system visibility by communicating a clear message to existing and potential transit customers that this is their transit service.

A customer information refresh for Greater Sudbury Transit is a separate study in itself and is beyond the scope of this report, however, the very basic aspects of this information refresh would consist of common and universal images throughout the following components of the transit system:

- Greater Sudbury Transit refreshed name and logo (consistent colour & shapes for all materials and new vehicles)
- Website
- Fonts (including AODA compliance with font size and contrasting colours)
- System route maps (printed, online and posted in transit shelters)
- Bus stops (and posted schedules at major busy stops) and shelters
- Service announcements, detours, route changes, etc.
- All promotional and marketing materials
- Fare media (including transit fare smartcards).

Recommendation: It is recommended to take advantage of the momentum built with the restructuring of the Transit Network, and undertake a customer information refresh and marketing strategy for Greater Sudbury Transit's family of services.

Image sources: left and middle: Petryna Advertising Ltd.; right: Watt Consulting Group

5.3 Bike Racks on Buses

Active transportation has been playing a significant role in the overall transportation choice across Canada. Since all transit customers are pedestrians, they benefit from walk distance guidelines as proposed in this report. One active transportation market that has not been accommodated are those that travel by bicycle, which was made clear through the community engagement process. 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 all key transit 'mobility' hubs – Transit Centre, New Sudbury Terminal, Costco, Four Corners, and Walmart – and at major transit generators.

Recommendation: It is recommended that bike racks should be placed on all conventional transit buses.

5.4 Accommodating Future Bus Rapid Transit

To accommodate future BRT, there are a number of steps that can be taken to evolve into a full BRT system with dedicated bus lanes, if required. In this regard, transit priority measures are designed to reduce bus travel times, improve schedule reliability and reduce transit costs that, in turn, will result in increased transit use and revenues. Priority measures can range from minor costs such as removing a turning restriction for buses only at an intersection to a full BRT corridor with dedicated bus travel lanes.

5.4.1 Identify Transit Priority Corridors and Mobility Hubs

To maximize the return on investment of the proposed service changes and plan for the further improvements needed to maximize success, the following priority activities are recommended:

- **Formally integrate the corridors designated for "Frequent" and "Core" transit services into updates to the Official Plan and development processes** to ensure that supportive land uses (higher density, ideally mixed use) and corridor infrastructure improvements align with these priority corridors.
- **Conduct an analysis of all proposed major connecting mobility hubs** (Downtown, New Sudbury Centre, Health Sciences North, South End) to determine:
    - Optimal location to ensure ongoing operational efficiency, ease of use, and safety and security.
    - Functional requirements over the 20-year horizon (i.e. number of bays, allocation of routes, functional design)
    - Infrastructure investments to improve customer information and care, including shelter, seating, integrated amenities (i.e. services, washroom, coffee shop, etc.), wayfinding, and information displays.
- **Conduct corridor planning on the Frequent Transit corridors** to identify:
    - Appropriate land use designations, pedestrian and cycling connection improvements.
    - Future bus rapid transit (BRT) station locations and amenities/clustering around these nodes.
    - Implementing turning movement exceptions for buses
    - 20% design of roadways and intersections

Transit priority treatments for consideration along these corridors are necessary to ensure that transit has the space and place it needs to be reliable and as timely as possible. This would include transit signal priority (TSP) for transit vehicles, optimized signal timing, queue jump lanes, and future separate transit rights of way where feasible.

5.4.2 Transit Signal Priority

Transit signal priority measures would involve a technology that detects an approaching bus that would trigger a real time change in the traffic control plan that would give the bus priority to move through the intersection. The provision of compatible equipment on the buses and at intersection traffic controllers would be required. The signal phases may include an extended green phase or a shortened side street green phase to enable the bus to clear the intersection. It should be noted that emergency vehicles would receive priority signal timings while transit vehicles would get secondary priority.

A more advanced form of transit signal priority is the use of advanced vehicle location and control (AVLC) systems on the buses where a central traffic control system tracks individual buses on a street network and adjust signal timings accordingly. For example, it might modify signal progression along a corridor while modifying the signal plan at intersections to provide transit with priority.

Further information of Transit Signal Priority would incorporate the findings and strategies of the report entitled City of Greater Sudbury Intelligent Transportation System (ITS) Plan and Advanced Traffic Management System (ATMS) Implementation Strategy.

5.4.3 Implement Transit Mobility Hub and Corridor Improvements

This initiative would further develop all Major Mobility Hubs in the City to maximize operational efficiency, safety and passenger amenities such as heated shelters. In particular, revised locations may be considered for the Downtown Terminal, New Sudbury Centre and South End Mobility Hubs to reduce running times/operating costs and improve security, pedestrian safety and integration with surrounding land uses.

Similar to the Major Mobility Hub Improvements, this initiative would develop proposed Community Mobility Hubs in outlying areas, including location, TransCab/Handi-Transit connection points, pedestrian/cycling linkages, potential Park & Ride and ride share connection points, integration with area services and the provision of improved passenger amenities.

It is recommended that prior to investing in an ultimate BRT corridor with dedicated bus lanes, that Transit Signal Priority be undertaken as well as low-cost solutions to provide transit priority at key locations. Low-cost solutions may include a number of measures such as queue jump lanes, curbside right turn lanes used by buses for straight through movements, bus only left turn lanes, minor roadway widenings, etc. The initial BRT phase, referred to as BRT-lite, is a strategy aimed at building ridership quickly at a lower capital cost with minimum disruption to the road network.

5.4.4 Bus Rapid Transit Vehicles

Bus Rapid Transit vehicles are higher quality buses than conventional transit buses and are usually branded separately.

As ridership demand increases along BRT corridors as a result of transit priority measures in place, bus frequencies will need to be increased to reflect the service standards in place.
To accommodate the increased demand, Greater Sudbury Transit has two options:

- Increase transit service frequencies with 12.2 metre (40') conventional transit buses
- Maintain transit frequencies with the use of 18.3 metre (60') articulated buses

Although 12.3 metre articulated BRT buses are far costlier to purchase than 12.2 metre conventional transit BRT buses, a business case could exist when operating costs are reduced as a result of fewer buses being required. The articulated bus option should be considered as an alternative vehicle in the capital budget.

Recommendation: It is recommended that major transit corridors and mobility hubs be confirmed, transit priority measures implemented, mobility hubs and key bus stations be constructed, and future Bus Rapid Transit services become a reality when supporting business cases exist.

6 LAND USE AND POLICY FRAMEWORK

6 LAND USE AND POLICY FRAMEWORK

The following sections describe best practices and recommendations with respect to transit service design, supporting land use policies and bus stop policies.

This policy framework includes the system's proposed revised Service Design Standards in Section 6.3, which have been updated to reflect the revised proposed route structure.

6.1 Land Use Planning and Transit

When designing transit service for new residential and commercial developments, maximum transit route coverage at minimal cost must be viewed as a priority, not unlike other services the City provides. Maximizing the number of residents and businesses that are served for every kilometre of bus route will go a long way to sustainable development that also addresses active transportation measures that integrate with Transit.

Arterial transit routes offer a more attractive service because they are more direct and cost-effective than transit routes along slower internal collector roads and residential streets. However, transit service along collector roads is necessary in many cases since arterial roads are often spaced too far apart to accommodate acceptable transit walk distance requirements.

It is recognized that the hilly topography of Greater Sudbury and railway corridors provides challenges, which forces some bus to travel out of direction to accommodate reasonable access to bus stops for residents. When developing bus routes, best practices are applied to route design, walk distances to bus stops, the locating of bus stops, and bus stop accessibility.

6.1.1 Acceptable Transit Route Design

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

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

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

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

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

Bus Route Design Speeds: Safe travel speeds are needed to ensure buses can maintain their schedule and be designed such that people can get from A to B in the quickest and safest manner possible. An average design travel speed of approximately 18-22kph should be in place in urban environments. Greater Sudbury Transit's average speed was reported at 25.23 kph in 2015.

Route Length and Population Density: Road layouts in residential developments should be designed such that transit routes require a maximum of 1.0 kilometre of transit route per 1,000 residents served. This would apply to the Greater Sudbury Transit urban service area (152.6 km^2). Since the total City of Greater Sudbury encompasses several communities in a large area of 3,228 km^2 that are linked by transit via sparsely populated roadways, it is impossible to meet the 1,000 residents per 1.0 km of bus route requirement. However, it is suggested by Transit Consulting Network that the route lengths within 152.6 km^2 urban area meet the 1,000 residents per kilometre of bus route to the extent possible.

6.1.2 Walk Distance to Bus Service

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

- 95% of dwelling units in the urban area of Greater Sudbury should be within a 450-metre walk distance of an existing or future bus stop; 90% of dwelling units in commuter areas of Greater Sudbury should be within a 400-metre walk distance of an existing or future bus stop;
- 70% of dwelling units should be within a 300-metre walk distance of a bus stop.
- All multiple housing units should be within a 300-metre walk distance of an existing or future bus stop.
- Special needs housing, high density employment, shopping, medical, and institutional development should be within a 150 metre walk distance of a bus stop.

The 450 metre standard is considered a realistic goal except for steep roadways in some areas of the city. If a more stringent standard than 450 metres is chosen, this may result in improved coverage being required in existing residential areas but at a higher cost.

6.1.3 Transit Role in the Land Use Design Process

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

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

- Determine basic location and orientation of transit routes
- Determine a street system and walkway layout, which attempts to accommodate efficient transit service along the arterial and collector road system
- Determine location of activity centres (schools, shopping facilities and medium to high density residential areas) along transit routes
- Determination of mobility hubs and transfer facilities to maximize integration of modes and reduce overall transit travel times

- Co-ordinate location of bus stops with design of intersections and walkways in order to minimize walk distances, provide for reasonable bus stop spacing, and provide for safe pedestrian routes; and
- Locating walkways which would serve as many purposes as possible (i.e. access to bus stops, schools, shopping, parks, and trail links)

It is also recommended that the finalized Transit Action Plan recommendations and network structure be incorporated into future planning documents and development processes. In particular:

- Corridors designated for Frequent or Core service should have land uses and developments that maximize residential and employment density. Development proposals within 400m of these corridors should be flagged for further scrutiny and passed to transit staff for input on amenities and changes that could be considered as part of development, such as improvement to pedestrian connections or bus stop amenities.
- Road network changes and upgrades to composition and intersections on Frequent and Core service corridors should consider how improvements could also be implemented to help ensure the reliability and ease of use of transit. This may include signal timing changes or transit signal priority measures, as well as queue jump lanes around areas of congestion.

6.1.5 Trade-offs

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

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

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

By reflecting Transit needs throughout the planning processes, it would be known whether or not the design guidelines have been met with every effort made to attain them. It is likely that existing and planned subdivisions and other developments, which do not meet all of the guidelines would receive a lower level of transit service (e.g. peak period only) than more transit-oriented subdivisions which meet or exceed the design objectives.

6.2 Bus Stop Location and Design Best Practices

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

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

- **Walkways, for the purpose of transit connections, must be constructed out of a material which can be maintained year-round**. Responsibility for the maintenance of these walkways must be allocated to the appropriate department.

- **Bus stops and bus stop amenities must meet Accessibility for Ontarians Disability Act (AODA) requirements.**
  The AODA (Accessibility for Ontarians with Disabilities Act, 2005), specifically Ontario Regulation 191/11, the Integrated Accessibility Standards (IASR), establishes the accessibility standards pertaining to information and communications, employment, transportation, the built environment (design of public spaces) and customer service, as well as additional general requirements that a municipality must comply with.

  Meeting AODA requirements will better enable some Handi-Transit customers to use Greater Sudbury Transit for at least some of their trips. Based on 2015 CUTA statistics, it cost and average of $25.82 per eligible Handi-Transit passenger trip in 2015 while the average cost for Greater Sudbury Transit trip was $4.59 per customer. Each time an eligible Handi-Transit customer uses Greater Sudbury Transit, a savings of over $21.23 could be realized.

  It is important to note that a limited number of bus stops along accessible routes may not be accessible due to the absence of sidewalks, insufficient road right-of-way, gravel shoulders and the presence of ditches in semi-rural areas. Furthermore, bus stops may also be temporarily inaccessible due to construction, weather, or damage.

- **Rights of Way (ROW), Permissions and Stakeholder Consultation**
  The placement of bus stops, landing pads and shelters will require ROW agreements and permissions with the City's Engineering division, Greater Sudbury, Hydro, and other utility companies. Also, it is common with other Ontario transit systems to enter into encroachment agreements with private landowners at prime major busy bus stop locations where transit shelters are warranted, but there may be insufficient public roadway allowance space to accommodate an entire shelter or landing pad without encroaching partially on an adjacent piece of private property.

  To ensure a smooth implementation of a bus stop infrastructure program, consultation with key stakeholders should be undertaken, such as:
  - Private landowners
  - BIAs (Business Improvement Areas) and Sudbury Chamber of Commerce
  - Greater Sudbury Transit Accessibility Advisory Committee and user groups
  - Transit operators and City planning, engineering & GIS staff

6.3 Transit Service Standards

The Transit Action Plan provides a service delivery hierarchy that better matches transit service with demand, which required an update of the current Transit Service Standards. Also addressed is an alternative to how the amount of service can be allocated between the urban area and outlying communities going forward.

6.3.1 Transit Service Standards Overview

Service design standards are used by Greater Sudbury Transit staff to support the annual budgeting process relative to:

- Determining frequency and span of service by day, time of day and service delivery type
- Identifying bus stop infrastructure, rolling stock (vehicles), transit fares
- Monitoring and reporting on key performance indicators (KPI) for existing and new services

These standards will be applied when monitoring and measuring system efficiencies within the Greater Sudbury Transit's System, and for assessment of new service requests from the general public. When performing a complete system review, these standards will be reviewed against the actual service provided.

6.3.2 Quantity of Service – Urban Area and Outlying Communities

The urban and commuter areas of Greater Sudbury were provided with an approximate combined 167,000 hours of revenue service in 2016. A guideline exists whereby 80% of the hours of service (133,600) are dedicated to the urban area of Greater Sudbury while 20% (33,400 hours) are allocated to the commuter areas in the outlying communities. The hours calculated for the outlying communities does not include TransCab fixed route or on-call services. Handi-Transit hours are also not apportioned using any formula.

Based on 2016 Census Data, the population of Greater Sudbury area was 161,531 with 55% (88,186) residing in the urban area of Greater Sudbury and 45% (73,350) residing in outlying communities within the City of Greater Sudbury. The population figures are useful for establishing a base to ensure that future changes to transit are fairly balanced between areas, which also taking into account population change and performance.

Based on the 80% - 20% guideline, the urban area of Greater Sudbury received 1.51 hours of revenue service per capita while the outlying communities would receive 0.455 hours per capita. Consideration can be given to establishing an alternative formula to the 80%-20% rule that would be based on the population growth in the future by applying the service hours per capita statistic between the urban area of Greater Sudbury and the commuter areas. This would ensure that the future growth in service hours is allocated fairly.

It is suggested that a target of 1.5 service hours per capita be applied to the urban area while the outlying communities receive 0.5 service hours per capita. This would mean that if the population growth in the outing communities exceed that of the urban area, service would be increased more equitably and it would also help ensure that the overall quantity of service provided throughout the City of Greater Sudbury would keep pace with population growth.

Given that the various fixed-route transit services – conventional transit, commuter route or fixed route Transcab – provide the same function by operating along a fixed route and schedule, service hours should be treated the same regardless of the vehicle used. As the Transit Action Plan is implemented, consideration could be given to including all fixed route services in the calculation of transit service hours; however, this would change the 80% - 20% formula. Alternatively, the costs associated with the delivery of all transit services in the urban area and a separate calculation for the outlying communities could be investigated in the future. All transit services, including Handi-Transit could be combined for each of the service areas, which would provide transparency in assessing the actual costs of the services delivered.

Going forward, it is suggested that the 80%-20% allocation be addressed and revised to the satisfaction of all stakeholders in an effort to move towards a formula that is fair and perceived to be fair.

6.3.3 Detailed Transit Service Standards

The decision-making process relative to if, when and how public transit is introduced, requires Greater Sudbury Transit management and staff to be 'guided' by transit service standards. Transit Service Standards guide the design of a transit network by ensuring availability and reliability of service, convenience, and comfort to passengers. They are an important transparent tool in assessing and monitoring the financial and operating performance of the system and individual routes.

Service design standards define the minimum amount of service provided during an entire day regardless of the level of ridership. This is known as "Base service" and is expressed in terms of coverage, hours of service, and frequency of service. Greater Sudbury Transit's base hours of service are from 7 a.m. until 10 p.m. and the frequency of service is provided at minimum intervals of 60 minutes in urban areas, and 9 trips per service day for Commuter areas.

Transit Service Definitions

Transit service design standards have been designed to reflect the hierarchy of services defined in Section 4.4 as follows:

- **Frequent:** Highest frequency on corridors connecting major destinations.
- **Core:** Higher Frequency routes in urban areas.
- **Neighbourhood:** Local service within urban neighbourhoods connecting with Core and Frequent routes at Mobility Hubs.
- **Targeted:** Service targeted for specific users and markets in urban areas, such as work and education commuter 'specials'.
- **Community Connector:** Connecting communities outside the urban area to Frequent and Core routes at transit mobility hubs. In some cases, these services are provided by TransCab operating on a designated route and schedule using smaller, contracted vehicles.
- **On Demand:** Operated primarily by TransCab, demand-responsive feeder service for areas outside of fixed route services; connects to nearest bus transfer point.
- **Handi-Transit:** Service for eligible registrants unable to use other transit service; Handi-Transit vehicles can also be used as On-call TransCab.

These standards will be applied when monitoring and measuring system efficiencies within the Greater Sudbury Transit's System, and for assessment of new service requests from the general public. When performing a complete system review, these standards will be reviewed against the actual service provided.

Desired Span and Frequency of Service

The following table defines the proposed **target minimum** service span and frequencies for each service layer by time of day. Actual start and end times may vary from the times shown.

It should be noted that the minimum frequencies illustrated are 'desired' frequencies by time of day and day of week. While peak hours during weekdays and Saturdays are similar, Sundays differ since work shifts are predominantly start later in the morning and end sooner in the evening than during other days of the week. Note that in the table, any item referring to "Sunday" would also typically refer to service levels on most statutory holidays.

Service Type	Description	**Desired** Span of Service	Desired Minimum Frequency		
			Weekday Frequency (minutes)	Saturday Frequency	Sunday Frequency
Frequent	Highest frequency on corridors connecting major destinations	Weekdays 6:00am-midnight; Saturday 7:00am - midnight; Sunday 8am-midnight	Peak: 15 Mid-day: 15 Evening: 30 Late evening: 30	Peak: 15 Mid-day: 15 Evening: 30 Late evening: 30	Peak: 60 Mid-day: 30 Evening: 60 Late evening: 60
Core	Higher Frequency routes in urban areas	Weekdays 6:00am-midnight; Saturday 7:00am - midnight; Sunday 8am-midnight	Peak: 30 Mid-day: 30 Evening: 60 Late evening: 60	Peak: 30 Mid-day: 30 Evening: 60 Late evening: 60	Peak: 60 Mid-day: 30 Evening: 60 Late evening: 60
Neighbourhood	Local service within urban neighbourhoods connecting with Core and Frequent routes at mobility hubs	Weekday 7:00am-midnight; Saturday 7:00am - midnight; Sunday 8am-midnight	Peak: 30 Mid-day: 60 Evening: 60 Late evening: 60	Peak: 60 Mid-day: 60 Evening: 60 Late evening: 60	Peak: 60 Mid-day: 60 Evening: 60 Late evening: 60
Targeted	Service targeted for specific users and markets in urban area, such as work and education commuter 'specials'	As required	As required	No service	No service
Community Connector	Connecting communities outside urban area to Frequent and Core routes at transit mobility hubs	Weekdays 6:00am-midnight; Saturday 7:00am - midnight; Sunday 8am-midnight	Peak: 60 Mid-day: 120 Evening: 120 Late evening: 120	Peak: 60 Mid-day: 120 Evening: 120 Late evening: 120	Peak: 120 Mid-day: 120 Evening: 120 Late evening: 120
On Demand	Demand-responsive feeder service for areas outside of fixed route services; connects ro nearest bus transfer point	Weekdays 6:00am-midnight; Saturday 7:00am - midnight; Sunday 8am-midnight	As required	As required	As required
Handi-Transit	Service for eligible registrants unable to use other transit service; can be used as On-call TransCab	Weekdays 6:00am-midnight; Saturday 7:00am - midnight; Sunday 8am-midnight	As required	As required	As required

Service Design Standards

Service design standards refer to the areas served, walk distances to bus stops, rolling stock (vehicles), service type and design, new services, and fares.

Service Design	Standard
Service area	The Sudbury Transit system serves urbanized areas of Greater Sudbury, including the urban commuter areas, subject to the provisions of the approved service design standards.
Walking Distance	Population served by transit is determined by walking distance to a bus route. Individuals who are within 450 metres of a bus stop are considered to be within the service area.
Stop Spacing	Bus stops are generally placed at intervals of 300 to 450 metres, with closer stop spacing (100-200 metres) in downtown areas or at other higher density developments. Spacing exceeding 450 metres may be considered on express/higher frequency routes (aligning with typical Bus Rapid Transit standards) and on a case by case basis. Restrictions may occur to maximize customer safety and accessibility.
Shelters	Shelters may be provided pursuant to the Bus Shelter Request Policy , a point-based system which is monitored on an ongoing basis.
Fare Structure	One cash fare will be applied to all transit customer categories while customer category-based discounts will only be available on pre-paid fares. Fare structure offers economic incentive for use through discounted prepaid 'concession' fares with tickets and passes. Approved fare structures are reviewed annually to determine performance and corrective action required. However, they are ideally set and adjusted less frequently (every two-three years) as each time fares go up they negatively impact ridership. Adequate lead time is provided to the public in advance of introducing fare increases.
System Equipment	Low Floor accessible transportation shall be provided on conventional services, and all vehicles will be equipped with next stop announcement system. Vehicles are required to have 25% Canadian Content..
Vehicle Accessibility	All new conventional transit and community buses shall be equipped with two rear-facing wheelchair positions and front door loading ramp. Smaller buses that are less than 14,400 lbs. GVWD shall have two forward-facing wheelchair positions with ramp access. Smaller accessible vehicles will require at least one forward-facing wheelchair position
Passenger loading standards	The number of buses required for a route may be determined by route loading capacities. Urban routes should not exceed a maximum average load of 150% seating capacity for more than 5 minutes during peak periods; Community Connector routes should not exceed a maximum average load of 130% seating capacity for more than 10 minutes. During non-peak periods, buses should typically not exceed seated capacity.

Service Design	Standard
Schedule adherence	No bus should leave published time points earlier than its designated time of departure. Greater Sudbury Transit will strive to meet a target of 90 percent schedule adherence, where buses should be "on time" within five minutes late of schedule."
Recovery Time	Used for the recovery of delays and preparation for the next trip, time is built into a schedule between arrival at the end of a route and departure of next trip. Recover time per trip should be no less than 10%. Routes with recovery times less than 10% should be reviewed for service improvement.
Route Directness	An index ratio should be applied to measure route directness. To determine the ratio, the deviated distance between two points is divided by the direct distance. When reviewing route directness, high deviation ratio should attract new passengers to the route and not only reduce walking distances for a few. Wherever possible, routes should be designed to operate in both directions as directly as possible along the same corridor and avoid one-way loops. However, one-way loops may be acceptable as the most efficient and effective way of providing service based on the road network, traffic, safety, low passenger demand, and economic considerations.
Introduction of new service	New service should be guaranteed for a minimum of 12 months, and the minimum performance threshold (Table 2) for the class of service should be met at the end of the trial period. Within the trial period, monitoring should occur at 3-, 6- and 9-months intervals to ensure targets of 25, 50 and 75% (respectively) of the final target value are met. If targets are not being met during the interim period, the route should be re-examined to identify potential change to improve its performance.
Introduction of modified service	Routes introducing service in new operating periods where routes exist or modify the existing route should be guaranteed for a minimum of 6 months, with interim monitoring will occur at 2 and 4 months. Interim targets are established at 33 and 66 percent respectively. If the service change is substantial, staff may recommend a longer trial period at the introduction stage of the service.
TransCab	Regular route services should be considered for conversion to TransCab service if the route's performance consistently falls below 5 boardings per hour. An area serviced by TransCab should be considered for regular route service when the cost of the TransCab contract reaches 85 percent of providing minimum base service level of a fixed route.

The aforementioned Transit Service Standards are guided by route and service performance that is monitored on a continual bases that report on key performance indicators (KPIs).

7 SUPPORTING STRATEGIES:

Proposed Improvements to Fares and Customer Care

7 SUPPORTING STRATEGIES: PROPOSED IMPROVEMENTS TO FARES AND CUSTOMER CARE

Complementing the system-wide changes to service proposed in the preceding sections, a number of other improvements are proposed. These include improvements to fare media, customer information and outreach measures. The following sections provide details on each of these areas.

The proposed supporting strategies include:

Restructuring fares to reward regular users and encourage ridership by considering a slightly higher cash fare with lower discount fares for passes and tickets, as well as consideration around other fare pricing policies, such as easing the time restrictions on transfers and allowing transfers to be used on any route and any direction. Implementation of Smart card technology would provide the ability to monitor ridership trends and revenues more closely, promote and create incentives more easily, and would improve customer experience.

Improving customer experience with additional Mobility Training Program. Create a municipal staff and community liaison position to address the following gaps in service to customers as heard through the engagement process:

- **Leading outreach initiatives** to help promote the service, such as liaising with schools, post-secondary institutions and major employers to provide information, events and programs to help promote the transit service and how it can be used as a part of a suite of sustainable transportation options and a healthy lifestyle.
- **Leading and organizing travel training** to help teach individuals and groups (such as seniors programs organized through the City's recreation department) on how to use the fully accessible conventional transit system.
- **Overseeing customer information tools and the customer complaint process** to identify ways that these processes can be as responsive as possible to citizen travel needs and to also ensure that feedback received from customers and front line staff has a clear process to go back into further improving and revising the system.

7.1 Proposed Fare Policy Strategies

7.1.1 Transit Fare Policies

Each year, Greater Sudbury Transit is challenged with minimizing the cost of service to the taxpayer at a time when the public demand for more service will continue to grow. Transit management does have the tools and responsibility to do more with less, which is inherent in the proposed Transit Action Plan where cost efficiencies can be attained by better matching service with demand. On the transit passenger revenue side of the equation, transit management can implement ridership growth strategies to help fill bus seats and increase passenger revenues that, in turn, will attract more dedicated gas tax funding.

Balancing costs with fare revenues in recent years has been challenging for a number of reasons such as increased maintenance costs associated with more stringent bus emissions and safety standards, spikes in fuel costs, and the need to expand and improve transit infrastructure to adapt to the City's growth and meet AODA requirements. At the same time, the City is challenged with ensuring that transit remains affordable for the customer. To this end, discounts are currently offered to children, older adults, Ontario Disability Support Program (ODSP) clients and students while children up to 5 years of age ride for free.

During the 2017 budget deliberations, means testing and subsidy programs were discussed in the areas of recreation and transit services. Council requested a report on means testing and subsidies for the City of Greater Sudbury transit program. Given every effort is made to minimize transit deficits, and to meet Council's direction of providing an affordable fare structure that promotes access to transit, any further expansion of the concession fares offered, although a positive in growing ridership, will impact Greater Sudbury Transit's bottom line. It is, therefore, important that the impact of additional concession fare discounts be tracked to the extent possible and reviewed on an annual basis. In addition, since the cost associated with the discounts would impact the transit deficit, it is reasonable to identify the lost revenues as a municipal grant allocated to the transit budget.

Building from Council's desire to provide an affordable access to transit, and keeping with industry best practice with consideration to minimizing transit deficit, the following sections will provide recommendations on fare structure policies and rates.

7.1.2 Fare Pricing Policy Best Practices

Transit fare revenues are needed to off-set transit costs. A best practices philosophy with respect to balancing transit costs with revenues is to have a fare pricing policy which:

- Rewards frequent transit customers;
- Offers equitable discounts and to those that need it the most;
- Increases transit use;
- Is simple to administer; and
- Is not complicated

When translating these larger goals into specific fare structure choices and policy, fare pricing best practices encompass the following typical recommendations:

Cash Fare:

- Set a base cash fare that applies to all transit customers to improve simplicity and ease of use. Since cash fares are typically used by infrequent transit customers, this cash fare should also be higher relative to prepaid fares like tickets and passes which reward regular customers.
- The cash fare chosen should minimize the number of coins required. To mitigate over and under payments, and reduce frustration for the passenger to try to find the correct change, the cash fare should be set at an increment of $0.25 and increases be considered every second year.

Target Groups:

- When offering a further discount to target groups, the rates of discount should be identical, usually expressed as a "concession" price separate from the "adult" ticket and pass price. This will maximize equity across vulnerable groups, minimize administrative overhead, fare product procurement, and will simplify the overall fare structure making it easier to understand.

Discounts:

- Create a reward system for frequent transit customers by implementing prepaid fares such as tickets that are priced 20% below the base cash fare, or tickets that are set at a rate that easily expresses their value, such as "6 rides for the price of 5."
- The deepest discount is typically applied to monthly passes, with amounts set at 25-30 times the base cash fare rate as per industry practice, with an additional 15% offered to target groups.

Future Fare Increases

- Fare increases are required to meet the rising cost of transit service delivery. 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 or travelling for other trip purposes takes precedence over the transit fare price.
- In order to reduce the number of coins a person needs to carry, it is suggested that future cash fares be increased in 25-cent increments while discounts offered on tickets and passes be increased to a lesser degree each year.

Based on these objectives and best practices, the following sub-sections provide suggested changes to the Greater Sudbury Transit System's current fare pricing. However, some of the presented changes would be considered significant and as such it is suggested that, if supported in principle by Council, the changes can take place over a few years rather than overnight. It should be noted that deeper discounted fares such as the Affordable Transit Pass are addressed separately.

7.1.3 Cash Fare

Greater Sudbury Transit's current base cash fare rate is the same for Adult and Students categories, and provides a 27% discount for all other categories, such as Seniors, Children and ODSP clients. The exact cash fares of $3.40 for Adults and Students requires a minimum of 5 coins. Approximately $1.8M of cash revenue is collected on an annual basis, of which 81% are from Adults and Students, versus 19% from the other groups.

It is recommended that a single base cash fare—set at either $3.25 or $3.50--be applied to all fare categories while only concession fare discounts be available to customers who pre-purchase tickets and passes. This strategy is in line with fare pricing strategies of many transit systems to encourage prepaid fares and make the fare structure easier to understand and implement.

Increased revenues can be expected since those that use the bus on a more infrequent basis are far less price sensitive to the higher cash payment. For those who are price sensitive, pre-paid discount fares are still available. To ease in the transition period, the cost of pre-paid fares such as tickets are set at a rate in alignment with the existing cash fare, meaning that Seniors, Children and ODSP clients can maintain their current pricing for transit if using pre-paid options rather than cash. See the next section, below.

Recommendation: Implement a single cash fare price for all passenger categories. Wherever possible, this cash fare should minimize the number of coins required.

7.1.4 Multi-Ride Tickets

The current unit price provides a $0.70 discount to Adults and Students and $0.40 discount to Seniors, Children and ODSP clients based on their respective cash fare. Multi-ride cards are offered in 5 & 10 ticket format for each category. This means that 6 types of tickets are designed with separate coding for tracking purposes.

Based on best practices, tickets should be priced at a lower rate than cash fares, and ideally set at a rate that easily expresses their value, such as "6 rides for the price of 5". Students up to and including high school students, children, seniors and disability pensioners should receive an additional 15% to adult ticket prices and should be categorized in one target group. To note, for those who are price sensitive and have previously received a discount on cash fare, the additional 15% provides them with a unit price of $2.50 which is equals the current cash fares. There is no financial impact on target groups if they chose to buy a 6 ride card instead of paying a cash fare.

Recommendation: In order to minimize administrative burden of managing 6 types of cards as well as increase simplicity and ease of use, and It is recommended that a maximum of two categories be created. Adults ticket prices should be set at the rate of 5 base cash fares, and Concession cards should be offered at an additional 15% discount.

7.1.5 90-minute Transfer

Currently, transfers are requested when paying fares by cash or when using multi-ride cards. They are valid for the first available bus travelling in the direction of the destination and are not transferrable. A daycare transfer can also be requested providing parents the ability to drop off their children at a daycare without having to pay a second fare to board the bus. Approximately 500,000 transfers are requested per year.

A transfer time of 90 minutes is recommended along with the ability of the transit customer to return via the same bus route or continue their travel on another connecting bus within 90 minutes of their original boarding. The transfer would, in effect, act as a period pass and would be an additional incentive as it would allow a passenger to make errands without being penalized by paying the fare a second time to continue their trip. By providing the extended transfer, the increase in cash and ticket revenue should reasonably compensate for the loss in revenue, and will provide an incentive for those passengers who choose the higher cash/ticket rate.

There would be a financial impact to providing a 90-minute transfer, however the additional revenue collected on cash and ticket fares based on this new strategy should compensate for most of the loss revenue. It would be advisable to provide this incentive first as a pilot, and that Staff review the impacts to the budget with Council prior to permanently approving the fare policy.

Recommendation: Allow a transfer time of 90 minutes and provide ability for customers to return via the same bus route or continue travel on any another bus.

7.1.6 Monthly Pass

A 31-day pass provides unlimited rides to a single cardholder within a 31-day period. To calculate the incentive for the passenger, the pass fee is divided by the cash fare, which provides the number of rides paid for – any additional rides taken within the 31-day period are essentially free. The current structure offers Adults 27 rides, Students for 25 Rides and Disability Pensioners, Seniors and Children pay for 23 rides with a 31-Day pass.

Based on the ridership collected by fare type and applied to the number of monthly passes sold, the average use of a card is 57 rides per month, with the highest use realized by Adults at 66 times per month and the lowest with Seniors at 52 rides per month. Translated into cost per ride, passengers who choose a monthly pass to access Transit Services pay on average approximately $0.82 per ride.

This type of information is useful to ensure that it meets Council's objective of providing affordable access to transit for the community. For those who heavily rely on transit services as their mode of transportation, the monthly pass is therefore the most economical option available.

The price of the pass should be set at an amount of 25-30 rides based on the cash fare rate. With a base cash fare of $3.50, the Adult Monthly should therefore be offered anywhere from $87.50 to $105.00. Students, Seniors, Children and ODSP recipients would then receive an additional 15% from the rate approved by Council, which should fall within $74.50 to $89.25.

Given the significant change, the revised pricing could be implemented over a few years.

Recommendation: The price of the pass should be set at an amount of 25-30 rides based on the cash fare rate. An additional 15% should be applied to Concession pass rates.

7.1.7 Ontario Works Program and Affordable Transit Pass

People who are in receipt of Ontario Works benefits may receive funds for transportation costs under certain circumstances. Under Ontario Works Directive 7.2 Health Benefits, transportation costs for medical treatment are paid when the costs exceed $15 in a given month. A monthly payment equivalent to a monthly bus pass can be issued if the participant is required to attend on-going appointments for medical or health related purposes. Under Ontario Works Directive 7.4 Employment and Participation Benefits, transportation costs can be provided to a participant who is beginning or changing employment, or participating in employment assistance activities as they progress toward sustainable employment. This may include seeking employment, going to school, or attending a training program. Funds up to the amount of a monthly bus pass are issued directly to the participant and can be used for their preferred method of transportation such as a bus pass, bus tickets, gas, or taxi fare. On an annual basis, the Social Services Department purchases approximately $80,000 worth of passes to distribute under the Ontario Works Program.

During budget deliberations in 2016, Council approved a permanent budget option of $59,000 for an affordable bus pass program. This program provides a 50% discount on an Adult 31 Day Transit Pass to workers between the ages of 18 and 64 who are living with a low income and do not receive any other subsidies (Students do not qualify). Low income passes are available on a first come first serve basis up to 1300 passes per year. This program is administered by the Social Services Division. The uptake on the program for the first year was minimal. The Social Services Division made improvements to the program in the Fall of 2017 by changing the approval period from monthly to quarterly, providing support to those with incomplete applications, and by increasing promotion of the program.

Since the implementation of these changes, an increase in application occurred and 100 applicants are on a waiting list. The demand for financial assistance based on income indicates that there is a gap in the system for adults who work but do not qualify for Greater Sudbury Transit's targeted group discounts. Although successful, the program itself requires a considerable amount of administration, is at times difficult for individuals to complete the application, and there are no measures in place to verify if the applicant is receiving other transportation subsidies.

As subsidies are provided through the Ontario Works Program, and discounts are provided to targeted groups, the $59,000 approved by Council could be applied to the Adult monthly rate. There are approximately 11000 monthly cards sold on an annual basis. This would mean than a discount of approximately $5.25 could be applied to the current monthly pass lowering the fare to $87.75 which is in line with the lower spectrum of best practice pricing for monthly passes.

7.1.8 Family and Day Pass

The current family pass priced at $16 allows up to five passengers unlimited travel during one service day, while the day pass priced at $10.50 provides unlimited use of services for one person only. Due to the low usage of these two types of cards, it would be recommended that they be combined as a Day pass at a price of $10.50. Furthermore, it is proposed that a **Family Travel Program** be implemented that would enable any adult or senior travelling with a Day Pass, Montly Pass or U-Pass to bring up to four children age 12 and under on board the bus for free.

7.1.8 Support Person Assistance Cards

Sudbury Transit currently provides photo identification that identifies the card holder as a person who, because of a disability, needs to be accompanied by a support person. Upon payment of their fare, a card holder permits one support person to travel at no additional cost. The card can be obtained through an application process.

Throughout the engagement process, it was clear that not many understood the process and therefore did not take advantage of the policy. Better communication strategies and travel training (see Section 7.2) would encourage more people to ride on the Conventional system instead of the Specialized Handi Transit service.

7.1.10 Universal Bus Pass (U-Pass)

The successful and popular program with Laurentian University students is an advantage to transit ridership and transit revenues. Although the U-pass price is deeply discounted, it is considered reasonable since there is full participation of students, which provides the City of Greater Sudbury with a sustainable revenue source. Certainly, the U-Pass program has benefited both participating students and municipalities across Canada for decades. The increase in revenues also makes it more affordable for the City to increase service to better accommodate students while other customer groups would benefit as well that will, in turn, increase transit use further.

Efforts to extend the program to Cambrian College and Collège Boréal should continue by focussing on the financial savings to students and the benefits of the added revenues that could be applied to improved service.

7.1.10 Employer Pass Programs

A similar pass program can also be extended to faculty and post-secondary school support personnel, as well as to other large employer such as the Canada Revenue Agency, Health Sciences North and of course, the City of Greater Sudbury. These types of programs require a similar pricing structure and conditions as a U-Pass (i.e. minimum participation). Greater Sudbury Transit currently offers a discounted Adult 31-day pass based on bulk purchase from one employer is made available through a 6-month commitment. Discounts vary based on volume of passes purchased. There has been no uptake on the program as of this date.

An alternative to providing the program, and perhaps less administrative in nature, a program could allow an employer to purchase 100+ Adult Passes, if they agree to provide a 10% discount to the employer – the City would match that 10%. Therefore, the employee would receive an additional 20% discount and could be receiving these passes through a payroll deduction should the employer have the capability of doing so.

7.2 Smart Card Technology

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

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

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

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

Benefits of using smart cards are summarized as follows:

- Eliminating the need to print and distribute tickets, passes and transfers, thereby reducing fare collection costs
- Eliminates fare evasion
- Reduced boarding times
- Tracking of smart card use through embedded serial numbers
- Flexibility in fare pricing
- Ease of implementing fare changes

Another critical benefit of an integrated smart card-GPS system is that the City of Greater Sudbury would not only be able to monitor bus stop activities, schedule adherence performance data would also be provided. This would provide the information needed to adjust schedules, as required, and provide the City of Greater Sudbury with the ability to monitor the performance of all services.

Recommendation: It is strongly recommended that the smart-card technology be adopted. Financial implications will be provided in the final Transit Action Plan report.

7.3 Proposed Transit Information and Customer Care Improvements

7.3.1 Mobility Training Programs

Greater Sudbury Transit has developed and introduced a Mobility Training Program (also known as "travel training") to assist people with disabilities and older adults who are hesitant to try transit on their own and are unaware of the accessibility features of the conventional transit vehicles. This training has been introduced in group formats and thus far is reported to be well received in the community.

As part of the 2017-2018 Transit Accessibility Plan, Greater Sudbury Transit has committed to" building on the success of the Mobility Training Program thus far and keeping in mind the goal of better integration of conventional transit services and specialized transit services, continuation of this training will provide passengers with disabilities and seniors with choices of transportation that best suits their needs."

Best practices in the industry rely heavily on Travel Training Programs to provide support to the community and promote the use of Transit Services to all types of groups:

Examples of people who could benefit from travel training are:

- High school and elementary students
- People with physical disabilities, who may be transported by family and/or special needs school bus, and who, with appropriate familiarization/ training could learn how to use conventional transit and become more independent.
- Adults with physical disabilities who may be able to travel on conventional services, at least for some of their trips.
- Older adults who suddenly find themselves either unable or unwilling to drive, and if never having used transit, simply do not know how, and may feel intimidated and reluctant to use a system they do not understand.
- People with cognitive or learning disabilities who, although possessing the physical ability to use conventional transit, lack the knowledge and skills to do so currently, but who are capable of assimilating training so as to at least be capable of making a regular, unvarying one-way or return trip.
- Citizens new to the city or new to transit altogether.

Training these customers to use conventional transit, in addition to the mobility advantages for the individual, allows Greater Sudbury Transit to use its services in the most cost- effective manner and helps to protect specialized service for customers who have no other travel options due to the more constricting nature of their disabilities.

Recommendation: Continue to grow the Mobility Training Program with consideration to impact on time required by staff to book and provide the training.

7.3.2 Municipal Staff and Community Liaison

As recommended in Section 3, many of the components most desired by the public relate to increased promotion of the system and customer care. However, existing staffing levels for Greater Sudbury Transit do not provide the resources to address these key opportunities and areas for growth.

Stakeholders during the Engagement Process highlighted the need to create partnership, promote, and create incentives to encourage people to take Transit. Communication to the public was seen as a priority which needs to be addressed and customer satisfaction is of utmost importance in order to retain and increase the ridership base.

Recommendation: Create a position to address the following needs:

- **Leading outreach initiatives** to help promote the service, such as liaising with schools, post-secondary institutions and major employers to provide information, events and programs to help promote the transit service and how it can be used as a part of a suite of sustainable transportation options and a healthy lifestyle.
- **Leading and organizing travel training** to help teach individuals and groups (such as seniors programs organized through the City's recreation department) on how to use the fully accessible conventional transit system.
- **Overseeing customer information tools and the customer complaint process** to identify ways that these processes can be as responsive as possible to citizen travel needs and to also ensure that feedback received from customers and front line staff has a clear process to go back into further improving and revising the system.

7.3.4 Security

The recent recommendations of the Downtown Transit Area Working Group should be implemented to improve safety and security within Greater Sudbury Transit services, including on board buses and at stops and Mobility Hubs. A review of the existing Downtown Mobility Hub location and design should be assessed in the near future based on the long-term transit route and service strategy and with a focus on safety and security improvements. Likewise, as the additional major and local Mobility Hubs are implemented, their safety and security should be addressed from the onset.

Cameras are a good way to capture incidents to be reviewed at a later date during investigations. Other measures should be reviewed to ensure transit customers feel safe while waiting for the bus. Some municipalities have a Transit By-Law which can be enforced by Municipal Transit by-law officers. These officers can support operators and passengers by enforcing the rules and regulations governing the use of the Transit system by issuing offence notices to those contravening the By-Law, thereby providing a deterrent to undesirable behavior at terminals, as well as vehicles.

7.3.5 Bus Cleanliness

In order to keep a fleet appropriately clean, there should be a daily vehicle cleaning practice where buses are washed on the outside, thoroughly wiped down throughout, garbage picked up, floors swept, and major spills washed. Detailing of buses--where windows, walls, and all areas that are hard to reach are cleaned—should be undertaken on a rotating basis. In support of implementing and monitoring this cleaning schedule, bus cleaning staffing positions have recently transitioned to within the City's Transit department.

7.3.6 Bus Shelter Maintenance

The process for reporting bus shelter and bench damage should be clearly articulated and the maintenance schedule for monitoring bus shelters, cleaning them and emptying trash receptacles should be set. In particular, higher usage shelters may require more frequent monitoring and cleaning and this rate of maintenance should be established. Likewise, winter snow clearing protocols should be established.

8 LONG-TERM TRANSIT STRATEGY

8 LONG-TERM TRANSIT STRATEGY

While the Transit Action Plan recommendations outlined in Section 4.5 will accommodate the change needed to provide 'better routes, better schedules and better service' within the existing funding framework, these improvements must align with a longer-term transit strategy that will allow Greater Sudbury Transit to continue to improve its service and evolve over time to higher-order transit, namely a form of Bus Rapid Transit (BRT) that includes transit priority measures.

The following section consolidates the service improvements and infrastructure capital investment outlined in previous chapters into an overall blueprint of how service might be logically transitioned. The path presented also aligns with the Integrated Bilateral Agreement for the Investing in Canada Infrastructure Program signed by the federal and provincial governments and which provides a potential total funding maximum of $99.4 million towards public transit infrastructure projects over the next ten years within the City of Greater Sudbury. Costs are based on 2018 budgeted amounts for existing transit services within the City or peer averages for new services and would be in addition.

The changes build toward developing two future BRT corridors:

- The 1 Mainline operating from New Sudbury Centre to the South End via Lasalle, Notre Dame and Paris and also serving the Major Mobility Hubs of Downtown and Health Sciences North, plus extension to Cambrian College possible at peak times.
- The 2 Barry Downe – Laurentian U. operating from Cambrian College/New Sudbury Centre to Laurentian University via Barry Downe, Kingsway and Regent and Ramsay Lake Rd., and also facilitating service to and connections at Downtown and Health Sciences North.

These routes can be separately branded. While standard conventional transit buses will work over the near term, as service frequency and ridership develop, these routes may require upgrades to longer 18.3 metre (60-foot) articulated vehicles. The combined service along the BRT corridors could have a bus every 5.0 to 7.5 minutes along key sections of the corridor. This proposed strategy will need to be confirmed in a business case based on the impact of the short-term TAP service recommendations and the application of transit service standards such as a maximum 150% of the seat capacity before service frequency is increased. Depending on available funding and final scheduling details, it may also be possible to implement BRT in phases beyond what is shown here and this would be developed through detailed implementation planning.

With the enhanced fare collection, passenger counting and schedule adherence monitoring proposed to be in place, the data will be sufficiently detailed to quantify the business case for BRT options. In this regard, there are various stages of transit priority and BRT rollout that can be considered based on ridership demand and operating impact.

The BRT service concept was supported by senior inter-departmental senior staff during the workshop help on November 30, 2018. The next step would be to undertake preliminary corridor and station design, and order-of-magnitude costing of the options available for budgeting and timing purposes. It is at this stage that Greater Sudbury would identify transit corridor priorities, such as opportunities where queue jump lanes or other transit priority treatments would be beneficial to reduce congestion delays

on buses or areas where cycling infrastructure investment can align with the development of future BRT stations.It is also at this stage that the City of Greater Sudbury Transit would assess the existing downtown terminal relative to remaining where it is today or possibly being relocated. Afterall, the TAP recommendations will result in fewer buses that will need to be at the downtown terminal at one time.

In addition to the City of Greater Sudbury urban area, consideration will also need to be given to commuter routes that may benefit from infrastructure improvements, in particular the Local Mobility Hubs to be positioned in key outlying service areas that may include Park & Ride facilities, bike storage, and heated shelters with amenities. By growing transit ridership on commuter routes, the business case for BRT investments will increase further.

8.1 Consolidated Service and Capital Infrastructure Plan

Greater Sudbury Transit Action Plan
Consolidated Long Term Transit Investment Strategy

Service Option	Vehicles **	Annual Service Hours	Total One Time Capital Costs	Annual Operating Costs	Annual Net Municipal Costs
Capital / Infrastructure Investment Already Underway or Completed (PTIF Phase 1)					
Transit Action Plan Study	0		$300,000		
Bike racks on buses	0		$20,000		
Upgrade to Transit Automatic Vehicle Location Units	0		$100,000		
Ongoing Fleet Refurbishment	0		$1,480,000		
Restoration/Rehabilitation Program of 45 Transit Shelters	0		$120,000		
Replacement of five 40 foot buses	0		$2,843,000		
Transit Garage upgrades and rehabilitation.	0		$3,500,000		
Upgrade and rehabilitation to Transit Terminal.	0		$1,225,000		
Purchase of new transit staff scheduling software	0		$165,000		
LaSalle Corridor Study	0		$200,000		
Travel Demand Management Study	0		$55,000		
Intelligent Transportation System Study	0		$55,000		
Paris/Notre Dame Active Transportation Improvements	0		$735,000		
Kingsway Active Transportation Improvements	0		$2,700,000		
Westmount Avenue Active Transportation Improvements	0		$255,000		
Initiatives Proposed for Immediate Consideration					
Service Options					
Immediate Network-Wide Route Restructuring	Accomplished entirely through reallocation of existing resources and vehicles.				
Complementing Capital / Infrastructure Investment					
Bus Stop Changes and Public Information Refresh	0		$250,000		
Smart Card Implementation	0		$600,000		
Priority Expansion Options (Optimally Next 1-3 Years, Pending Funding)					
Service Options					
Option 1: Critical Fixes to Frequency, Capacity and Span of Service	0	8,100	$0	$905,300	$787,500
Option 2: Earlier Weekday Service	0	3,600	$0	$402,300	$349,900
Option 3: Additional Sunday and Statutory Holiday Frequency & Span	0	3,200	$0	$357,600	$299,400
Option 4: Comprehensive Laurentian University Service Improvements	3	6,100	$1,710,000	$701,100	$545,800
Complementing Capital / Infrastructure Investment					
Existing Fleet Replacement	0		$11,000,000		
Preliminary Bus Rapid Transit (BRT) Corridor and Station Designs Review	0		$1,000,000		
Transit Signal Priority (Incl. Engineering Support)	0		$1,200,000		
BRT Transit Priority Measures (Queue Jump Lanes, etc).	0		$7,600,000		
Other Majority and Local Mobility Hub Functional Design	0		$200,000		

Greater Sudbury Transit Action Plan

Consolidated Long Term Transit Investment Strategy, Continued

Service Option	Vehicles **	Annual Service Hours	Total One Time Capital Costs***	Annual Operating Costs	Annual Net Municipal Costs
Other Medium-Term Expansion Options (Next 4-10 Years, Pending Funding)					
Service Options					
Option 5: Consistent and Extended Frequent Route 15-Minute Service	2	7,200	$1,140,000	$817,600	$660,500
Option 6: Community Connector Frequency Improvements	2	3,000	$400,000	$348,200	$304,500
Option 7: Weekday Commuter Frequency Improvements	7	10,100	$3,250,000	$1,242,900	$1,059,400
Option 8: Schedule Reliability Maintenance	3	8,800	$1,710,000	$1,002,800	$842,800
Option 9: Further Frequent Transit Improvements	11	28,000	$6,270,000	$3,200,300	$2,386,000
Option 10: Targeted Commuter Improvements on Other Routes	5	10,100	$2,110,000	$1,195,500	$938,500
Option 11: Implementation of Community Shuttle Route	2	2,500	$400,000	$292,300	$265,000
Option 12: Implementation of Additional Community Connector Route	1	2,800	$200,000	$319,400	$288,800
Option 13: Additional Midday and Weekend Handi-Transit Capacity	3	7,900	$600,000	$902,300	$866,000
Option 14: Additional On-Demand (TransCab) Service	0	0	$0	$69,000	$55,900
Complementing Capital / Infrastructure Investment					
Existing Fleet Replacement	0		$22,000,000		
Downtown Major Mobility Hub Construction / Improvement	0		$900,000		
Other Mobility Hub and Station Construction	0		$27,000,000		
Park & Ride Construction	0		$1,200,000		
Bus Rapid Transit Vehilces (Articulated 60')	9		$6,900,000		
Ongoing Technology improvements	0		$900,000		
Total of All Options	**51**	**122,400**	**$114,003,000**	**$14,122,900**	**$11,632,600**

Notes:

* Based on 2016 system actuals and peer averages. Final costs may vary based on detailed budgets, year of implementation and final operational details.

** Vehicle requirements shown include spares and may vary at time of implementation based on system fleet standards.

*** The City's municipal share of one-time capital costs was 50% for the first phase of PTIF funding and is currently projected to be 27% for the second phase.

9 MOVING FORWARD:

Next Steps

9 MOVING FORWARD: NEXT STEPS

The Greater Sudbury Transit Action Plan is being provided to the City of Greater Sudbury Council for its consideration, selection of service options as applicable, and approval to move forward to implementation.

It is recommended that the City of Greater Sudbury approve, in principle, the recommendations of the Transit Action Plan and take steps to implement the immediate changes, conduct the planning required to undertake the supporting infrastructure improvements, and better align land use with these investments.

In Focus: How the Transit Action Plan Recommendations Align with the City's Vision

The following describes how the Transit Action Plan preliminary recommendations align with the City's Strategic Goals.

Current City of Greater Sudbury Strategic Direction	How Greater Sudbury's Transit Action Plan Recommendations Meet These Goals
VISION A growing community, recognized for innovation, leadership, resourcefulness and a great northern lifestyle.	▪ Resourcefulness through existing and proposed low-cost service delivery ▪ Innovation in technology such as smart card, mobile apps, passenger information systems ▪ Transit service is restructured to foster continued economic growth and civic participation and use City resources as effectively and efficiently as possible.
MISSION Providing quality municipal services and leadership in the social, environmental and economic development of the City of Greater Sudbury.	▪ Improved schedule reliability ▪ Linking all members of the community to have access to goods and services and social/recreational designations ▪ Providing businesses with increased access to employees by improving hours, operation and route coverage ▪ A service plan developed to improve the environment by reducing the need for high auto ownership and complementing other active modes of transportation.
VALUES As stewards of the City of Greater Sudbury, we believe in recognizing the specific needs of all our citizens in urban, rural and suburban areas, and are guided by our belief in: ▪ Acting today in the interests of tomorrow ▪ Providing quality service with a citizen focus ▪ Embodying openness and transparency ▪ Communicating honestly and effectively ▪ Creating a climate of trust and a collegial working environment to manage our resources efficiently, responsibly and effectively ▪ Encouraging innovation, continuous improvement and creativity • Fostering a culture of collaboration • Ensuring an inclusive, accessible community for all • Respecting our people and our places.	▪ Transit Action Plan can easily adapt to future development ▪ Improved bus schedule adherence ▪ Transparency attained through service policies and standards that balance community needs with fiscal responsibilities. ▪ Communicating honestly through unprecedented transit community engagement undertaken. ▪ An action plan that incorporated input from not only the public but also the front-line and support staff that have to make it work to: • Reallocate existing resources where they provide the best return on the dollar • Measure progress through detailed passenger counting and system monitoring on an ongoing basis ▪ Inclusive accessible community through Handi-Transit and fully accessible buses to enable those with mobility devices to integrate with the community ▪ Enhanced community-wide accountability through additional staff member to go to the community

9.1 Service Implementation Steps

If approved, the next steps in the path to service implementation would typically be as follows:

- **Create an implementation team** made up of key staff from across the organization to meet on a regular basis and guide the implementation process. This team would typically encompass transit system management, representation from transit operator union leadership, system planner, system scheduler, a safety and training officer, a customer information rep, a communications rep and the key staff person responsible for bus stop changes.
- **Undertake the detailed implementation plan**. While this Transit Action Plan provides a large amount of detail—and in fact a higher amount of detail than would be typical of a plan of this nature—a follow up detailed implementation plan is always required to support service changes. This detailed implementation plan would usually be undertaken by the system's implementation team, with additional outside assistance or guidance if required.

  A detailed implementation plan would normally include the following activities and components:
  - **Testing and confirmation of all routes** by Safety and Training personnel using a system bus. This step would also collect running times. Note that much of this step has already taken place as part of work in support of the Transit Action Plan.
  - **Creation of a bus stop and infrastructure change plan** that outlines for each route which stops need to move, be added or closed, as well as any signage changes.
  - **Creation of a communications and promotion plan** that outlines how the various stages in implementation will be communicated to the public and supported.
  - **Development of draft revised trip schedules**, vehicle blocking and driver shifts.
  - **Development of draft revised route maps** and messaging about the change.

- **Refresh all Supporting Customer Information Materials**. It is critical that the implementation of a revised service structure be complemented by a refresh of all supporting customer information materials. Not only do they need to be revised to reflect the new routes and schedules, they should be modernized to present a more user-friendly approach to using transit. As part of this, it is strongly recommended that a new supporting name and visual elements be developed for the restructured system and its proposed family of services. Doing so would reposition the overall transit system as including ALL services (not just the bus), shift perceptions and align with the overall marketing strategy for the service implementation. This will include developing a complimenting set of easy-to-understand identifiers for the overall system umbrella, Frequent routes, other routes types, On-Demand services and Handi-Transit.
- **Undertake final phase of pre-implementation public engagement.** For extensive route restructurings and service changes similar in scale to that proposed for Greater Sudbury, the consultant team has found it helpful to provide draft schedules and materials first to front line transit staff and then to the public for their review and feedback prior to implementation. Often referred to by our team as a Service "Sneak Peek," this process essentially enables the crowd-

sourced checking of all routes, trips and connections prior to their implementation. In addition to enabling issues to be addressed at the draft stage where possible, the other key benefit to undertaking this pre-implementation engagement is that it also helps to promote the change and familiarize staff and passengers with how the changes will affect them.

- **Update and finalized implementation plan and materials.** Based on engagement outcomes, the implementation plan and schedules would be revised and finalized.
- **Undertake Implementation Activities and Outreach.** This final part of the process undertakes the last of the actual implementation activities, including:
    - Driver shift finalization and sign up.
    - Printing and online uploads of all revised schedule and route materials.
    - Updates as required to any internal materials (driver route guides, dispatch sheets, etc.)
    - Update and upload to vehicle destination signs.
    - Installation of revised bus stops and signage.
    - Distribution of revised schedule materials.
    - Advertising on traditional and social media about the change, news releases and on-bus posters.
    - Outreach by transit staff for at least the first week of service at key locations throughout the system. This outreach generally consists of transit staff (identifiable by uniform or safety vest) approaching waiting passengers to see if they need revised schedule materials or assistance. Many systems also provide edible perks for passengers on these days, such as cookies at the main exchange, etc.

As the implementation of the Transit Action Plan takes shape over the next few years, there will likely be adjustments made from time to time, which is normal. Closely tracking of the impact of the transit service changes using available technology will be important to further adjust routes and schedules to ensure the system operates as efficiently and effectively as possible. The recommended plan was designed to maximize ridership within existing resources and create a strong foundation for future improvements, while negatively impacting as few current transit customers as possible.

Critical to the plan was the necessity to improve service quality, expand coverage, and improve Sunday service significantly, and to do all this without increasing the annual hours of operation. It is recognized that transit cannot be all things to all people; however, the service plan as laid out does reflect due diligence by the study team in meeting community-wide priorities that were expressed during the unprecedented and inclusive consultation process.

9.2 Implementation Risks and Mitigation Strategy

A project of this comprehensive nature requires some key pillars to help chart its path to success and mitigate potential risks. Based on the project team's substantial experience implementing major service changes, the following outlines key reasons why transit service implementations have been less successful in other communities. Also outlined are the mitigating strategies that have been recommended for inclusion as part of the detailed Greater Sudbury Transit Service Restructuring Implementation Plan to address these risks.

Project Critical Success Factors, Risks and Mitigation Strategies	
Risks: Reasons Why Service Implementations Have Been Less Successful Elsewhere	**Mitigating Strategies Employed in the Greater Sudbury Transit System Restructuring Implementation**
Existing transit riders and front-line staff have not been adequately involved in changes and feel "done to" when the changes are implemented.	• The Transit Action Plan has built trust and involvement with passengers, front line staff, stakeholders and citizens throughout its process and clearly shown how feedback heard has been incorporated into proposals. These groups have been part of the doing, and are therefore less likely to feel "done to." • The participatory approach has been diverse to-date and this approach will be continued through the implementation process.
Front-line transit staff do not understand or support the changes; they are therefore in a poorer position to answer passenger questions or address concerns when the change is implemented.	• In addition to being involved throughout the development of the Transit Action Plan, communication with staff and passengers has always emphasized the "why" behind the changes. This makes it easier for staff and regular riders to understand and support the rationale for the changes and communicate them to others. • Materials and outreach sessions to front line staff scheduled for prior to the implementation will provide further messaging and tools for conveying the "why" behind the system changes to passengers. • Tear off sheets will be available on all buses during the implementation period indicating where customers can provide feedback or ask questions, meaning that drivers can easily direct any passenger who may be upset to another venue.
Inadequate support for front-line transit staff to assist passengers with the new service and answer questions.	• The Greater Sudbury Transit Service Restructuring Implementation Plan includes provision for on-street ambassadors at key locations. In other communities, transit staff have formed the core of the team, augmented by other City staff who agree to act as ambassadors for specific peak period two-hour shifts during the first two weeks of the implemented change.
Passengers and front line staff were involved in the development of the "big picture ideas" behind the service change but never had an opportunity to review the details and the impacts on their specific individual travel patterns.	• The "Sneak Peek" process offers the ability for passengers and staff to check proposed routes and schedules in detail BEFORE changes are finalized. This enables the system to make critical fixes while it is easy to do so. • The Sneak Peek also offers an important opportunity for regular riders to learn what their routes and trips will look like, meaning that passenger education occurs prior to the change.

Project Critical Success Factors, Risks and Mitigation Strategies	
Risks: Reasons Why Service Implementations Have Been Less Successful Elsewhere	**Mitigating Strategies Employed in the Greater Sudbury Transit System Restructuring Implementation**
One or two residents on streets affected by a routing change mobilize a larger neighbourhood against the service.	• For any new streets that will be served by transit—and potentially for some streets where transit will be removed--it is recommended that transit staff undertake a door-to-door canvas of residents and to determine their level of support for the change prior to the Sneak Peek. • Prior to the confirming the Bus Stop Plan for the service change (which provides the final list of stops to be removed, moved or added), a leaflet should be delivered to all addresses within 200m of the stop informing them of the proposed change and a contact number to call.
The learning curve of the implementation period is negatively compounded by higher traffic and new family travel patterns experienced during the back to school period.	• The first week after Labour Day typically has more chaotic travel patterns. The service implementation for Greater Sudbury is proposed for a week before Labour Day so that the system has the opportunity to shake out issues and enable staff to become familiar with the system when ridership and traffic is lower.
The perception of the service implementation is negatively compounded by a fare increase implemented at the same time.	• Ideally, fare changes should always be scheduled to occur when ridership is at its lowest point and travel patterns are less regular, typically July 1. This timing is suggested for Greater Sudbury.
Public expectations for the change are unrealistic and reality doesn't measure up.	• The language used consistently for the Transit Action Plan recommendations has described the changes as creating "the foundation for further future system improvement." In other words, they are not the end goal but rather the first step towards improvement. • The messaging for the implementation period will continue in this vein, letting the public know that this is the start (not the end) of positive change and inviting them to be a part of creating it. • Likewise, the plan for addressing issues as they arise—including a follow up service change in January to address any larger issues experienced—will also be communicated as part of the implementation.
There is no plan ahead of time to monitor the changes and address issues; a series of abrupt and disjointed fixes are put in immediately after the implementation, further disrupting travel patterns and undermining the service.	• The proposed monitoring plan on the following page describes the methodology that will be used to monitor the changes, evaluate what adjustments are needed and when these refinements should be most strategically updated.

9.3 Transit Planning and Route Monitoring Process

The implementation of the Transit Action Plan represents the most comprehensive change undertaken since the amalgamation of transit services in 2001. The transformation is proposed to commence Monday, August 26, 2019 following a comprehensive information and training program for both the public and internal municipal employees; this was designed to mitigate any problems that may arise. However, given the magnitude of the changes to take place, there will be issues immediately following the start of the new service, which will be addressed to the extent possible within the first two weeks in September, which is the norm in the transit industry.

Once the new transit network and schedules have been in place, Transit staff will closely monitor the service performance and obtain public input on an ongoing basis. Some of the public input will involve requests for service. Some requests may be minor and may be accommodated while others more complex and could involve additional costs. Proper responses to requests for service will need to be transparent and reflect the walk distance guidelines and transit service standards that are in place.

In Focus: Monitoring the Implementation of Restructured Service

The following describes key sources of information and processes that will be used to monitor the success of the implementation of restructured service, as well as take action as needed:

- Creation of a master Issues and Concerns spreadsheet to keep track of all issues arising by route, type (customer information, scheduling, operational, etc.), risk level, proposed solution and any actions taken.
- Feedback heard through on-street ambassadors that will be captured by a "Key Themes and Concerns" check out sheet to be filled in at the end of each outreach shift.
- Customer comments received through the transit phone information line and website.
- Service comment sheets available for completion by Transit Operators and other front line staff.
- Existing data sources: Automated Passenger Counter ridership and schedule adherence information; farebox revenues.

These materials will be used to gage the success of the service change and determine immediate and longer-term actions necessary to support its success. The actions required will be determined collaboratively at Project Team meetings to be held at the following suggested intervals:

- One day after the implementation.
- Four days after the implementation.
- Two weeks after the implementation.
- One month after implementation.

9.3.1 Data Collection

City of Greater Sudbury Transit planning and scheduling staff monitor and review transit system performance on an ongoing basis with a number of tools that are or will be at their disposal. These tools and how they are used are described as follows.

Existing Data Collection Technology

Automatic Passenger Counters (APCs)

- Reports boardings and alightings by bus stop and calculates passenger loads, which can be used for the service standards process (i.e. maximum passenger load to determine service frequency)
- Can quantify on-time schedule performance by route and time of day; data can be used to support changes to the route or schedule
- 10 buses are equipped with APCs, sufficient for sampling size; however, buses need to be rotated to provide relatively similar sample sizes
- APCs not provided on TransCab vehicles

GFI Registering Fareboxes

- Reports total boardings and revenues by route and fare payment type
- Validates cash fare paid and passes
- Issues transfers
- Equipment needs replacement as soon as possible due to lack of parts, increasing breakdowns and cost to maintain

Proposed Data Collection Technology

As the Transit Action Plan is implemented, it will be important to monitor each route to ensure schedule reliability, to minimize the number of transfers needed and to quantify passenger demand at the bus stop level by time of day. The number of Automatic Passenger Counters can be increased to provide a higher sample of passenger loading (boardings less alightings) and schedule adherence data. The use of smart card technology can report demand by passenger classification, by bus stop and route, and time of day as well as report on directness of travel by monitoring the number of transfers that are needed.

The unprecedented amount of data, will provide Greater Sudbury Transit staff with supporting information to justify changes in schedules and routes, as required, to better match demand with resources and to enhance the quality of service through maximum schedule adherence and reducing the need to transfer.

8.3.2 Annual and Ongoing Transit Planning Process

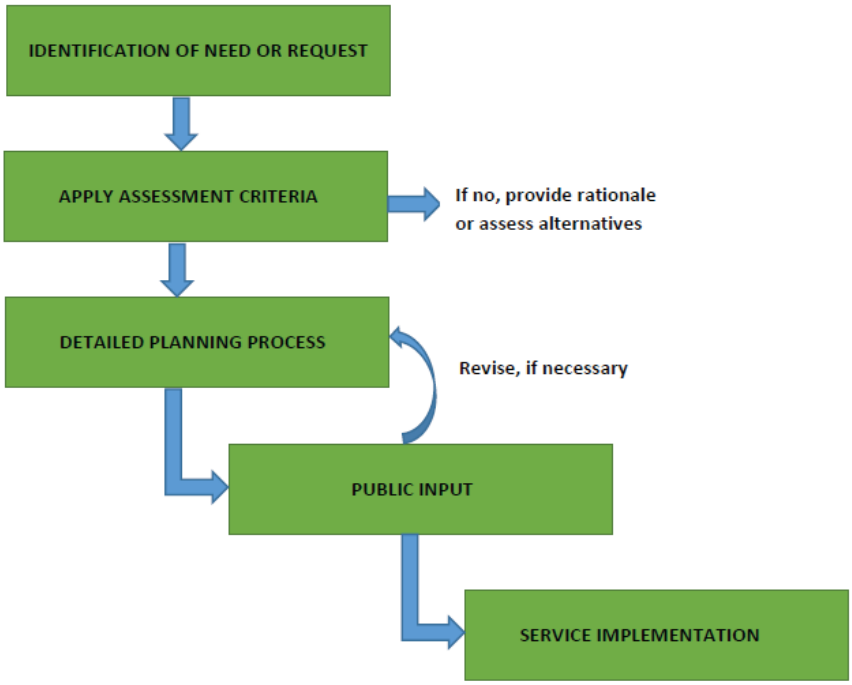
City of Greater Sudbury Transit planning and operations staff continually monitor transit services as well as dealing with the public on a day to bay basis. Staff is tasked with applying continuous improvement principles to maximize the return of every transit dollar spent and to adapt to any changes in the demand in service. The TAP, for example, provided for a significant improvement in transit services based on the current 170,000 hours of annual transit service based on the data that was available and analyzed during the study.

With enhanced and timely data, transit staff will be able to plan for change and to respond to requests for service from the general public and businesses in a timelier manner and from transit operations staff (e.g. bus operators, dispatchers and supervisors). Each year Greater Sudbury Transit prepares their budget, consideration is given to the number of transit vehicles and hours of service that is needed to meet the demand projected by staff (e.g. for a new residential development, changes in existing services, etc.) as well as consideration of requests from the public.

Transit Service Standards that are in place address the type of service, frequency of service and span of service needed, and provides Transit staff with a transparent decision-making process on which to base recommendations. While minor changes can be made that have no impact on the budget, other changes can be more complex and require more detailed reviews as illustrated in the following flow chart.

The transit planning process outlined is objective, transparent and provides Transit management with the data and other information needed to support any recommendations to significant change in the service or the need for additional funds, if necessary. It is then up to Council to support or not support the recommendations based on the information provided. Regardless of the outcome of staff recommendations, Transit staff will have taken due diligence.

Annual and Ongoing Transit Service Review Process



9.4 Conclusions: A Greater City Depends on Great Transit

The City of Greater Sudbury has been on an evolutionary path to transition its economy and community into something far more comprehensive and diverse than ever before, both in terms of the many linked communities it encompasses as well as the many reasons why people live, work and go to school here.

Viable and enjoyable transportation choice is the key to thriving and healthy communities and it is key to addressing the needs of a new generation of residents that are the most transit-supportive generations in several decades, young and old. Upper tier governments recognize this as well and have, in recent years, made it more affordable at the local level to take action through various funding programs in place.

The Transit Action Plan outlines the activities that the City should take to transform its transit network by first prudently using existing transit resources to make things better to attract more riders. A blueprint has also been laid out to take Greater Sudbury Transit to the next level, which is in line with the City of Greater Sudbury vision and its values.

APPENDIX A:

Public Engagement Phase 1 Result Summary

Acknowledgements

In collaboration with the City of Greater Sudbury, the Transit Consulting Network and its project partners would like to thank all those Greater Sudbury-area community members who provided their feedback and ideas into this process. In particular, the residents, staff, community leaders and organizations that provided input at Transit Action Plan open houses, workshops, through online surveys and through one-on-one interviews.

The project also gratefully acknowledges the support of the the Canada-Ontario Public Transit Infrastructure Fund (PTIF).

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1.0 INTRODUCTION

In collaboration with the community and its partners, the City of Greater Sudbury is undertaking a comprehensive review of the Greater Sudbury Transit System. Called the "Greater Sudbury Transit Action Plan," the project and its resulting recommendations seek to outline the key service, infrastructure and supporting measures the City can take immediately and into the future to further improve how transit serves and connects Greater Sudbury.

The Greater Sudbury Transit Action Plan is made possible by the Canada-Ontario Public Transit Infrastructure Fund (PTIF). The Canadian transit consulting firm Transit Consulting Network (TCN) and its associates have been retained to lead the Transit Action Plan project on behalf of the City.

This first phase of the Greater Sudbury Transit Action Plan focused on gathering ideas and feedback from the community, particularly through a series of events and surveys which took place from June 18 to July 9, 2017. This information is now being used to help draft recommendations to improve public transit for a second round of public feedback in February and March, 2017.

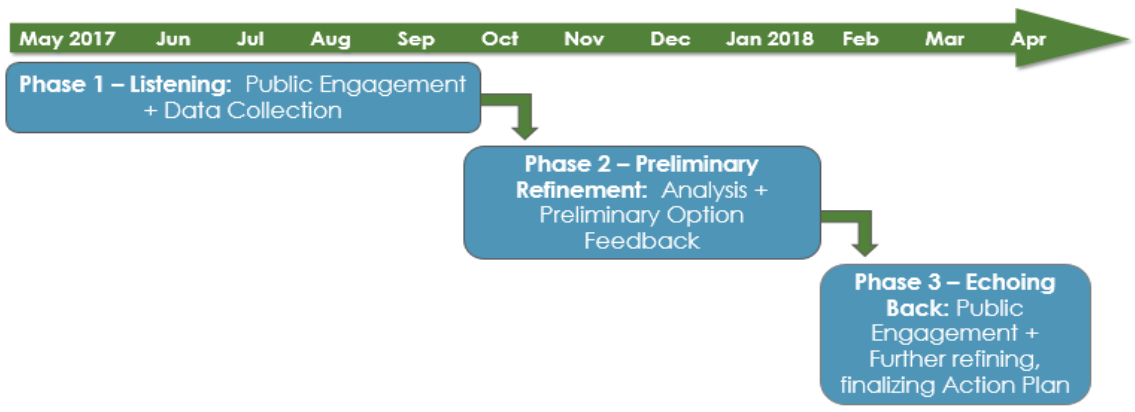
Greater Sudbury Transit Action Plan Overall Objectives:

- Undertake a comprehensive analysis of Greater Sudbury Transit routes, service levels and service models, including Handi-Transit and TransCab service.
- Hear from transit passengers, staff, stakeholders and the larger community about how transit can continue to improve to meet the City's diverse transportation needs.
- Consider all potential opportunities to improve the efficiency and effectiveness of Greater Sudbury Transit.
- Identify potential recommended service, infrastructure and related improvements.
- Build public awareness and support of Greater Sudbury Transit and its services.

2.0 PURPOSE AND SCOPE

The objective of Public Engagement Phase 1 was to provide information about the existing transit system and Transit Action Plan process and ask the public for their feedback on how the existing transit system is performing, to what degree it meets or does not meet their needs and what they would like to see for the future of transit over the longer term.

Greater Sudbury Transit Action Plan Project Phases and Timeline



3.0 METHOD

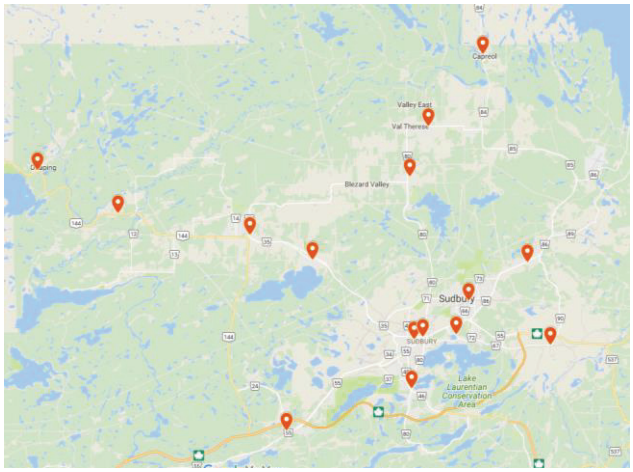
Phase 1 public engagement spanned a diverse set of methods and events with the goal of enabling as broad a representation of the community as possible across geographic area, age, income and lifestyle. A mix of online and in-person techniques were used, with materials available in both English and French. The following describes each of the elements of the engagement strategy.

Transit Action Plan Website

A dedicated web page (both in English and French) was set up to inform the public of the ongoing Transit Action Plan (English: www.greatersudbury.ca/TAP French: www.grandsudbury.ca/PAT). The web page provided information on the upcoming open houses across the City and linked to an online survey (further details below).

Greater Sudbury Transit Action Plan Webpage

4.0 GREATER SUDBURY TRANSIT ACTION PLAN OPEN HOUSES



Sixteen (16) open houses were held from June 19-30, 2017 across the City to collect people's opinions on the current transit situation in Greater Sudbury and ways to improve the service. Interactive presentation boards were used at the events to collect feedback from participants shared through conversations, as well as the use of post it notes and sticky dots for voting. The boards sought feedback on participants' specific ideas for improving routes and schedules, infrastructure such as passenger amenities at stops and terminals, technology enhancements, customer information, as well as other priorities for improvement, and general comments.

The following table shows the open house schedule and areas covered:

Open House Locations and Times			
Tuesday, June 20	1:30pm – 3:30pm	Lively	Battistelli's Your Independent Grocer, 65 M.R. 24
Wednesday, June 21	9:30am – 11:30am	Sudbury	Dumas' Your Independent Grocer, 82 Lorne Street
	9:30am – 11:30am	Azilda	Desjardins caisse populaire, 43 rue Notre-Dame
	1:00pm – 3:00pm	Chelmsford	Place Bonaventure Mall, M.R. 15
	1:30pm – 3:30pm	Garson	Foodland, 3098 Falconbridge Hwy
	4:30pm – 6:00pm	Dowling	Chris' Valu-Mart, 30 Main St E
	5:00pm – 7:00pm	Coniston	Toe Blake Memorial Arena, 1 Government Rd.
	7:00pm – 8:30pm	Onaping	Onaping Falls Community Centre, 2 Hillside Dr.
Thursday, June 22	1:30pm – 5:30pm	Sudbury	Downtown Transit Terminal, 9 Elm St.
	4:30pm – 6:30pm	Hanmer	Neil's Your Independent Grocer, 5200 Hwy. 69 N
Friday, June 23	9:30am – 11:30am	Capreol	Foodland, 85 Young St.
	9:30am-11:30am	Sudbury	Vrab's Your Independent Grocer, 1836 Regent St. S.
	1:30pm – 3:30pm	Val Caron	Metro Val Est, Val-Est Mall, Hwy. 69 N.
	1:30pm – 3:30pm	Sudbury	Real Canadian Superstore, 1485 Lasalle Blvd.
	5:00pm – 7:00pm	Sudbury	Carmichael Arena, 1298 Bancroft Dr.
Friday June 30	10:00am – 11:30am	Copper Cliff	McClelland Community Centre Arena, 37 Veterans Road

Transit Staff Open Houses and Survey

Two open houses were conducted for transit employees and a detailed paper survey was handed out to collect their feedback and suggestions. The transit staff was also given the opportunity to attend public open houses and complete the online survey.

The open houses were conducted at the transit garage during times structured around Transit Operator shifts to make it as convenient as possible for employees to attend:

- 5:00am to 7:00am, June 12, 2017
- 2:00pm to 4:00pm, June 14, 2017

Handi-Transit Ride-alongs

Transit Consulting Network staff boarded Handi-Transit service on May 16-17, 2017 to interview Handi-Transit customers and drivers to seek their input on improvements in all areas of the Specialized Transit Service. This was complemented by further one-on-one telephone conversations with Handi-Transit staff and key stakeholders held at a later date.

Community Action Network, Advisory Committees and Stakeholder Outreach / Workshops

Information on the Transit Action Plan was sent to all area Community Action Networks and major post-secondary institutions (Collège Boréal, Laurentian University and Cambrian College), as well as 29 other Stakeholder Group Organizations that spanned the areas of transportation, sustainability, health, education, major employers, seniors, people with a disability, youth and community services. Council members and City employees from relevant departments (Recreation, Roads, Planning, etc.) were also invited to attend the workshops. All of these networks and Organizations were invited to send a representative to one of two open houses that were held:

- 6:30pm to 8:30pm on June 20, 2017
- 10:00am to noon on June 22, 2017

Each workshop involved a series of small roundtable discussions that gathered participant input on larger issues and opportunities facing the transit system, key travel times and destinations for different segments of the population, specific route, schedule and infrastructure suggestions, and ideas for marketing the system. The open house presentation boards were also available at the workshops for participants.

Separate meetings were also held with the Accessibility, Seniors and Sustainable Mobility Advisory Panels that sought their feedback to similar questions as those at the workshop. All meeting and workshop invitees were informed of the open houses and online survey and invited to help promote them across their larger organizations and networks.

Online/Paper Survey

A survey was produced in both English and French to understand citizen concerns and their opinions on making the transit system better. The survey covered similar questions and themes as those covered in the open house boards and workshop questions. The survey was available online as part of the Transit Action Plan webpage from June 18, 2017 to July 9, 2017 and paper copies of the survey were also available at the open house events and at public locations around the City, such as libraries and Community Service Centres.

Sample of Photos from the Various Open Houses and Workshops

Additional Conversations and Input

Through the various scheduled engagement activities, other opportunities arose to hear from citizens and organizations about how to improve Greater Sudbury Transit. This included input received via email and other follow up phone conversations with the engagement team. One such example was the provision by Friends of Sudbury Transit of information to the project and result highlights from a 2015 survey which that group had previously conducted that garnered 800 responses.

Supporting Advertising, Media and Promotion

In addition to the means noted above, the engagement events and opportunities were promoted through a variety of methods, including:

- News releases
- Advertising in local newspapers and radio and TV stations
- The City's Facebook and Twitter feeds, as well as Facebook ads
- Posters onboard all Greater Sudbury Transit vehicles
- Bookmarks advertising the online survey that were available for Transit Operators and open house staff to hand out to customers

Some examples of these activities and resulting publicity are shown here.

Results

The table on the right provides a summary of response rates to the various engagement activities. Over 2,000 citizens directly provided input into the process. This does not include the larger Greater Sudbury population who would have been informed of the Transit Action Plan and the Greater Sudbury Transit System through the associated media, social media and advertising.

Engagement Quick Facts	
Online Survey Respondents	1,752
Paper Survey Respondents	23
Workshop Participants	51
Open House Participants	350+
Number of Public Open Houses	16
Number of Transit Staff Open Houses	2
Number of Advisory Panel Workshops	3

The detailed results and comments from all activities have been captured and have been a key source of information for the project team's further analysis and incorporation into the Transit Action Plan's recommendations. The following provides highlights from common themes heard from the three main streams of activities: Open Houses, Survey and Workshops.

4.1 PUBLIC OPEN HOUSE RESULT HIGHLIGHTS

Response themes had some slight variations across the 16 public open houses but generally there were strong commonalities in the feedback received across the City.

Priorities for Service - When asked to "vote" using sticky dots on priorities for improvement, by far "more Sunday and holiday service" was a top priority for change among open house participants, followed by "more frequent mid-day service," "more direct / simplified routes" and "better connections." The following table summarizes responses received across all areas, as well as specific routes and quadrants in the community. (Respondents had the opportunity to vote for their service improvement across the whole system or within a specific area).

Response Summary: What are your priorities for improved service?

	Total Responses	System Wide	Northwest Areas / Services	Northeast Areas / Services	Southwest Areas / Services	Southeast Areas / Services
More Sunday and holiday service	57	39	4	4	2	8
More frequent midday service	37	16	7	4	3	7
More direct/simplified routes	33	11	5	12	5	0
Better connections	30	12	7	2	4	5
Earlier weekday service	25	14	5	3	2	1
More frequent commuter service	24	16	4	3	1	0
Other ideas (various):	21	10	1	6	0	4
More evening service	14	8	2	3	1	0
More Saturday service	2	1	0	0	1	0

Comments received through one on one conversations and recorded with post it notes provided a greater insight into specific priorities. The information was gathered into five areas of improvement; Routing and Service Levels, Infrastructure, Customer Information, Specialized Transit Services and General Comments.

Routing and Service Levels - When asked to provide specific ideas to improve Greater Sudbury Transit routes and service levels, the top five improvements were identified as:

- Improve and increase service on Sunday
- Increase frequency especially during peak time and midday
- Provide direct routing and express buses
- Improve on-time performance
- Increase service to South End

Infrastructure - When asked about improvements to bus stop and terminals, including benches, shelters and other passenger amenities, the top five improvements were identified as:

- Increase security at the Transit Terminal and on buses
- Increase number of benches at shelters
- Provide additional shelters
- Improve bus cleanliness
- Increase winter maintenance at bus stops.

Customer Information – The top priorities requested for improvement to customer information were identified as:

- Improve wayfinding and wayfinding technology to make it easier to access the system's services
- Improve customer service levels and complaint process
- Promote services and provide travel training
- Provide information on policies and procedures

Specialized Transit Services (Handi-Transit) – The priorities requested by Handi-Transit customers during the ride-alongs and telephone interviews included:

- Expand the hours that trip-bookings can be made
- Provide the ability to book trips on weekends
- Accept Handi-Transit passes for travel on TransCab and Greater Sudbury Transit
- Reduce the length of time a Handi-Transit customer needs to complete their trip

General Comments – When asked for any other ideas or comments to improve Greater Sudbury Transit, comments were mostly relating to fare structure:

- Extend time allowed on transfers
- Provide incentives for seniors to use the service
- Wherever possible, link fare increases to coincide with service improvements

- Make purchasing fare media more convenient
- Provide a family pass or free transit for children under 12

4.2 TRANSIT STAFF OPEN HOUSE AND SURVEY RESULT HIGHLIGHTS

Many of the Greater Sudbury Transit employee comments were similar to those received at the public open houses. Some of the additional general key themes include:

- On time performance is an issue, which needs to be addressed. Additional time is required on many routes to ensure that the system can operate on time, offer good customer service and meet connections. A reduction in bus stops, priority signaling and smart card technology were provided as solutions to improve on time performance, as well as consideration of routing changes where feasible to make service more direct.
- Complementing the discussion on on-time performance, Transit Operators provided many specific ideas for streamlining routes to make them more direct and customer-friendly, as well as ideas for infrastructure improvements. This input has been incorporated throughout the project team's subsequent analysis and development of options.
- When asked which areas of the community most needed additional service, the South End was the most common response.
- When asked which area had too much service, New Sudbury was the most common response.
- Many employees also noted the opportunity to create more hubs in the system where community routes could connect, particularly at New Sudbury Centre and the South End within the urban areas, and potentially the Valley area for commuter routes.
- Similar to comments received by passengers, other key areas of feedback from transit staff included safety and security issues and the desire to extend the time allowed for transfers.

4.3 WORKSHOP RESPONSE HIGHLIGHTS

Five separate workshops engaging different sets of participants were conducted. The nature of these workshops was more conversational in nature, enabling facilitators to further clarify and capture specific ideas, as well as ask broader questions.

In particular, specific comments were captured in each group relating to what would be taken into consideration during the analysis of the service:

- Key travel times and destinations for each of the potential transit customer markets in Greater Sudbury (commuters of all types, including adults, youths, seniors, persons with a disability)
- Marketing and promotional ideas
- Specific improvements desired for routes, frequency and infrastructure.
- Larger commuter trends and opportunities that the transit system needs to address over the longer term.

Generally, the comments provided by members of all workshops align with those described for the open house and survey, and so have not been repeated here; however, some particular themes that were more pronounced for each group need to be highlighted:

Community Action Network and Transit Stakeholder Workshops:

- The most common themes within the discussions related to Transportation Demand Management programs and policies. Examples include:
    - Providing service to target audiences such as students and seniors
    - Providing incentives through fares to encourage transit use
    - Providing travel training to seniors, young students and those new to the City of Greater Sudbury
- Improvements to amenities and technology to improve customer experience. Examples include more shelters, benches, smart card technology, charging stations for personal electronic mobile devices, music and art.
- Offers from stakeholder groups and organizations were made to collaborate with Greater Sudbury Transit to improve transit's links to the community. Examples include linking services to community events; providing opportunities to attract tourists; promoting services by providing support to stakeholder initiatives, etc.

Accessibility Advisory Panel Workshop:

- It was noted that 100% accessibility should be a system goal.
- Participants emphasized the need for 100% accessible design of stops and sidewalk connections that make it easier for all Greater Sudbury residents to access transit.
- Technology improvements should be made to make the system accessible for the visually impaired.
- Other key themes during the discussion included opportunities to better integrate use of both Handi-Transit and conventional transit; improved travel training for customers, especially young students/seniors/persons with disabilities; and suggestions to make Handi-Transit and conventional transit vehicles more comfortable.

Senior Advisory Panel Workshop:

- Bringing back free Transit for Seniors on Mondays was identified as a priority.
- Participants focused on customer service levels and comfort as being very important. Many of the suggestions related to accessible shelters and stops, and the provision of benches. Although the group shared interest in receiving a higher frequency of service (which is often most cost-effectively created by focusing routes on main roads), maintaining some level of service coverage within neighbourhoods at a lesser frequency was identified as being equally important.

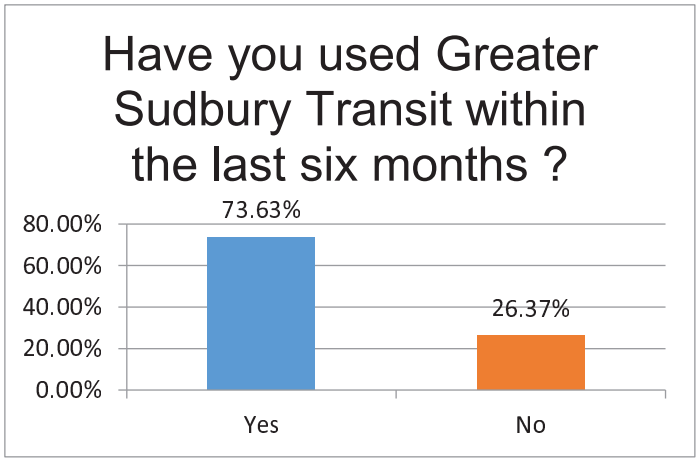
- Many shared interest in promoting Transit services through collaboration efforts with community stakeholders, and highlighted that one on one and/or group Travel Training was very important to familiarize seniors on using the service.
- Handi-Transit services was praised for its effectiveness; however, the two-day advance booking required for the service was identified as an inconvenience. It was also expressed that the eligibility process should consider all types of disabilities—not just those of a physical mobility nature--that prevent a person from taking the accessible conventional system.
- Safety and security at the Downtown Transit Terminal was identified as a barrier to transit use for many seniors. There is perception that the area is unsafe and they prefer to stay away from the Terminal due to this reason.

Sustainable Mobility Advisory Panel

- Priorities included an increase in wayfinding and transit information tools that make it easier for new users to take transit and for all passengers to access services.
- Need to improve cycling infrastructure near transit hubs and relation of transit routes to key cycling infrastructure, and to introduce more Transportation Demand Management policies to encourage all modes of active transportation.
- Changing perception of Transit services through branding and promotion is key to attract new users.
- Bus stop and shelter infrastructure improvements were identified as a priority, particularly the need to review existing bus stop amenities and location to increase safety and passenger convenience.
- Members would like to see a route structure that features timed connections at several key hubs and where not all connecting trips need to route via the Downtown Terminal. Park and ride facilities would also be a benefit.

4.4 ONLINE AND PAPER SURVEY HIGHLIGHTS

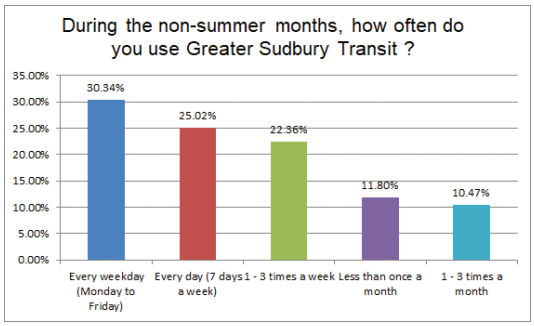
A total of 1,775 responses were collected through the online and hardcopy surveys; this represents a 1.1% sample of the total population of Greater Sudbury. Three-quarters responded that they used Greater Sudbury Transit within the last six non-summer months (considered existing transit customers) while one-quarter did not, which are surmised to be non-transit customers. Tapping into this group of residents who do not currently use transit represents Greater Sudbury Transit's largest market potential. Increasing the use of transit by existing users also appears to be a potential focus. The on-line survey offers a snapshot of the



total Greater Sudbury Transit market, which can be compared to the information received during the workshops and public open houses. The following presents response highlights for each group of current users or non- users.

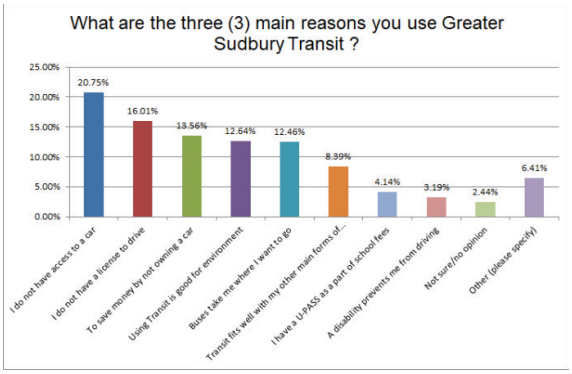
4.4.1 TRANSIT ACTION PLAN ON-LINE SURVEY FOR TRANSIT CUSTOMERS

The majority of Transit Customers reported they used transit every weekday, which typically represents the work and school trip market and people for whom transit is their sole or primary form of transportation. The 45% that reported they used transit less frequently is significant primarily because the non-frequent Transit Customer is already familiar with transit and better meeting their needs can convert them to become more frequent Transit Customers.



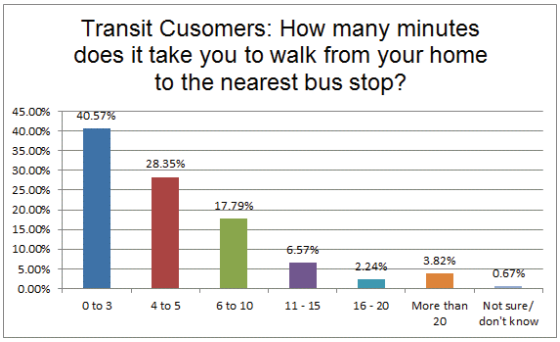
During the non-summer months, how often do you use Greater Sudbury Transit ?		
Answer Choices	Responses	
Every weekday (Monday to Friday)	30.34%	365
Every day (7 days a week)	25.02%	301
1 - 3 times a week	22.36%	269
Less than once a month	11.80%	142
1 - 3 times a month	10.47%	126
	Answered	**1203**
	Skipped	**562**

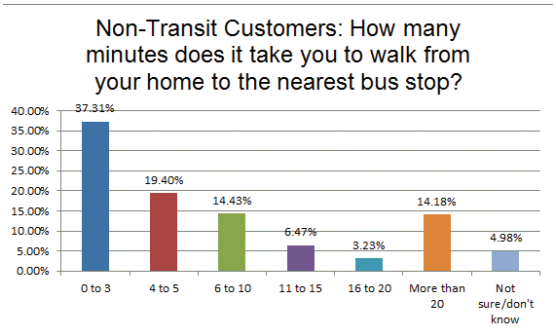
Of the 1,203 Transit Customer respondents, approximately 40% of the responses indicated they did not have a car or license or they were unable to drive due to a disability. What is considered significant is that almost 14% indicated that it saved them money by not owning a car while 12.6% indicated environmental reasons were their priority for using transit; this is in line with common worldview of the emerging millennial generation and indicates potential messages to emphasize in future transit promotions.



What are the three (3) main reasons you use Greater Sudbury Transit ?		
Answer Choices	Responses	
I do not have access to a car	20.75%	586
I do not have a license to drive	16.01%	452
To save money by not owning a car	13.56%	383
Using Transit is good for environment	12.64%	357
Buses take me where I want to go	12.46%	352
Transit fits well with my other main forms of transportation (walki	8.39%	237
I have a U-PASS as a part of school fees	4.14%	117
A disability prevents me from driving	3.19%	90
Not sure/no opinion	2.44%	69
Other (please specify)	6.41%	181
	Answered	**1203**
	Skipped	**562**

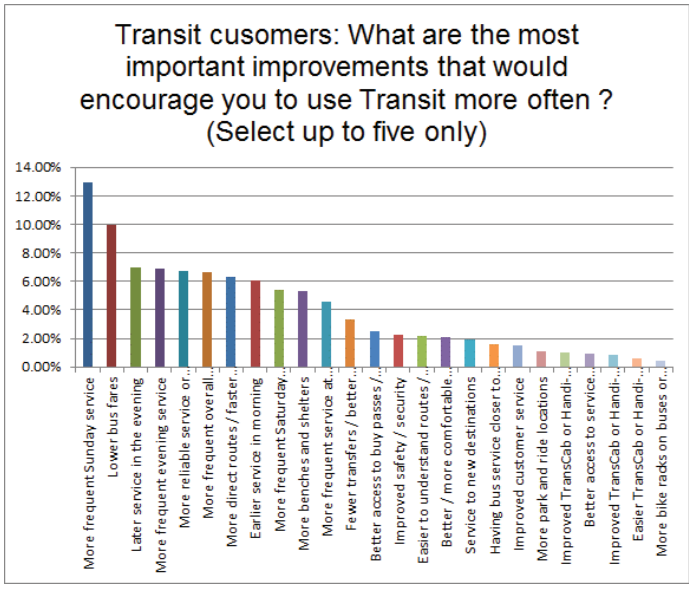
One of the most significant factors in determining whether or not one can or will choose to use transit is the walk distance to the nearest bus stop, as well as the relative frequency of the transit service provided there. As a guide, transit bus stops are considered to be easily accessible to residents when they are within a 5-minute walk, or approximately 450 metres. Bearing in mind the 450-metre walk distance standard, the following responses are considered significant.





Of the 1,203 Transit Customers that responded, only 69% reported they were within a 5-minute walk to a bus stop compared to 57% of the 402 Non-Transit Customers. The numbers provide a clear indication of what needs to be overcome, namely, improving route coverage to enable easier access to services. It also means that one of the most significant ways that the City can increase the effectiveness of its transit system is by focussing new housing and development on the key corridors where transit already operates, such as through supportive zoning that makes increased density and walkability a priority. In the case of more rural areas where residential development and therefore transit coverage is actually spread out, the use of low-cost feeder services such as Trans Cab, coupled with good route design principle, can go a long way to improving access to transit to grow ridership.

While reasonable walking 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 five.

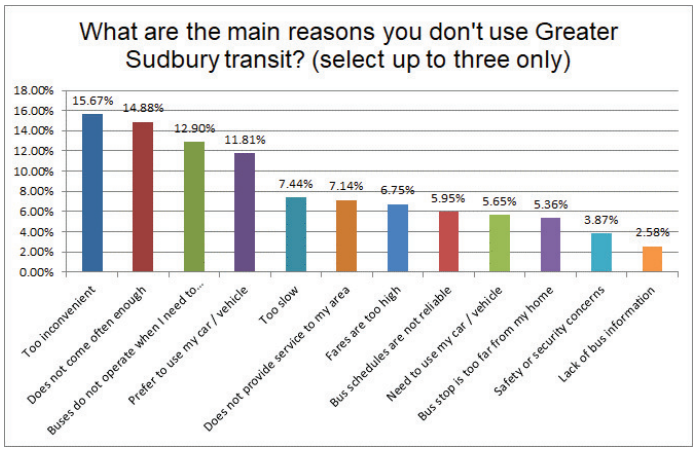


Transit Customers: What are the most important improvements that would encourage you to use Transit more often ? (Select up to five only)		
Answer Choices	Responses	
More frequent Sunday service	12.95%	684
Lower bus fares	9.92%	524
Later service in the evening	6.97%	368
More frequent evening service	6.89%	364
More reliable service or buses being on time	6.72%	355
More frequent overall weekday service	6.67%	352
More direct routes / faster travel time	6.29%	332
Earlier service in morning	6.08%	321
More frequent Saturday service	5.36%	283
More benches and shelters	5.32%	281
More frequent service at peak work or school travel times	4.55%	240
Fewer transfers / better connections	3.31%	175
Better access to buy passes / tickets	2.54%	134
Improved safety / security	2.22%	117
Easier to understand routes / service	2.14%	113
Better / more comfortable buses	2.08%	110
Service to new destinations	1.91%	101
Having bus service closer to home	1.55%	82
Improved customer service	1.52%	80
More park and ride locations	1.10%	58
Improved TransCab or Handi-Transit hours of service	1.02%	54
Better access to service information	0.97%	51
Improved TransCab or Handi-Transit availability during existing hours	0.85%	45
Easier TransCab or Handi-Transit trip booking	0.61%	32
More bike racks on buses or at terminals	0.45%	24
	Answered	1203
	Skipped	562

More frequent Sunday service, reduced fares, improved evening services and on-time performance topped out the list. The need for shorter travel times, more frequency and better connections are somewhat related and represent almost 10% of the responses. These priorities are very much in line with those heard from participants of Open Houses, Surveys and Workshops.

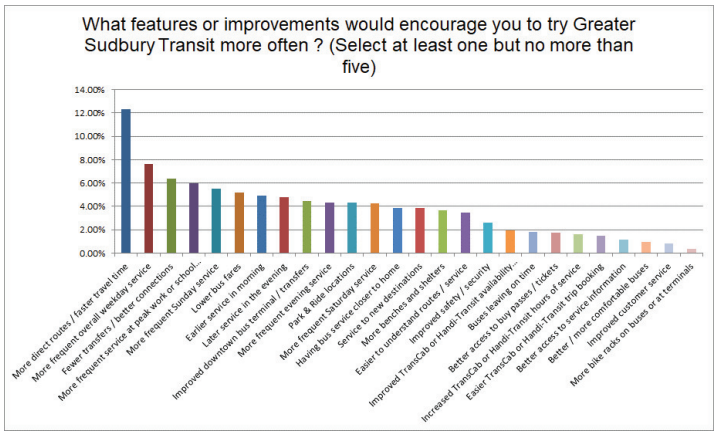
4.4.2 TRANSIT ACTION PLAN ON-LINE SURVEY FOR NON-TRANSIT CUSTOMERS

When Non-Transit Customers were asked why they don't use Greater Sudbury Transit, it is clear that travelling by car is the preferred choice for a number of reasons. Generally, Transit's ability to compete with a personal automobile is limited by the fact that most people feel their automobile is more convenient and the service does not meet their travel patterns and needs. Most importantly, bus stops being too far from their home or lack of service are barriers which must be overcome to change choice in mode of transportation for Non-Transit Customers. There are a number of reasons given that can be addressed by Greater Sudbury Transit, such as improving access to some areas, improved service frequency, reduced bus travel times, and improving service quality/ reliability.



What are the main reasons you don't use Greater Sudbury transit? (select up to three only)		
Answer Choices	Responses	
Too inconvenient	15.67%	158
Does not come often enough	14.88%	150
Buses do not operate when I need to travel	12.90%	130
Prefer to use my car / vehicle	11.81%	119
Too slow	7.44%	75
Does not provide service to my area	7.14%	72
Fares are too high	6.75%	68
Bus schedules are not reliable	5.95%	60
Need to use my car / vehicle	5.65%	57
Bus stop is too far from my home	5.36%	54
Safety or security concerns	3.87%	39
Lack of bus information	2.58%	26
	Answered	**402**
	Skipped	**1363**

It is clear that addressing the reasons that residents reported they don't use transit will not change travel habits overnight. A question asked to Non-Transit Customers was to select up to five transit service improvements that would convince them to try transit more often. Non-Transit users want more direct, frequent service, improved hours of operation, and better Sunday Service coverage. These priorities mirror those provided overall throughout the engagement process from Existing Transit Customers.



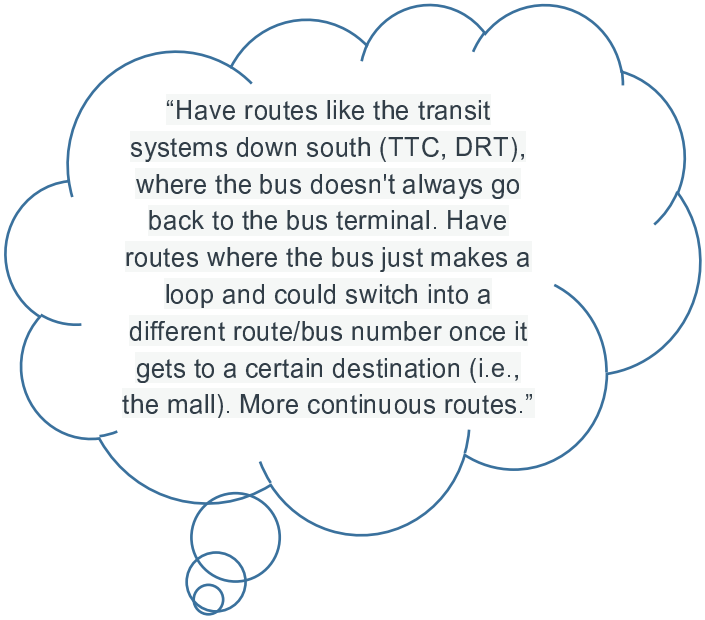
What features or improvements would encourage you to try Greater Sudbury Transit more often ? (Select at least one but no more than five)		
Answer Choices	Responses	
More direct routes / faster travel time	12.33%	187
More frequent overall weekday service	7.65%	116
Fewer transfers / better connections	6.39%	97
More frequent service at peak work or school travel times	6.00%	91
More frequent Sunday service	5.54%	84
Lower bus fares	5.21%	79
Earlier service in morning	4.94%	75
Later service in the evening	4.81%	73
Improved downtown bus terminal / transfers	4.48%	68
More frequent evening service	4.35%	66
Park & Ride locations	4.35%	66
More frequent Saturday service	4.28%	65
Having bus service closer to home	3.89%	59
Service to new destinations	3.89%	59
More benches and shelters	3.69%	56
Easier to understand routes / service	3.49%	53
Improved safety / security	2.64%	40
Improved TransCab or Handi-Transit availability during existing h	1.98%	30
Buses leaving on time	1.85%	28
Better access to buy passes / tickets	1.78%	27
Increased TransCab or Handi-Transit hours of service	1.65%	25
Easier TransCab or Handi-Transit trip booking	1.52%	23
Better access to service information	1.19%	18
Better / more comfortable buses	0.99%	15
Improved customer service	0.79%	12
More bike racks on buses or at terminals	0.33%	5
	Answered	**402**
	Skipped	**1363**

4.4.3 ALL SURVEY RESPONDENTS

Several survey question responses were common to all respondents. The key conclusions that were drawn are:

- Nearly all respondents agree to the positive aspects of taking transit, namely benefits to the environment, reduction in road congestion, personal cost savings and ability to access the services.
- Nearly 54% of the total respondents felt that the system could use some improvement.
- 65% of the respondents would not mind a minor increase in taxes if assured an increased transit service.

Thousands of comments were also received in the survey in terms of how the system should improve routes, schedules, infrastructure, customer information and other attributes. Common themes similar to those heard in the Open Houses and Workshops are as follows:



Improvements to Routing

- Improve Sunday service as people avoid the service on this day due to its inconvenience.
- More overall frequency, earlier weekday buses and better evening service.
- Improved service in outlying communities, by establishing local transit hubs—with Park & Rides--and provide connections between these hubs so that not all trips need to go via Downtown.

Infrastructure Improvements:

- More bus stops with shelters, benches, stop numbers and posted route schedules, as well as prioritized stops for snow removal.
- Improve safety, security and maintenance at the Downtown Transit Terminal.

Customer Information Improvements:

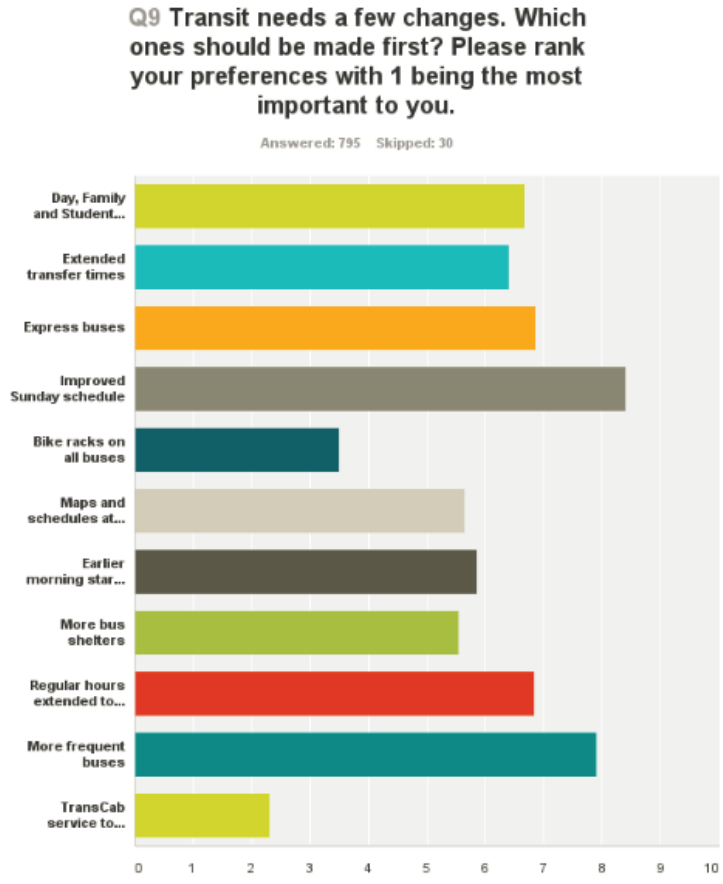
- Real-time information screens at the Downtown Terminal
- Printed route book with all routes; use a.m./p.m. rather than 24 hour time
- Expanded hours of operation at Downtown Kiosk.

Fares:

- Increase the number of locations selling transit passes/tickets. Longer transfer time allowances given size of system, multiple connections

It is also notable that many of the priorities shown in this survey align with those seen in a 2015 survey undertaken by The Friends of Sudbury Transit, which were provided by that group to the Transit Action Plan project team. An excerpt from those survey results are shown to the right.

For comparison, excerpt from 2015 survey conducted by Friends of Sudbury Transit.



5.0 KEY CONCLUSIONS: ISSUES AND OPPORTUNITIES

Response rates to the Transit Action Plan Phase 1 Engagement have been among the highest ever received in a City of Greater Sudbury Engagement Process. While there are specific, detailed suggestions that project staff will look to incorporate into recommendations, there was also a resounding similarity to key themes heard from the various sources. The extent of participation and the commonality of priorities mean that the City and project team members should feel reasonably confident around the recommended direction for the system.

Based on overall public feedback heard and system analysis to date, some of the main issues and opportunities that the Transit Action Plan recommendations will need to address are as follows:

- **System reorganization to improve clarity, directness, frequency and reliability** – Greater Sudbury's existing route structure is confusing, hard to understand for new users and dilutes potential frequency by spreading service across many streets. Focusing heavier ridership service on key corridors with complementing feeder services would enable the system to put more frequency where it is needed most, shorten travel times and provide the time necessary to improve reliability.
- **A more organized and innovative approach to outlying areas** – There is strong desire for improved service to Greater Sudbury's many outlying neighbourhoods. At the same time, each has different population sizes and demographic needs.
    - Creating service standards that clearly show minimum acceptable service that can be consistently applied across the City--as well as the criteria used to recommend further service improvements--would be helpful in fairly allocating service and ensuring it meets the needs of as many residents as possible.
    - At the same time, further approaches should be explored to improve how the suite of transportation services are organized, deployed and communicated in these areas. This might include potential creation of mobility hubs that make it more convenient for connections to take place, Park & Rides, improved coordination and technology with TransCab services and potentially integration with some regularly scheduled Handi-Transit services, where feasible.
- **A balance of investment** – There are two key strategies for attracting further ridership on the Greater Sudbury Transit System: [1] making it easier for *existing users* to take it more often; [2] attracting *new users*, particularly commuters. Priorities for the first centre on increasing frequency and hours of operation on Sundays. Priorities for the second focus on improving service on weekdays, particularly during the peak commuting periods. As it moves forward, the system needs to strike a balance between both types of investment in order to diversify and grow its ridership.

- **A more integrated accessible service** – There are a number of strategies that will be needed to ensure that Handi-Transit services meet Accessibility for Ontarians Disability Act (AODA) requirements, improve customer booking options, customer travel experience and expand eligibility. Enhancements are also needed to better enable some registrants to use TransCab and conventional transit to complete some or all of their trip needs that precludes the need for advance bookings so that trips can be taken dynamically; this would enable qualifying registrants to be more integrated with the community.
- **Integrated infrastructure, fare, customer information and policy improvements** – There are many specific improvements that can be made to each of these components, which have been captured in the detailed responses being analyzed for recommendation by the project team. The resulting Transit Action Plan will include a prioritized list of improvements for each of these elements and their implementation should be considered in tandem with resulting prioritized list of service improvements.

6.0 SUMMARY

The 1,775 respondents to the online and hard copy transit survey provided quality feedback that complemented the feedback provided by over 400 participants at public Open Houses and Workshops. The information gathered through the engagement process from Transit Customers, Non-Transit Customers and Community Stakeholders is integral to creating a plan that accurately identifies opportunities and solutions.

In order to grow transit ridership and make transit more effective in the City of Greater Sudbury, it is clear that by addressing the transit service improvement priorities, existing Transit Customers will ride it more often and the current Non-Transit Customers – the largest market potential – will at least take transit sometimes and, over time, more frequently. In this regard, it is recognized that transforming Greater Sudbury Transit will not result in residents reducing car ownership levels overnight. However, there is opportunity to restructure the Greater Sudbury Transit system to better serve existing and future residents and create the framework to effect ridership growth over time and make it easier for residents to reduce their reliance on automobiles.

7.0 PRELIMINARY TRANSIT ACTION PLAN STRATEGIES

In order to meet the community priorities identified through the engagement process for both Transit Customers and Non-Transit Customers, a list of action items have been identified for the Transit Action Plan initiatives. The action items would build on existing strengths of the service and incorporate best practices.

The following lists outlines the key themes and community priorities by service type which will be reviewed in depth and incorporated in the Draft Recommendation Report. It is important to note that not all priorities may be achieved within the existing budget, however strategies to implement in an efficient way will be provided.

Conventional Transit Service

- **More frequency**, particularly on Sundays and overall
- **More timely travel**: More direct, faster routing; fewer/better connections; improved on-time performance; later evening service/ earlier morning service
- **Improved routing**: easier to understand; stops and service closer to home; less to need to always travel via the Downtown Terminal
- **Better access:** improved safety/security; more Park & Ride locations; continued improvements to customer information, trip planning and travel training
- **Continue to improve value to customers**: fare review; more options and locations to purchase tickets and passes; consider longer time periods for transfers

TransCab Services

- **Easier to book** through improved Transcab booking process, less lead time and use of a single telephone number and other technologies.
- **Easier access** by expanding the Transcab network

Handi-Transit Services

- **Easier to book** by increasing the days when trips can be booked and reducing the lead time before travel
- **Provide more options** for passengers by making it easier to also use Transcab and the accessible Conventional Transit services, encouraging their use, and providing travel training that would be required

8.0 NEXT STEPS

Building from the information collected in Phase I, the next phase of the Greater Sudbury Transit Action Plan involves the development of the preliminary proposed recommendations for the system. This includes creating the draft long term and short-term route networks, service plans, policies, infrastructure, and supporting measures that will be used to further improve Greater Sudbury Transit over the short, medium and long term. The Transit Action Plan will build on what is working well today, incorporating best practices from other communities and other solutions that would be customized for the Greater Sudbury's unique environment, community and opportunities.

It is expected that resulting preliminary proposals will be further refined with transit system staff, City leaders and key community representatives. Once feedback has been received, a Draft Interim Recommendation Report will be presented to Council for consideration by the end of January, 2018.

Once Council has approved the draft recommendations, a third round of public engagement will occur in February, 2018. With feedback received through the engagement process, the report will be refined and finalized for Council's consideration in April 2018.

APPENDIX B:

Public Engagement Phase 3 Results Summary

APPENDIX B: PUBLIC ENGAGEMENT PHASE 3 RESULTS SUMMARY

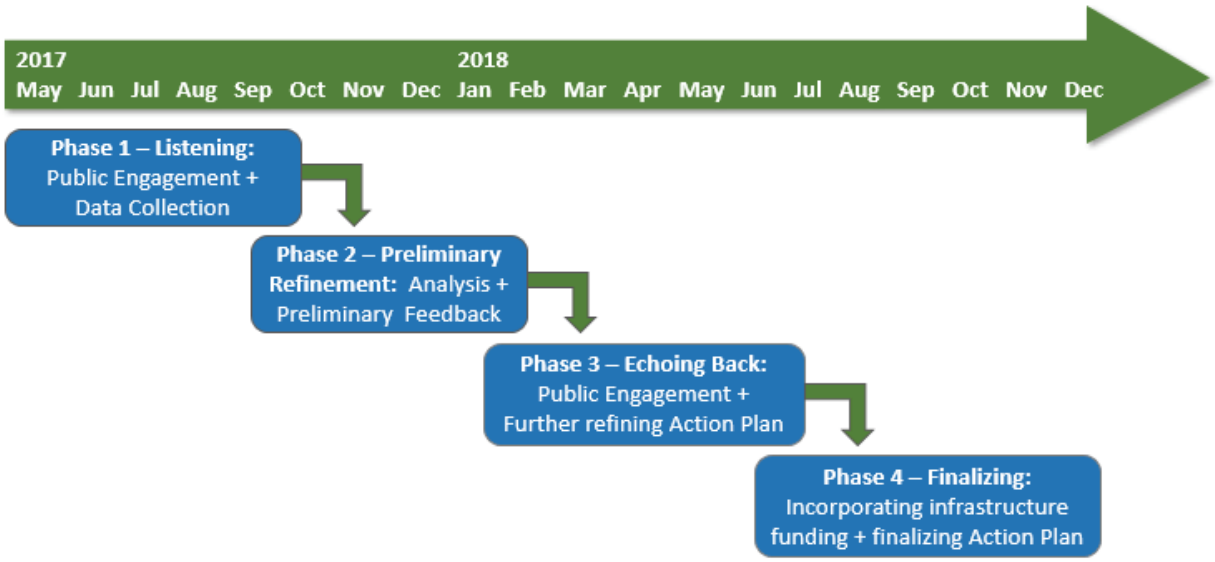
Introduction

In collaboration with the community and its partners, the City of Greater Sudbury is undertaking a comprehensive review of the Greater Sudbury Transit System. Called the "Greater Sudbury Transit Action Plan," the project and its resulting recommendations seek to outline the key service, infrastructure and supporting measures the City can take immediately and into the future to further improve how transit serves and connects Greater Sudbury. This project will be completed in three phases.

Phase 1 evaluates the existing transit issues by analyzing current performance, system issues, and, most importantly, your feedback. Phase 2 is the development of the draft report and proposed recommendations which are based on the analysis and community engagement from Phase 1. Phase 3 wraps the project up by presenting the draft recommendations to the public to refine and determine which proposals are preferred.

The project is currently in Phase 3, and this document will summarize how community engagement was completed in this phase, and what was heard from you through these collaborations, and how we will address your feedback in the final Action Plan.

Project Key Phases and Timeline:



How Did We Collect Your Feedback?

A wide array of in-person and on-line techniques were used to gather responses from community leaders and staff, existing transit users and future users. These techniques have included online and paper surveys, stakeholder workshops, open houses at the system's main transit terminal and potential hub areas, post-secondary schools, major employment centres and "pop up" open houses at high traffic locations around the community (grocery stores, libraries, shopping centres, etc.).

The approach to engagement in this project followed the International Association for Public Participation (IAP2) Core Values for Public Participation (see https://www.iap2.org/page/corevalues for more details), and had a key focus on engaging the people who are most impacted by these changes (e.g. passengers, front line staff, community leaders and more) as well as taking an active role in bringing engagement to the public at popular locations around the community. This approach was a huge success as the response rates to the Transit Action Plan engagement have been among the highest ever received in a City of Greater Sudbury Engagement Process.

What Did We Hear, And How Did We Address It?

The comprehensive engagement process in Phase 3 of the Transit Action Plan has ensured a realistic outcome reflecting the views and needs of stakeholders and the community in general. All feedback received in Engagement Phase 3 has been reviewed by the project team and incorporated into this final plan where feasible. The following points describe some of the more common feedback items heard and how they have been addressed in the final recommendations.

Hours and Service Frequency

A. Earlier transit trip start times to allow arrival at major employment locations by 7:00am.

a. Not possible for all routes at this time, but added as an expansion option with new investment and route structures.

B. Improved frequency on Sundays and Holidays.

a. Sunday service has been improved significantly, and further improvements to route frequency are included in the expansion option.

C. More service to Coniston.

a. There will be more service to Coniston, and this will be clarified in the final plan which will describe the operation of scheduled services by TransCab in the area.

D. More frequency in the Madison and Graywood areas and in the South End.

a. As part of the Transit Action Plan process, service has been allocated to neighbourhoods based on their actual ridership patterns. In some cases, the proposed new frequencies may be lower than existing service in order to more appropriately match demand. This enables the system to reallocate service to the highest ridership corridors where it is needed most. Matching service to demand also ensures that neighbourhoods are more equitably treated across the City. Determining ways to use existing system resources more effectively and prudently has been a key objective of the Transit Action Plan.

Detailed Route and Service Structure

A. **Clarification to overall route structure**.

a. Two main corridors of the originally proposed Mainline route have been separated into two separate routes to improve clarity: #1 Mainline (serving Lasalle, Notre Dame and Paris) and #2 Barry Downe - Cambrian (serving Barry Downe,Kingsway and Cambrian College).

b. All other routes which also contained more than one loop have been renumbered as separate routes.

c. Route numbering has also been redesigned to reflect type of service (frequent, core, local, community connector) and relative geographic position in the City (i.e. from north to south within route categories).

B. Address specific trips and routing to better meet resident needs.

a. Added a new route type – 'targeted' – to address resident concerns. This type of service consists primarily of routes tailored to meet specific employment and education commuter needs.

C. **Omit the need to transfer at New Sudbury Shopping Centre to reach Cambrian College**.

a. The #2 Barry Downe - Cambrian has been extended to Cambrian College. Also, a portion of #1 Mainline trips could with additional service hours extend as other routes to the College.

Detailed Route and Service Structure (CONTINUED)

D. Retain service to Lamothe Street, direct connection from Madison Avenue area to downtown. Provide opportunity to connect directly from Madison area to Cambrian College.

a. Loop service to Madison and Lamothe/ Graywood areas returned to two separate smaller loops (#11 Madison and 12 Graywood) that would be connected at commuter times to the #1 Mainline trips. A transfer may be required at non-peak times but similar frequencies to existing service would be retained throughout the day. As a trade- off in the short term, evening, late night and Sunday service would be operated as a combined loop (#13 Madison-Graywood-Cambrian Combined) in alignment with existing service levels.

E. Retain opportunity for direct service from Grandview neighbourhood to the Canada Revenue Agency Office and downtown during shift changes.

a. In addition to the #14 Grandview Local Loop, the #15 Grandview Commuter route has been added at peak times which would offer a direct connection between that neighbourhood and the Canada Revenue Agency Office. This would also provide the opportunity to passengers to transfer to the #1 Mainline for those travelling Downtown or to the South End.

F. Offer connection between the Kathleen area and Collège Boréal.

a. A direct connection is not possible based on existing service levels and ridership and therefore an expansion option has been provided.

G. **Improve access to St. Joseph's Villa and Continuing Care Centre**.

a. There is not enough time to effectively serve St. Joseph's in both directions on Laurentian University services. Instead, improvements to pedestrian crossings and infrastructure are recommended to help facilitate boarding of buses across the street.

H. Improve connection between high density residential locations in the Regent and South End areas and Laurentian University.

a. Service to Laurentian University has been redistributed between routes serving Paris and Regent, offering improved frequency on Regent. A future expansion option has also been included that would provide direct service between the South End and the University at peak times.

I. Improve directness of travel in the South End.

a. The revised #21 South End Local has been separated from a previous loop that operated in the Martindale area. Martindale area will be serviced with the #103 Lively. Service would now operate in both directions during peak time to reduce travel times. An expansion option has been included that would provide the opportunity for direct connection to downtown at certain times of the day.

Supporting Priorities

A. Various suggestions to fares, infrastructure, etc.

a. Fare structure section expanded to provide further detail and direction; minor additions to other supporting strategies.

What Happens Next?

The feedback received through the engagement process has been incorporated into the draft report. A final version of the report will be refined and submitted to Council for consideration. Thank you for participating in the engagement process and helping us to create an improved transit system that better addresses the needs of the public.

APPENDIX C:

Detailed Analysis of Existing System

APPENDIX C: DETAILED EVALUATION OF EXISTING TRANSIT SERVICES

Analysis of Existing Transit Services

Greater Sudbury Transit currently operates a "family of services" that includes three types of transit services.

Figure 1 – Greater Sudbury Transit Services, provides an overview of the service coverage including all three types of service. The City of Greater Sudbury's geography, the scale of the system and the geographic area covered combined make this transit system unique from other typical systems. The Appendix explores how each of the systems are performing by analysing three components:

Community Priorities: Although a lot more information was captured through the engagement process and applied to the final recommendations, the top three Community Priorities are identified and guide the analysis.

Historical Data: Analyzed against Greater Sudbury Transit's service design standards for both Urban and Commuter Routes and Community Priorities, the historical data is presented in summary.

Peer Review: The Canadian Urban Transit Association (CUTA) has kept records of individual transit systems and their performance across Canada since 1980 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, and 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.

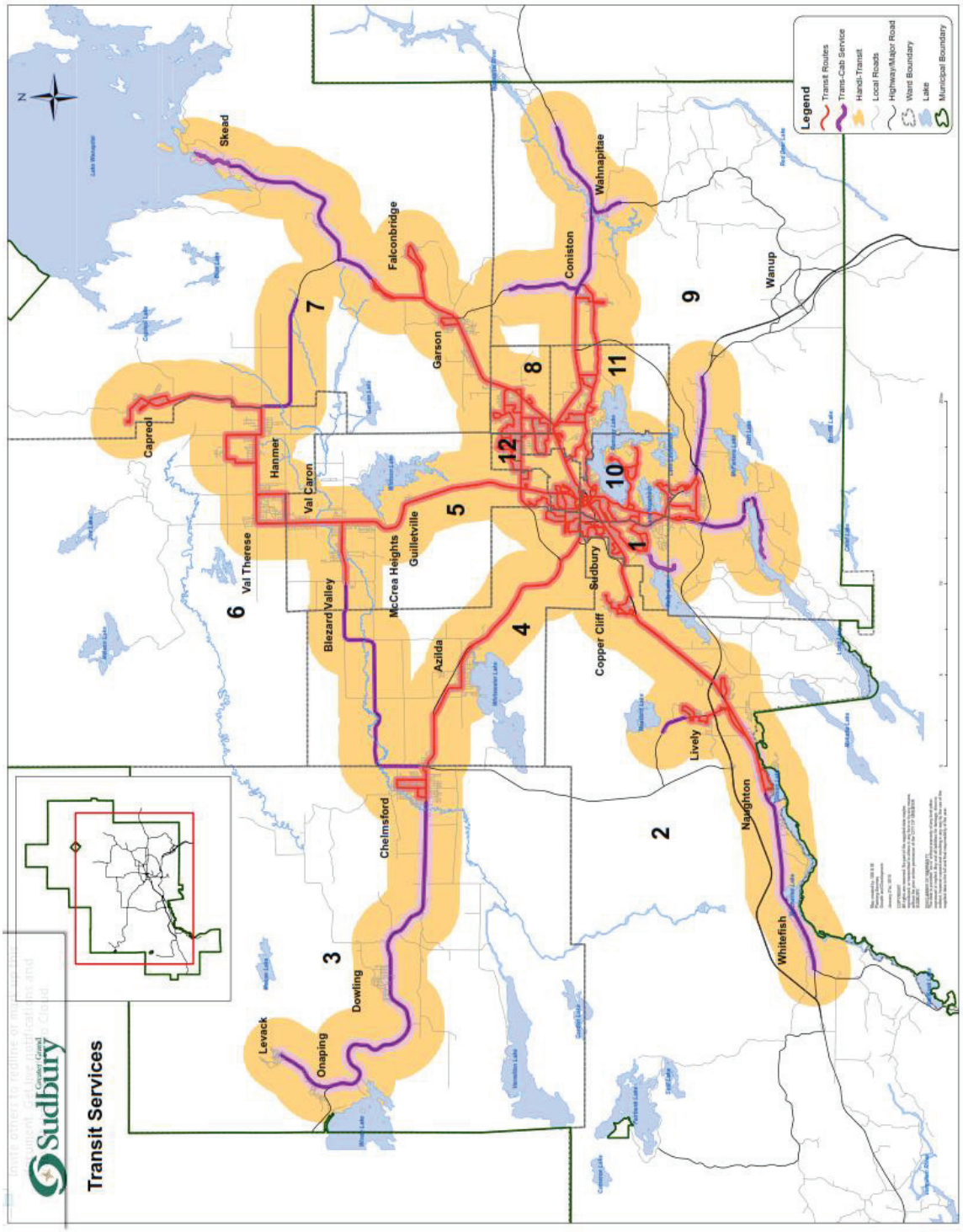
In Focus: What Methods Were Used to Analyze Existing Services?

The proposed service changes in the Transit Action Plan were the result of a process of evaluation using many different sources. These included:

- Data on ridership and on-time performance from Automated Passenger Counter (APC) units that are mounted on a selection of the system's conventional vehicles and cycled through the system's routes and trips. These provide very detailed information on system activity by route, route segment and stop.
- Data on fares and boardings from electronic fareboxes on all conventional system vehicles.
- Schedule adherence data from GPS units mounted on all conventional vehicles.
- Ongoing recording and reporting of ridership from TransCab and Handi-Transit services, as well analysis of typical schedules and dispatch sheets.
- Input from front line transit staff, passengers and the public through various methods, as described in the overview of engagement process and outcomes in Sections 1.2-1.4.
- Information from the City's Geographic information System to plot the above attributes, as well as determine numbers of current residents residing within 400m (a typical 5-minute walk) of existing transit stops.
- Historical ridership and financial performance trend information (such as budget information the City provides annually to the Ontario Ministry of Transportation), as well as that of Canadian peers similar in size to Greater Sudbury Transit.
- Multiple site visits and field work by the Transit Consulting Network team members.

The data was analyzed for two purposes: To measure Greater Sudbury Transit performance over a 5-year period - this answers the question "How are we doing?". To assess how Greater Sudbury Transit performed in relation to its peer group in 2015; this answers the question "How do we compare to others?"

Figure 1 - Greater Sudbury Transit Services



Overview of Existing Services

Greater Sudbury Transit today encompasses multiple types of services to serve the diverse needs of the community's land area and its population. Some of these services are operated by the City of Greater Sudbury's transit department while others are provided through contract with private operating companies.

Greater Sudbury Transit currently operates a "family of services" that includes three types of transit services as detailed in the table below. Together, these various types of transit serve over four million customers per year. In the opinion of the Transit Consulting Network team, this existing level of ridership and the diversity of service and operating entities already in place presents a strong foundation to build from. The existing level of services dedicated to the system (approximately 170,000 hours of service already allocated per year) also presents a sizable number of resources and the recommendations presented in the Transit Action Plan start from the position of first redeploying these existing resources to attract and carry even more passengers. Additional priority investment then builds from this base.

Table 1 – Greater Sudbury Transit's Existing Family of Transit Services

Service Type	Description and Market Served	How Service Operates
Conventional Transit	Serves stops in higher population areas using "fixed routes" (i.e. routes that are published) and regularly scheduled trips.	Service is operated by City of Greater Sudbury staff and uses standard-sized (12.2m) fully accessible transit vehicles.
TransCab	Serves lower density and outlying communities within the City that are not easily accessible by Greater Sudbury Transit conventional buses and which offer connection to Conventional Transit at key points.	TransCab trips are contracted to local taxi companies and consist of two types of services: • **On-Demand TransCab** provides service to any point within designated areas and operates on a call-in 90-minute advance booking basis using sedans or vans. • **Fixed-Route TransCab** uses smaller (7.3m) buses as part of a current pilot project, picking up at designated 'bus stops' on a regular schedule and feeding into Conventional Transit.
Handi-Transit (also known as "Specialized Transit)	Provides on-demand transportation to and from accessible building entrances to persons who have physical disabilities and are unable to use the Conventional Transit services.	Handi-Transit services are operated through contract by a private operating company and use smaller buses to deliver services. Handi-Transit users must be eligible and registered with the system and call ahead to book trips.

The **Conventional Transit Service is** delivered by 12.2 metre (40-foot) buses serving routes and stops in higher population areas through a regularly scheduled fixed route network system. Greater Sudbury Transit operates with a fleet of 59 accessible buses on 38 routes, seven days a week. These routes cover more than 4.2 million kilometres and provide approximately 4.5 million passenger trips on an annual basis.

Supplementing the Conventional Service, **TransCab Service** serves lower population density and outlying communities within the City that are not easily accessible by Greater Sudbury Transit conventional buses and which offer connection to Conventional Transit at key points. The TransCab Service is a door-to-door demand response shared service and is delivered by partner taxi companies to nine designated

areas. Collectively the TransCab routes cover more than 240,000 kilometres and provide approximately 38,000 trips on an annual basis.

Handi-Transit Service provides transportation to persons who have physical disabilities and are unable to use the Conventional Transit services. Handi-Transit services the same area as Greater Sudbury Transit buses and TransCab with boundaries that extend three kilometres. The service operates with 15 specialized accessible buses, supplemented with conventional taxi services when necessary. The Handi-Transit vehicles travel more than 1.3 million kilometres annually and provides approximately 130,000 passenger trips on an annual basis.

Conventional Transit Services

Conventional Transit Services Phase I Engagement Feedback

Table 2 provides the top three Community Priorities when asked to provide specific ideas to improve Greater Sudbury Transit routes and service levels.

Table 2 – Community Priorities for Routing and Service Level

Priority	What we heard
Frequency	More frequency especially during peak time and midday. There is a very strong desire to see Sunday Services improved
Timely Travel	More direct, faster routing including better connections, improved on-time performance and earlier morning service
Improved Routing	Easier to understand routes and schedules with less need to always travel via the Downtown Terminal and more service to the South End

Overview of Conventional Services

Service Span

Greater Sudbury's existing conventional transit system operates daily with the exception of Christmas Day and its service spans from approximately 6:00am to 1:30am Monday to Saturday, with a slightly later start time (6:30am) on Sundays and Statutory Holidays.

Table 3 outlines the current Greater Sudbury Transit Service Design Standards. Council approval is required for changes to Base level or customer based service.

Table 3 – Service Hours Design Standard

Service Area	Service Hour Service Design Standard	What this means
Urban Routes	Base level of service is generally provided between the hours of 7 a.m. to 10 p.m. Customer-based service is provided outside of the base level service in response to ridership demand.	Service span has been approved for 7 a.m. to 10 p.m. Any trips outside of these hours should be monitored and adjusted based on ridership demand.
Commuter Routes	Base level of service include no fewer than 9 trips, with the first AM trip designed to arrive at the Transit terminal no later than 8 a.m., the last trip designed to leave the Terminal no earlier than 7 p.m.	Service span is currently the same as for urban routes, with less trips within that span.

Service Frequencies

Service frequencies range substantially between routes, with some operating 15-minute service at peak commuting periods (roughly 6:00am to 9:00am and 3:00pm to 6:00pm) and others operate three trips per day. While ongoing routing adjustments to the system have been made, the conventional transit system has not been substantially altered for many years.

Table 4 – Service Frequency Design Standard

Service Area	Frequency Service Design Standard	What this means
Urban Routes	Service is provided on urban routes base service at a minimum frequency of 60 minutes.	Base level of service is provided at a 60-minute frequency between the hours of 7 a.m. and 10 p.m. This level of service is provided even if the bus is only carrying a few passengers.
Commuter Routes	Service is provided on commuter routes with at least 9 trips per service day, comprising three AM peak inbound trips, plus one trip in each direction in the midday and one outbound trip in the PM.	Base level of service is provided at a minimum of 9 trips to all commuter areas per day.

In Focus: Route Structure

As shown on the existing service map in Figure 2, the system encompasses a very large number of routes: 38 in total. Rather than serving distinct areas, this large number of routes is mainly due to the Greater Sudbury Transit existing practice of operating slightly different routes Monday to Saturday before 10:00pm, others after 10:00pm, and others on Sundays and giving these routes corresponding different names and numbers. The route patterns also seem to indicate that there is duplication of travel on main corridors, and some seem circuitous. There is opportunity to restructure the route patterns to improve route directness and timely travel to address Community Priorities.

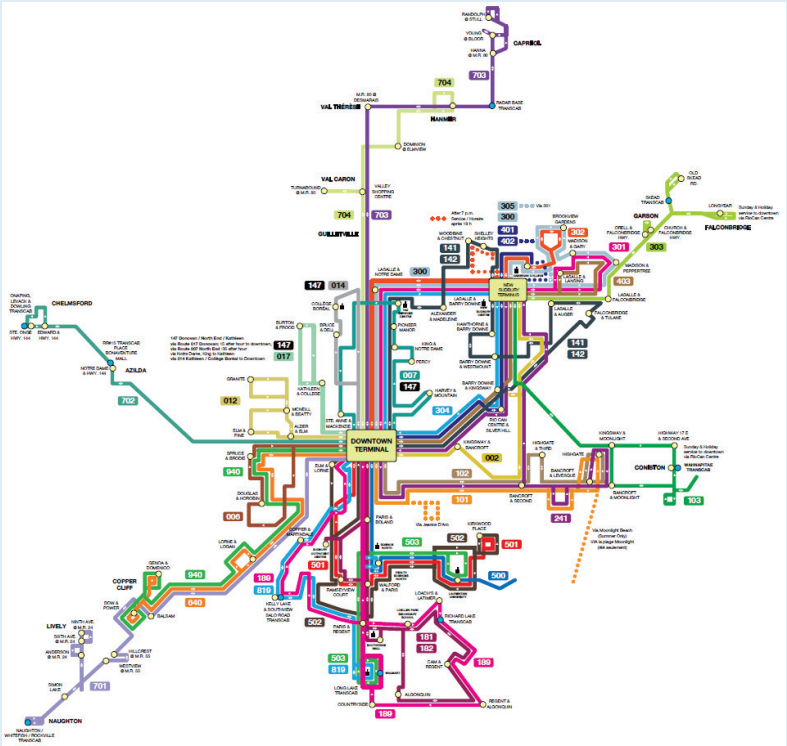


Figure2 - Greater Sudbury Existing Transit Route Map

Table 5 provides a breakdown of the hours assigned to each route for base vs customer base service purposes. As the purpose of this report is to find ways to improve on the services with the existing allocated hours of 167,000, this table provides a framework to work with to ensure that no under performing routes contain customer base service hours.

Table 5 –Commuter and Urban Service hours/Day

Commuter Service Hours/Day		Weekday		Saturday		Sunday	
Route #	Route Name	Base	Customer Base	Base	Customer Base	Base	Customer Base
103	Coniston	9.0	2.0	9.0	2.0	9.0	2.0
303	Garson/Falconbridge	9.0	5.0	9.0	0.0	9.0	2.0
701	Lively	14.0	4.0	10.0	5.0	14.0	4.0
702	Azilda/Chelmsford	11.3	8.0	11.5	3.8	13.0	1.0
703	Val Caron/Hanmer/Capreol	16.0	19.0	16.0	5.0	16.0	0.0
704	Blezard/Elmview	0.0	11.0	0.0	11.0	0.0	0.0
Urban Service Hours/Day		**Weekday**		**Saturday**		**Sunday**	
Route #	**Route Name**	**Base**	**Customer Base**	**Base**	**Customer Base**	**Base**	**Customer Base**
2	Second Avenue/Shopping Centre	14.5	15.0	14.5	15.0	-	-
6	West End	7.5	6.5	7.5	6.5	-	-
7	North End	7.5	-	7.5	-	-	-
12	McKim	7.5	-	7.5	-	-	-
14	Kathleen/College Boreal	7.5	10.0	7.0	7.0	-	-
15	Taxation Special	-	0.5	-	-	-	-
17	Donovan	7.0	7.0	7.0	7.0	-	-
101	Howey/Moonlight	15.5	-	15.5	-	-	-
102	Howey/Third Avenue	7.0	-	-	-	-	-
141	Westmount/Shopping Centre	-	3.5	-	-	-	-
142	Grandview/Shopping Centre	-	4.0	-	-	-	-
147	Donovan/North End/Kathleen	-	3.0	-	3.0	15.0	4.0
181	Paris/LoEllen	17.0	6.0	17.0	-	-	-
182	Ramsey View/Algonquin	16.5	5.0	15.0	-	-	-
189	Paris/LoEllen/Four Corners	-	3.0	-	3.0	15.0	4.0
241	Howey/Moonlight/Shopping Centre	-	3.0	-	3.0	15.0	4.0
300	Lasalle/Madison/Cambrian	-	3.0	-	3.0	7.0	4.0
301	Lasalle/Madison	16.5	16.5	16.0	16.0	-	-
302	Lasalle Cambrian	14.0	13.5	14.0	13.5	-	-
304	Lasalle/Shopping Centre	-	3.0	-	-	-	-
305	Lasalle/Peppertree	-	-	-	-	8.0	0.0
400	Cambrian Express	-	2.5	-	-	-	-
401	Barrydowne/Cambrian	10.00	30.0	10.0	12.0	-	-
402	Barrydowne/Shopping Centre	-	-	-	-	8.0	0.0
403	Barrydowne/Madison	-	3.0	-	-	-	-
500	University via Paris	13.0	39.0	-	-	-	-
501	Regent/University	15.0	20.5	13.0	13.5	-	-
502	Regent/University/Four Corners	-	3.0	-	3.0	15.0	4.0
503	University/South End	-	8.0	-	13.0	-	-
640	WestEnd/Gatchell/Coppercliff	-	3.0	-	3.0	15.0	4.0
819	Copper/Four Corners	15.0	8.0	15.0	1.0	-	-
940	Gatchell/Copper Cliff	15.0	8.0	15.0	1.0	-	-

Walking Distances

Looking at the area covered by existing transit services in any system can provide a sense of the extent to which services are easily available to residents by a short walk. In some cases, this analysis can also illustrate the immense scale of the community served, especially if it is spread out in nature as is the case in Greater Sudbury.

Table 6 – Walking Distance Design Standard

Service Area	Walking Distance Service Standard	What this means
Population served	Population served by transit is determined by walking distance to a bus route. Individuals who are within 400 meters of a bus route are considered to be within the service area.	Approximately 90% of the population is within 400m crow-fly walking distances of a transit stop or TransCab route.

A general rule of thumb as it relates to designing routes and a network system, is that a walking distance that most people seem to tolerate is about 450m for a local stop service. Further, as frequency and convenience increases, people will walk farther at a distance of 800m to access service.

In Focus: Walking Distance

Figure 3 provides an overview of the population served within a 400m walking distance of the Conventional Route system. When also considering TransCab Services, approximately 90% of the population is within 400m crow-fly walking distances which is in line with the currently Service Design Standards. This means that while there may be still opportunity to improve access to transit, the general placement of fixed-route services – which always operate most efficiently when they are focused on higher population areas – is in an appropriate range.

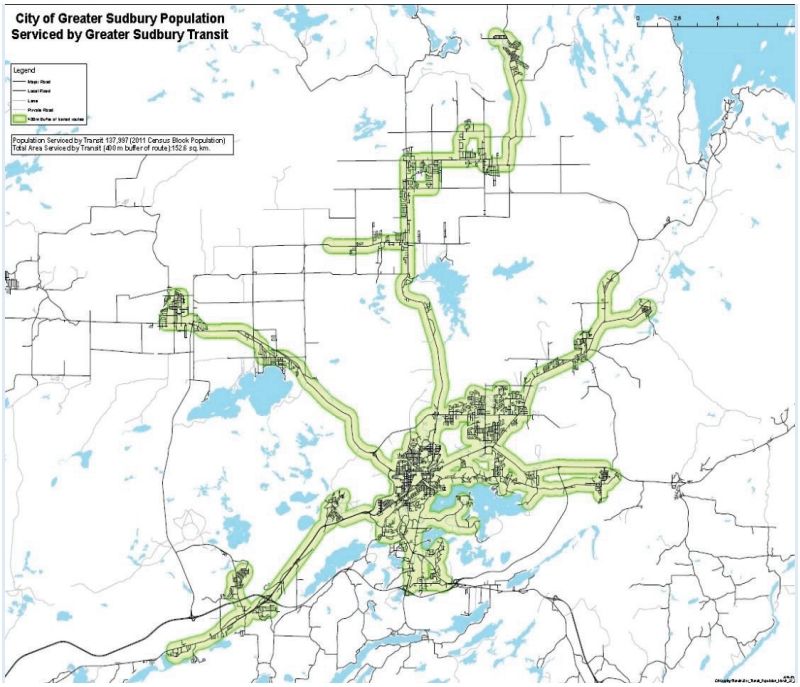


Figure3 - Greater Sudbury Population Serviced by Greater Sudbury Transit

System Key Performance Indicators and Route Level Performance

As described earlier, a number of different sources were used to analyze the conventional system's performance. The information below provides highlights of key observations derived from reviewing key performance indicators.

Current Route Structure

Table 7 summarizes the system's routes and current characteristics by Service Area (Commuter and Urban). The large number of routes coupled with the varying service designs lends to the complexity of the network, which was reflected in the Community Priorities as an area of concern. Routes are not easily recognizable as being after 10pm, Holiday and Sunday schedule only, and the route numbering doesn't reflect an easy to recognize structure based on service design.

Table 7 – Route Service Summary by Service Area

Commuter Route Service Summary		Weekday					Saturday					Sunday				
Route #	Route Name	First Trip	Last Trip	Service Frequency (Minutes) Peak/Off Peak/Evening	Cycle Time	# Vehicles Peak	First Trip	Last Trip	Service Frequency (Minutes) Peak/Off Peak/Evening	Cycle Time	# Vehicles Peak	First Trip	Last Trip	Service Frequency (Minutes) Peak/Off Peak/Evening	Cycle Time	# Vehicles Peak
103	Coniston	6:30	1:15	60/120/120	60	1	6:30	1:15	60/120/120	60	1	6:40	1:15	120/120/120	60	0.5
303	Garson/Falconbridge	6:25	1:15	30/120/120	60	2	6:25	1:15	60/120/120	60	1	6:26	0:30	120/120/120	60	0.5
701	Lively	6:15	1:30	90/120/60	120	1	6:15	1:30	60/120/60	120	2	6:00	1:30	120/120/120	120	1
702	Azilda/Chelmsford	6:25	1:30	75/90/120	120	2	6:25	1:30	90/90/120	120	1	6:20	1:30	120/120/120	120	1
703	Val Caron/Hanmer/Capreol	6:00	1:40	30/120/60	120	4	6:13	1:40	75/120/60	120	2	6:06	1:30	120/120/120	120	1
704	Blezard/Elmview	6:10	22:00	75/120/150	120	2	6:10	22:00	75/180/0	120	2	-	-	-	-	-
	Commuter Route Total	6:00	1:40	Varies	120	12	6:10	1:40	Varies	120	9	6:00	1:30	120	120	4

Urban Route Service Summary		Weekday					Saturday					Sunday				
Route #	Route Name	First Trip	Last Trip	Service Frequency (Minutes) Peak/Off Peak/Evening	Cycle Time	# Vehicles Peak	First Trip	Last Trip	Service Frequency (Minutes) Peak/Off Peak/Evening	Cycle Time	# Vehicles Peak	First Trip	Last Trip	Service Frequency (Minutes) Peak/Off Peak/Evening	Cycle Time	# Vehicles Peak
2	Second Avenue/Shopping Centre	6:15	22:15	30/30/30	60	2	6:15	22:15	30/30/30	60	2	-	-	-	-	-
6	West End	6:45	22:15	30/30/60	30	1	6:45	22:15	30/30/60	30	1	-	-	-	-	-
7	North End	7:30	22:00	60/60/60	30	0.5	7:30	22:00	60/60/60	30	0.5	-	-	-	-	-
12	McKim	7:00	21:30	60/60/60	30	0.5	7:00	21:30	60/60/60	30	0.5	-	-	-	-	-
14	Kathleen/College Boreal	6:45	22:15	15/30/60	30	2	6:45	22:15	30/30/60	30	1	-	-	-	-	-
15	Taxation Special	15:15	15:45	1 Trip	30	-	-	-	-	-	-	-	-	-	-	-
17	Donovan	6:23	21:45	30/30/60	30	1	6:23	21:45	30/30/60	30	1	-	-	-	-	-
101	Howey/Moonlight	6:40	22:15	60/60/60	60	1	6:40	22:15	60/60/60	60	1	-	-	-	-	-
102	Howey/Third Avenue	7:10	18:45	60/0/0	60	1	-	-	-	-	-	-	-	-	-	-
141	Westmount/Shopping Centre	6:40	10:15	60/0/0	60	1	-	-	-	-	-	-	-	-	-	-
142	Grandview/Shopping Centre	14:45	18:45	-	60	-	-	-	-	-	-	-	-	-	-	-
147	Donovan/North End/Kathleen	22:30	1:30	0/0/60	60	-	22:30	1:30	0/0/60	60	-	6:15	1:30	60/60/60	60	1
181	Paris/LoEllen	6:34	22:45	30/60/60	60	2	6:34	22:45	60/60/60	60	1	-	-	-	-	-
182	Ramsey View/Algonquin	6:45	22:15	30/60/60	60	2	7:15	22:15	60/60/60	60	1	-	-	-	-	-
189	Paris/LoEllen/Four Corners	22:30	1:30	0/0/60	60	-	22:30	1:30	0/0/60	60	-	6:15	1:30	60/60/60	60	1
241	Howey/Moonlight/Shopping Centre	22:30	1:30	0/0/60	60	-	22:30	1:30	0/0/60	60	-	6:40	1:30	60/60/60	60	1
300	Lasalle/Madison/Cambrian	22:30	1:30	0/0/60	60	-	22:30	1:30	0/0/60	60	-	6:35	1:15	60/60/60	60	1
301	Lasalle/Madison	6:12	22:45	30/30/30	60	2	6:12	22:45	30/30/30	60	2	-	-	-	-	-
302	Lasalle Cambrian	7:00	22:00	30/30/60	60	2	7:00	22:00	30/30/60	60	2	-	-	-	-	-
304	Lasalle/Shopping Centre	15:15	19:00	45/0/0	45	1	-	-	-	-	-	-	-	-		
305	Lasalle/Peppertree	-	-	-	-	-	-	-	-	-	-	6:15	1:30	60/0/60	60	1
400	Cambrian Express	7:15	10:00	30/0/0	30	1	-	-	-	30	-	-	-	-	-	-
401	Barrydowne/Cambrian	6:50	22:30	15/15/30	45	3	7:05	22:30	30/30/30	45	1.5	-	-	-	-	-
402	Barrydowne/Shopping Centre	-	-	-	-	-	-	-	-	-	-	11:15	19:15	0/60/0	60	-
403	Barrydowne/Madison	14:45	18:45	0/0/0	60	-	-	-	-	60	-	-	-	0/0/0	-	-
500	University via Paris	6:40	22:45	15/15/30	60	4	-	-	-	30	-	-	-	0/0/0	-	-
501	Regent/University	6:33	22:00	30/30/60	60	2	6:38	22:00	30/30/60	60	2	7:15	1:30	0/0/0	-	-
502	Regent/University/Four Corners	22:30	1:30	0/0/60	60	-	22:30	1:30	0/0/60	60	-	6:38	1:00	60/60/60	60	1
503	University/South End	12:00	19:30	0/45/0	45	-	12:00	19:30	0/30/0	45	-	-	-	-	-	-
640	WestEnd/Gatchell/Coppercliff	22:30	1:30	0/0/60	60	-	22:30	1:30	0/0/60	60	-	6:15	1:30	60/60/60	60	1
819	Copper/Four Corners	6:15	22:15	30/60/60	60	2	6:15	22:15	60/60/60	60	1	-	-	-	-	-
940	Gatchell/Copper Cliff	6:15	22:15	30/60/60	60	2	6:15	22:15	60/60/60	60	1			-	-	-
	Urban Route Total	**6:15**	1:30	Varies	30-60	33	6:15	1:30	Varies	30-60	19	6:15	1:30	60	60	7

Ridership Performance by Route: Revenue boarding per vehicle service hours (Rides per Revenue Hour) can be used to measure ridership performance against a set of thresholds. This measure can be applied to the system as a whole, for individual routes, or even for portions of a route. Measurements below the minimum rides per revenue hour (RRH) threshold should be reviewed to identify changes that may improve the route's performance and better serve the community. Table 8 outlines Greater Sudbury Transit's current boarding per service hour thresholds.

Table 8 – Ridership Performance Targets by Service Area and Time of Day

Urban	Time of day	Target Threshold
Weekday AM Peak	Start of service to 10:00 a.m.	15-45
Weekday Midday	10:00 a.m. to 2:30 p.m.	13-40
Weekday PM Peak	2:30 p.m. to 6:30 p.m.	15-45
All service day Evenings	6:30 p.m. to end of service	6-18
Saturday	Start of service to 6:30 pm	7-22
Sunday	Start of service to 6:30 pm	7-22
Total Urban		10-30
Commuter	Time of day	Target Threshold
Weekday AM Peak	Start of service to 10:00 a.m.	10-26
Weekday Midday	10:00 a.m. to 2:30 p.m.	6-18
Weekday PM Peak	2:30 p.m. to 6:30 p.m.	10-26
All service day Evenings	6:30 p.m. to end of service	5-9
Saturday	Start of service to 6:30 pm	5-13
Sunday	Start of service to 6:30 pm	5-10
Total Commuter		6-18

Commuter Routes Ridership Performance			Revenue Boarding	Service Hrs	Rides per Revenue Hr
Route #	Route Name	Class			
103	Coniston	Commuter	32522	3751.5	9
303	Garson/Falconbridge	Commuter	57563	4038	14
701	Lively	Commuter	52717	6333	8
702	Azilda/Chelmsford	Commuter	127880	6420.75	20
703	Val Caron/Hanmer/Capreol	Commuter	185834	10651	17
704	Blezard/Elmview	Commuter	39312	2888	14
Commuter Route Total			**495828**	**34082.25**	**15**

Urban Routes Ridership Performance			Revenue Boarding	Service Hrs	Rides per Revenue Hr
Route #	Route Name	Class			
2	Second Avenue/Shopping Centre	Urban	220257	8968	25
6	West End	Urban	125417	4256	29
7	North End	Urban	37781	2280	17
12	McKim	Urban	36398	2280	16
14	Kathleen/College Boreal	Urban	165672	5134.5	32
15	Taxation Special	Urban	3303	125.5	26
17	Donovan	Urban	171540	4256	40
101	Howey/Moonlight	Urban	91345	4712	19
102	Howey/Third Avenue	Urban	29760	1757	17
141	Westmount/Shopping Centre	Urban	14601	878.5	17
142	Grandview/Shopping Centre	Urban	12179	1004	12
147	Donovan/North End/Kathleen	Urban	31107	2052	15
181	Paris/LoEllen	Urban	164727	6598	25
182	Ramsey View/Algonquin	Urban	141765	6191.5	23
189	Paris/LoEllen/Four Corners	Urban	36848	2052	18
241	Howey/Moonlight/Shopping Centre	Urban	34429	2052	17
300	Lasalle/Madison/Cambrian	Urban	44530	1436	31
301	Lasalle/Madison	Urban	430145	10032	43
302	Lasalle Cambrian	Urban	320404	8485.5	38
304	Lasalle/Shopping Centre	Urban	16560	753	22
305	Lasalle/Peppertree	Urban	20476	480	43
400	Cambrian Express	Urban	8237	690.25	12
401	Barrydowne/Cambrian	Urban	460742	11272.25	41
402	Barrydowne/Shopping Centre	Urban	19259	480	40
403	Barrydowne/Madison	Urban	17474	1004	17
500	University via Paris	Urban	262785	15965	16
501	Regent/University	Urban	247335	9616.4	26
502	Regent/University/Four Corners	Urban	41731	2022	21
503	University/South End	Urban	9043	344.5	26
640	WestEnd/Gatchell/Coppercliff	Urban	24930	1992	13
819	Copper/Four Corners	Urban	184466	6621	28
940	Gatchell/Copper Cliff	Urban	141458	6683.75	21
Urban Route Total			**3566704**	**132474.65**	**27**
System Total			**4062532**	**166556.9**	**24**

Table 9 – Ridership Performance by Service Area

Table 9 provides an overview of the system's performance by service area and by individual route for all days of the week combined. The results indicate that the system measures overall within approved thresholds with an average of 15 RRH in commuter service areas, and 27 RRH in urban service areas.

Nine routes are performing above thresholds targets and the remainder fall within acceptable thresholds. Routes which perform above average usually indicate that they either have the correct frequency and service hours, or there is a trip generator which attracts riders to the area. In order to identify specific areas which can be improved on the average routes, further analysis should be undertaken by day of week and time of day. This type analysis provides an in depth snap shot of each route and their contribution to overall ridership performance.

Highest Ridership Routes –Table 9 presents the highest ridership routes in the system by service area. Overall, Commuter routes represent 12.1% and Urban routes represent 87.9% of total system's ridership including transfer.

The (13) thirteen highest ridership routes in the system represent more than three quarters with 76.1% of the ridership, with the remaining (25) twenty-five accounting for 23.9%. The top ridership routes include:

- **Route 401** – providing service between Cambrian College, New Sudbury Centre and Downtown via Barry Downe. (11.6% of total ridership)
- **Routes 301 and 302** – providing service along Lasalle and Notre Dame between Downtown and New Sudbury Centre, with also service to the Madison and Cambrian College areas. (Together, 18.4% of total ridership).
- **Routes 500 and 501** – providing service between Downtown, Health Sciences North and Laurentian University via Paris (500) or via Regent (501). (Together, 12.1% of ridership).
- **Routes 2, 819, 17, 14, 181, 182, 940** – Each route respectively consists of approximately 4% of the ridership (Together, 29.6% of total ridership). These routes deviate from arterial corridors but are anchored by trip generators like the South End, New Sudbury Shopping Centre, Downtown and College Boréal.
- **Route 703** – providing service between downtown and the outlying communities of Val Caron, Hanmer and Capreol. (4.5% of total ridership).

Table 10 – Highest Ridership Routes by Service Area

Commuter Route Ridership			Total Boarding			
Route #	Route Name	Class	Revenue Boarding	Transfers	Total Ridership	% of Ridership
703	Val Caron/Hanmer/Capreol	Commuter	185834	13786	199620	4.5%
All other	Remaining 5 Routes	Commuter	309994	30603	340597	7.6%
Commuter Route Total			**495828**	**44389**	**540217**	**12.1%**
Urban Route Ridership			**Total Boarding**			
Route #	Route Name	Class	Revenue Boarding	Transfers	Total Ridership	% of Ridership
401	Barrydowne/Cambrian	Urban	460742	59783	520525	11.6%
301	Lasalle/Madison	Urban	430145	51061	481206	10.8%
302	Lasalle Cambrian	Urban	320404	21265	341669	7.6%
500	University via Paris	Urban	262785	14664	277449	6.2%
501	Regent/University	Urban	247335	15298	262633	5.9%
2	Second Avenue/Shopping Centre	Urban	220257	22407	242664	5.4%
819	Copper/Four Corners	Urban	184466	17712	202178	4.5%
17	Donovan	Urban	171540	22346	193886	4.3%
14	Kathleen/College Boreal	Urban	165672	15255	180927	4.0%
181	Paris/LoEllen	Urban	164727	22141	186868	4.2%
182	Ramsey View/Algonquin	Urban	141765	15747	157512	3.5%
940	Gatchell/Copper Cliff	Urban	141458	17476	158934	3.6%
All other	Remaining 20 Routes	Urban	655408	73305	728713	16.3%
Urban Route Total			**3566704**	**368460**	**3935164**	**87.9%**
System Total			**4062532**	**412849**	**4475381**	

Key Observation: The patterns shown by destinations and route ridership indicate there are already key corridors in the system that are driving the overall performance of the service and which would likely respond well to further frequency and investment.

Performance by Service Day - A helpful way to review transit system performance is to not just consider ridership alone but also service hours. Each hour of service operated by a transit vehicle on the road collecting bus fares is one service hour. Ideally, hours of service (the "supply" of transit) are adjusted to match demand.

As shown on Table 11 - 2017 Revenue Hours, Riders and Riders per Hour, Saturdays have 4 riders per hour less than a weekday, with 29% fewer daily hours of service. Sundays have 6 riders per hour less than a weekday, with 64% fewer daily hours of service.

Annual (Day Type)	Revenue Hours		Riders		Rides per Hour
	No.	%	No.	%	
Weekday (Monday - Friday)	136000	81%	3418098	84%	25
Saturday	20000	12%	421151	10%	21
Sunday	12000	7%	223283	5%	19

Average "Day"	No.	% Change with Weekday	
		Weekday	Saturday
Weekday (251 Days)	542	n/a	n/a
Saturday (52 Days)	385	29%	n/a
Sunday (61 Days inc Stats)	197	64%	49%

Table 11 - 2017 Revenue Hours, Riders and Riders per Hour

It should be mentioned that each "day" experiences different travel patterns. For example, weekdays require more hours to accommodate work, school and general appointments during AM and PM peak times. Saturday and Sundays do not have peaks. Greater Sudbury Transit's Sunday routes have a different routing network than the Monday to Saturday network with less coverage and service frequency. This reduced level of service is resulting in transit customer comprehension challenges, and reduction of use as heard through Phase 1 Public Engagement.

Key Observation: This analysis would seem to indicate that a higher level of service and coverage would be warranted on weekends, particularly Sundays.

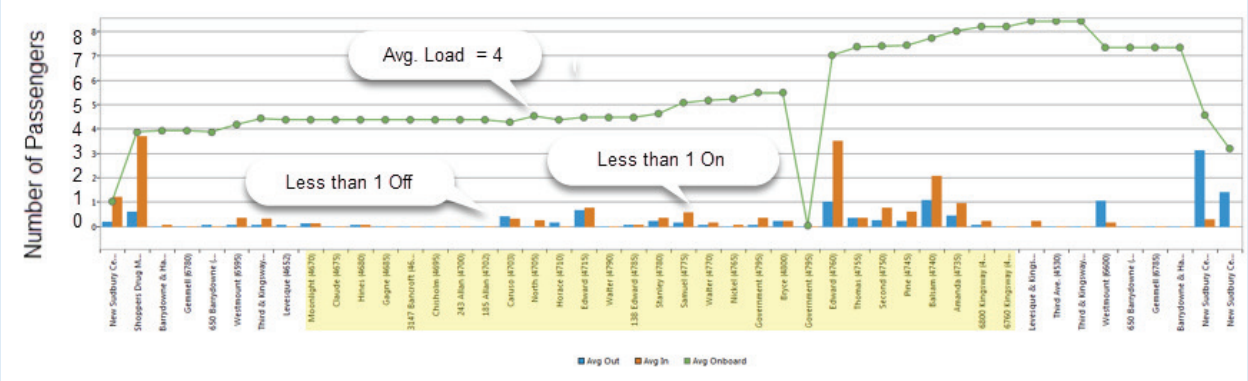
Route Load Profiles - Passenger boarding and alighting by bus route, direction (outbound from the downtown Greater Sudbury core and inbound to the core) and by bus stop were available from the Automatic Passenger Counters (APCs) installed in 10 buses (out of a total active fleet of 59 buses). In general, the route load profiles showed:

- Overall, there appears to be a high comfort level provided to transit customers with most being accommodated with seats and few standing, with the exception of standing passenger loads on some trips to Laurentian University and New Sudbury.
- In some cases, what would otherwise be standing passenger loads have been addressed through additional buses inserted into the schedules to increase the normal frequency at key times. These are known as "double headers". The service hours could instead be invested in increasing the frequency in a schedule where a passenger would then have more choices in departure times. Route loads would eventually be balanced without having to send two buses at once.

Figure4 – Average Weekday Boardings, Alightings and Loads for Route 103 by Bus Stop, 8 a.m. – 7 p.m., Oct. 13 – Nov. 9, 2017

In Focus: How Detailed Analysis Was Conducted for Each Route

The proposed service changes in this Transit Action Plan were the result of a process of evaluation using route data on ridership from the Consat APC (Automatic Passenger Counter) system and the GFI electronic fareboxes that record passenger fares and boardings. This data is used to evaluate exactly when and where higher or lower ridership is happening so that service can be adjusted to better match demand.



As part of the analysis process for each route, the project team first examined passenger boardings in half hour intervals to identify times where ridership fell below service standard thresholds or presented anomalies. As part of the next step, they then looked at when and where ridership was occurring at bus stops using information obtained from the APCs. An example of this average bus stop level data is presented in Figure 3, above

This sample shows average ridership by stop on the Route 103 travelling from New Sudbury Centre to Coniston where the number of people boarding the bus (orange bars) or alighting (blue bars) are shown for each stop and where the average load is also shown as the trip progresses (green dotted line). In this case, a portion of the route that has an average load of four or less people on board could be considered for service by TransCab instead of a larger conventional vehicle.

Patterns that emerged through the stop-level analysis were then further analyzed and verified against the City's Geographic Information System (GIS) maps that show average annual boardings at the route and stop level. Again, this further analysis provided evidence on whether a route could be considered eligible to be converted to an on-demand service model or proposed for increased frequency or route restructuring in the case of higher ridership areas.

Boarding Threshold by Service Area, Service Day and Time of Day

Further to the above general ridership and service hour information, and based on the boarding threshold targets in Table 6, it's always helpful to analyse rides per service hour by service day and time of day. Time of day is expressed in AM peak (6am to 9am), Base (9am to 3pm), PM Peak (3pm to 6pm), Evening (6pm to 10pm) and Late Night (10pm to end of service).

The analysis of this information can identify trips (as opposed to the entire route) that need to be reviewed where they fall below targets and provide confirmation that frequency matches demand.

In order to understand the level of demand of service per route, in other words frequency required to ensure no one is left behind, the Passenger Loading Standard described in Table 12 should be reviewed. The number of buses required for a route may be determined by route loading capacities.

Table 12 – Passenger Loading Standard

Service Area	Passenger Loading Standards	What this means
Urban Routes	Passenger loading per bus should not exceed a maximum average load of 150% seating capacity. When boardings per service hour targets are not met, the area of concern should trigger a review of service.	When the average load exceeds 55 passengers per service hour, additional frequency should be considered to ensure no one is left behind and customer comfort is met. If boarding targets are not met, a review of service is required to reduce system inefficiencies.
Commuter Routes	Passenger loading per bus should not exceed a maximum average load of 130% seating capacity. An average of less than 5 passenger per service hour	When the average exceeds 45 passengers per service hour, additional frequency should be considered to ensure no one is left behind and customer comfort is met. If boarding targets are not met, a review of service is required to reduce system inefficiencies.

In Focus: Adjusting Service to Meet Demand

Boarding per hour thresholds indicate that in some areas, there are less than 5 passengers per service hour. This provides an opportunity to consider an on-demand model which will be further discussed in the Transit Action Plan recommendations. The hours invested in providing conventional service could be transferred to an on-demand service thereby providing additional hours of service which could be invested in the system.

With the information in Table 13 & 14, detailed route analysis was conducted to identify overall route characteristics. Due to the extend of the information gathered, only an overview of the key findings will be presented in this document.

Table 13 – 2017 Boarding per Service Hour – Commuter Routes

Commuter	Weekday					Saturday					Sunday				
Route#	AM Peak	Base	PM Peak	Evening	Late Night	AM Peak	Base	PM Peak	Evening	After 10PM	AM Peak	Base	PM Peak	Evening	After 10PM
103	10	6	6	4	3	4	3	3	2	2	4	5	3	3	4
303	17	12	13	7	4	7	8	6	5	3	6	7	7	6	2
701	15	11	14	7	3	4	5	7	5	3	3	7	7	6	3
702	45	25	35	17	6	12	16	17	12	8	7	11	9	10	6
703	58	38	59	25	11	9	25	21	21	13	6	18	21	18	11
704	9	13	13	6		4	6	6	4						

- Routes 103, 303, 701 and 704 are routes that could benefit from an on-demand service model (to be discussed in later in this section) some or all of the time.
- Route 702 and 703 have an appropriate level of frequency to meet demand.

Table 14 – 2017 Boarding per Service Hour – Urban Routes

Urban	Weekday					Saturday					Sunday				
Row Labels	AM Peak	Base	PM Peak	Evening	After 10PM	AM Peak	Base	PM Peak	Evening	After 10PM	AM Peak	Base	PM Peak	Evening	After 10PM
2	50	59	92	28		20	50	56	24						
6	41	35	39	14		14	23	25	13						
7	6	10	10	5		2	5	5	4						
12	16	10	9	5		7	8	7	5						
14	51	46	63	19		11	26	27	11						
15			19												
17	43	46	50	19		16	33	28	12						
101	19	29	24	13		10	19	18	12						
102	21	7	14												
141	13	10													
142			13	4											
147					8					9	16	32	32	17	7
181	51	35	57	21		18	24	27	14						
182	37	42	35	17		13	27	29	16						
189					8					11	28	34	36	22	25
241					9					12	22	29	29	20	17
300					18					22	28	57	63	40	36
301	99	111	110	62		41	91	93	54						
302	74	87	95	35		30	68	71	29						
304			20	12											
400	13	6													
401	83	123	142	63		23	67	93	53						
402												42	52	30	
403			20	11											
500	70	108	112	37											
501	52	72	79	41		20	53	65	39						
502					12					16	18	38	41	25	11
503		7	12				22	10							
640					8					27	14	25	23	19	11
819	53	42	65	26		19	33	37	20						
940	56	33	55	17		14	23	22	14						

- **Routes 301, 401, 500** – require 15-minute frequency assigned to the routes on weekdays, especially during peak times. Evening frequencies should be 30 minutes, and Late night 60 minutes.
- **Route 2, 302 and 501 –** require 30-minute frequency all day, and 60 minutes Evening and Late night.
- **Routes 14, 17, 181, 819 and 940 –** require 30-minute frequency peak time only, with 60-minute service all other times of the day.

- **All after 10pm, Sunday and Statutory Holiday Routes –** require 60-minute frequency to meet demand, except for Routes 300 and 402 which could be served with 30-minute frequency on Sundays between 10am and 5pm.
- **The remaining routes and trips require 60-**minute level frequency to meet demand.

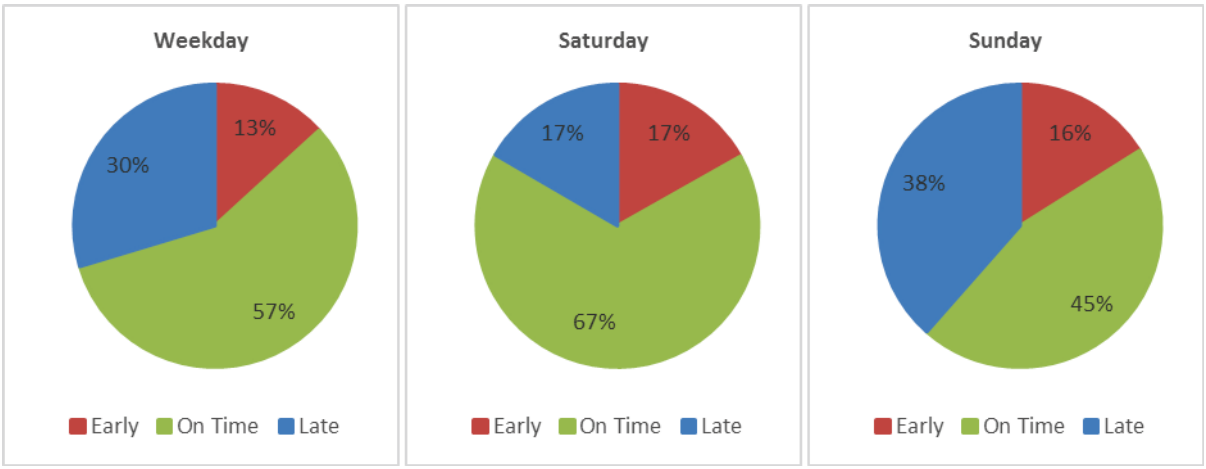
Schedule Adherence by Route – Table 15 outlines Schedule Adherence as per approved Greater Sudbury Transit Standards.

Table 15 – Greater Sudbury Schedule Adherence Standard

Schedule Adherence Standard	What this means
No bus should leave published time points earlier than its designated time of departure. Greater Sudbury Transit will strive to meet a target of 90 percent schedule adherence, where buses should be "on-time" within three minutes late of schedule.	All schedules are shared with passengers via public timetables. The bus must arrive at the published time point within 3 minutes after the time indicated on the schedule.

From the AVL system, Greater Sudbury Transit staff monitor on-time performance of the conventional transit service quarterly and produce internal reports. For all three service day types, the transit service is not meeting the existing service standard target of 90% where buses should be **"on-time" and no more than three minutes late** of the published public timetable. As per Figure 6 – 2017 On-Time Performance by Service Day, the service standard is clearly not being met.

Figure 6 – 2017 On Time Performance by Service Day



Sunday has the least on-time performance with buses running late 38% of the time and this impression was repeatedly noted by front-line staff and passengers during Phase I engagement. On Sundays, due to the hub and spoke model and the low frequency of service, buses are held back so that customers can make connections. This is problematic and the main reason for the lack of schedule adherence.

Even more problematic than late buses were the high percentage of early buses since an early bus is considered to be 'no bus' for those passengers who just miss it. All days of the week recorded high levels of "early" buses. This could be a result of improperly balanced time points, where Transit Operators are not able to slow down or stop on a busy street to "get back on schedule".

Direct engagement with front-line transit staff provided information on specific routes and areas where on-time performance could be improved. Several reasons for lack of schedule adherence and possible solutions were provided including: a reduction in bus stops, priority signaling, queue jumping lanes and smart card technology. More importantly, the Project Team learned of areas where deviation of route patterns did not warrant the demand. This information provided areas for the project team to consider for routing changes to make service more direct and improve schedule adherence.

In order to address on-time performance, solutions would include adjusting all system schedule running times so that they match the reality of service on the road. Further, adjusting the system's service standard to zero minutes early to five minutes late could also be considered, or the standard can remain the same as long as sufficient recovery time is in place so that there is less pressure for Transit Operations to meet the current three-minute guideline.

2011-2015 Greater Sudbury Transit Peer Review

The 2011-2015 Greater Sudbury Transit Performance Data in Table 16 quantifies the change in performance over the five-year period.

Table 16 – 2011 to 2015 CUTA Statistics

2011 to 2015 CUTA Statistics - Sudbury Report Card														
Year	Total Population	Service Area Population	Ridership	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	Net Investment per Capita	Adult Cash Fare	Average Fare
2011	160,000	129,600	4,468,760	61	$17,054,937	$7,010,449	159,119	$106.74	28.1	1.23	34.48	$69.70	$2.60	$1.57
2012	161,900	138,000	4,444,719	61	$18,468,203	$7,414,102	159,119	$107.96	27.9	1.15	32.21	$72.91	$2.70	$1.67
2013	161,900	138,000	4,362,683	64	$18,940,806	$7,381,107	158,756	$115.43	27.5	1.15	31.61	$79.15	$2.70	$1.69
2014	161,900	138,000	4,457,779	64	$19,419,539	$7,583,142	158,756	$118.00	28.1	1.15	32.30	$80.62	$2.90	$1.70
2015	160,274	138,000	4,263,622	61	$19,561,737	$7,492,728	166,715	$114.22	25.6	1.21	30.90	$77.97	$3.00	$1.76
Change 2014 Vs 2010	274	8,400	-205,138	0	$2,506,800	$482,279.00	7,596	$7.48	-2.5	-0.02	-3.58	$8.27	$0.40	$0.19
% Change 2014 Vs 2010	0.2%	6.5%	-4.6%	0.0%	14.7%	6.9%	4.8%	7.0%	-8.9%	-1.6%	-10.4%	11.9%	15.4%	12.1%

2015 Greater Sudbury Transit Peer Review

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 Greater Sudbury were Ontario municipalities with a service area 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 and local financial commitment to transit and bus fare policies.

Ten (10) Ontario municipal jurisdictions were selected and the data illustrated in Table 17 below.

Table 17 – 2015 MTO Conventional Transit Fact Book Statistics Peer Review

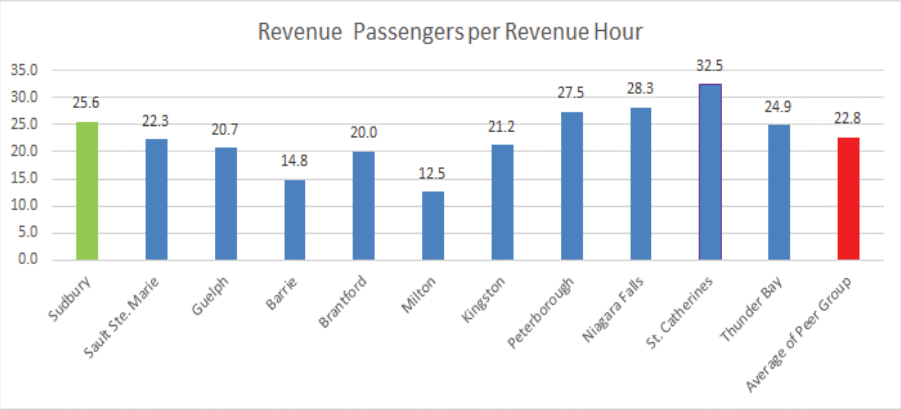
2015 MTO Conventioal Transit Fact Book Statistics Peer Review													
Jurisdiction	Municipal Population	Service Area Population	Service Area Size	Density	Ridership (revenue passengers)	Revenue Vehicle Hours	Cost Efficiency (Cost per Hour)	Revenue Passengers per Revenue Hour	Revenue Vehicle Hours per Capita	Revenue Passengers per Capita	Municipal Operating Contribution per Capita	Adult Cash Fare	Average Fare
Sudbury	**160,274**	**138,000**	**152.6**	**1,050**	**4,263,622**	**166,715**	**$114.22**	**25.6**	**1.21**	**30.9**	**$77.97**	**$3.00**	**$1.76**
Sault Ste. Marie	74,200	69,900	223.5	332	1,877,639	84,153	$97.04	22.3	1.20	26.9	$71.78	$2.50	$1.22
Guelph	141,097	141,097	87.0	1,622	6,386,104	308,800	$82.26	20.7	2.19	45.3	$92.12	$3.00	$1.61
Barrie	142,000	135,543	113.0	1,257	2,539,382	172,049	$94.30	14.8	1.27	18.7	$70.90	$3.00	$2.00
Brantford	97,862	97,862	75.1	1,303	1,521,531	76,149	$115.53	20.0	0.78	15.6	$46.72	$3.00	$1.87
Milton	103,700	84,973	35.6	2,913	418,055	33,338	$112.29	12.5	0.39	4.9	$29.09	$3.25	$2.47
Kingston	127,250	115,142	131.7	966	4,659,300	219,323	$84.34	21.2	1.90	40.5	$111.68	$2.75	$1.35
Peterborough	80,000	80,000	67.4	1,187	3,404,333	122,639	$85.06	27.5	1.53	42.6	$60.03	$2.50	$1.38
Niagara Falls	85,000	80,000	80.9	1,051	2,258,555	79,949	$113.88	28.3	1.00	28.2	$73.63	$2.75	$0.61
St. Catherines	149,331	149,331	179.1	834	5,489,764	168,704	$108.35	32.5	1.13	36.8	$59.14	$3.00	$1.63
Thunder Bay	146,000	109,000	256.0	570	3,600,425	144,378	$106.27	24.9	1.32	33.0	$92.46	$2.65	$1.43
Average of Peer Group	**118,792**	**109,168**	**127.4**	**1,190**	**3,310,792**	**143,291**	**$101.23**	**22.8**	**1.27**	**29.4**	**$71.41**	**$2.85**	**$1.58**

In general, the following trends can be noted from the comparison to peers and the system's historic trend:

Ridership Trend - Overall system ridership over the 5-year period fell marginally by 4.6%, with the biggest drop reported from 2014 to 2015, which is not considered significant; however, it does indicate that steps should be explored to reverse the trend. Indeed, the City has shown that it is proactively addressing this situation through undertaking this Transit Action Plan.

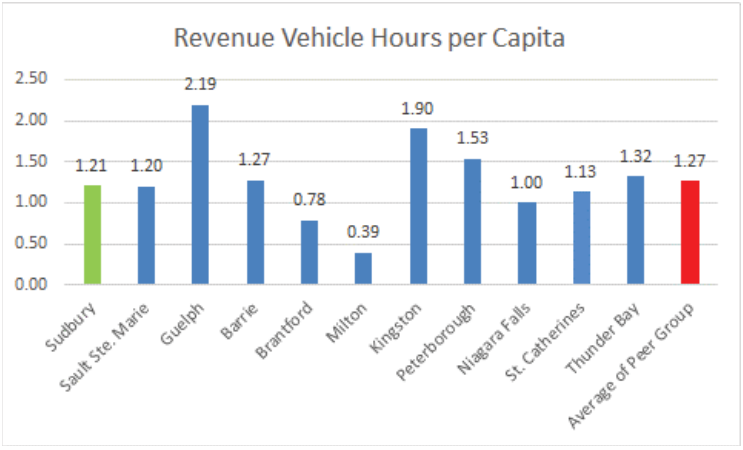
Service Hours Trend - While there is an increase of 8,000 service hours shown in 2014 to 2015, this is actually a correction to underreporting in previous years and service levels have been somewhat static. It should be stressed that the corrected 2015 service hour amounts form the basis for all calculations for service improvement recommendations within the Transit Action Plan.

Service Efficiency - Transit systems across Canada use the Revenue Passengers per Hour of Service metric as one measure to quantify transit efficiency across systems and routes. Even with the trends noted in ridership and service hours reporting, Greater Sudbury Transit's efficiency was an impressive 13.2% higher than the peer group's average value. The ridership per service hour is even more impressive given the scale of the system and the geographic area covered. While there are variations at the route level, the system's overall current ridership per hour means there is an existing strong foundation for further improvement in the system, particularly as service levels are adjusted by

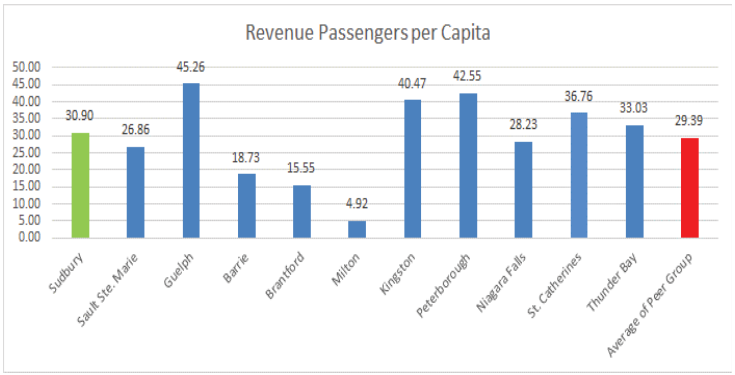


route, day, time of day and season through Transit Action Plan recommendations to ensure that service matches demand as best as possible at all times.

Service Quality - To quantify the relative amount of service provided by the City of Greater Sudbury—which can roughly translate into the quality of service that is able to be provided - the Revenue Hours of 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. Greater Sudbury Transit was somewhat in-line with the peer group average in 2015, although it provided slightly less (-4%) service hours per capita. To be equal to the peer group, Greater Sudbury Transit would have to increase service by approximately 0.5%. Although 0.5% seems nominal, it does equate to adding 6,700 hours of service per year and to put this in perspective, 6,700 hours per year equates to one bus operating over 18 hours per day, 365 days a year.

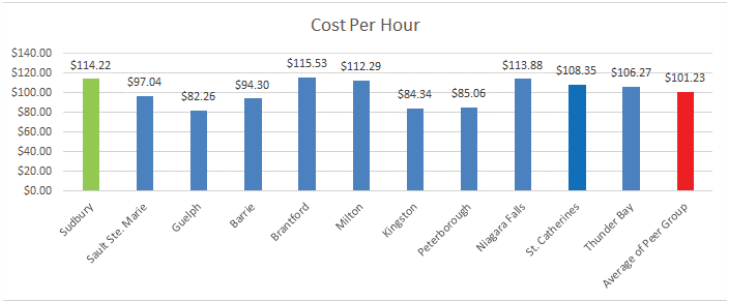


Service Effectiveness - A key measure of a transit system's effectiveness is how many trips are taken annually based on the population served in a given year. If transit ridership growth exceeds population growth then service is deemed to be more effective and as such, transit becomes a more integral component of urban travel. The graph at right shows that Greater Sudbury Transit's effectiveness was 30.9 trips per capita in 2015, slightly higher than the peer group average in 2015.

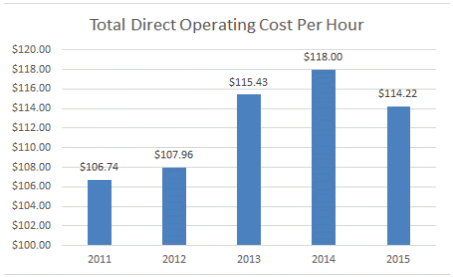


Cost per Hour - A key metric that transit systems use to track financial performance is the 'total direct and auxiliary operating expense' in a given year divided by the total vehicle hours, which can be expressed simply as Cost per Hour or hourly operating cost. The annual cost per hour cost has two components – fixed costs and variable costs:

Fixed costs are expenditures that do no vary regardless of the amount of service delivered such as facilities, administration, marketing, etc.

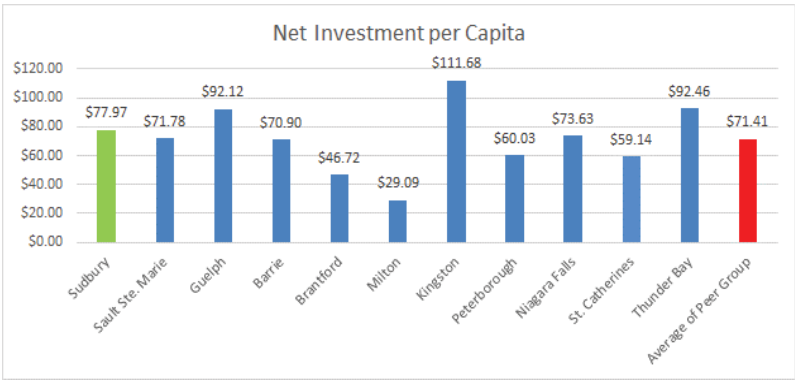


Variable hourly costs are expenditures that are incurred based on the quantity of service that is provided such as bus operator wages, fuel consumed, maintenance costs, etc. Costs can vary significantly between transit systems due to differences in operating environments since transit system wage rates, local climate, topography, etc. and as such, the hourly cost of service is more accurately compared within each transit system over time rather than between systems.

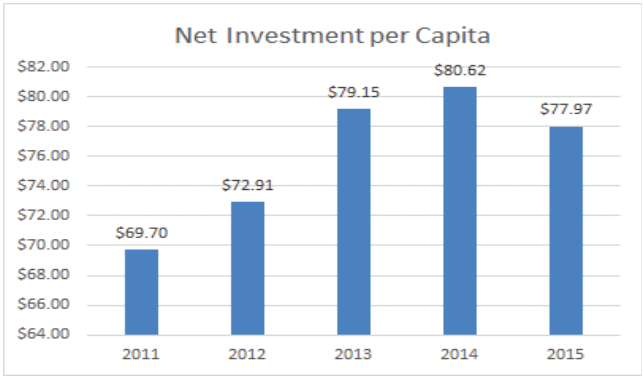


In general, Greater Sudbury Transit showed a 7% increase in the cost per hour over from 2011 to 2015. This is nominal and acceptable, with variations in cost attributed to vehicle maintenance and fuel costs. In comparison to the 2015 Peer Group, the Greater Sudbury Transit cost of $114.22 per hour is 12.8% higher; however, the reduction from $118.00 per hour in 2014 is encouraging and is within the range of the transit peer group.

Net Municipal Investment per Capita - 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 key measure of the local municipal investment that is calculated using net transit costs (total direct operating costs less revenues received) and dividing by the population served by transit. Since transit operates at a deficit – not unlike other municipal services – the net cost per capita can also be expressed as the net investment per capita.



The City of Greater Sudbury's net investment per capita jumped from $69.70 per capita in 2011 to $80.62 in 2014 then stabilized to $77.97 in 2015, which is 9.2% higher than the peer group average value of $71.41. The 9.2% higher net investment per hour of service is considered encouraging since the increase is less than the transit cost per hour increase of 12.2% than the peer group over the same 5-year period.



TransCab Services

TransCab Services Phase I Engagement Feedback

Table 18 provides the top three TransCab Community Priorities when asked to provide specific ideas to improve Greater Sudbury Transit's services.

Table 18 – Community Priorities for TransCab Services

Priority	What We Heard
Frequency	More time points, corresponding to all schedules
Coverage	Easier access by expanding the TransCab network
Booking	Easier to book through improved booking process, with less lead time and use of a single telephone number or other technologies

In general, there was also a strong desire for improved service to Greater Sudbury's many outlying communities. At the same time, each has different population sizes and demographic needs. Many respondents noted that it would be good to improve how the suite of transportation services are organized, deployed and communicated in these areas. This might include potential creation of mobility hubs that make it more convenient for connections to take place, Park & Rides, improved coordination and technology with TransCab services, and potential integration with some regularly scheduled Handi-Transit services, where feasible.

Overview of TransCab Services

Greater Sudbury Transit has a very effective and efficient way of providing public transit services to vast lower population density areas through the integration of fixed route conventional transit services with contracted taxi services, known as TransCab. TransCab operates where implementing standard transit conventional vehicles would not be economical due to lower population densities and more dispersed ridership. The same transit fares used on fixed route services are also used on TransCab services at no extra cost to riders.

Two types of TransCab services are operated within Greater Sudbury depending on the overall population density and level of demand:

Demand responsive service – In this case, a transit rider must call to reserve a TransCab trip at least 90 minutes before boarding a bus when the starting point is with the TransCab service. One single bus fare pays for both services.

- For example, if the starting point is in an area not serviced by a bus route, the customer calls a minimum of 90 minutes prior to their start time, the TransCab picks them up at their home, they pay the regular transit fare to the Conventional Service Operator when boarding the bus.
- If the starting point is within walking distance of a bus route, the customer advises the operator that a TransCab is required when boarding the bus and requests a transfer, boards the bus and at the connection point, presents the transfer to the TransCab (taxi) driver that drives the customer to their endpoint (or home).

Fixed Route TransCab – In this case, the taxis operate similar to conventional buses on a fixed route and schedule, using a smaller 7.3 metre (24 ft.) bus and has been part of a "pilot" since February 29, 2016.

- For example, in the "pilot" service of Levack, Onaping and Dowling, TransCab operates fixed routes with 4 scheduled times throughout the day (approximately 6:00 a.m., 7:30 a.m., 2:30

p.m. and 4:30 p.m.). A customer reviews the published TransCab schedule time, walks to the nearest TransCab stop, pays their regular transit fare to Conventional Service Operator when the connections is made.

- Fixed route TransCab service does not include services to or from a person's home.

Key Performance Indicators and Service Performance

Service Coverage – TransCab service areas are outlined in Figure 1 as purple lines. The service is available to persons within a 400m distance from the road identified as a TransCab Area.

TransCab services connect with the following transit routes and destinations:

- 702 Alzilda/Chelmsford - TransCab to Dowling/Onaping/Levack
- 704 Blezard/Elmview - TransCab to Municipal Road 15
- 703 Val Caron/Hanmer/Capreol - TransCab to Radar Base
- 819 Copper/Four Corners - TransCab to Long Lake
- 819 Copper/Four corners - TransCab to Salo
- 181 Paris/Lo-Ellen - TransCab to Richard Lake
- 701 Lively - TransCab to Whitefish & Rockville
- 103 Coniston - TransCab to Whanapitae
- 303 Garson/Falconbridge - TransCab to Skead

Frequency – TransCab Connection time points are published on the schedule of the Conventional Route. The time points have been selected based on available budget and historical use. Any additional time points would require Council approval as it requires an increase in the Operational Budget.

Cost per trip -

The cost per trip for TransCab service varies by service area, ranging from $9.19 per trip to $42.61 per trip with an overall 2016 average cost per trip of $21.14. Based on the end point of the route, and the expectation that a Greater Sudbury Transit route would be required to travel along the whole route no matter if the service is needed, the cost per hour for Greater Sudbury Transit to provide the same level of service is approximately three times of the cost to provide the service with TransCab. Expanding services to low population density areas with TransCab is, therefore, cost effective compared to operating a standard bus, which is measured in cost per hour at approximately $110/hr.

Table 19 – TransCab 2016 Annual Ridership and Key Performance

	2016 TransCab Cost for Service				Estimated Cost for Greater Sudbury Transit		
2016	Ridership	Total Kms	Avg Cost per trip	Avg Km per trip	Total KM	Hours of Service	Avg Cost per trip
Richard Lake	4879	18735	$ 9.19	4	12	0.25	$ 27.50
Long Lake	2319	15690	$ 16.70	7	20	0.5	$ 55.00
Dowling, Onaping, Levack	24134	154250	$ 12.80	6	60	1	$ 110.00
Naughton, Whitefish, Rockville	1370	8095	$ 24.25	6	30	0.75	$ 82.50
Wahnapitae	2716	15020	$ 14.31	6	25	0.75	$ 82.50
Skead	915	14130	$ 42.61	15	30	0.75	$ 82.50
Salo	2	10	$ 19.81	5	10	0.25	$ 27.50
Radar Base	1113	12325	$ 25.79	11	20	0.5	$ 55.00
RR # 15	324	3425	$ 24.82	11	20	0.5	$ 55.00

Kilometers per trip - For all TransCab services, the kilometres travelled per rider had a range from an average low of 4 kms to a high of 16 kms with total average of 7.9 kms per rider.

TransCab Service Standard - Table 20 provides the Service Standard for TransCab Services

Table 20 – TransCab Service Standard

TransCab Service Standard	What this means
Regular route services should be considered for conversion to TransCab service if the route's performance consistently falls below 5 boardings per service hour. An area serviced by TransCab should be considered for regular route service when the cost of the TransCab contract reaches 85 percent of providing minimum base service level of a fixed route.	As per Table 12, routes 103, 303, 701 and 704 should be considered for conversion to TransCab. Table 16 indicates that no route is performing at an 85% level of providing minimum base service of a fixed route. All routes are being monitored on an on-going basis by Transit Staff.

Key Observation: The route review points to some areas of the city which could benefit from converting conventional service to TransCab service, for some or all of the time. There is an opportunity to grow this efficient service by partnering with a third party who would be able to provide accessible vehicles. By expanding TransCab service to the boundaries serviced by Handi-Transit, coinciding with accessible vehicles, TransCab could then become the extension for both Conventional and Specialized services, reducing the demand on Handi-Transit and improving the overall effectiveness of service.

Handi-Transit Services

Table 21 provides the top three Handi Transit Service Community Priorities when asked to provide specific ideas to improve Greater Sudbury Transit's services.

Table 21 – Handi Transit Services Community Priorities – Phase I Engagement Feedback

Priority	What We Heard
Booking	Reduce lead time before travel, which is currently a minimum of 48 business hours. Easier to book by increasing the days when trips can be booked (7 days a week as opposed to 5 days a week)
Eligibility	Consider expanding eligibility process
Coordination of Services	Provide more options for passengers by making it easier to also use TransCab and the accessible Conventional Transit services, encouraging their use, and providing travel training that would be required.

Handi-Transit Overview

Operating Structure - The service configuration – contracted to a private sector provider who provides nearly 90% of the rides in its own buses, and dispatches the remaining 10 to taxis – is an excellent formula for cost-effectiveness. Trip booking is managed through RouteMatch software. Advance notice for bookings is 48 hours. Only a minimal number of same-day trips are provided. One of the impacts of this is that the capacity freed-up by advance cancellations of bookings is not re-used productively.

Service Quality - On-site and ride-along observations, and telephone interviews with passengers indicate a high-quality, well-managed service that operates over a very large territory. The vehicles are clean and well-appointed; drivers are courteous and capable, and apparently well-liked by the passengers. Maintenance facilities are well-organized and capably managed.

AODA Considerations – The Accessibility for Ontarians with Disability Act (AODA) requires that any person unable to use transit because of a disability must be eligible for the specialized service. Up to the present time, Handi-Transit has considered only physical disabilities when assessing applicant. A service review is being undertaken to review eligibility processes and the mandate, to include all disabilities.

Under the AODA, a Conditional Eligible category is required for people who only need Handi-Transit under certain conditions, such as the presence of ice and snow, or the need to make a complex trip on transit with one or more transfers. Although Conditional Eligibility may open up the eligibility door even wider, it can also be used as the foundation of dynamic eligibility determination policy, under which a Conditionally Eligible eligibility is assessed for each trip requested.

The dynamic eligibility determination policy would allow for the Reservation agent to compare the client's abilities and limitations with access barriers in the fixed route transit environment for that trip (stop location, presence or absence of shelter, etc.) and would then decide what service is required for the trip (Conventional, Transcab, Specialized or a combination of). This process reduces demand for specialized transit in some instances, especially when combined with a Transit Travel Training program. There are good models in the US of the trip-by-trip eligibility process that Handi-Transit could adopt.

In Focus: Handi-Transit Eligibility Criteria and Application Process

There are a number of factors that are leading to increased demand for specialized transit services in the City of Greater Sudbury which is in line with the experience of other municipalities in Canada. The primary reasons are changing demographics and legislative changes. As capacity constraints become increasingly challenging, it is important to recognize that increasing costs and ridership, together with trip denials are usually a rationale for making improvements to the specialized transit's eligibility programs.

Enhancing the accuracy of eligibility processes is the most equitable and cost-effective way of serving the mobility needs of individuals who have no other mobility choice than to rely on the Handi-Transit Service. A **Specialized Service Review (Handi-Transit)** is being undertaken at the same time as the Transit Action Plan. The Transit Action Plan aims to provide a framework to build on in the future, where all service levels integrate. The Specialized Service review aims to provide recommendations on how the City of Greater Sudbury can improve on identifying an individual's environmental barriers which prevents them from taking the conventional bus for some or all of their trips.

The AODA requires that all riders of specialized transit services have their eligibility categorized under one of three types; unconditional, conditional and temporary. In Greater Sudbury Transit, the current practice in over 90 percent of situations where ridership is granted is that the rider is granted either unconditional or temporary eligibility. This is due to the limited amount of information Greater Sudbury Transit currently asks the applicant to provide in its current form-based application process.

There is a missed opportunity to provide efficient and convenient service to system riders: the best practice for application process being adopted in many transit systems is to provide more of a conversation and objective assessment process as part of applying for specialized transit services. This conversation enables the system to get a clearer picture of their abilities and needs. By requesting more information in the application process and having a better understanding of where the applicant needs to travel, system staff can more easily provide service options and guidance to passengers.

"Conditional eligibility" allows the Rider to use specialized transit but also opens up the ability, potentially, for the Rider to utilize the fully accessible conventional transit system which allows more freedom to travel independently and sporadically without having to book trips at times two days in advance.

With the aging population and the move to serve persons with cognitive disabilities, introducing a more robust Handi-Transit application process in tandem with improvements to other system services can help tailor services to the specific needs of each Rider and also ensure that precious Handi-Transit resources are preserved for those who most need them.

"Clients just phone and are picked up – don't have to walk to a bus stop… drivers are very accommodating"

Handi-Transit clients can wait inside for their ride. The driver comes in to get them. At the destination, the driver escorts them to the door"

"They let me know in advance when my rides will be"

The following points were raised by Handi-Transit clients who were interviewed by the consultant relative to what they appreciated about the service.

Service Span – Service span mirrors the Conventional System, with service provided between the hours of 7am and midnight.

Service Area – The geographic area served by Handi-Transit is three (3) km outside of the area served by Greater Sudbury Transit's Conventional Service, including TransCab. Trips may be requested outside the service area, and are subject to availability and road conditions.

Service Frequencies – The service is based on a first come first served basis, and must be booked in advance at a minimum of 48 business hours. This is due to the fact that schedules must be created on a daily basis, and vary based on the demand. The number of trips allocated to the outlying communities should mirror those provided by the Conventional system.

Key Observation: The Transit Action Plan aims to provide a framework to build on in the future, where all service levels integrate. The Specialized Service review being undertaken by Greater Sudbury Transit staff will provide recommendations on how the City of Greater Sudbury can improve on identifying an individual's environmental barriers which prevents them from taking the conventional bus for some or all of their trips through a dynamic eligibility process. It will also provide recommendations to policy changes, which could impact the service levels for those requiring the service.

2011-2015 Greater Sudbury Transit Report Card

The report card below traces the development of Handi-Transit performance indicators from 2011 through 2015.

Table 22 – 2015 MTO Conventional Transit Fact Book Statistics Peer Review

2015 MTO Specialized Transit Fact Book Statistics - Greater Sudbury										
Jurisdiction	Ridership (passenger trips)	Passenger Revenues	Revenue Vehicle Hours	Cost per Hour	Cost per Passenger	Passengers per Hour (Dedicated)	Regsitrants per Capita	Passenger Trips per Registrant	Net Operating Cost per Capita	Kms per Passenger
2011	125,242	$262,269	47,741	$59.16	$25.42	2.33	0.0367	21.33	$16.01	9.30
2012	134,294	$246,454	48,451	$55.06	$23.51	2.25	0.0379	25.71	$19.16	9.96
2013	133,133	$281,021	51,839	$54.59	$23.79	2.29	0.0420	22.99	$20.01	9.62
2014	134,925	$236,141	51,940	$51.38	$22.54	2.28	0.0580	16.86	$20.98	10.81
2015	130,549	$262,743	50,503	$55.05	$23.28	2.29	0.0514	18.42	$20.12	11.76
%Change 2011 vs 2015	4.1%	0.2%	5.5%	-7.5%	-9.2%	-1.7%	28.6%	-15.8%	20.4%	20.9%

Highlights of the 5-year period are:

- Ridership has increased by 4% compared to 2011
- Revenues have stayed the same as a result of fare parity

- Total expenses were held to the rate of inflation (7% in four years) even though service hours increased by nearly 6%, and the length of the average trip increased by 20%
- Cost per passenger declined by 9%
- There has been a 28% increase in registrants per capita since 2011

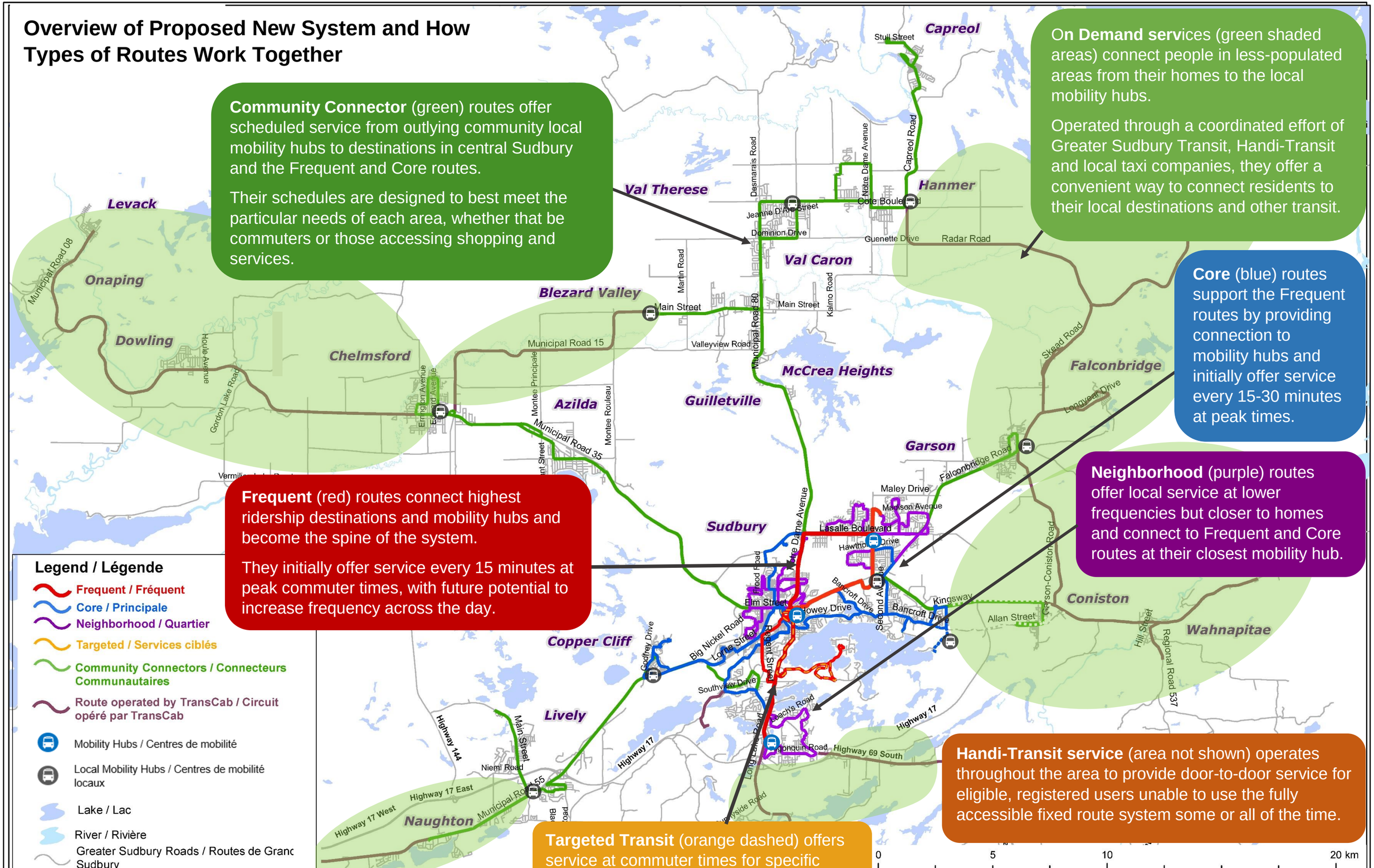
Key findings of the 2015 Handi-Transit performance were then compared to select transit systems as well as the average of all specialized transit systems with a service area population of 50,000 to 150,000 residents, summarized in the table below.

2015 MTO Specialized Transit Fact Book Statistics Peer Review									
Jurisdiction	**Service Area Population**	**Ridership**	**Cost Per Hour**	**Cost per Passenger**	**Dedicated Passengers per Hour**	**Regsitrants per Capita**	**Passenger Trips per Registrant**	**Net Operating Cost per Capita**	**Kms per Passenger**
Greater Sudbury	138,000	130,549	$55.05	$23.28	2.3	0.0514	18.4	$20.12	11.8
Sault Ste. Marie	69,900	46,790	$66.10	$24.16	2.0	0.0405	16.5	$15.06	7.5
Guelph	141,097	47,229	$56.74	$35.33	3.2	0.0095	35.3	$11.37	5.7
Barrie	135,543	48,452	$47.61	$27.64	2.1	0.0385	8.9	$9.00	3.0
Kingston	115,142	80,117	$55.74	$28.34	2.3	0.0234	27.8	$16.77	7.9
Thunder Bay	109,000	75,567	$48.07	$25.54	2.5	0.0065	79.8	$11.20	5.1
Average of Peer Group	118,114	71,451	$54.89	$27.38	2.4	0.0283	31.1	$13.92	6.8
ON 50K to 150K Pop.	1,926,739	928,100	$56.74	$25.55	2.3	0.0264	18.3	$11.13	9.0
Variance from Peer Avg	16.8%	82.7%	0.3%	-15.0%	-4.6%	81.6%	-40.8%	44.5%	72.6%

Key Observations:
In general, when compared with its peers, Greater Sudbury Handi-Transit showed:

- Higher Direct Operating Expense, Ridership, Registrants Per Capita.
- Handi-Transit efficiency in Cost per Hour was near the peer average, but its Cost per Passenger was well below average (-13.3%), which suggests a highly efficient service.
- Handi-Transit exceeds the peer average in Passenger Trips (90%), and Registrants per Capita (92%), but is markedly below the peer average in Trips per Registrant (-35%). This suggests that relatively more people are registered with the system but then may find it harder to take trips at their desired times. These two trends seem to indicate the need for the system to review its registration processes—to ensure the Handi-Transit service focusses on those who need it most—and also consider further investments in service capacity.
- Another factor in the lower number of Trips per Registrant is that trips are much longer (76%) than the peer average because Handi-Transit serves such a vast municipality (3,267 square km). In tandem with the fact that Handi-Transit has lower than average unit costs, this would suggest that opportunities to combine TransCab and Handi-Transit services in less-populated areas could also provide more capacity and improved flexibility to system users.

Overview of Proposed New System and How Types of Routes Work Together



Community Connector (green) routes offer scheduled service from outlying community local mobility hubs to destinations in central Sudbury and the Frequent and Core routes.

Their schedules are designed to best meet the particular needs of each area, whether that be commuters or those accessing shopping and services.

On Demand services (green shaded areas) connect people in less-populated areas from their homes to the local mobility hubs.

Operated through a coordinated effort of Greater Sudbury Transit, Handi-Transit and local taxi companies, they offer a convenient way to connect residents to their local destinations and other transit.

Core (blue) routes support the Frequent routes by providing connection to mobility hubs and initially offer service every 15-30 minutes at peak times.

Frequent (red) routes connect highest ridership destinations and mobility hubs and become the spine of the system.

They initially offer service every 15 minutes at peak commuter times, with future potential to increase frequency across the day.

Neighborhood (purple) routes offer local service at lower frequencies but closer to homes and connect to Frequent and Core routes at their closest mobility hub.

Handi-Transit service (area not shown) operates throughout the area to provide door-to-door service for eligible, registered users unable to use the fully accessible fixed route system some or all of the time.

Targeted Transit (orange dashed) offers service at commuter times for specific markets (students, employees, etc.)

Greater Sudbury Transit Action Plan
Proposed Urban Area Network Strategy Overview
Transit Consulting Network

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Created by the GIS & M Department. Updated January 14, 2019

Overall Strategy Highlights:

- New structure more effectively deploys existing resources:
  - Goal of attracting higher ridership now PLUS creating foundation for the future.
- Consistent, consolidated routing:
  - Primarily same routes throughout the day and week.
  - Easier to understand, more direct travel, addresses on-time performance.
- Adjusts service to match demand:
  - Frequent service aligned with highest ridership corridors: focus for further infrastructure investment and land use development to support transit.

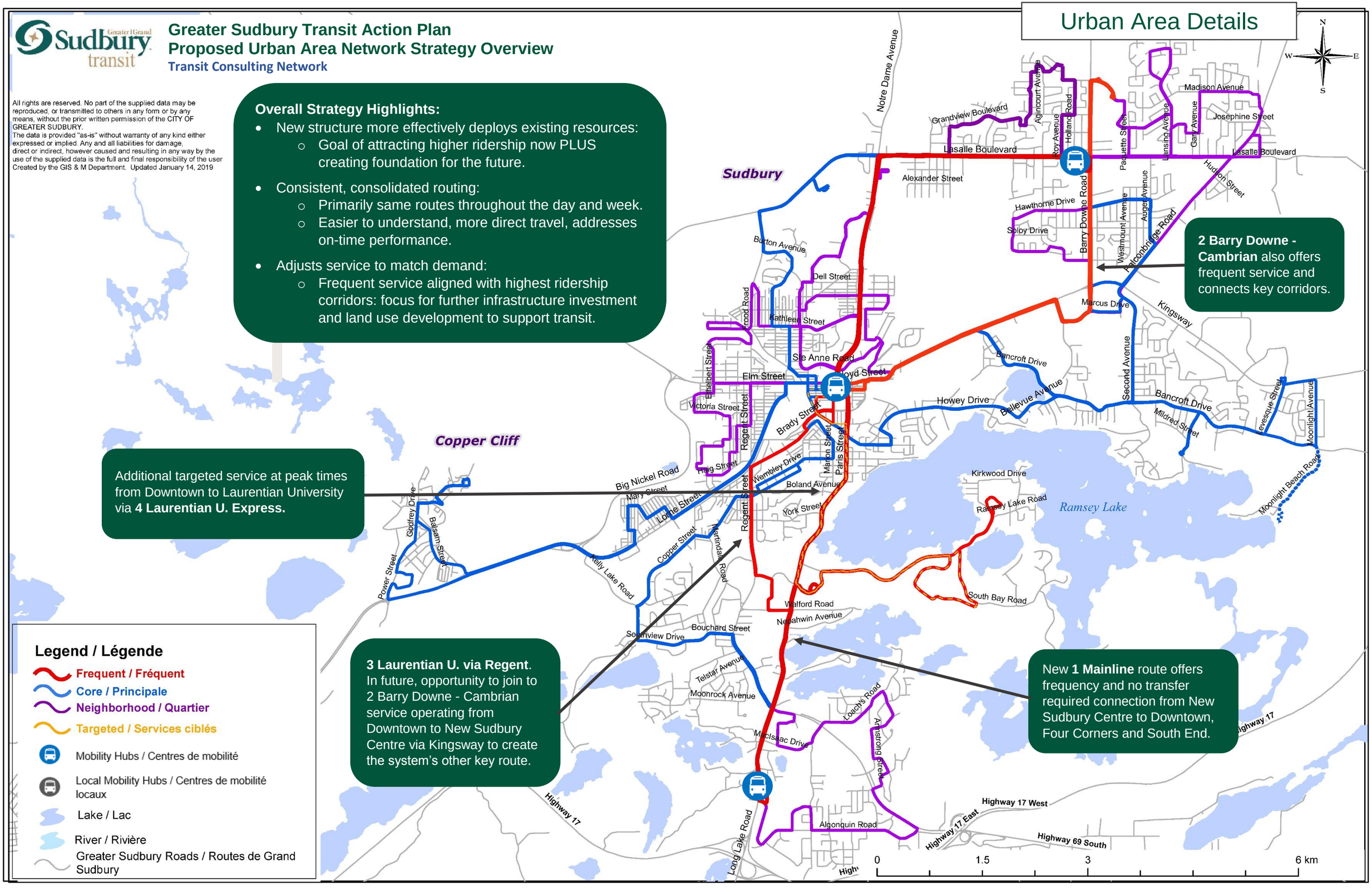
Additional targeted service at peak times from Downtown to Laurentian University via **4 Laurentian U. Express.**

3 Laurentian U. via Regent. In future, opportunity to join to 2 Barry Downe - Cambrian service operating from Downtown to New Sudbury Centre via Kingsway to create the system's other key route.

2 Barry Downe - Cambrian also offers frequent service and connects key corridors.

New **1 Mainline** route offers frequency and no transfer required connection from New Sudbury Centre to Downtown, Four Corners and South End.

Urban Area Details



Legend / Légende

- Frequent / Fréquent
- Core / Principale
- Neighborhood / Quartier
- Targeted / Services ciblés
- Mobility Hubs / Centres de mobilité
- Local Mobility Hubs / Centres de mobilité locaux
- Lake / Lac
- River / Rivière
- Greater Sudbury Roads / Routes de Grand Sudbury

Greater Sudbury Transit Action Plan

Better Routes. Better Schedules. Better Service.

Council Meeting: February 12, 2019

Presented by: Michelle Ferrigan, Director of Transit Services

Greater Grand Sudbury

TRANSIT ACTION PLAN GOALS

Better Routes

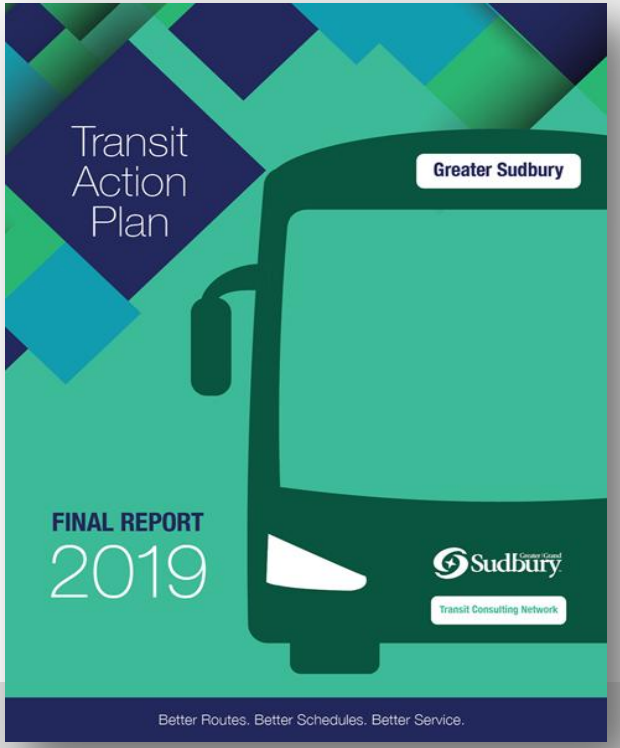
Improve route network to meet travel patterns

Better Schedules

Improve schedules to meet demand

Better Service

Improve customer experience by addressing infrastructure needs and other supporting initiatives



The Transit Action Plan outlines the steps the City can take now and in the future, to transform its transit network and improve how it serves and connects the community.

Greater Grand Sudbury

HOW THE PLAN WAS DEVELOPED

BENEFITS OF TRANSIT INVESTMENTS

Economic & Social

Healthy Community & Environment

Mobility Independent Living Accessibility

Reduces Infrastructure Costs

Greater Grand Sudbury

FLEXIBLE LONG TERM PLAN

Immediate Improvements with Existing Resources to Build Foundation

1

August 26, 2019

Near-Term

2

2020-2023

Short Term

Service Expansion Recommendations to Meet All Community Priorities

Add Infrastructure to Increase Transit Priority on Key Corridors

Infrastructure Funding

2020-2029

4

Medium Term

2023-2029

3

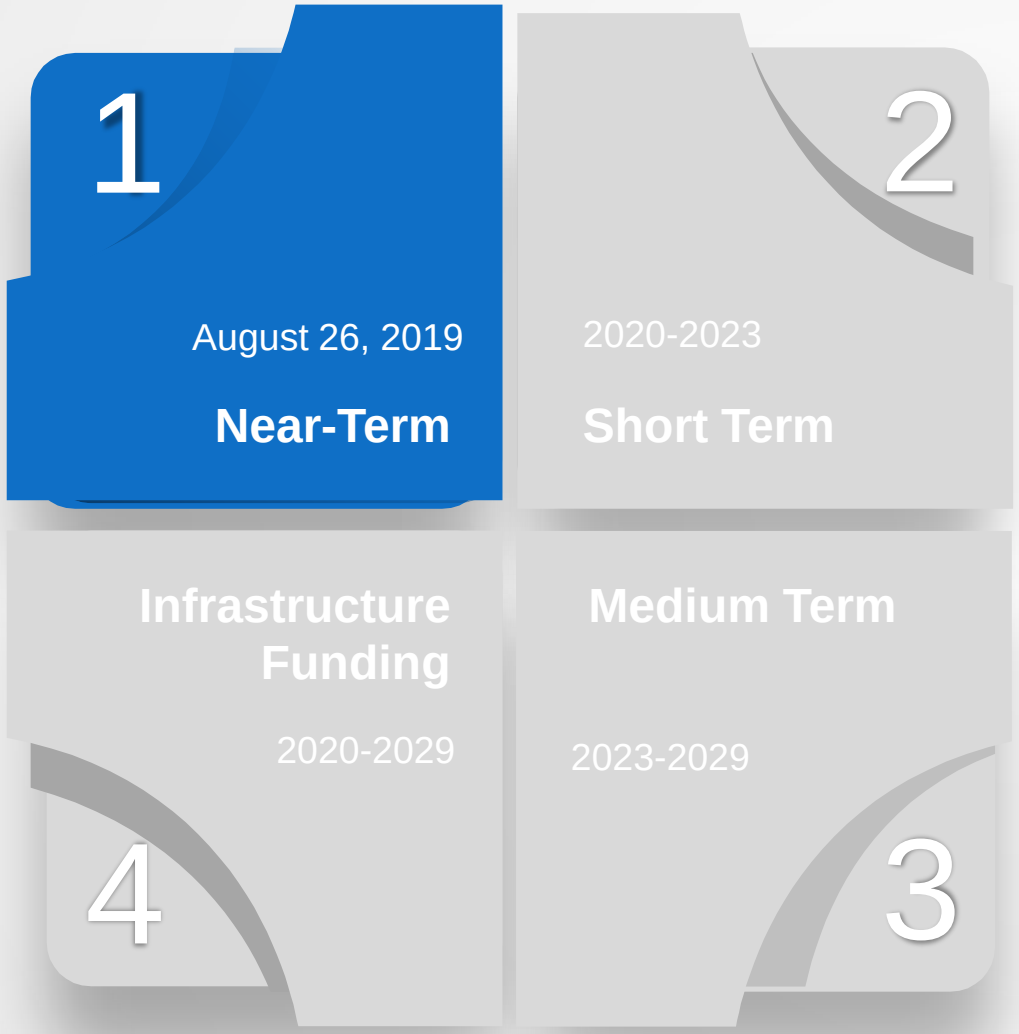
Service Expansion Recommendations to Build Ridership and Meet Demand

Greater Grand Sudbury

STRATEGIES ADDRESSING COMMUNITY PRIORITIES

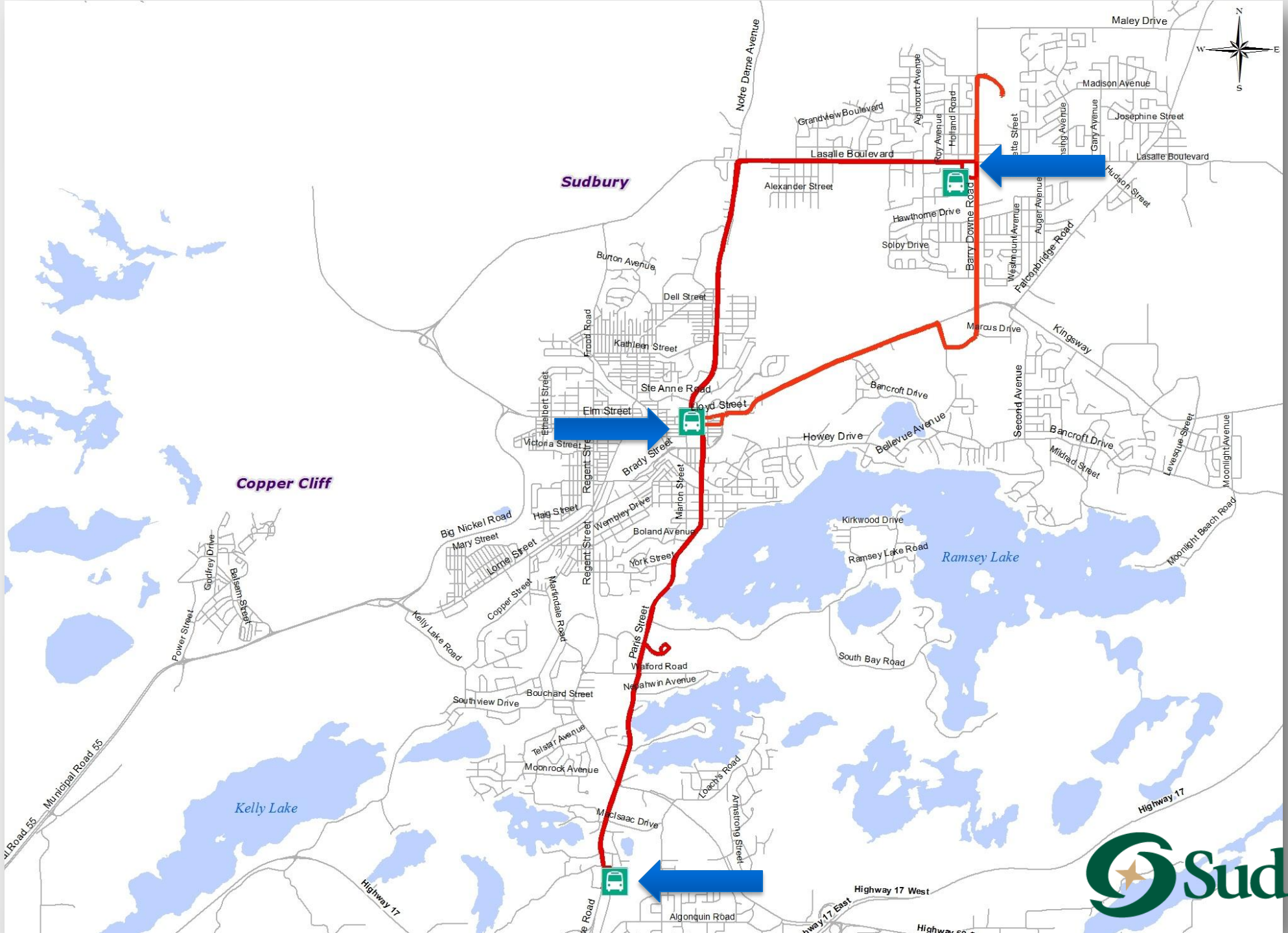
- High frequency routes on key corridors
- Fewer trips need to go Downtown
- System coordinates around three Mobility Hubs
- 27 routes, one network, 7 days/week
- Consistent and easier to understand
- Revised time points to improve reliability
- Focus on creating seamless travel
- Service standards to match demand

NEAR-TERM RECOMMENDATIONS



AUGUST 26, 2019

Seeking Council approval to implement the system-wide restructuring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Josephine Street
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Hawthorne Drive
Solby Drive
Barry Downe Road
Falconbridge Road
Hudson Street
Auger Avenue
Westmount Avenue
Burton Avenue
Dell Street
Kathleen Street
Ste Anne Road
Lloyd Street
Elm Street
Victoria Street
Brady Street
Regent Street
Marion Street
Marcus Drive
Kingsway
Bancroft Drive
Howey Drive
Bellevue Avenue
Second Avenue
Mildred Street
Levesque Street
Moonlight Avenue
Moonlight Beach Road
Kirkwood Drive
Ramsey Lake Road
South Bay Road
Big Nickel Road
Mary Street
Lorne Street
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Wembley Drive
Boland Avenue
York Street
Copper Street
Martindale Road
Kelly Lake Road
Power Street
Godfrey Drive
Balsam Street
Paris Street
Walford Road
Nepahwin Avenue
Southview Drive
Bouchard Street
Telstar Avenue
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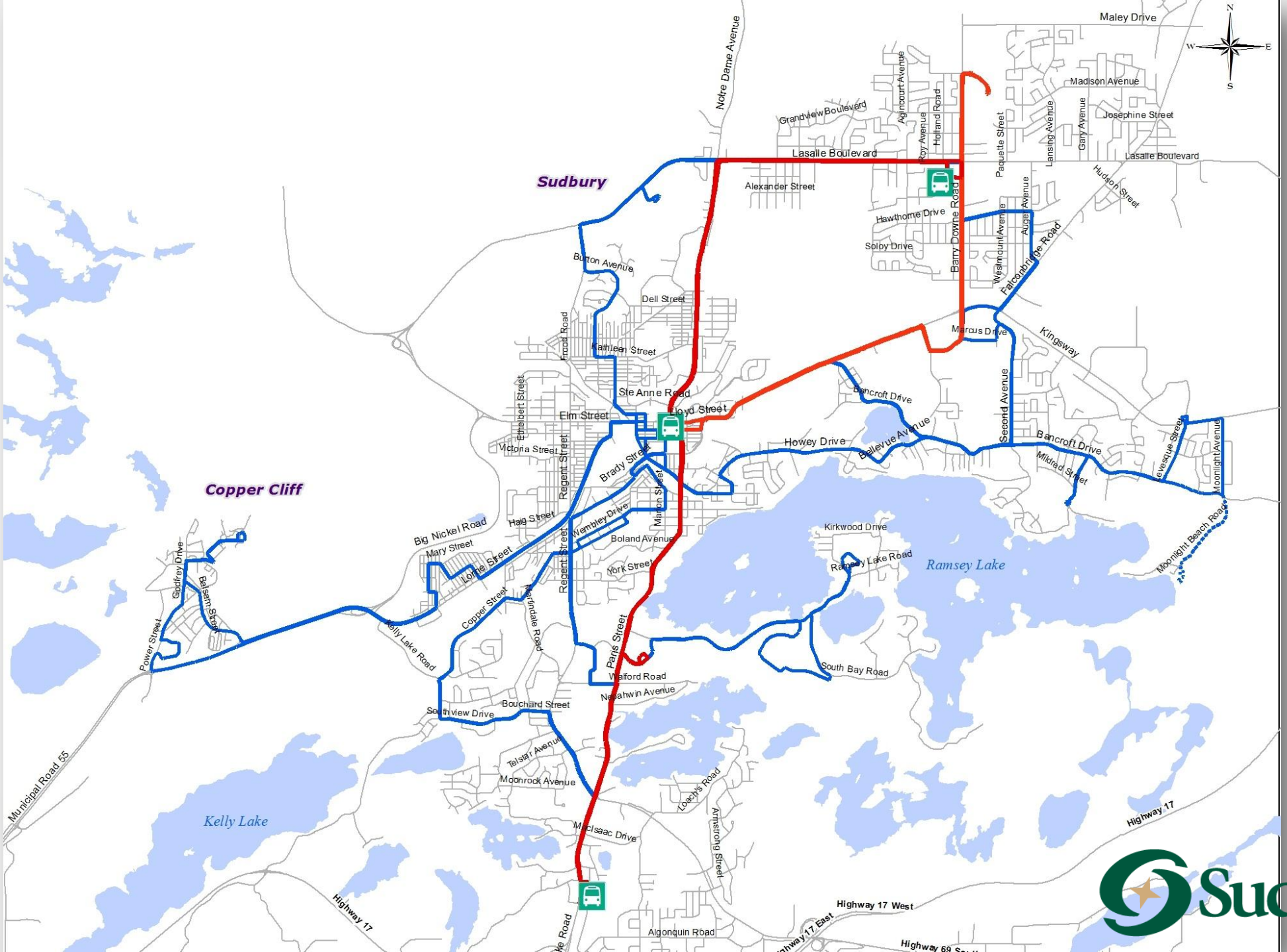
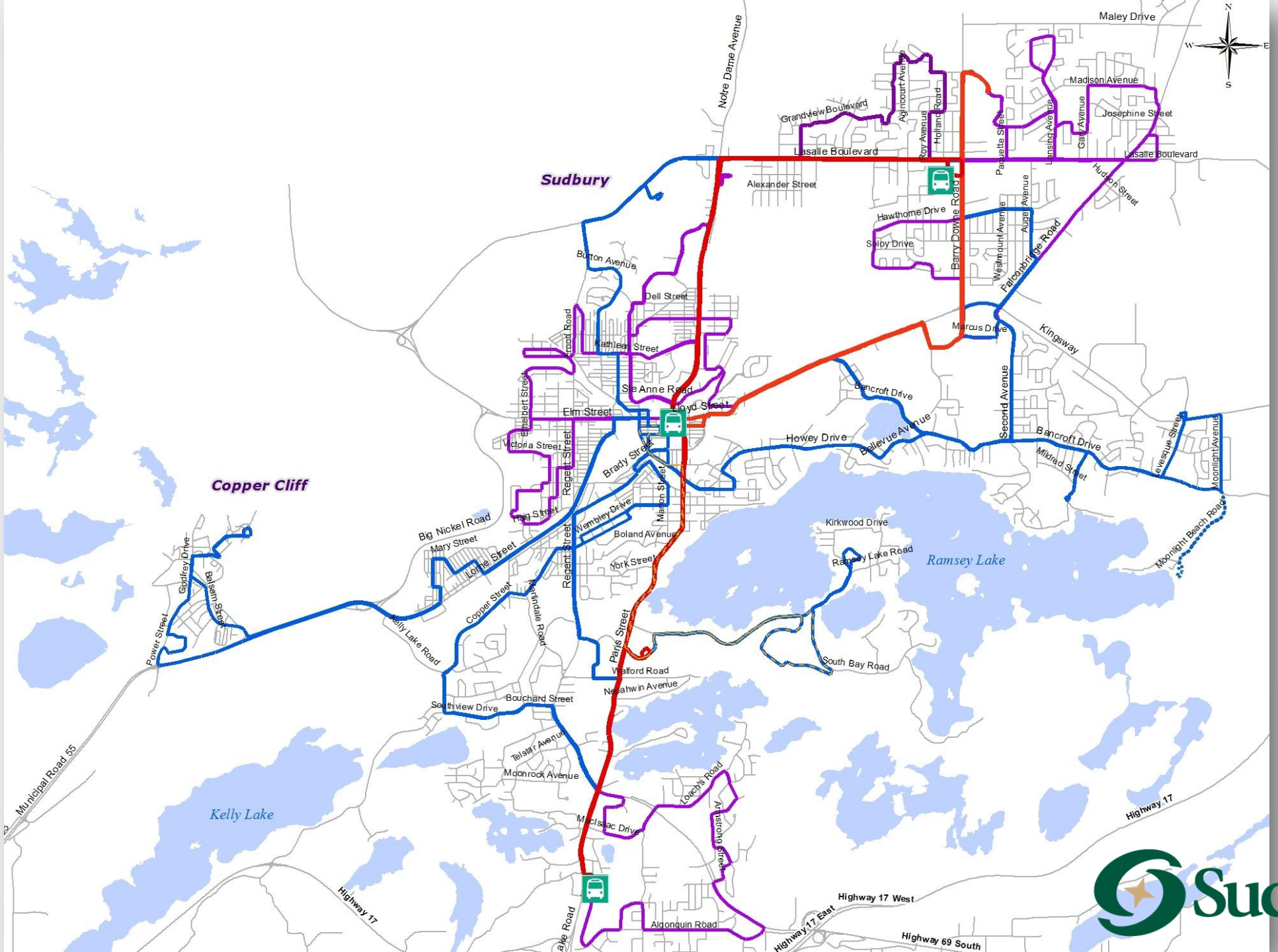


Greater Grand Sudbury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Southview Drive
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MacIsaac Drive
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Armstrong Street
Algonquin Road
Big Nickel Road
Mary Street
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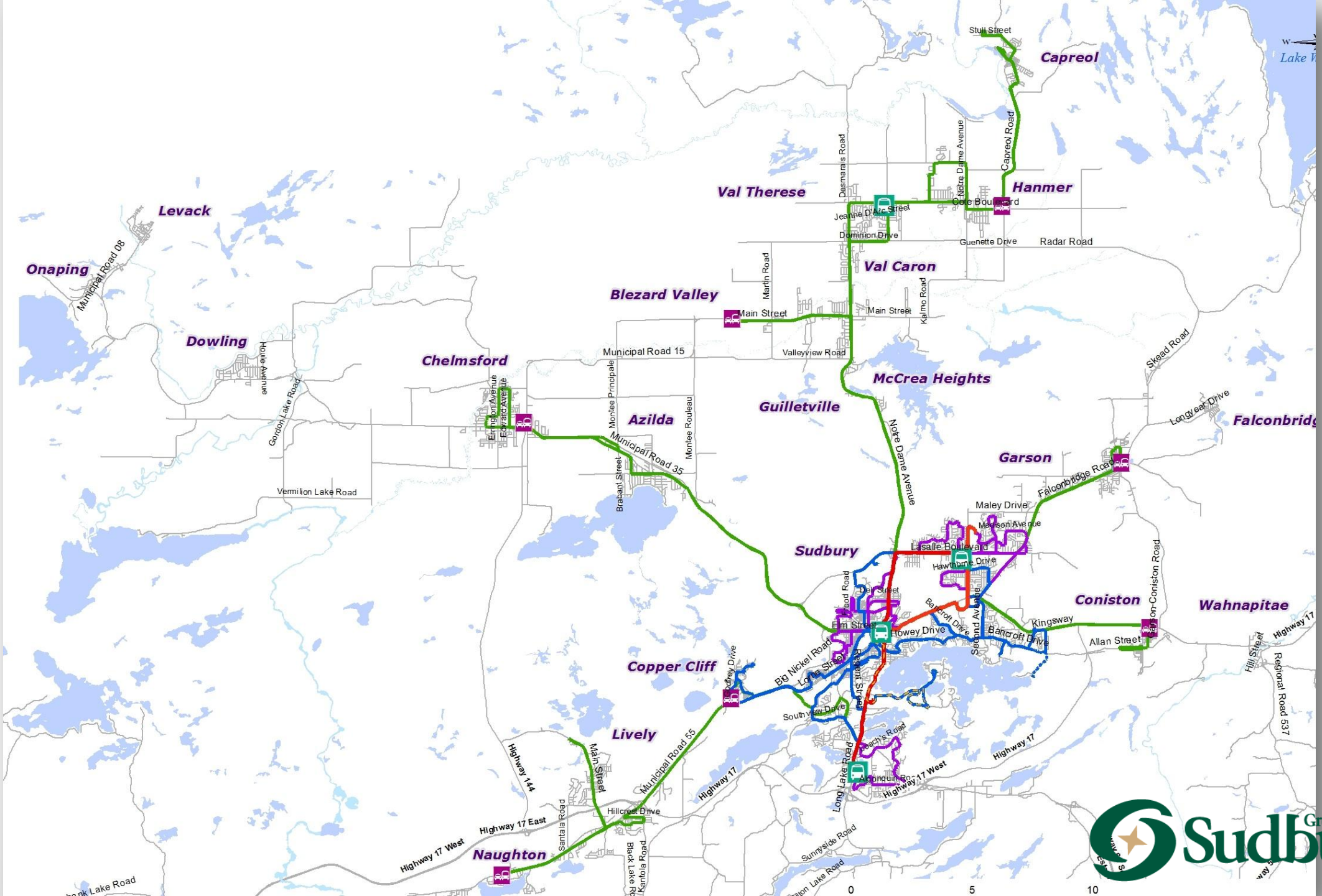
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Azilda
Guilletville
McCrea Heights
Garson
Falconbridge
Sudbury
Coniston
Wahnapitae
Copper Cliff
Lively
Naughton
Stull Street
Capreol Road
Dasmarais Road
Notre Dame Avenue
Core Boulevard
Jeanne D'Arc Street
Dominion Drive
Guenette Drive
Radar Road
Main Street
Mardin Road
Kalmo Road
Valleyview Road
Municipal Road 15
Municipal Road 08
Houle Avenue
Gordon Lake Road
Errington Avenue
Edward Avenue
Montee Principale
Montee Rouleau
Municipal Road 35
Brabant Street
Vermilion Lake Road
Note Dame Avenue
Skead Road
Longyear Drive
Falconbridge Road
Maley Drive
Meyerson Avenue
Lasalle Boulevard
Hawthorne Drive
Regent Street
Elm Street
Howey Drive
Second Avenue
Bancroft Drive
Kingsway
Allan Street
Lorne Street
Big Nickel Road
Aubrey Drive
Southview Drive
Municipal Road 55
Highway 144
Highway 17
Highway 17 East
Highway 17 West
Hillcrest Drive
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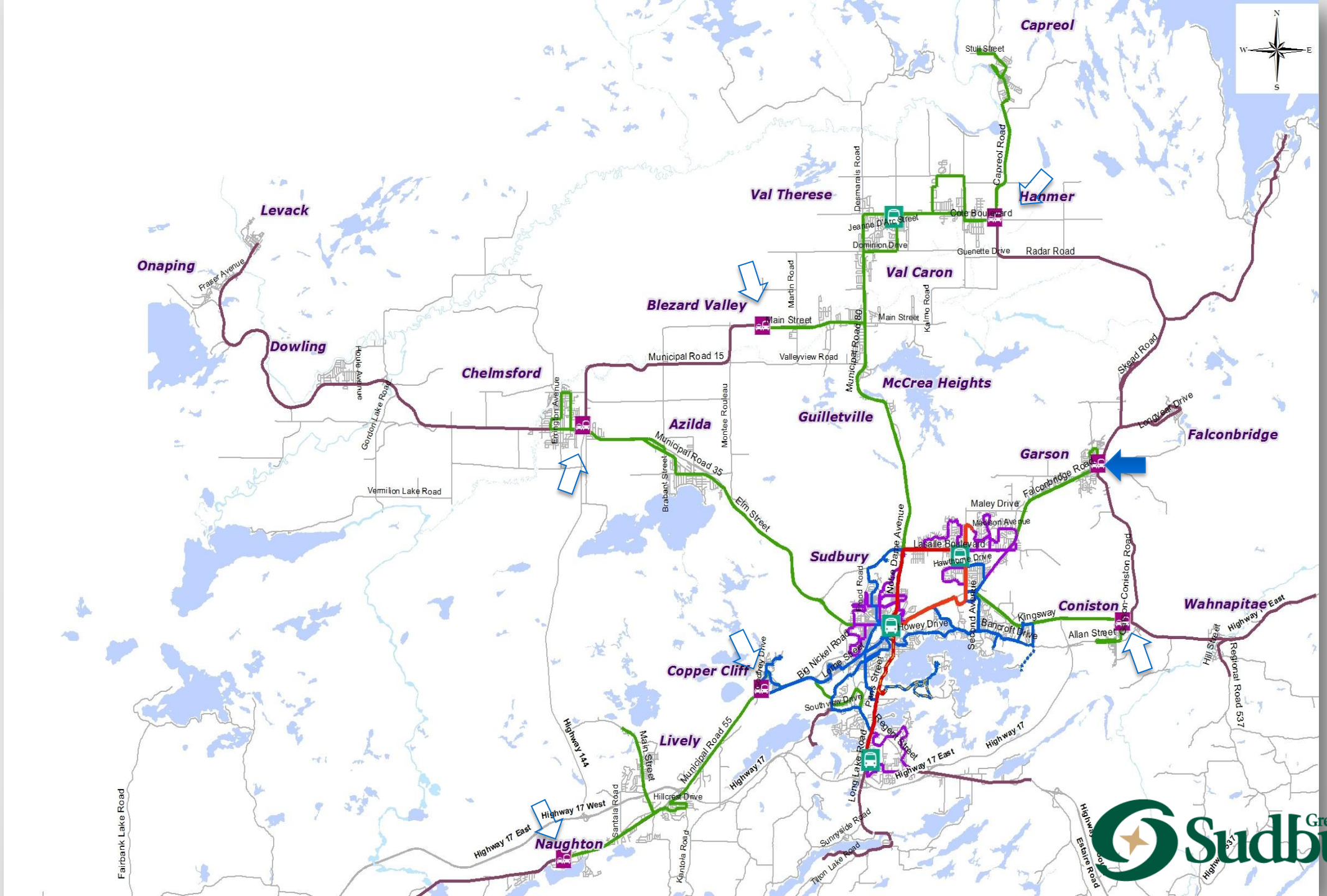
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Highway 17 West
Highway 17 East
Hillcrest Drive
Naughton
Santala Road
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Sunnyside Road
Tilton Lake Road
Fairbank Lake Road
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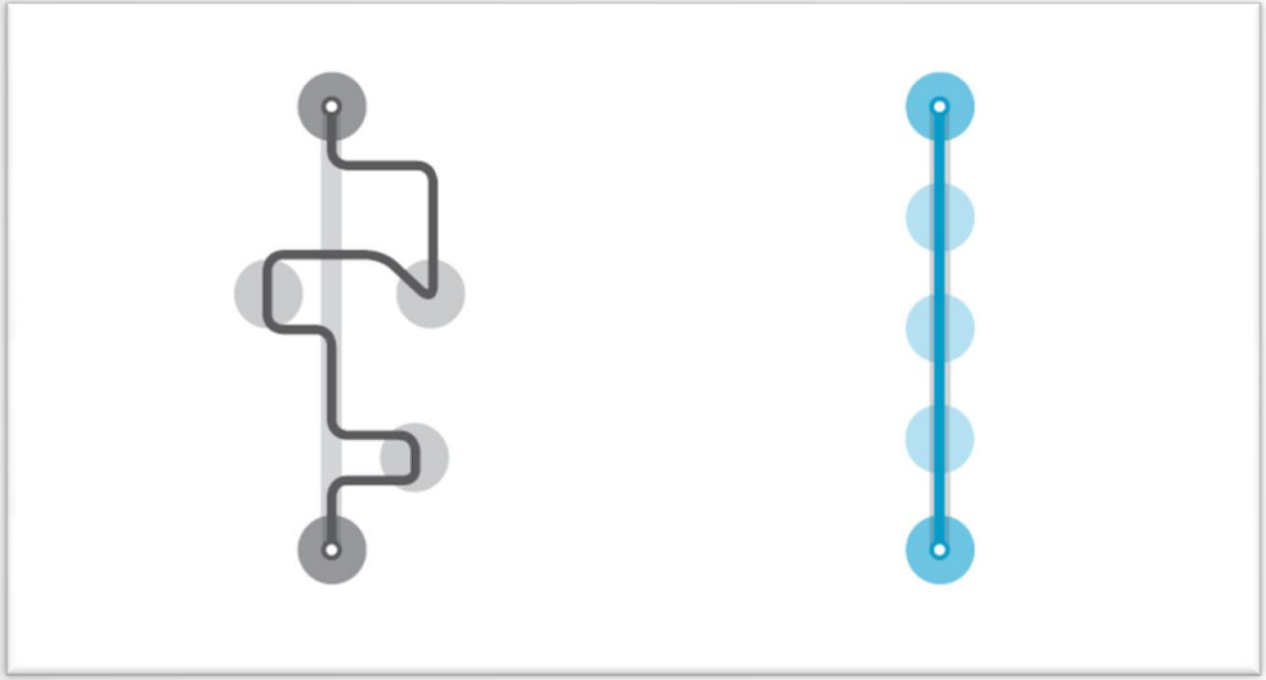
UNDERSTANDING THERE ARE TRADE-OFFS



Trade-offs are necessary to provide a well balanced, efficient and reliable transit system that works for the whole community.

IMPLEMENTATION AND COMMUNICATION PLAN

- NEW MAPS & SCHEDULES
- MODERN LOOK & FEEL
- NEW NAME & VISUAL ELEMENTS
- SNEAK PEEK
- USER FRIENDLY APPROACH
- EXTENSIVE PUBLIC EDUCATION & ENGAGEMENT

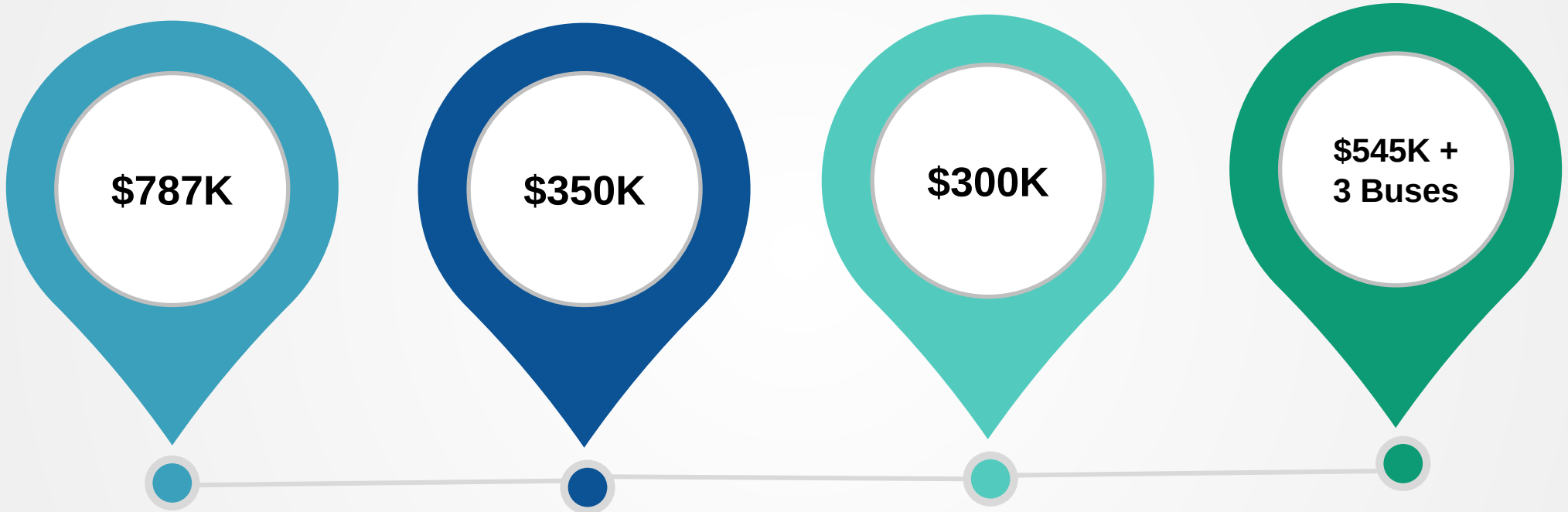
Greater Grand Sudbury

SHORT-TERM RECOMMENDATIONS

2020-2023

Reports will be prepared September 2019 and September 2020 prior to budget deliberations

SHORT TERM SERVICE EXPANSION OPTIONS (1-3 YEARS)



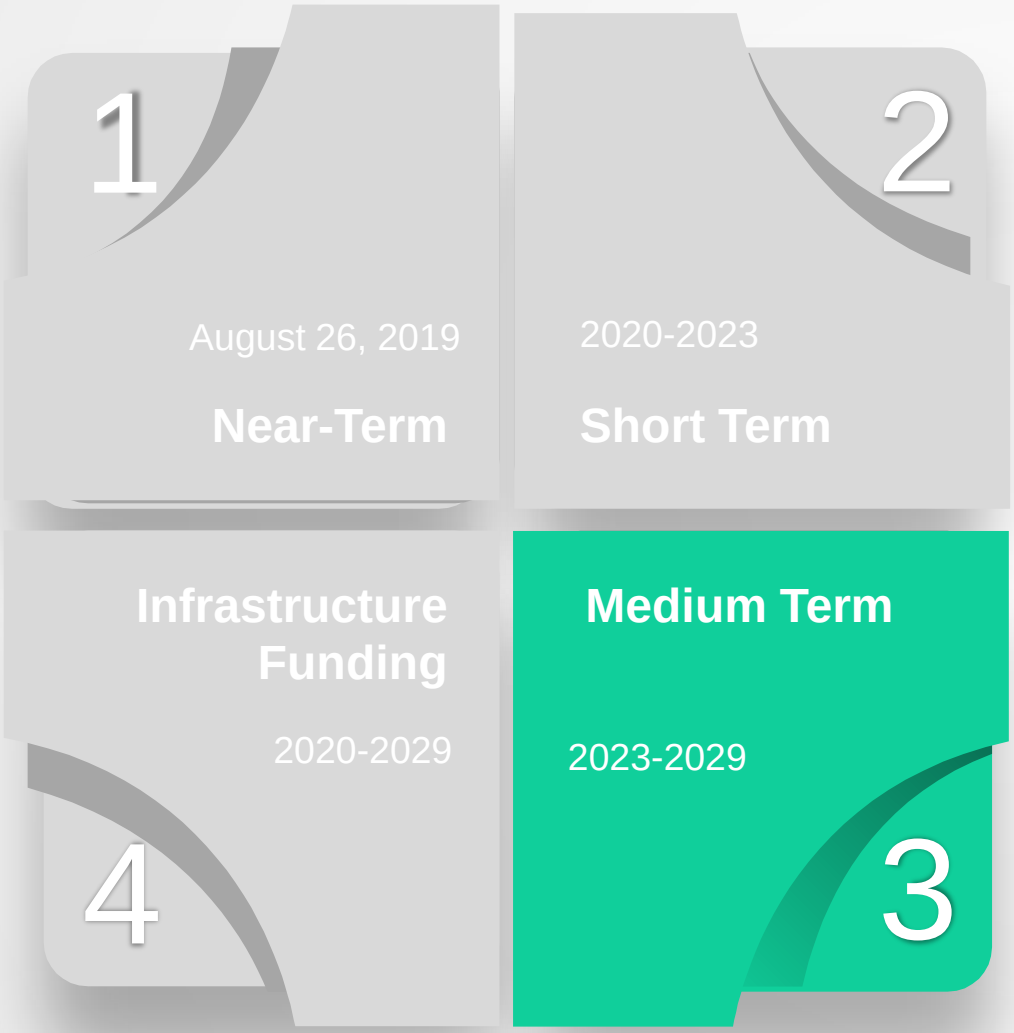
Community Priority Contingency

7AM Work Start

Sunday Frequency

Package of Improvements

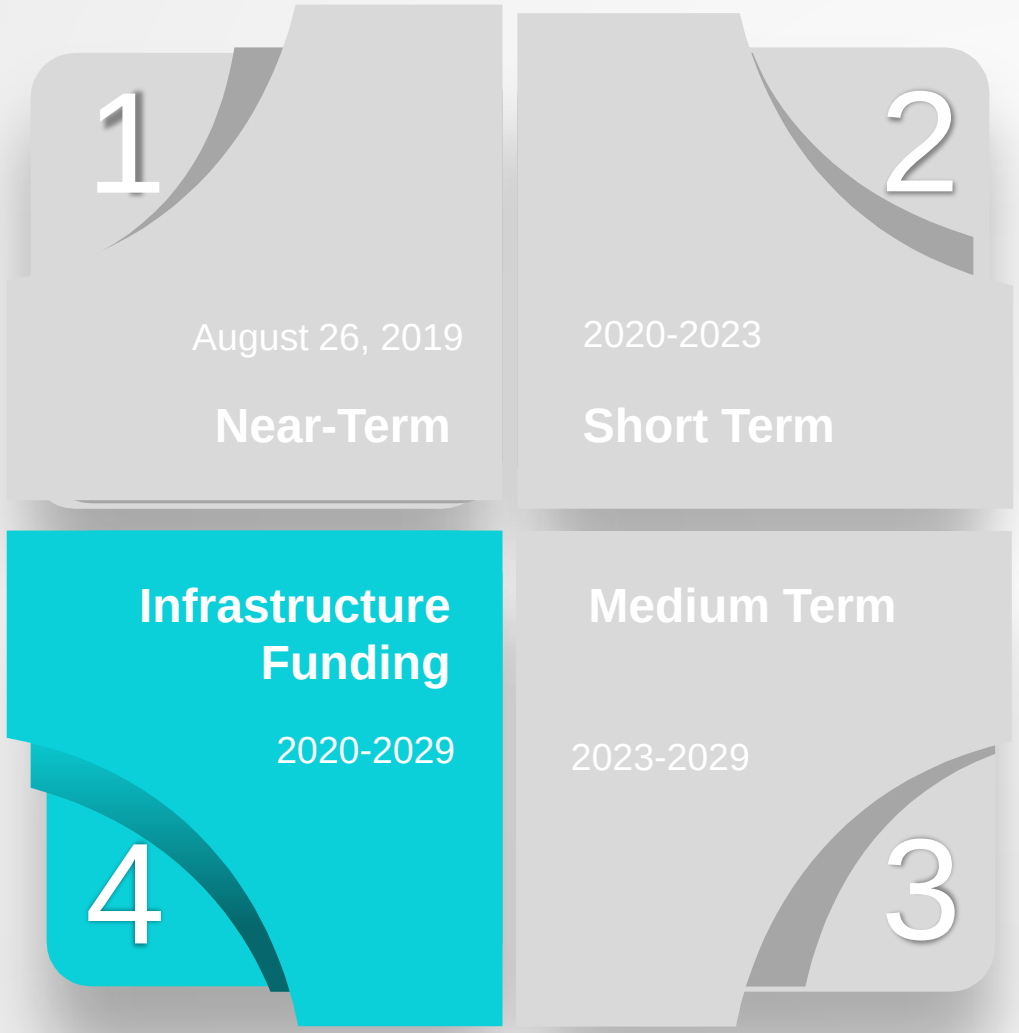
MEDIUM-TERM RECOMMENDATIONS



2023-2029

Additional frequency will be required as the system matures and to support the ongoing evolution and success of the City

INFRASTRUCTURE FUNDING OPPORTUNITY



2023-2029

Funding opportunity focused on priority measures to support Bus Rapid Transit corridor

LONG TERM INFRASTRUCTURE
BUS RAPID TRANSIT PRIORITY MEASURES

- ✓ Bus Rapid Transit means giving Transit the space and place it needs to be reliable and as timely as possible.
- ✓ Transit Priority Treatments can include priority signaling, queue jump lanes.
- ✓ Comfort stations, shelters, benches and wayfinding

Greater Grand Sudbury

On behalf of Greater Sudbury Transit, thank you to all those who participated in providing feedback in the last two years.

Greater | Grand Sudbury