Saint John Transit Operational Audit

City of Saint John

Task 9: Final Report
Draft

Prepared for Saint John Transit
Prepared by Stantec

October 2020

Stantec   Saint John Transit

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Prepared for:

The City of Saint John

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Reviewed by _____

(signature)

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Abbreviations

SJT	Saint John Transit
City	The City of Saint John
OTP	On-time performance
FTE	Full-Time Equivalent
OMSF	Operating, Maintenance, and Storage Facility
OTP	On Time Performance
SaaS	Software-as-a-Service
SJT	Saint John Transit
UNBSJ	University of New Brunswick Saint John Campus
NBCC	New Brunswick Community College Saint John Grandview Campus

1.0   EXECUTIVE SUMMARY

In support of shaping a Sustainable Future in Saint John, a Transit Operational Audit was performed to review all facets of the Saint John Transit operations. The Audit considered strengths, challenges and opportunities, with a goal of 'doing transit's part' in helping address a city-wide budget deficit through identifying additional revenues and cost savings.

Existing Service Review

As a starting point, a comprehensive review of existing operating conditions was undertaken including a background planning document review, spatial analysis of transit propensity measures (population/employment density, land use, income etc.), a system performance review and peer transit system review. Overall, the City sees both strengths and challenges in delivering an effective transit service. The current-state review highlighted a large increase in newcomers as well as a significant low-income population, both of which often demonstrate higher transit use and present opportunities to better serve these populations and capture ridership. Furthermore, key employment, commercial and residential destinations were found to be largely accessible with the current network. Some challenges identified include the low-density, dispersed nature of the City, declining population in the city centre and the geographical constraints of the Saint John River separating the east from the west. This review was complemented with public feedback gleaned through an online survey, engaging transit riders on buses and a public open house. Public insights were offered with respect to service span, frequency, customer information, service reliability, policies and practices, service coverage and driver behaviour.

System Visioning and Objectives

Using the insights gained from these exercises a long-term vision was set with supporting objectives and evaluation criteria to monitor progress. The vision for transit in Saint John has been set as the following:

Keep Saint John connected... Transit provides a safe, reliable, affordable, and customer-focused service that contributes to growth, advances sustainability goals, and encourages everyone to choose transit.

To uphold this vision key objectives were set, including:

- Build a transit system that provides access to where people want to go.
- Foster sustainability and economic prosperity.
- Increase brand and service awareness.
- Optimize the return on the investment in transit.

To monitor progress financial, operational and social evaluation criteria and supporting Key Performance Indicators (KPIs) were devised. Building from here, a set of network guiding principles and service guidelines were set to lay the foundation for the proposed network. The network guiding principles are summarized as follows:

- Strengthen what is working and eliminate what is not working.
- Improve route directness where possible.
- Improve the reliability of transit service.

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Proposed System Design

To create service proposals that met the needs of riders, an in-depth route-by-route analysis was completed as presented in Section 12.0. Areas for service enhancements, consolidation and rationalization were acknowledged as well as opportunities for more direct routing, improved travel times and consistent headways. In looking to do "more with less", the routing analysis focused on serving the greatest number of residents, particularly residents that rely on the service.

The proposed network utilizes a layered approach where each route has been classified based on service layers identified in MoveSJ to align with the overall transit and transportation vision for the City. Frequent service routes (1 and 3) will offer service Monday-Saturday with peak headways of 15 minutes, which is consistent with the existing service offerings. Then, there are local-level routes which will operate six days a week. Peak headways range from 30-60 minutes and weekday service will begin at 6am along all routes. To ensure that critical locations which include priority neighbourhoods, key growth areas (Millidgeville), UNBSJ, NBCC and the Regional Hospital have adequate service throughout the day, all fixed routes are proposed to operate until 9pm with routes 1, 3, and 15 operating until 11:30pm. Furthermore, there is one express route, Route 33, which will function similar to the existing Champlain Express with different routing. This route will provide direct service between NBCC and King's Square during weekday AM and PM peak periods with 30-minute headways. Lastly, the on-request service type (routes 12 and 32) is proposed to offer trips within the designated service areas with operating hours from 6am-6pm. The on-request routes will use a stop-to-hub strategy to replace fixed Route 12, and Route 32. To successfully deploy these on-request services a third-party technology partner will need to be engaged to provide the scheduling software required. To ensure service optimization, the proposed network was designed to account for interlining opportunities as detailed in Section 13.6.3. The existing and proposed transit network is illustrated in Figure 1-1 and Figure 1-2, with the existing and proposed network service spans outlined in Table 1-2 and Table 1-2.

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Figure 1-1: Existing Transit Network
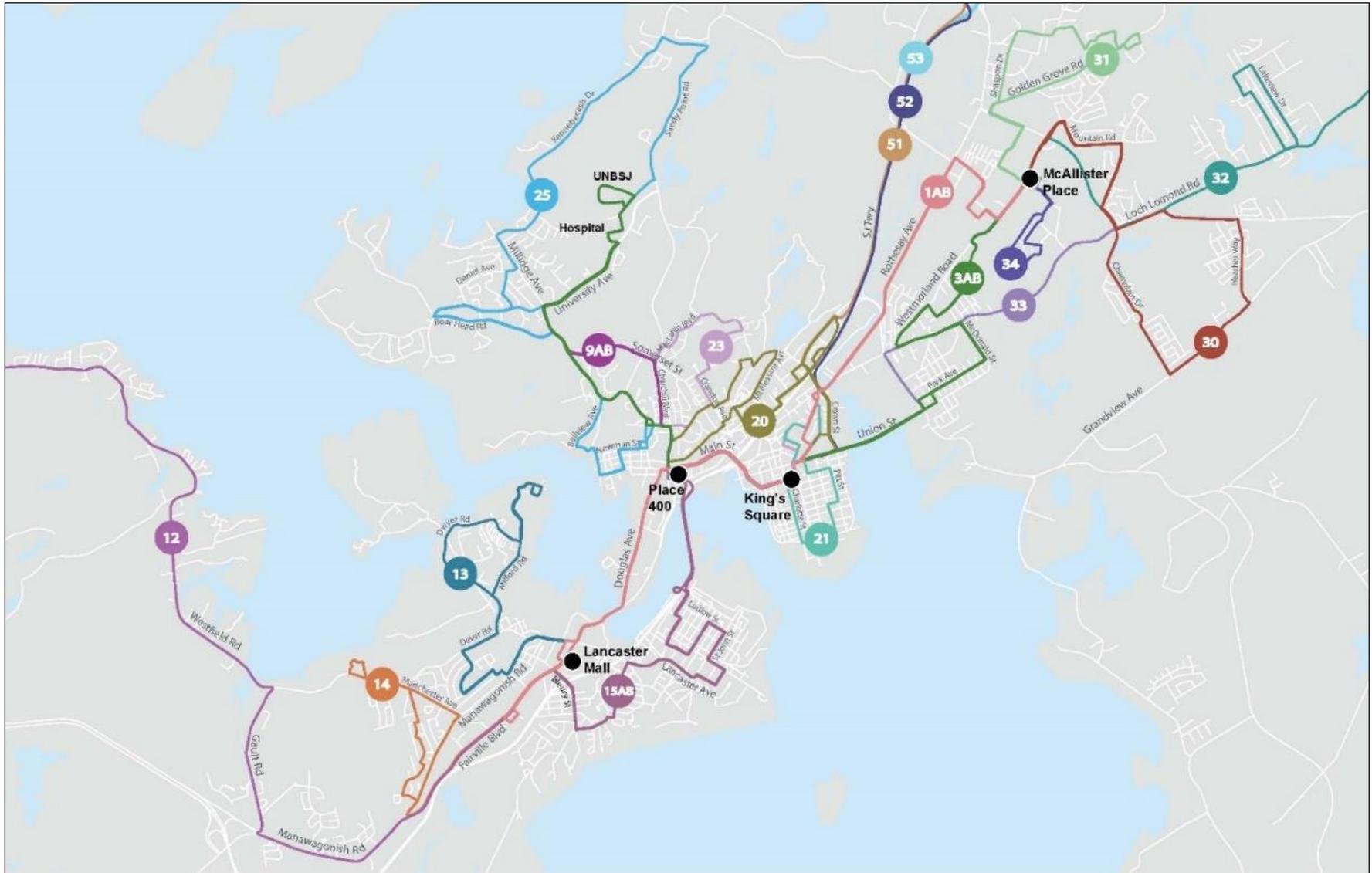
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Figure 1-2: Proposed Transit Network
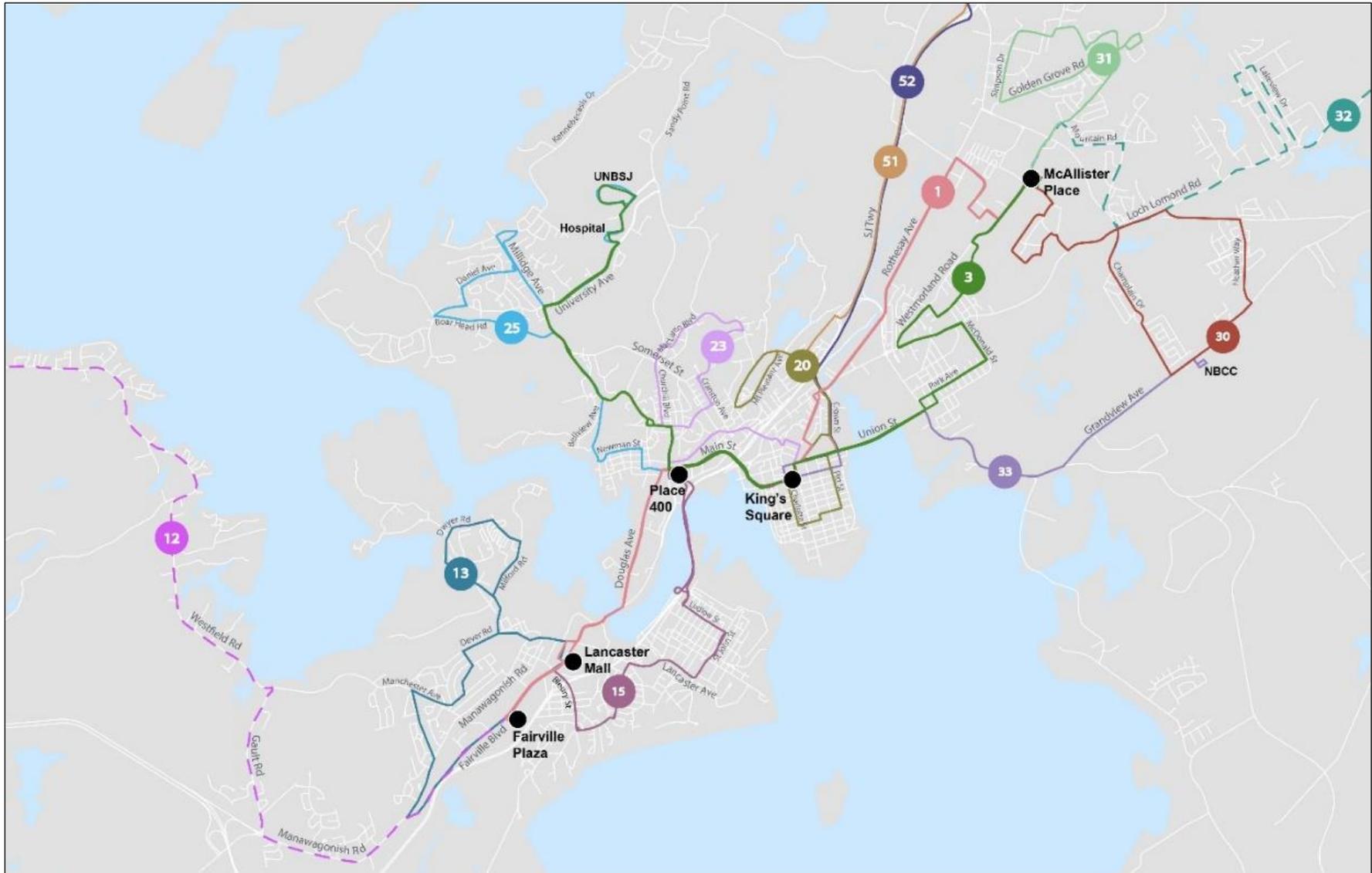
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Table 1-1: Existing network service spans

Route #	Route Name	Service Type	Peak Vehicle Req	Weekday Service Span	Weekday Headways	Saturday Service Span	Saturday Headways	Sunday Service Span	Sunday Headways
1A/B	Lancaster Mall / Fairville Blvd. Plaza	Frequent	6 buses	6:05 am - 11:15 pm	15 minute peak 30 minute non peak	7:05 am - 10:55 pm	30 minutes	10:35 am - 6:10 pm	60 minutes
3A/B	Regional / UNB Millidge Avenue	Frequent	3 buses	5:50 am - 11:30 pm	30 minutes	6:20 am - 11:00 pm	30 minutes	10:50 am - 6:40 pm	30 minutes
9A/B	Regional / UNB Churchill Blvd.	Frequent	3 buses	6:05 am - 6:45 pm	30 minutes	-	-	-	-
12	Martinon	Local	1 bus	6:40 am - 9:35 am 12:25 pm - 1:20 pm 4:40 pm - 6:35 pm	60 minutes	-	-	-	-
13	Milford / Greendale	Local	0.5 bus (w/ rt 14)	6:50 am - 6:20 pm	60 minutes	10:50 am - 5:20 pm	60 minutes	-	-
14	Churchill Heights	Local	0.5 bus (w/ rt 13)	6:20 am - 6:45 pm	60 minutes	10:20 am - 5:45 pm	60 minutes	-	-
15A/B	Harbour Bridge	Local	2 buses	6:15 am - 11:15 pm	30 minutes until 7:15 pm 60 minutes until 11:15 pm	6:45 am - 9:45 pm	60 minutes until 11:15 am 30 minutes until 6:15 pm 60 minutes until 10:15 pm	10:45 am - 6:15 pm	60 minutes
20	Wright Street / Fort Howe	Local	1 bus	6:10 am - 9:50 pm	45 minutes	9:55 am - 6:05 pm	45 minutes	-	-
21	South End / St. Joseph's	Local	0.5 bus (w/ rt 23)	6:35 am - 9:55 pm	60 minutes	7:35 am - 5:55 pm	60 minutes	-	-
23	Crescent Valley	Local	0.5 bus (w/ rt 21)	5:55 am - 9:30 pm	60 minutes	7:55 am - 5:55 pm	60 minutes	-	-
25	Millidgeville / North	Local	1 bus	6:15 am - 10:50 am 1:40 pm - 2:45 pm 3:40 pm - 7:05 pm	65 minutes	9:45 am - 4:40 pm	70 minutes	-	-
30	Champlain Heights	Local	0.5 bus (w/ rt 34)	6:40 am - 10:20 pm	45 minutes until 6:20 pm 60 minutes until 10:20 pm	10:25 am - 6:20 pm	45 minutes	-	-
31	Forest Glen	Local	1 bus	5:55 am - 9:50 pm	30 minutes until 6:50 pm 60 minutes until 9:50 pm	7:25 am - 6:50 pm	30 minutes	10:05 am - 5:30 pm	60 minutes
32	Loch Lomond	Local	1 bus	6:30 am - 9:50 am 11:10 am - 12:10 pm 4:40 pm - 6:50 pm	70 minutes	-	-	-	-
33	Champlain Express	Express	2 buses	6:15 am - 9:45 am 2:50 pm - 6:25 pm	60 minutes (Jul-Aug) 30 minutes (Sep-Jun)	-	-	-	-
34	Silver Falls	Local	0.5 bus (w/ rt 30)	6:25 am - 6:35 pm	45 minutes	10:55 am - 5:50 pm	45 minutes	-	-

Table 1-2: Proposed network service spans

Route #	Route Name	Service Type	Peak Vehicle Req	Weekday Service Span	Weekday Headways	Saturday Service Span	Saturday Headways	Sunday Service Span	Sunday Headways
1A/B	Lancaster Mall / Fairville Blvd. Plaza	Frequent	6 buses	6:00am – 11:30pm	15 minutes peak 30 minutes off-peak	7:00am – 11:00pm	30 minutes	medium/long term consideration	
3A/B	Regional / UNB Millidge Avenue	Frequent	6 buses	6:00am – 11:30pm	15 minutes until 7pm 30 minutes from 7pm	7:00am – 11:00pm	30 minutes	medium/long term consideration	
12	Martinon	Targeted	-	6:00am – 6:00pm	on-request	-	-	-	-
13	Milford / Greendale / Churchill Heights	Local	1 bus (w/ rt 14 maintained in short term)	6:00am – 9:00pm	60 minutes	8:00am – 6:00pm	60 minutes	-	-
15A/B	Harbour Bridge	Frequent	2 buses	6:00am – 11:30pm	30 minutes	7:00am – 11:00pm	30 minutes	medium/long term consideration	
20	South End / Waterloo Village / Mount Pleasant	Local	1 bus	6:00am – 9:00pm	30 minutes peak 60 minutes off-peak	8:00am – 6:00pm	60 minutes	-	-
23	Crescent Valley / St. Joseph's	Local	1 bus	6:00am – 9:00pm	30 minutes peak 60 minutes off-peak	8:00am – 6:00pm	60 minutes	-	-
25	Millidgeville / North	Local	1 bus	6:00am – 9:00pm	60 minutes	8:00am – 6:00pm	60 minutes	-	-
30	Champlain Heights / Silver Falls	Local	0.5 bus (w/ rt 31)	6:00am – 9:00pm	60 minutes	8:00am – 6:00pm	60 minutes	-	-
31	Forest Glen	Local	0.5 bus (w/ rt 30)	6:00am – 9:00pm	60 minutes	8:00am – 6:00pm	60 minutes	-	-
32	Forest Hills / Loch Lomond / Airport	Targeted	-	6:00am – 6:00pm	on-request	-	-	-	-
33	NBCC Express	Express	1 bus	6:00am – 9:00am; 4:00pm – 7:00pm;	30 minutes	-	-	-	-

Proposed Network Impacts

To evaluate the impact of the proposed network, several considerations were given with respect to coverage, priority and growth neighbourhoods, intensification areas and active transportation connections. A 400- and 800-metre buffer analysis revealed similar levels of coverage between the existing and proposed network within the primary development area of the City including all five priority neighbourhoods. The existing network offers slightly more coverage in the outer edges of the city however the new proposed express Route 33 offers new coverage along Bayside Drive in the East Side providing access to NBCC and a number of industrial sites.

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Table 1-3: Area covered within a 400m and 800m buffer of the existing and proposed networks
Source: Calculated in ArcGIS

	Coverage Area (sqkm)		
	Existing Network	**Proposed Network**	**Percent Change**
400m buffer	76	66	-13%
800m buffer	123	109	-11%

Figure 1-3: Existing and Proposed Transit Network- 400m Buffer
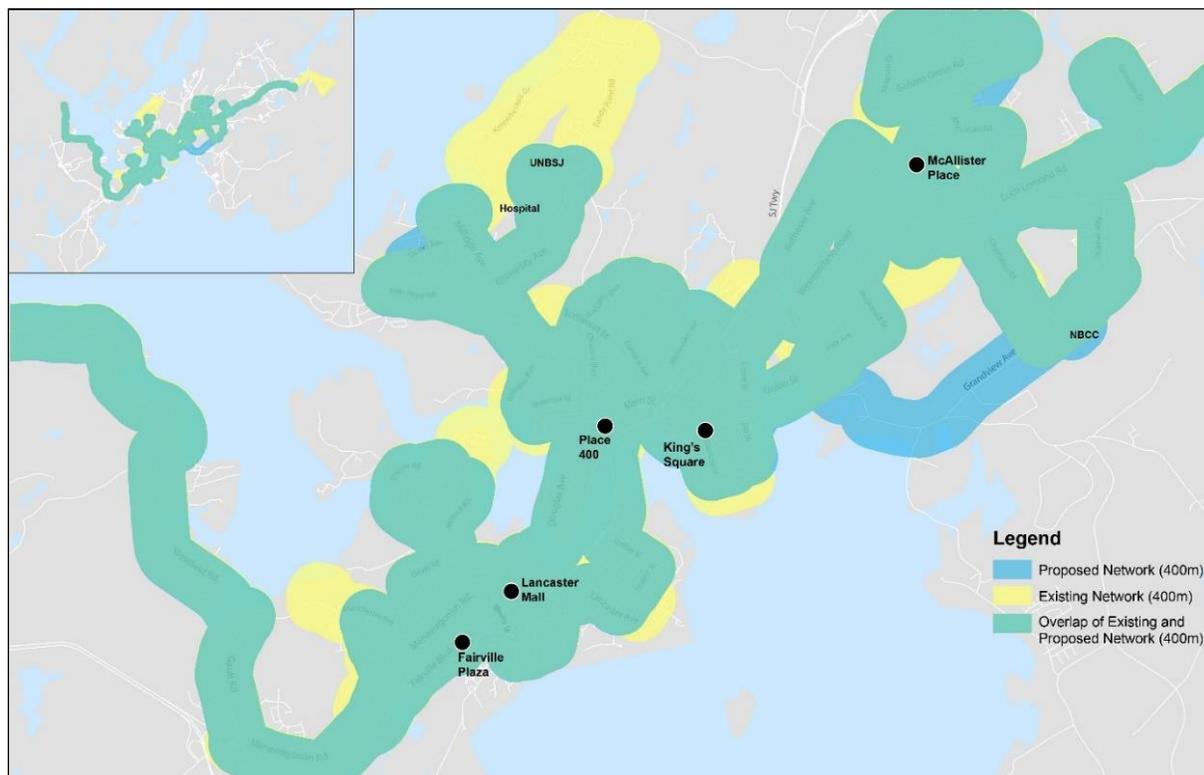
The proposed network will maintain or improve access and connectivity within priority and key growth areas. Notably, Route 25 improvements will increase service frequency and service span in the Old North End and Millidgeville areas by providing all-day 60 minute service. Additionally, the Intensification Areas and cycling network outlined in PlanSJ align with the proposed network offering opportunities for multi-modal trips. The proposed network in relation to priority neighbourhoods and PlanSJ proposals (Intensification Areas and Cycling Network) are illustrated in Figure 1-4 and Figure 1-5 respectively.

Figure 1-4: Proposed Network- Priority Neighbourhoods
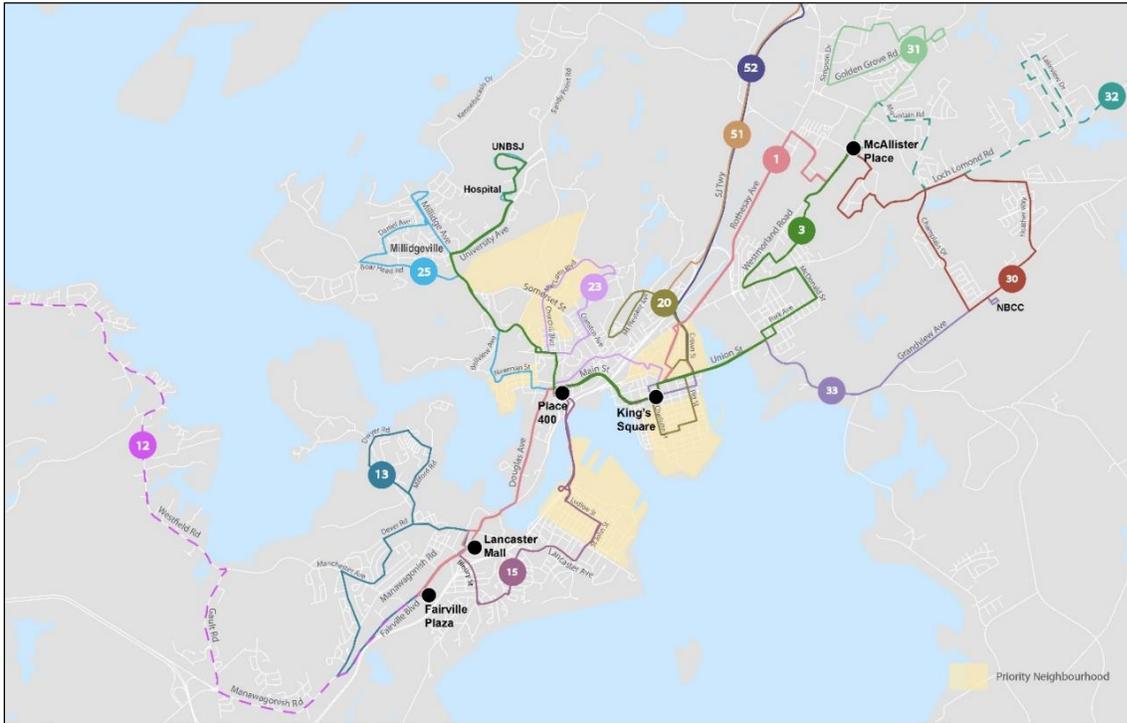
Figure 1-5: Proposed Network- Intensification Areas and Bike Routes
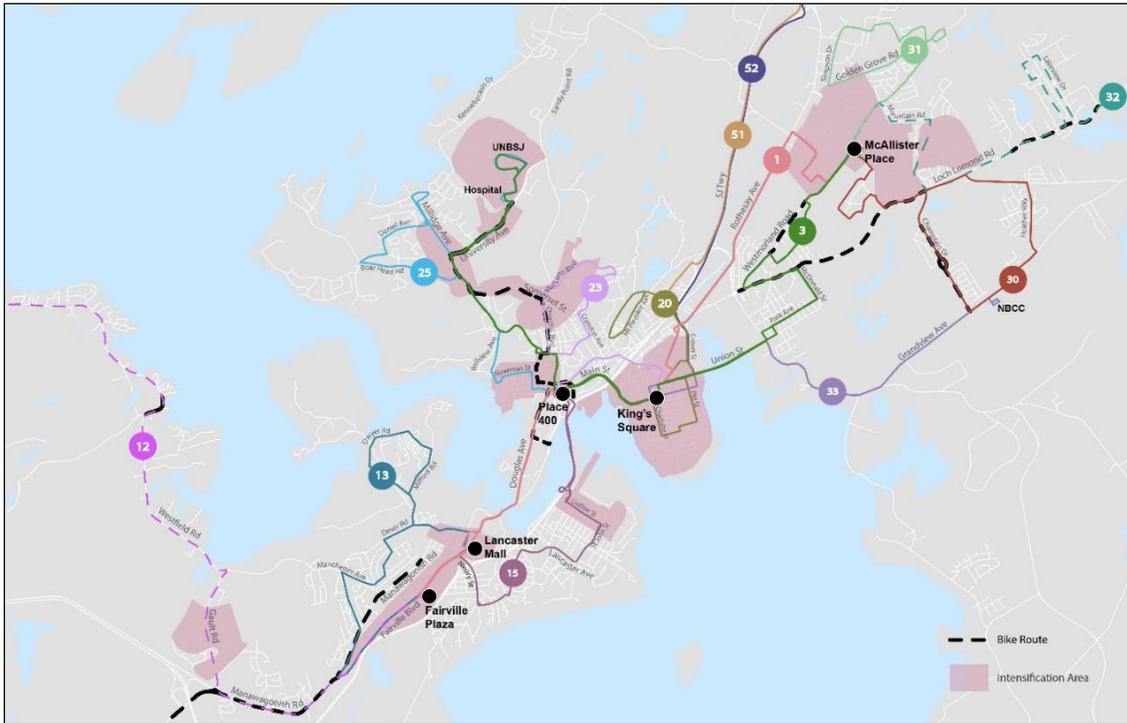
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Internal Operations Review

In addition to the service review, all facets of the internal operation were evaluated including administration, organizational structure, scheduling/planning/dispatch, service operations and operation & maintenance and storage facilities. Based on the existing assessment a number of recommendations were made which are further detailed in Section 16.0.

Operational Cost Impacts

Furthermore, the financial impacts of the proposed short-term recommendations were quantified, illustrating how savings of $850,000 may be achieved in 2021. These operational impacts are based on the following factors:

- Cost savings gained from a reduction in revenue service hours as a result of the short-term network;

- Additional cost of on-request service;

- Additional cost required for adding 0.5 FTE to the labour force; and

- The revenue reduction associated with fare parity between Handi-Bus service and conventional service.

Notably, the additional revenue generation from anticipated ridership increases have not been factored into the operational cost impacts to remain conservative. Lastly, long-term recommendations such as new technology procurements (increase in costs) and the consolidation of routes 13 and 14 (decrease in costs) do not factor into this analysis. A detailed breakdown of these calculations is provided in Section 17.0.

The financial estimates described in Section 17.0 hinge primarily on an assumed average cost-per-hour of $107.87 for fixed-route service (Canadian Urban Transit Association reporting). While this is common industry practice with respect to estimating budgetary impacts of service level changes, in reality implementation is more complex than simply adding or removing service and watching the budget change. That is, the $107.87 per hour figure represents not only the direct costs of operating service (wages, fuel, etc.) but also the indirect costs of operating service (maintenance, supplies, etc.). Specifically, all costs related to operations and maintenance are assumed to be proportional to the total number of revenue-hours of service delivered, and all costs related to administration and management of SJT are exempt from this calculation and are assumed to be fixed costs regardless of the amount of service delivered.

Implementation Plan

To present an actionable roadmap of all service recommendations, an Implementation Plan was devised and categorized recommendations into the short and long term. Action items have been prioritized into short- and long-term actions whereby short-term actions aim to address the annual budget deficit whereas long-term actions consider items that will aid in achieving the long term vision for the transit

agency and ensure financial and social sustainability into the future. The Implementation Plan is summarized below and further detailed in Section 18.0.

Short-Term Actions

Service Planning

1. **Make route revisions as per the final preferred network outlined in Section 13.0.**
   - **In the short-term existing routes 13 and 14 will operate with their current routing** to optimize on interlining opportunities.
   - **The Short-Term Proposal will utilize the current methods of booking paratransit rides to book on-request trips (via the Handi-Bus call centre)**.
   - **Transition from 3 to 2 Comex routes.** It is understood that the City is made whole for Comex operation which is anticipated to be the case regardless of whether two or three routes are operated.
2. **Begin/continue collecting the noted KPIs in Section 9.4 and ramp up ongoing evaluation efforts**. Performing more comprehensive monitoring will allow for more informed decision making. As a starting point, prior to technology upgrades, reporting capabilities available today include on-time performance and weekly passenger trips by route.

Administration and Organizational Structure

3. **Develop and implement operating contract for paratransit and on-request services,** including the development of a performance-based operations contract for combined paratransit and on-request service delivery and go to market with an RFP to procure these services. As part of the contract, a **formal reporting relationship with the paratransit contractor should be established.** The regular monitoring of this service can help to inform service planning decisions into the future, including the comingling of paratransit and on-request service based on available capacity and evolving demand as well as the most efficient service delivery model.

4. **Adjust roles and responsibilities within the SJT organization and add a 0.5 FTE.** Stantec believes that SJT can add a 0.5 FTE and still meet the $850,000 budget reduction target. The three existing Administrative Staff roles should be specified into the following roles in the short-term: Marketing and Customer Service Specialist, Planning and Development Specialist and Finance Specialist. **In conjunction with role adjustments, develop job descriptions for each role in the organization structure. Furthermore, consider additional organizational updates required in the event that SJT is brought under the City as a department.**

Operations

5. **Shift bus stop infrastructure and accessibility amenities to align with the proposed routes.**

6. **Simplify the fare structure.** The recommended fare changes in the short-term, along with their respective justifications include:

   - *Consolidating the concession discounts for children, students, and seniors* which currently consist of several variations.

   - *Maintain current fare for now.* Given the intent of this Audit is to "do more with less", it would be imprudent to increase fares for a net reduction in service hours and likely

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disincentivize many transit users as well as negatively impact any potential new growth in ridership.

- *Fare parity for Handi-Bus service.* Fare parity is an important consideration in any specialized transit program. While there is no provincial mandate requiring fare parity in New Brunswick, in other jurisdictions, Human Rights legislation is a mechanism that has been used to mandate transit agencies to honour fare parity. A precedent was set on September 22, 2016 in the City of Yellowknife, Northwest Territory where a human rights adjudicator ruled it was unfair of Yellowknife not to offer a monthly pass to users of the accessible transit system, and ordered it to stop using a fare structure discriminating against persons using public transit on the basis of disability. The adjudicator ordered the city to pay back people who used YATS between September 2016 and January 2017 the difference in fares. Therefore, given this precedent, it is Stantec's fiduciary duty to identify that the City of Saint John and SJT could be a subject to a New Brunswick Human Rights Act challenge. The current practice of charging different fares for the two services (conventional and specialized transit) could be interpreted as being discriminatory to persons with disabilities and mobility challenges.

Long Term Actions

Service Planning

7. **Make the noted enhancements to the network outlined in Section 13.0**, **these include**:
   - Interline Route 12 and 13 using the dynamic scheduling technology.
   - Explore the provision of additional stops along Route 33 at industrial employment sites.

Administration and Organizational Structure

8. **Rebrand Handi-Bus service** to deemphasize the exclusivity of the service and remain consistent with the overall SJT branding, ultimately creating a more inclusive and barrier-free service. It also enables SJT to provide on-demand services using the same vehicles.

9. **Expand charter and ferry tours businesses.** The additional revenue gained from these services can be used to improve and support other aspects of the service. Proactively planning revenue-generating services will help to reduce the need for service cuts in the event of potential funding reductions in the future.

Scheduling, Planning and Dispatch

10. **Invest in scheduling/dispatch and customer information software to exploit operational efficiencies**. These technology needs should be incorporated into City's long-term capital planning.

Operations

11. **Invest in a fare collection system to reduce operational costs and improve customer experience.** Stantec recommends that SJT procure a simple open and mobile fare collection solution like a validator product such as the one developed by eiGPS or Token Transit which is a suitable solution and at a reasonable price point (approximately $300-$500 per bus installed). When integrating advanced fare collection systems, payment options for those that do not have

access to this technology or are unbanked will need to be factored through consultation with these communities.

12. **Simplify the fare structure.** The recommended fare changes in the long-term, along with their respective justifications include:

    - *Consolidate various fare products* once an open/mobile fare payment system is procured and rolled out. This change will reduce customer confusion and reduce the administrative burden of processing various fare products.

    - *Explore a low-income fare product.* This pass will allow customers with low or fixed incomes to avoid devoting a disproportionate amount of their income to transit. Partnering organizations to consider in this initiative include the YMCA, Nick Nicolle Community Centre (as well as other community centres located within priority neighbourhoods) and ONE Change, among many others.

13. **Develop a fare evasion plan and enforce it.** This includes establishing an acceptable target for fare evasion that balances the revenue loss of fare evasion and cost of enforcement, identify enforcement activities and formal procedures to achieve this target, build a public education strategy, provide operator training, and establish KPIs. To ensure this initiative does not disproportionately impact lower-income riders, an enforcement strategy should be paired with the exploration of low-income fares to ensure that transit is affordable to all residents.

14. **Improve bus stop infrastructure and customer comfort and accessibility amenities.** The current bus stops present visibility challenges (further amplified in the winter), lead to customer confusion and do little to attract future users. Once immediate stop changes are operationalized to accommodate the proposed network and budget deficit, further stop improvements can be considered. This can be done by targeting strategic stops such as high-usage stops (which can be identified through the technology upgrades noted above).

15. **Bolster public marketing efforts.** This will serve to achieve many objectives that build on the long-term vision for SJT including increasing brand and service awareness, and optimizing the return on the investment in transit. To fully capitalized on the proposed improvements, the service needs to be marketed to residents and visitors to ensure that transit continues to permeate into the culture of the city.

Operating, Maintenance, and Storage Facility (OMSF)

16. **Undertake a thorough review of the SJT fleet.** This will help to understand whether the fleet is right-sized for the operation, with appropriate capacity for the expansion of charter service in parallel with proposed reductions in revenue-hours of fixed route service. This fleet study should also help to prepare for future vehicle planning including the exploration of smaller vehicles for lower-usage routes, zero-emission buses and any further interoperability between the transit and City vehicle fleet in light of the consolidated facilities. This study should aid in the development of a fleet asset management plan that integrates with financial policies.

17. **Redesign and expand OMSF office layout to provide more space for staff.** The SJT Transit OMSF office space should be redesigned and expanded to introduce common elements found in modern transit facilities – private meeting rooms and additional space for both existing staff, as well as proposed new additions.

2.0   INTRODUCTION

The Operational Audit was completed to evaluate all facets of the Saint John Transit operations to understand where strengths, challenges and opportunities lie, with a goal of 'doing transit's part' in helping address a city-wide budget deficit through identifying additional revenues and cost savings. The first step included an extensive background and document review to understand the current state of transit in Saint John. This was supplemented with extensive public engagement to understand how residents and visitors use the service and what aspects are working or not working for them. An online survey, several stakeholder meetings and a public forum was conducted to gather feedback. Based on what was uncovered a visioning exercise was completed to outline a framework for future transit in Saint John along with objectives and metrics to monitor the progress. Following this, a comprehensive system analysis was undertaken at the system and route level to identify where improvements could be made. Considering public input, data analyses and transit propensity measures a proposed transit network and internal operations recommendations have been made. These routing changes are accompanied with an operational cost model to highlight the total network savings. The final output consists of a set of tailored strategies that will ensure a cost-effective, high-quality transit system that will sustain the local environment, and support the needs of residents and visitors now, and for years to come. This document summarizes the work completed as part of this audit. The final recommendations and implementation plan to help establish a timeline to complete these changes are outlined in Section 18.0 below.

3.0   ABOUT SAINT JOHN

Located along the coast of the Bay of Fundy, Saint John sits at the southern end of the province of New Brunswick. The City of Saint John (City) is home to just over 70,000 residents. Serving as the first incorporated city in Canada, Saint John has a long and rich history. Additionally, with a major port located within the City's waterfront, it serves as a critical location for goods movement within Canada. Figure 3-1 illustrates the various neighbourhoods within the City. The Uptown area represents the central business distinct with a number of surrounding neighbourhoods making up the core area of the City. The remainder of the City can be broken down into neighbourhoods within the North End, East Side and West Side. Notably, the West Side is separated by the Saint John River and connects to the city centre via two bridges. The City is generally dispersed over a large area with a number of surrounding suburban communities.

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Figure 3-1: Neighbourhoods in Saint John
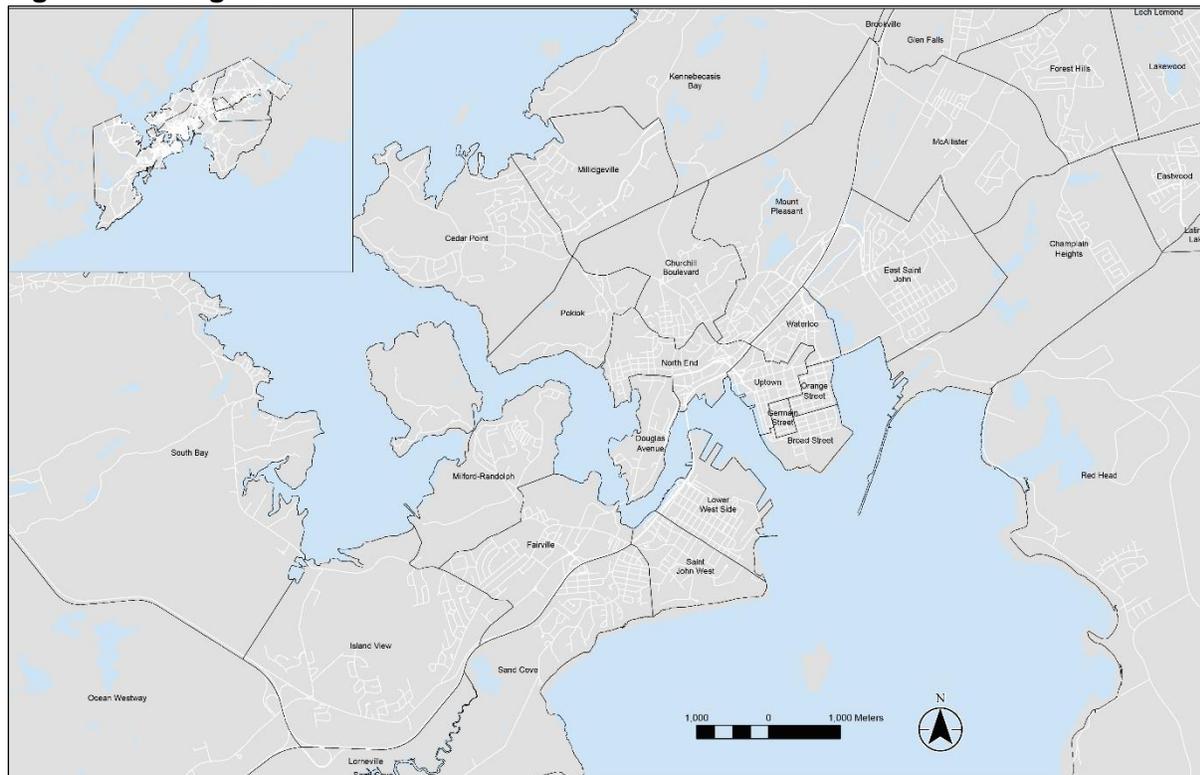
3.1   DEMOGRAPHICS

To understand the transit needs and demand, it is important to understand the current and potential population demographics, the geography and spatial design of the City, as well as all mobility options available to residents of Saint John. Table 3-1 compares demographic statistics of the City with those of the province of New Brunswick and Canada to understand how Saint John aligns and differentiates on various scales.

The demographics of Saint John show that the population has declined in the city which is seen throughout the province but not the country. Notably, Saint John was the only census metropolitan area in the country to see a decline in population between 2011 and 2016. The median income is lower than the national average which warrants the consideration of a potentially higher transit-dependent population. Furthermore, more high-density housing is seen relative to the rest of the province (over 5 stories) which is expected as Saint John is an urban centre, however these rates are lower than the national average.

Unemployment rates in the province are higher than the rest of Canada, though Saint John's unemployment is lower than the rest of province. This aligns with other data sources which note the high poverty rates in the City and province. A critical consideration of this study will be to support strong transportation networks throughout the City to help meet mobility challenges and connect residents with employment, education, healthcare and other essential services.

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The transit mode share in Saint John is higher in comparison to the province and lower than the rest of the country (almost half the national average) which suggests there is not as a strong of a transit culture in the City or province. This is likely in some part due to the geographic makeup of the City which sees significant urban sprawl around the city centre, making it challenging to provide efficient and convenient transit service. It may also be a result of the lack of transit in the province outside of the Saint John, Moncton, Fredericton, and Miramichi metropolitan areas, and the lack of dedicated funding committed provincially to transit operations.

Table 3-1: Demographics of Saint John

Source: Statistics Canada, 2016

Characteristic	Saint John	New Brunswick	Canada
Total population (2016)	67,575	747,101	35,151,728
Total population (2011)	70,063	751,171	33,476,688
Population change (2011 - 2016)	-3.6%	-0.5%	5%
Population density per square kilometre	213.9	10.5	3.9
Dwellings	30,208	319,773	15,412,443
Average household size	2.2	2.3	2.4
Median household income	52,132	59,347	70,336
Unemployment rate	9.6%	11.2%	7.7%
Labour force	34,150	381,790	18,672,475
Recent immigrants	1,550	9,330	1,212,075
(Visible) Minority groups	6.7%	3.3%	22.3%
First Nations	2.1%	3.9%	6.2%
Male	47.5%		49.1%
Female	52.5%		50.9%
14 and younger	15%	14.8%	16.6%
15-34	24.1%	21.8%	25.3%
35-64	41.8%	43.5%	41.2%
65 and older	19.2%	19.9%	16.9%
Average Age	42.9	43.6	41
No degree	19.4%	22.0%	18.3%
High school only	32.9%	28.5%	26.5%
College degree	22.3%	21.8%	19.4%
University degree	16.2%	16.7%	23.3%

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Owned	55.5%	74.4%	67.8%
Rented	44.5%	25.0%	31.8%
Single detached home	41.5%	69.3%	53.6%
Semi-detached home	3.4%	3.9%	5.0%
Apartment (<5 storeys)	29.7%	13.8%	18.1%
Apartment (>5 storeys)	5.9%	1.2%	9.9%
% Spending >30% of income on housing	24.1%	16.8%	24.1%
Mode of Commuting			
Car (driver)	72.8%	83.6%	74.0%
Car (passenger)	11.2%	7.7%	5.5%
Transit	6.6%	2.3%	12.4%
Walked	7.9%	4.6%	5.5%
Bicycle	0.3%	0.4%	1.4%
Other	1.2%	1.5%	1.2%

3.2   POINTS OF INTEREST

To understand where residents of Saint John need to travel, a number of points of interest have been mapped alongside the transit network including schools, hospitals, shopping facilities, recreational facilities and City facilities. As illustrated in Figure 3-2 , the transit network provides adequate coverage to the majority of these destinations. However, considering frequency and service spans, the points located within the city centre are much better served by higher-quality (frequent, accessible, and reliable) transit.

Transit Propensity

Figure 3-2: Points of Interest in Saint John
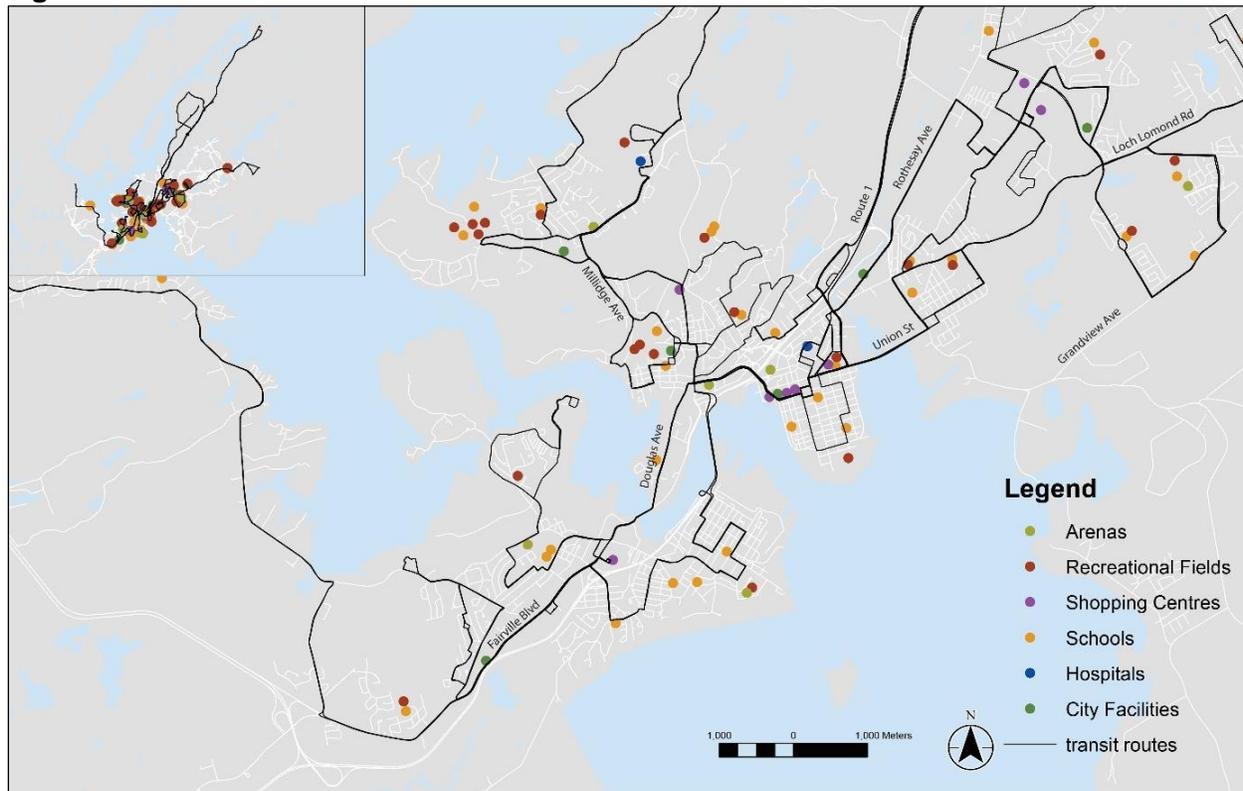
4.0 TRANSIT PROPENSITY

To understand the current market for transit in Greater Saint John a number of transit propensity measures have been considered. Overall, the City sees both strengths and challenges in delivering a strong transit service. The analyses presented in this section illustrates a large increase in newcomers as well as a significant low-income population in various areas in the City, both of which often demonstrate higher transit use. As such, opportunities may be explored to capture this ridership and deliver services to residents who rely on it. Additionally, Uptown and the Regional Hospital serve as large employment areas in the City and both are served with frequent (15 minute) transit service throughout the day, though the consideration of employment hours outside the current transit service hours can be investigated to further meet travel needs in the City. Lastly, commuting flow patterns suggest that the Comex routes are serving key commuter markets to the northeast.

The future land use layout of the City will support transit service to key employment, commercial and mixed-use areas found in the city centre, however the low-density residential areas surrounding the city centre and dispersed nature of the City make it challenging to service effectively with fixed routes on a limited operating budget. Additionally, the West Side poses geographical challenges as the area is separated by the Saint John River with only two points of connection to the city centre. The decline in population in the city centre and increase in the surrounding suburban communities also presents

additional challenges. Lastly, the large supply of parking within Uptown and around the city makes it challenging for transit to compete with personal vehicle trips as a commuting option which was noted by many residents.

4.1 LAND USES

As part of the PlanSJ document a future land use map was created to guide the development of the City as illustrated in Figure 4-1. The map identifies the entire city centre as a primary development area. All planned intensification areas highlighted within this boundary are currently well supported by transit and provides access to various employment, commercial and mixed-use destinations. Additionally, a large industrial park on the East Side serves as a major employment area in the City and presents opportunities to investigate the interest and feasibility of greater transit service to this area. Furthermore, it will be important to explore opportunities to maintain strong transit connections to the regional retail centres identified in the East and West Sides as well as to the medium density residential area in the Lower West Side given the limited connectivity to the rest of City due to the river.

Figure 4-1: Future land use map of Saint John

Source: City of Saint John, 2014
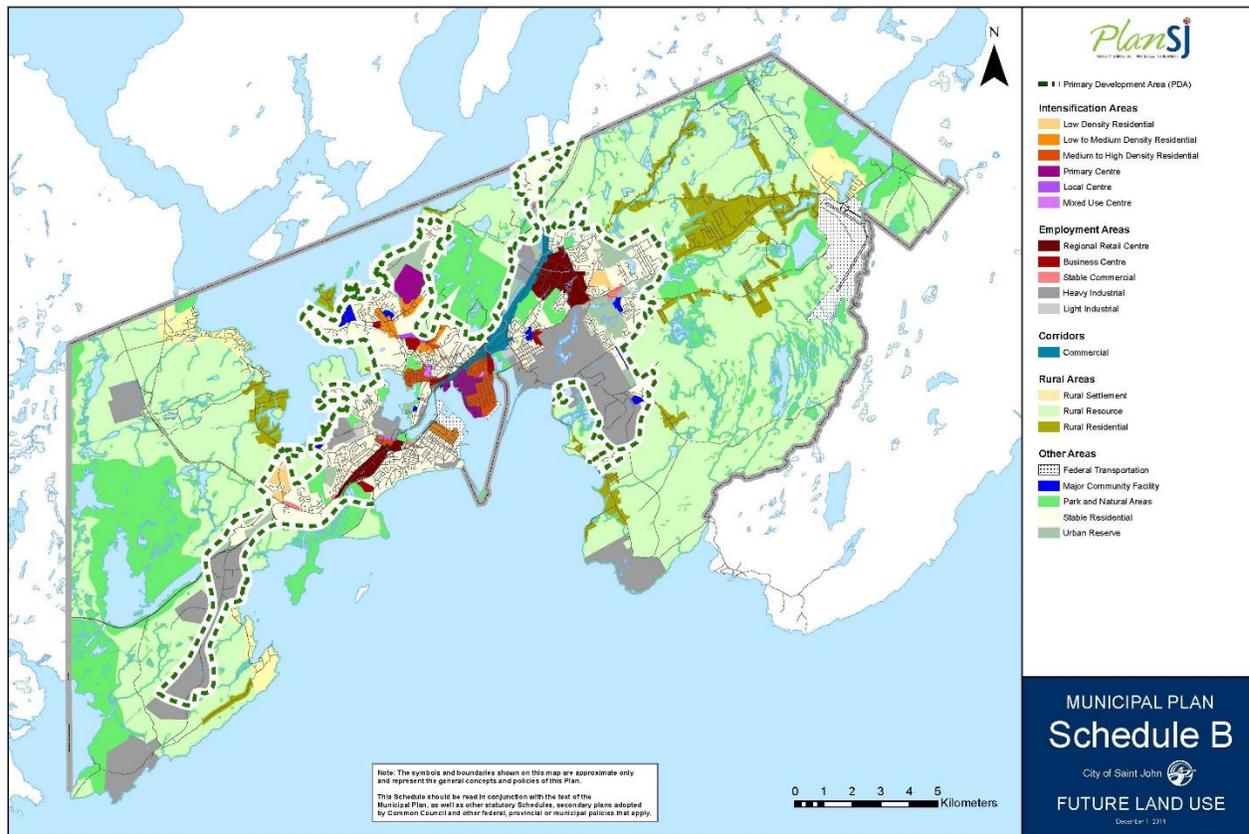
4.2 POPULATION DENSITY

Considering population density throughout the City, greater densities are seen outside the city centre including in the Millidgeville area located northwest of Uptown which has a significant immigrant population, who tend to be more likely to be transit users, and is identified as a key growth area in the City. This suggests that opportunities to maintain transit service to this area is and will continue to be critical. Additionally, greater density is seen east of the City in the Champlain Heights area. Greater density is also observed in the more suburban communities located to the northeast, including Rothesay which is currently serviced by Comex. This aligns with trends noted in background planning documents including a reduction in population within the city centre and a growth in the surrounding suburban communities. This shift in population often fosters a strong car culture and presents challenges in maintaining the effectiveness and efficiency of fixed-route transit as the city evolves.

Figure 4-2: Population density in Saint John
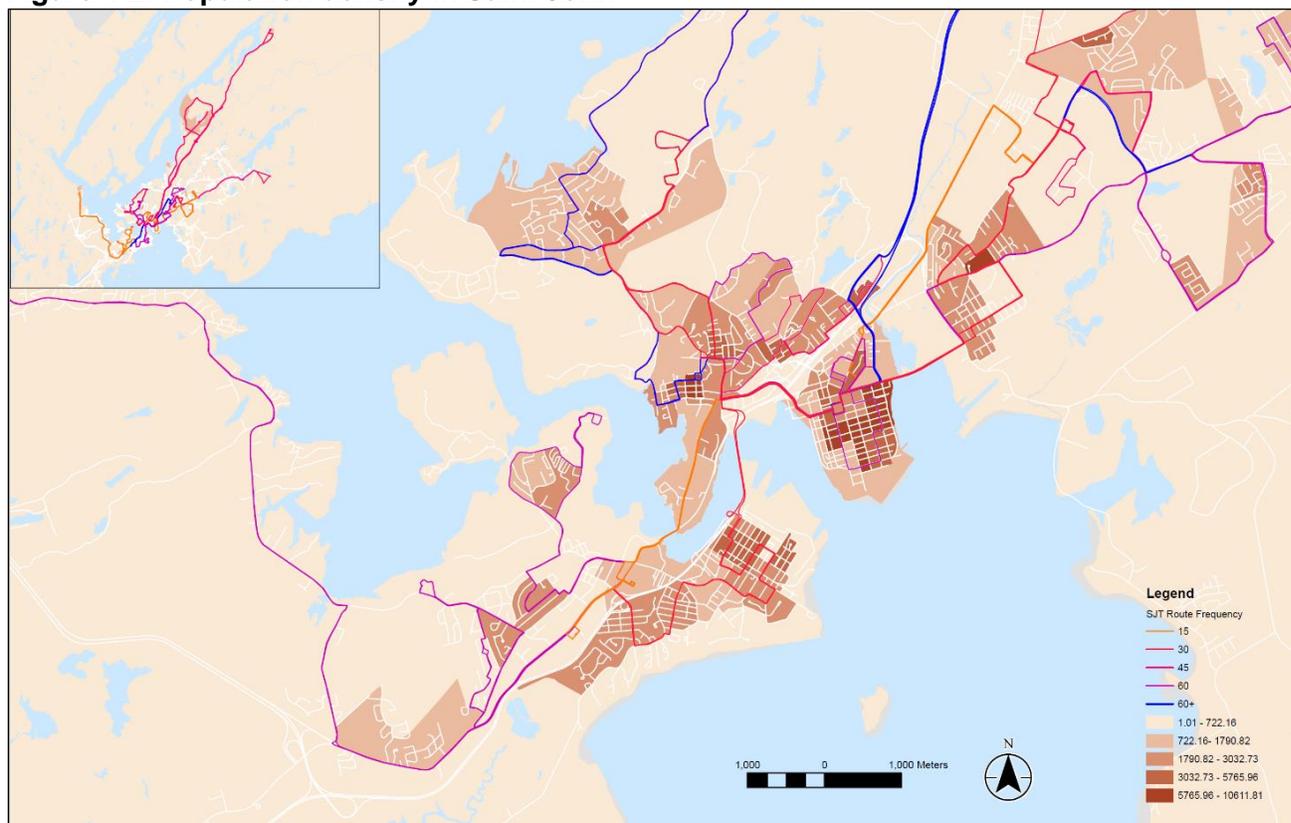
4.3 EMPLOYMENT

To understand where jobs are located within Saint John the number of employees broken down by dissemination area is illustrated in Figure 4-3. As expected, a large concentration of jobs are located in the Uptown area which is currently well served by the transit network. Additionally, the Regional Hospital serves as a major employer which is located to the north in Millidgeville. Currently there is frequent service (15 minutes) to and from the hospital, and while many hospital workers do use transit, there are

several shift times that do not align with the hours of transit service since the hospital operates 24/7. This offers an opportunity to explore potential partnerships with the management of Saint John Regional Hospital to operate a shuttle type service for their employees, which was also mentioned in the SJT Ridership Survey in 2018, especially for those who travel outside of conventional transit service hours. Additional employment pockets can be seen in Rothesay as well as in the East Side where the Irving Oil Refinery is located. Similarly, in the West Side additional jobs can be seen likely tied to the Irving Pulp and Paper Mill. There is significant industrial employment in the City with varying shift hours which is important to keep in mind when considering how the community can be best served by transit.

Figure 4-3: Number of employees per dissemination area in Saint John
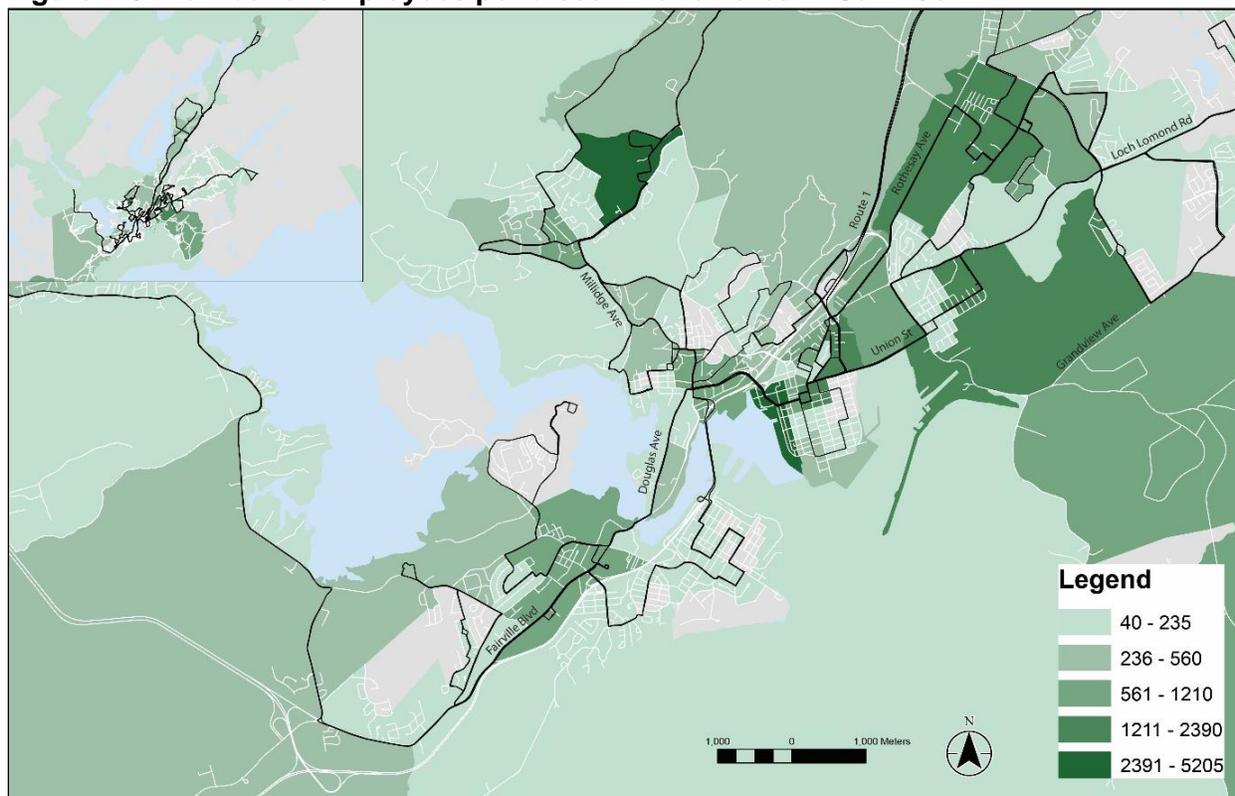
4.4   INCOME

Given the high poverty rates and unemployment rates observed in Saint John, various studies and analyses have been completed to understand root causes of poverty and priority areas of focus within the City. A figure was created by the City illustrating the prevalence of low-income households based on 2016 Statistics Canada census data. This map illustrates that higher proportions of low-income populations can be seen within the city centre, aligning with where service levels are higher. Additional prevalence of lower income populations is observed in the North and West Sides of the City which do not currently have service to the extent that exists in and around the city centre. It is important to note the correlation between low-income populations and transit ridership as many of these individuals use transit as a primary mode without alternative means of travel, while also keeping in mind that many perform essential work to continue to support the functioning of the City.

Transit Propensity

Figure 4-4: Prevalence of low-income populations in Saint John

Source: City of Saint John, 2016

Prevalence of Low Income Households in 2015 by Dissemination Area (Saint John Census Metropolitan Area)
Fréquence de ménages à faible revenu en 2015 selon les aires de diffusion (région métropolitaine de recensement de Saint John)
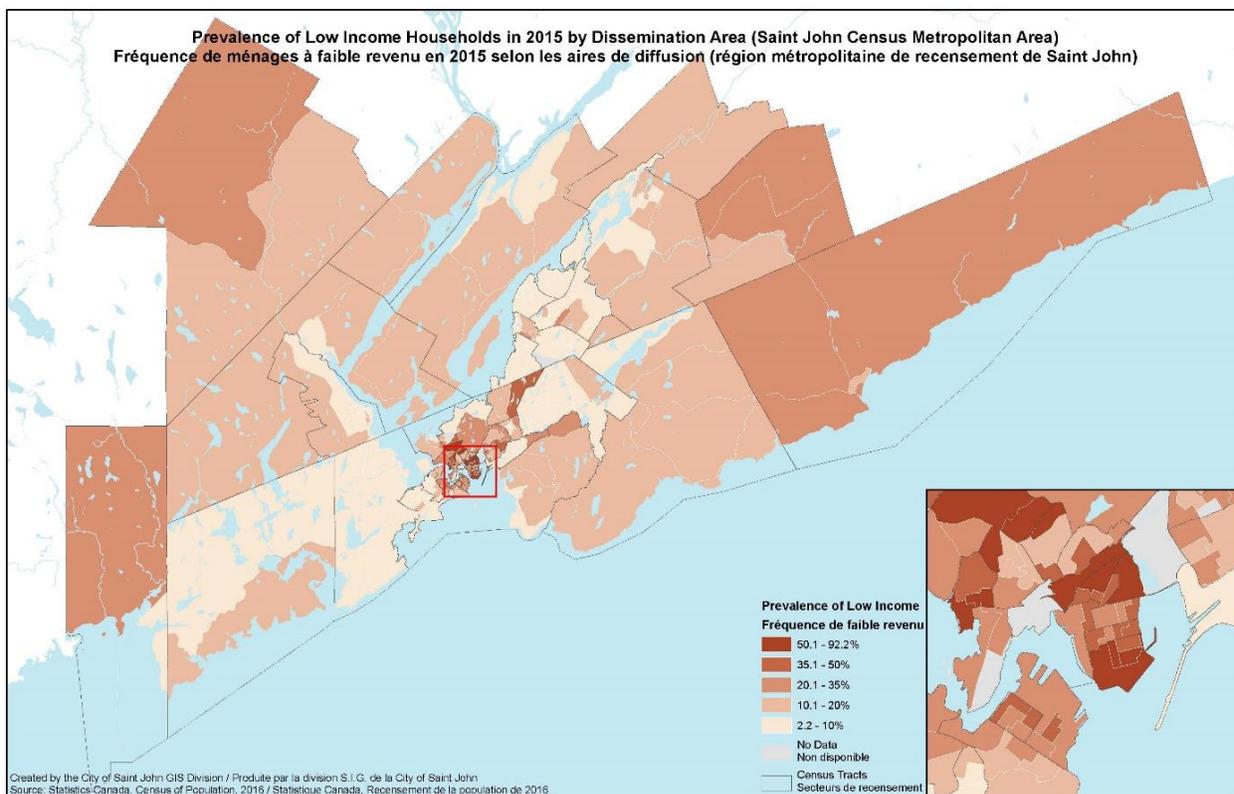
4.5   VEHICLE PARKING

The use of transit can often be correlated with the availability and affordability of parking within urban areas. There is typically noted to be adequate availability and affordability of parking within Uptown and the city centre. The available parking lots have been mapped in Figure 4-5, with darker lots containing a greater capacity of parking spaces. A large capacity of parking is available in the Uptown area- coupled with relatively low traffic congestion in the City makes driving a convenient commuting option for many residents within the Greater Saint John Area. While the transit system provides connections to some park-and-rides, moving forward, a close connection between parking and transit will help to provide an integrated network and potentially leverage parking lots just outside the City for commuters and visitors to park and take transit into Uptown. A strong variable in this will be the cost of parking relative to transit where there needs to be a higher parking cost to incentivize the use of transit.

Transit Propensity

Figure 4-5: Vehicle parking lots in Saint John
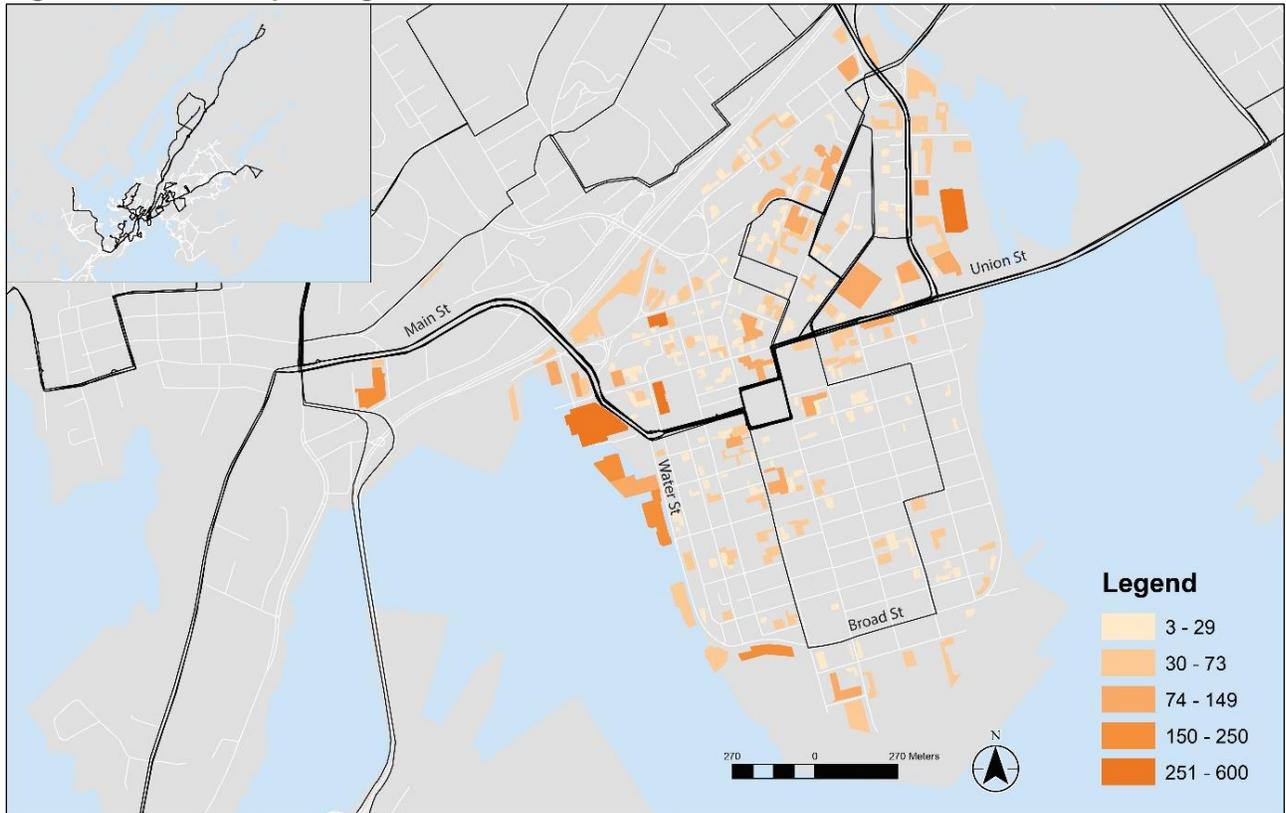
4.6   COMMUTING FLOW

The City completed a commuting flow map illustrated in Figure 4-6 which indicates commuting patterns within the Greater Saint John Area. A large number of commuters are traveling between Uptown Saint John and Rothesay and Quispamsis, which aligns with how the Comex commuter service is currently structured. Significant commuting flow is also observed between Uptown and the East and West Sides of the City.

Transit Propensity

Figure 4-6: Commuting flow patterns in Saint John

Source: City of Saint John, 2016
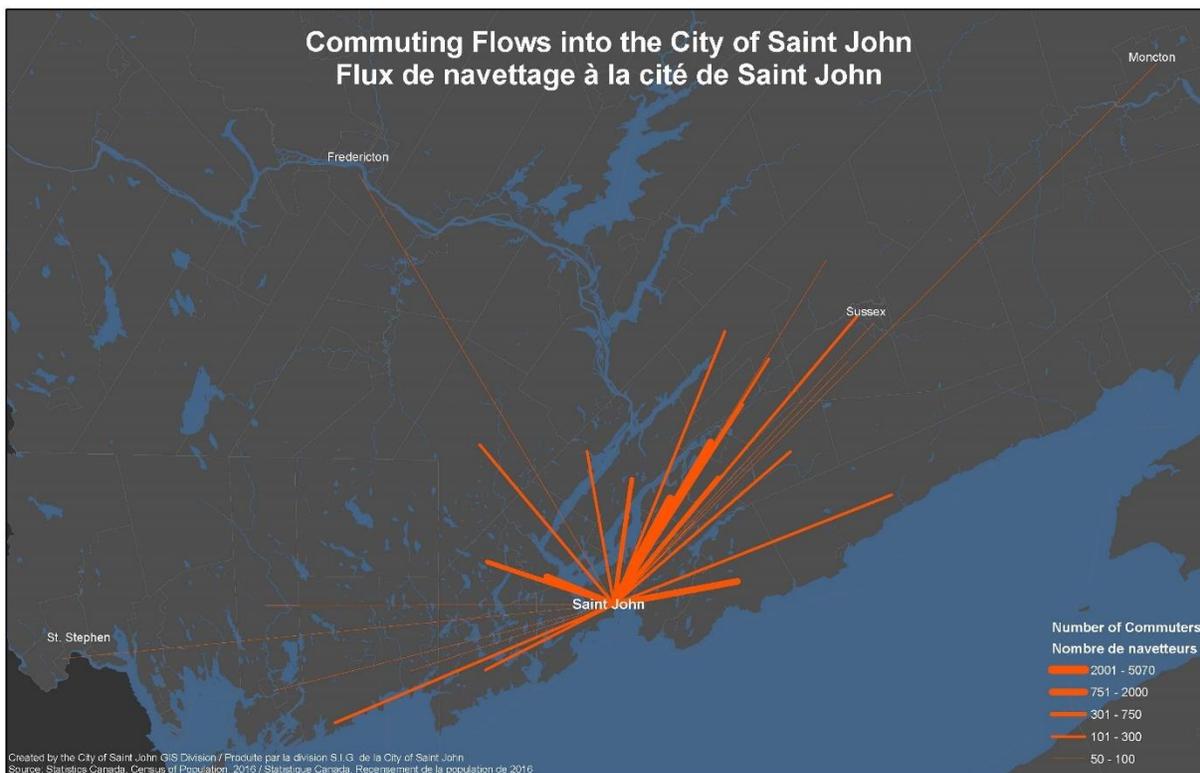
4.7   RECENT IMMIGRANT POPULATION

The attraction and retention of newcomers to Saint John has been identified as a key strategy to drive population growth in the City going forward. To aid in this initiative a Saint John Newcomer application was created to share facts, figures, and resources related to newcomers in the region. Figure 4-7 illustrates patterns of recent immigrant settlement in the City between 2011 and 2016 taken from the application.

The data illustrates that 30% of immigrants in the Greater Saint John area arrived between 2011 and 2016 with a large concentration in Millidgeville. Similar patterns of settlement were seen among immigrants who arrived between 2001 and 2010 who account for 20% of the immigrant population. The settlement of many immigrants in Millidgeville largely contributes to the growing population seen in this area. This also applies to a lesser extent to other areas surrounding the city centre. Given that newcomers have a higher tendency to use transit and that they will make up majority of the growth in Saint John into the future, a critical consideration will be investigating ways to maintain high-quality transit service to and from Millidgeville and other areas with high immigrant populations.

Figure 4-7: Recent immigrant settlement patterns in Saint John between 2011 and 2016

Source: City of Saint John, 2019
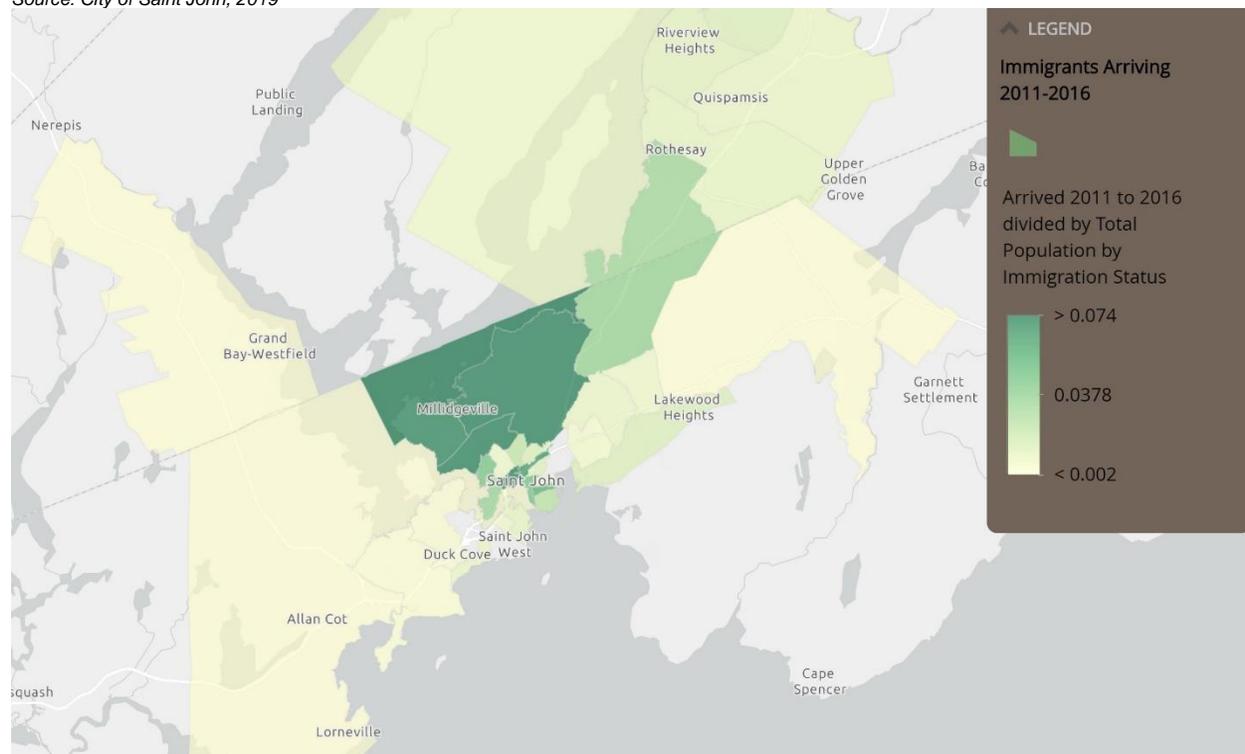
5.0 WHAT WE HAVE HEARD

As a component of the Saint John Transit Operational Audit, Stantec and the City hosted several engagement activities to solicit the direct input from riders, non-riders and key stakeholders of SJT. These activities were predominantly held over two days, March 12 and 13, 2020. A full overview of engagement insights can be found in Appendix B. The following activities occurred:

- Online survey
- Public meeting
- Ride-alongs
- Off-board engagement
- Bus operator workshop
- SJT staff meetings
- Transportation equity meeting
- Newcomer meeting
- Population growth meeting
- Neighbourhood focus group
- Transportation provider meeting
- Saint John Ability Advisory Committee Meeting

TASK 9: FINAL REPORT (DRAFT)

What We Have Heard

The public meeting and online survey were advertised around transit shelters located in key hubs throughout the city, on Facebook and through the City and SJT websites. Additionally, the event was advertised to riders and non-riders during in-person engagement.

The purpose of the engagement was two-fold:

- to collect feedback from riders, non-riders and key stakeholders to understand their priorities, as well as the challenges and successes of the current SJT system; and
- to gain insights from SJT and City staff to understand the operations and the operating landscape.

The information collected was complied and reviewed to understand opportunities and challenges, and their relative importance, to help inform the existing conditions review of the transit system.

5.1 EMERGING THEMES

Through meeting with various stakeholders, extensive feedback was received. It became clear that people are, by and large, satisfied with the service and have a positive impression of SJT. Many residents, including lower-income residents and recent immigrants, depend on the transit service to access work, school and other essential services. At the same time, a number of themes emerged with respect to common challenges with the transit system –

Service span:
- Riders noted the desire for extended service hours outside of main line routes during evenings and weekends. It was noted that people are experiencing difficulty accessing various jobs, notably in customer service and industrial workplaces, and other roles without 9-5 schedules.

Service frequency:
- Greater service frequency is desired during the day on various routes, especially for those where service stops operating during the midday.
- Students expressed additional frequency is desired in the evening to return from campus. The University was noted to be well served by Main Line routes 3 and 9 whereas the Community College has less frequent bus service with limited service during evenings and weekends.

Customer information:
- There is an opportunity to improve bus stop signage, schedule clarity and wayfinding. This would be especially beneficial for those who may not be overly familiar with the system including newcomers, non-English speakers and students.
- Automated next stop announcements and digital displays are periodically not working. Relatedly, bus times on the current application were noted to be unreliable.

Service reliability:
- Many riders reported that they frequently observe instances of buses arriving significantly early or late. For routes with infrequent service this can result in considerable wait times.

Policies and practices:
- Fare evasion was mentioned to be prevalent across the system, and labour-intensive fare collection practices detract from efficiency.
- The scheduling of service is done manually which requires significant time, which effective prevent SJT from adjusting service based on the season.

5.2   SURVEY HIGHLIGHTS

Stantec administered a survey to obtain feedback from riders and non-riders in the context of the Transit Operational Audit. In total, 1,213 surveys were completed. The survey highlighted what aspects of the transit service respondents are satisfied with, and aspects which need attention. While a majority of respondents felt that the service is a positive addition to Saint John, a variety of concerns were expressed by respondents who are deeply familiar with the service. Key considerations expressed include:

- **Driver Behaviour:** While many respondents were satisfied with the level of customer service received by the bus operators, some reported negative experiences which have damaged their outlook on Saint John Transit. Examples of such behaviour include aggressive driving styles, quickly pulling out of stops before riders are able to sit, and the perception of unsanctioned breaks contributing to issues with schedule adherence.

- **Frequency:** Respondents felt that bus frequencies on some routes were not adequate for their needs. This issue is intertwined with other service factors such as directness of routes, and schedule adherence.

- **Evening and Weekend Service:** Respondents reported that bus schedules on weekends, and especially Sundays, don't reflect the reality for many Saint John Transit riders who use the service to access employment on all days of the week. Similarly, some riders finish shifts after the last bus on their route(s) has departed, forcing them to find alternative modes of transportation to return home.

- **Cleanliness of Buses and Quality of Bus Stop Infrastructure:** Riders reported that the cleanliness of buses and bus stops can sometimes be below expectations. Riders reported difficulty in the winter accessing some bus stops due to build-up of snow and ice. Transfers can be made more difficult when waiting at transfer locations which lack bus shelters to protect from inclement weather.

- **Service Coverage and Connectivity:** Both riders and non-riders remarked that the coverage of existing bus routes did not service all areas of the city. In general, respondents expressed frustration at the cycle of ongoing service cuts, reducing or eliminating transit service in areas such as Red Head. Some comments also pointed out that the existing route structure is largely designed to move passengers from outlying areas to Uptown, but don't provide strong crosstown connections.

The recommendations emerging from the Operational Audit attempt to address these challenges as best possible within budgetary limitations. It must be appreciated that many of these challenges involve trade-

offs; for example, to increase service frequency during the day, additional financial resources will be required, which means things will have to give in lieu elsewhere across the SJT operation.

6.0 BACKGROUND DOCUMENT REVIEW

To understand recently completed or ongoing planning initiatives in the City, a background document review was completed. Relevant studies and plans have been examined to identify themes, opportunities and constraints of transit and transportation in the City. A summary of key documents considered and their relevance to this Operational Audit has been detailed below.

6.1 FROM SURFACES TO SERVICES, 2017

This document serves as a transportation strategy for New Brunswick from 2017 through to 2037. The strategy is intended to make transportation more affordable, accessible, available and sustainable. Its goal is to improve economic inclusion and quality of life for residents of New Brunswick. Key recommendations that came out of the study include:

- Clarify roles and responsibilities for various transportation services in the province;

- Improve the planning and alignment of transportation services;

- Improve and integrate transportation data into decision making processes;

- Improve the affordability and access to multiple transportation options throughout the province; and

- Develop an action plan to implement the strategy.

Relating to this Operational Audit, opportunities to provide more efficient, affordable and accessible transit will be explored as well as the potential to integrate transit with various transportation and public services. This study will use the data available to guide recommendations while also identifying where additional data capturing or monitoring is required.

6.2 MOVE SJ, 2017

Move SJ is a transportation planning document that will design how people and goods move through the City over the next 25 years. The plan is broken down into three phases. Phase 1 is comprised of research, Phase 2 is the plan development including consultation and Phase 3 is the finalization of the plan. The plan reviews all transportation networks in an integrated way including roadways, transit, and active transportation. The City has a long history of urban sprawl which is supported by the provincial throughway (Provincial Route 1) that bisects the City splitting the north and the south. This provides easy driving access to the city centre from neighbourhoods to the east and west while simultaneously creating a challenging environment to provide transit in these areas.

Background Document Review

There are two bridges connecting across the Saint John River with only one providing non-motorized access which creates challenges accessing the city centre from the West Side.

Some public feedback from the plan included the following:

- The City is designed in such a way where families need two cars unless they live in Uptown which is walkable;

- The student population feels there should be more Comex service in the afternoons;

- More user-friendly transit information (bus stops, route directions etc.) is needed;

- Some buses travel to Rothesay with no one on it warranting the consideration of smaller buses; and

- People like bicycle racks on buses for multi-modal trips.

A series of deliverables were completed for this plan, a summary of relevant transit findings are summarized in the subsections below.

6.2.1 Move SJ Phase 2- Transit System Review, 2017

A review of the transit system was completed to understand the current state of operations. According to Canadian Urban Transit Association (CUTA) reporting the system ridership has been decreasing since 2010. At the same time, the financial performance is higher than peers including lower operating expenses, which although advantageous in the short-term, reflects low levels of investment. A declining investment in transit contributes to the ridership lost over the past decade.

The ridership decline can also be attributed to the population distribution. The population within the City has decreased since the 1970s, which makes up the main catchment area of the transit system, while the suburban communities, where transit service is more challenging to provide and less likely to be used, has grown.

A rider profile that was developed revealed a few noteworthy items. First, transit ridership is highest among young people under 35 and elderly people over 55. Second, transit trips are predominantly made between AM and PM peak hours for school and work purposes. Finally, key neighbourhoods for transit use include Uptown, Indiantown, Saint John East, Eastmount, and the Fairville Boulevard corridor.

Additionally, the 2015 Household Travel Survey shows main trip generators to include the following:

- Uptown (main employment centre)

- University of New Brunswick Saint John Campus

- Saint John Regional Hospital

- Rothesay Avenue corridor extending north-east from the city centre to Eastmount. Several retail stores are located along the corridor with some big box stores located in Eastmount.

6.2.2   Saint John Transit Long Term Vision, 2018

The Saint John Transit Long Term Vision was completed as part of Phase 2 of Move SJ. As part of the vision a proposed service hierarchy was recommended including a frequent service with 15 minute headways, local service and target (demand response) services. The coverage goal set was that 85% of households and employment should be within 500 metres of frequent transit.

Short term focuses include a review of route alignments, schedule inconsistencies and service duplications to create more direct, efficient and easy to use service. Additionally, long routes with large service areas and low ridership were recommended to be identified as potential candidates for on-request service.

Opportunties to increase service or frequency included the West Side, North End and East Side. Opportunites to rationalize or decrease service included the Comex commuter service, service to the airport and service further northwest into South Bay.

6.3   MUNICIPAL PLAN, 2010

The Municipal Plan was created as part of Plan SJ and was a product of an extensive two-year engagement process to capture the visions and goals of residents for the future growth of the City. The plan leverages existing infrastructure to support efficient and cost-effective growth that enhances the quality of life of Saint John residents. Among other deliverables the Plan provides future land use and transportation maps.

Dominant themes from the engagement include:

- A need for more diverse communities (income, age, and race) and the City should be more attractive to young people;

- Uptown should be more vibrant with art, culture and nightlife;

- The geography of the City limits should shrink to reduce the amount of infrastructure the City looks after and focus on growing the City including infill development and strategic growth;

- Need to improve existing green spaces in the City;

- Improved wheelchair accessibility on transit;

- Consider shift-based employees with respect to public transit, for example the hospital and the refinery are 24-hour workplaces; and

- Ensure municipal and provincial parks are well served by transit.

6.4   NORTH END NEIGHBOURHOOD TRANSPORTATION PROJECT, 2017

This study investigates a gap in transportation services within three Priority Neighbourhoods in Saint John including the Old North End, Crescent Valley and Anglin Drive. These neighbourhoods contain high

concentrations of poverty and an increasing newcomer population. Both population groups tend to have lower rates of vehicle ownership with limited access to additional means of transportation, making them often transit-dependent.

Through engagement and an evaluation of various options the study recommended that the Living SJ-Neighbourhood Collective Impact Team develop a transportation social enterprise that would provide affordable transportation services to low-income North End residents. The system would be a demand-response transportation system that could either be a service available only to target populations or an open market approach where revenue earned is used to subsidize rates for low-income members. These recommendations suggest investigating the feasibility of some form of demand-response transit in the North End and the Living SJ-Neighbourhood Collective Impact Team may be consulted for potential collaboration and to ensure efforts are not duplicated.

6.5 CENTRAL PENINSULA SECONDARY PLAN, 2019

The Central Peninsula Secondary Plan serves as an area-specific planning document to guide the development of the Central Peninsula area which consists of the city centre area. The Central Peninsula is made up of the Uptown, South End and Waterloo Village neighbourhoods. This area is characterized with a much larger walking and transit mode share than other areas of the City, which when coupled with the significant water frontage makes this area a strategic location for development.

The Uptown neighbourhood contains the majority of offices, restaurants and commercial uses in the City. The South End neighbourhood is primarily residential with some mixed-use and local neighbourhood commercial throughout and contains some low-density business development. Lastly, Waterloo Village consists of a mix of residential, commercial and community spaces including St. Joseph's Hospital. Currently, all of these neighbourhoods maintain good transit access. Possibilities to maintain this access will be important to consider given the future plans for development and the large concentration of employment, housing and commercial uses.

6.6 SAINT JOHN TRANSIT RIDERSHIP SURVEY, 2018

SJT conducted an extensive on-bus ridership survey on all routes over a 10-day period. Key recommendations made by riders included the following:

- Improve accessibility on buses including making visual displays and audible stop announcements more clear;

- Improve schedule accuracy on current mobile application;

- Improve timed connections between feeder routes to connect to main lines;

- Establish greater customer service and/or sensitivity training for drivers;

- Enable the electronic purchase of bus passes;

- Improve marketing and communications particularly for newcomers;

- Explore potential partnership with the management of Irving Oil, JDI, and Saint John Regional Hospital to provide reliable shuttle services for their employees at a discounted fee. Notably, many shift workers arrive and leave at the same time which would work well with a coordinated shuttle;

- Majority of respondents noted they would be willing to transfer if higher frequency service was available;

- Sunday and holiday schedules are inconvenient- service should begin earlier and end later;

- Comex service is perceived to be more expensive than driving into Uptown every day and paying for parking. Additional timing issues were noted on the service where many routes arrive just after 8AM however many people start work at 8AM;

- There is interest in a daily/weekly/family pass especially on routes to low-income areas such as the Crescent Valley, Wright Street, and North and South routes.

6.7   CITY OF SAINT JOHN POPULATION GROWTH FRAMEWORK

Saint John has seen a decline in its population over the last 45 years with a reduction of nearly 25%. In efforts to reverse these trends, a coordinated effort has been made to grow the population through attracting and retaining new residents. Furthermore, this growth is anticipated to be mostly from international migration. The objectives set in this plan are three-fold:

- Attract new people to Saint John;

- Enhance the newcomer experience in Saint John; and

- Retain our population in Saint John.

As part of the strategy to enhance the newcomer experience in Saint John a newcomers guide is recommended. Within the guide critical transit information should be provided to support newcomers in moving around the City and grow the ridership base. Making the transit system easy to use and navigate will be critical to grow and maintain ridership especially for newcomers who are a fast-growing percentage of the population. Additionally, investigating options to serve areas with high newcomer populations will help to enhance mobility while also growing ridership.

7.0   SYSTEM ANALYSIS

To take a deeper dive into the service performance, an analysis of operations and financial data is presented below. Data was considered at both a system and route-level where needed to capture the strengths, challenges and opportunities of the system.

7.1 SERVICE OVERVIEW

The service offerings of SJT include fixed route services, accessible services, charter bus service (booked by larger groups), City tours and an airport service.

The fixed route service consists of 22 routes divided into 5 categories based on the area they serve:

- **Main routes (5)** connect the east, west, and north ends of the City to Uptown;
- **West routes (5)** serve areas west of the Saint John River including the Lower West Side;
- **East routes (5)** serve areas east of Uptown Saint John; and
- **North-south routes (4)** serve Uptown, the South End, the Old North End, Waterloo Village, Crescent Valley, Millidgeville, Saint John Regional Hospital, and the University of New Brunswick Saint John Campus.
- **Comex (3):** express commuter service which connects the eastern suburban communities of Quispamsis, Rothesay, and Hampton to Uptown

The Handi-Bus is the specialized transit service offered by SJT. The service consists of wheelchair accessible buses which serve persons with mobility limitations or special needs, and seniors unable to use conventional public transit. The hours of operation are weekday from 7am to 6pm (extended to 9pm Tuesdays and Thursdays), 11am to 6pm on Saturdays and 11am to 5pm on Sundays. Trips are booked via phone during office hours of 8am to 4pm. Trips can be made within the service boundaries of SJT service and is only for Saint John residents. A single cash fare is $5, $45 for a 10-ride pass, $80 for a 20 ride-pass and charter fares are $60 per hour where companions ride free on the service.

7.2 PERFORMANCE INDICATORS

Based on feedback from SJT and City staff, there are currently no performance indicators used to monitor the health of the system or standards which are used to flag when further investigation into service is required. However, within Phase 1 of the transportation planning document, MoveSJ, the following service standards were mentioned that guide transit service planning:

- Routing is designed with a goal that 85% of the population is within 500m of a transit route;

- Aim to maintain service with 20-minute headways on main routes between 6am and 12am; and

- For service that operates with 30-minute frequencies during peak periods and 60-minute frequencies on off-peak periods, service aims to be maintained between 6am and 10pm.

Based on a current network review, the first metric is not currently being met which is likely due to the dispersed nature of the City which makes it challenging to offer adequate amounts of coverage in an effective manner. On weekdays the main line routes do maintain 15-minute frequencies between the hours of 6am and 12am apart from Route 9 which ends earlier but runs parallel to Route 3. This however means that service along this alignment would reduce to 30 minutes once Route 9 stops operating which is around 7pm. For feeder services, there are many routes which end before 12am which was noted as a challenge for many riders. Additionally, on weekends all routes end earlier than the desired service span specified.

7.3   HEADWAYS

The service frequency along each route is illustrated in Figure 7-1. Route 1A/B operates with the greatest peak headways of 15 minutes, followed by routes 3A and 9A which run along a similar route to collectively provide 15-minute headways between McAllister Place and the Regional Hospital / UNBSJ Campus. The majority of routes operate with 30-minute peak headways with certain services stopping midday and/or operating with 60-minute off-peak headways. It can be seen that some areas in the North and West Sides are not served with high frequency transit (15-minute headways). Additionally, the Comex service operates with headways just over 60 minutes during peak hours.

Figure 7-1: Transit service frequency in Saint John
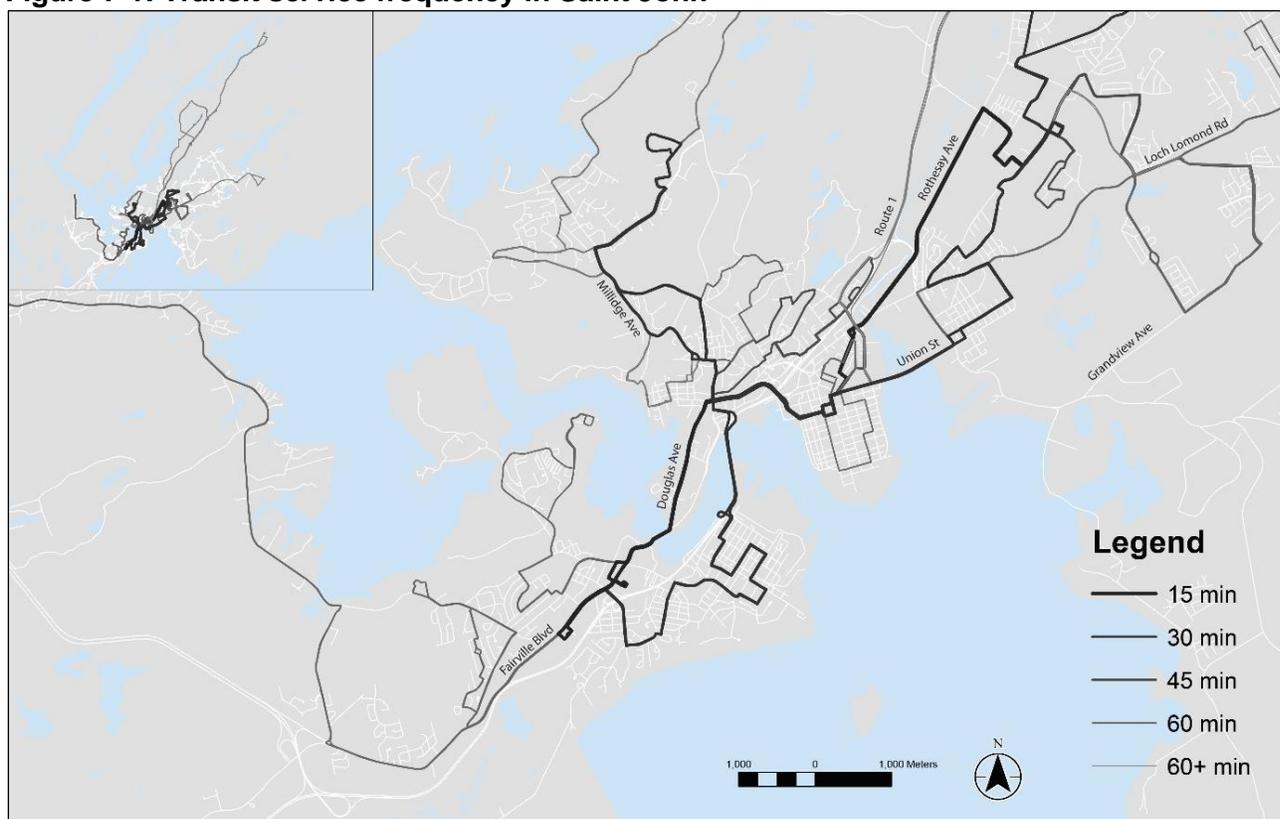
7.4   RIDERSHIP

To understand the current system ridership, average weekly passenger trips were considered over the 8 months of ridership data provided, along each route to account for seasonal variation.

The average weekly passenger trips illustrate that Routes 1A/B and 3A/B have the greatest system ridership, representing 23% and 28% of total system ridership respectively. This aligns with service frequency as these two routes have the greatest frequency on the network, with 15 and 30-minute peak headways respectively; notably Route 3A/B provides composite 15-minute service with Route 9A/B between McAllister Place and the Regional Hospital / UNBSJ as noted above. Route 9A/B also has high

ridership (13%) as well as route 15A/B which connects Uptown to the West Side (10%). All other routes comprise less than 5% of the total system ridership, though also run on lower frequencies and for shorter service spans.

The Comex routes 51, 52 and 53 make up about 1% of ridership each - 3% in total, which is comparable to other low-frequency routes. However, given that this service only operates a few runs in the AM and PM peak hours, the service is quite productive despite the relatively low ridership. Through engagement, an increase in Comex service was noted to be desirable, specifically later into the evening and on the weekend. This, along with other stakeholder feedback received on service levels, will be explored further in the Operational Audit.

Figure 7-2: Breakdown of average Saint John Transit weekly ridership, 2019
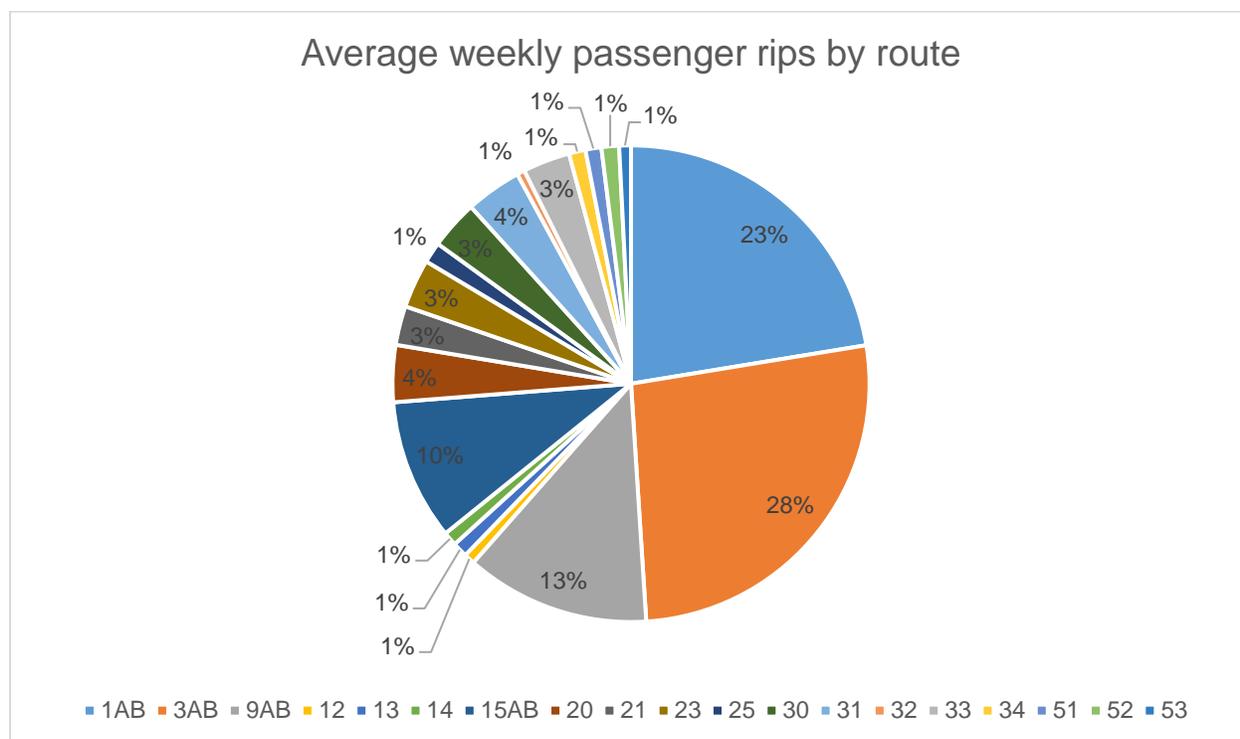
7.5   ON-TIME PERFORMANCE

To measure the reliability of the system and investigate commonly expressed challenges with bus arrival and departure times, the on-time performance (OTP) of the system was considered at a route-level. For the purpose of this analysis, early buses were considered to be anything beyond 5 minutes early of the scheduled time and late buses were considered to be anything that exceeds 5 minutes past the scheduled time. An average OTP was taken for each month in 2019 along each route. Notably, the current application's data collected is inaccurate at times and therefore these results have been used in conjunction with insights from other datasets and in collaboration with SJT staff, residents and key stakeholders, to highlight preliminary challenges and trends in service. The results are illustrated in Figure 7-3.

TASK 9: FINAL REPORT (DRAFT)

System Analysis

Overall, the system performance is adequate with 2% of service considered early, 9% considered late and the remaining 90% considered on-time. However it is important to note that while 2% of service operating early appears minimal, any service that is more than 0 minutes early, which is greater than 2% of current service, is problematic as it results in riders who arrived on time to miss their bus, therefore eroding customer satisfaction, reliability and forcing longer wait times, particularly on lower-frequency routes. Best practice in the industry is typically to define OTP as in between 0 and 3 or 5 minutes late.

Routes 23, 25, and 33 illustrate poorer OTP with 17%, 15% and 31% late service reported for each route respectively. Through feedback from bus operators, it was expressed that Route 33 can be challenging to operate on schedule due to the limited recovery time. Route 33 is a peak only service that operates with 60-minute headways making reliability crucial. It will be important to seek opportunities to reliably collect and monitor OTP for all routes to identify routes which show higher deviations so the cause may be determined and service alterations can be made where necessary. Additionally, the Comex service shows a significant amount of early service with routes 51 and 52 illustrating 5% and 6% respectively. Given this is a commuter service, with only a few runs in the AM and PM peak hours, there can be long wait times if the bus is missed. Furthermore, as commuters often need to arrive at a certain time for work, school or other scheduled activities, the reliability of the service would highly impact whether a commuter would choose to use the Comex service, particularly if they have access to alternative means of transportation. As such, opportunities to maintain reliable OTP, striving for no early service where possible, will be important to consider.

Figure 7-3: Average on-time performance, 2019
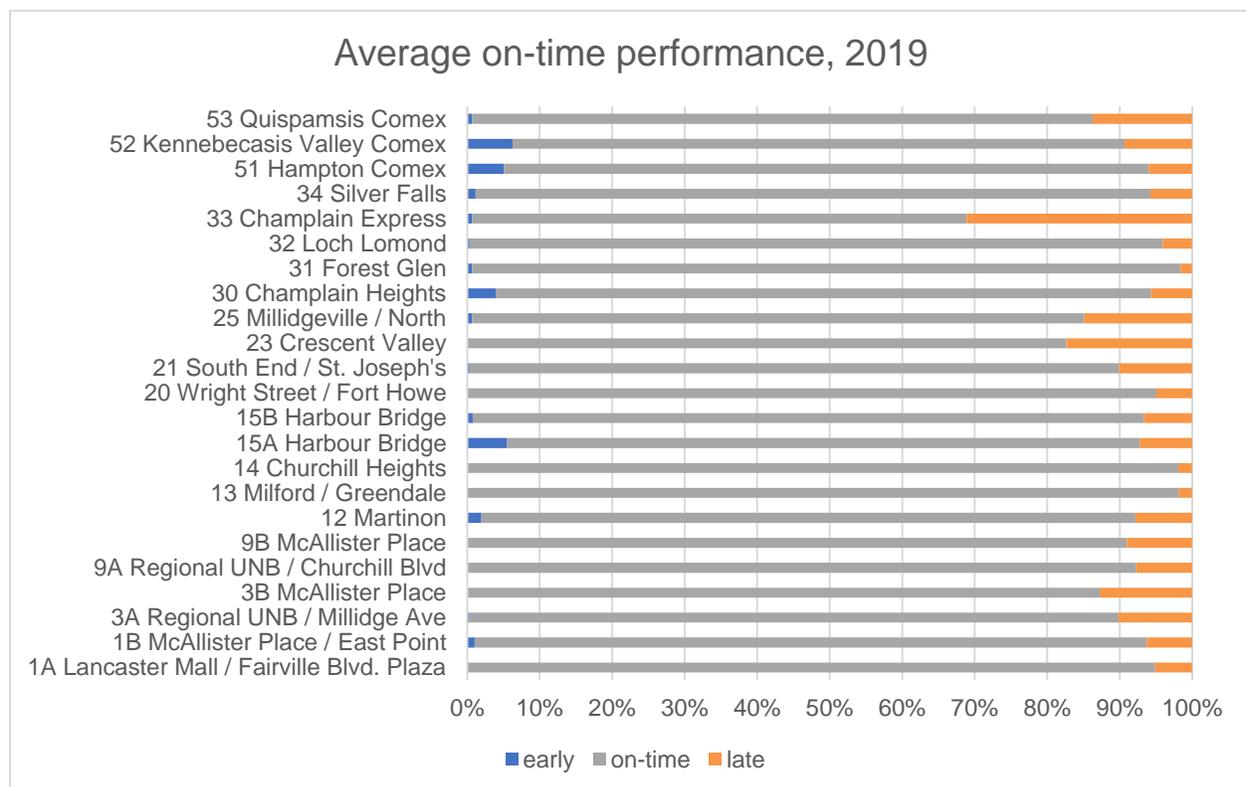
7.6 FARES

SJT currently offers single cash fares, monthly passes, 10-ride passes, 20-ride passes and a Comex service fare. An employee sponsored monthly pass is also available (for businesses with 20+ participating employees) which according to SJT staff, is not widely used. Fares differ for adults, seniors and children. According to SJT and City staff the last fare increase was in 2015. The fare types and associated prices are illustrated in Table 8-1 below.

Table 7-1: Saint John Transit fare products

Fare Type	Price	Notes
Single Cash Fare		
Adult Cash Fare (age 15 and over)	$2.75	
Senior Citizen Cash Fare (65 and over)	$2.50	
Child Cash Fare (age 6 to 14)	$2.50	
Child Cash Fare (age 5 and under)	-	First 3 children are free
Monthly Passes		
Monthly Adult Pass	$77.00	
Monthly Student Pass	$66.00	
Monthly Senior/Child Pass	$55.00	
Transcards (multiple rides)		
Adult 10-rides	$25.00	
Adult 20-rides	$50.00	
Seniors/Student 10-rides	$22.00	
Seniors/Student 20-rides	$44.00	
Comex Service		
One-way cash fare	$4.00	
10 ride punchcard	$38.00	
20 ride punchcard	$68.00	
Monthly pass	$125.00	Monthly pass holders can transfer to regular Saint John Transit buses for free
Employee Sponsored Monthly Pass		
Monthly Pass*	$112.50	A 10% discount is offered for companies to purchase a minimum of 20 monthly passes (Comex and regular passes)

7.7 FINANCIAL

A review of total revenue and expenses over the last 10 years reveals approximately a $5,000,000 shortfall. To gain a greater understanding of expenses and revenues of the Commission, a deeper dive into various aspects of the operation was completed in the context of the Operational Audit and is detailed in Section 15.0 of this report.

Peer Review

Figure 7-4: Saint John Transit total revenue and expense
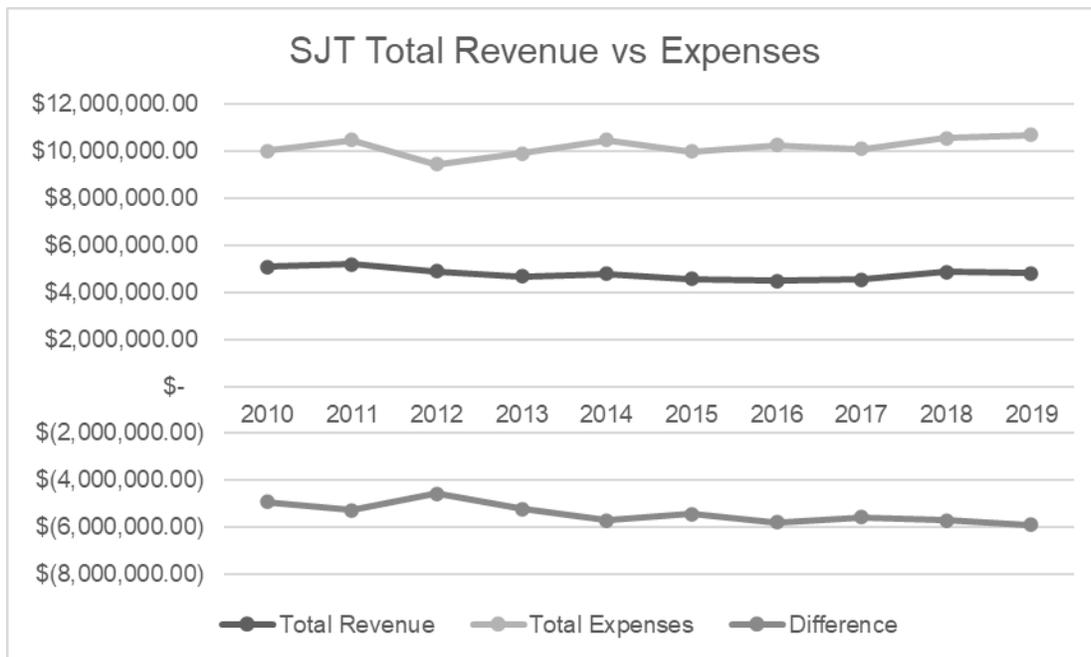
8.0 PEER REVIEW

By comparing Saint John Transit (SJT) to similarly sized transit systems, we can begin to understand areas where Saint John is performing well and where there may be room for improvement. Service area population was reviewed for all peer agencies over 2012 and 2018 to get a sense of any trends or growth. Peer agencies were chosen for having comparable ridership, agency size, and service area to Saint John Transit as summarized in Table 8-1.

Peer Review

Table 8-1: Peer Transit Agency Characteristics
*St. John's did not submit 2018 ridership to CUTA. 2017 ridership has been assumed for 2018.
Source: Canadian Urban Transit Association Fact Book

Agency	Location	Service Area – km² (2018)	Service Area Population (2018)	Service Area Population (2012)	Ridership (2018)	Peak Vehicle Fleet (2018)
Saint John Transit	**Saint John – Quispamsis – Rothesay – Hampton – Grand Bay (NB)**	**495**	**100,830**	**122,389**	**2,054,643**	**27**
Fredericton Transit	Fredericton (NB)	132	57,000	56,000	1,847,724	20
Kingston Transit	Kingston (ON)	132	121,775	112,759	6,797,799	62
Lethbridge Transit	Lethbridge (AB)	124	99,769	90,417	1,307,418	26
Codiac Transpo	Moncton – Dieppe – Riverview (NB)	231	116,940	111,512	2,397,013	24
Red Deer Transit	Red Deer (AB)	105	99,718	91,877	2,450,823	44
Metrobus (St. John's Transit Commission)	St. John's – Mount Pearl – Paradise (NL)	491	135,000	125,034	*2,999,802	41
Thunder Bay Transit	Thunder Bay (ON)	328	107,909	109,000	4,036,591	31

The chosen transit agencies displayed in Table 8-1 have populations between 50,000 and 150,000 people, and service census metropolitan areas (CMA) with older, urban cores surrounded by suburban settlements. According to 2016 Census reports, Saint John had the second highest share of respondents using public transit for journeys to work among the peer agencies at 4.1%. Many of these economies rely on similar industries as Saint John, such as forestry, fishing, manufacturing, and pulp and paper. Understanding the major industries that drive these economies allow us to acknowledge how Saint John residents and the transit environment may be impacted with industry downturns, growth, as well as learn from previous experiences among peer systems. It also allows us to structure transit to best support the travel needs of working residents and Saint John businesses. Details on industry employment in the locations that the peer agencies operate can be seen in Appendix C. Furthermore, the appropriateness of these comparative agencies was maintained by ensuring they had comparable income and labour force characteristics.

Table 8-2: Socioeconomic Indicators of Peer Agencies

Agency	Prevalence of Low Income	Median Total Income[1] ($2020)	Labour Force Participation	Unemployment Rate	Main Mode of Commuting – Public Transit
Saint John Transit	**16.7%**	**$61,191**	**62.9%**	**7.6%**	**4.1%**
Fredericton Transit	15.5%	$63,792	66.1%	5.8%	2.8%
Kingston Transit	13.3%	$68,647	62.9%	5.8%	6.8%
Lethbridge Transit	11.2%	$73,169	68.9%	4.0%	2.9%
Codiac Transpo	15.5%	$60,443	66.7%	5.1%	3.4%
Red Deer Transit	10.0%	$80,937	72.6%	6.6%	4.5%
Metrobus (St. John's Transit Commission)	12.0%	$74,640	66.0%	7.0%	3.1%
Thunder Bay Transit	13.8%	$66,329	61.0%	5.0%	3.9%

It is critical to consider statistics such as unemployment rates and income when evaluating residents' transportation decisions. The choice between driving a car and using public transit can be easily swayed depending on an individual's disposable income. Understanding the share of low-income residents within a service area can also be useful when determining fare structure and offering discounted or student passes.

Despite similarities, no two cities are the same, and vary in demographics, history, geography and political climates. Even with best efforts by the Canadian Urban Transit Association (CUTA), transit agencies may report indicators and statistics, such as ridership, differently depending on the technologies they each have available for collecting this data. Thus, cautious comparisons are drawn. Data relating to peer agencies has been obtained from CUTA and Statistics Canada.

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[1] Median total income (after-tax) was extracted from 2016 Canadian Census data in 2015 dollars and escalated to $2020 using Bank of Canada CPI calculations.

Peer Review

Figure 8-1: Ridership and Population Change, 2014 to 2018
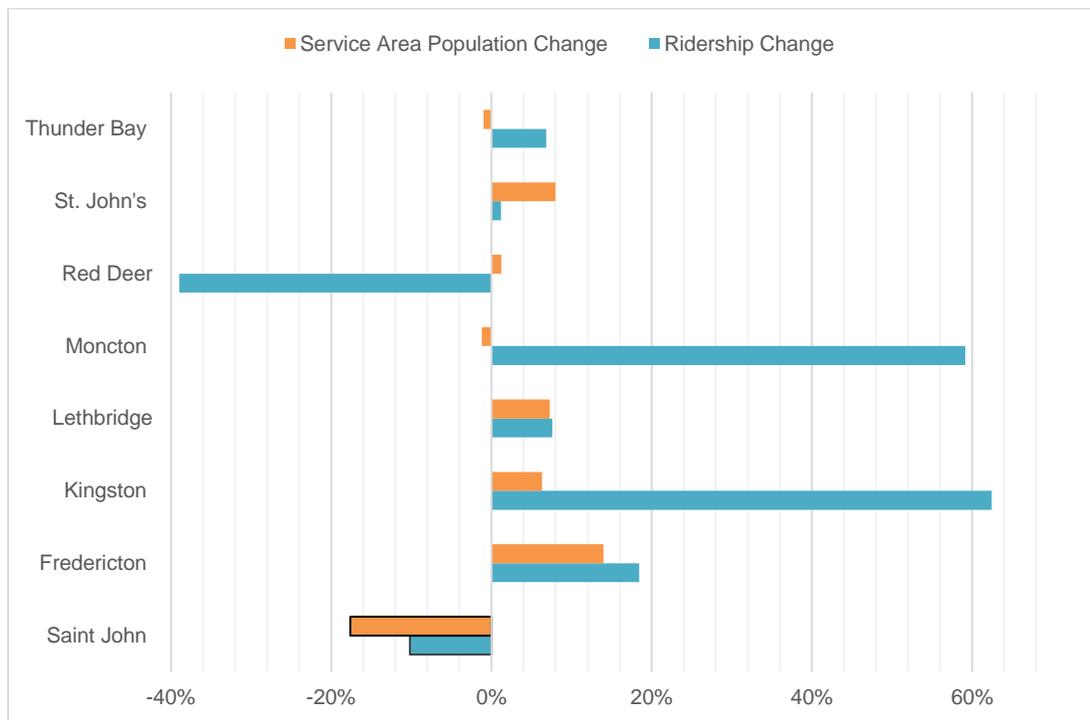
Ridership indicates how many trips were made by the total population in a year. As shown in Figure 8-1, population growth doesn't necessarily translate to increased ridership. Furthermore, Figure 8-1 demonstrates that agencies that have a broad service area don't in turn have higher ridership or a larger population. Interestingly, Saint John Transit covers an area of almost 500 square kilometres yet services a population smaller than Kingston Transit, which covers approximately 132 square kilometres. As such, it is evident that ridership, operating expenses and performance indicators are all impacted by urban sprawl and the location of suburban communities in which a transit agency operates. With a relatively small population dispersed over a wide service area, unique challenges are present for Saint John Transit in delivering service effectively and efficiently.

Peer Review

Figure 8-2: Total Ridership by Agency, 2013 to 2018
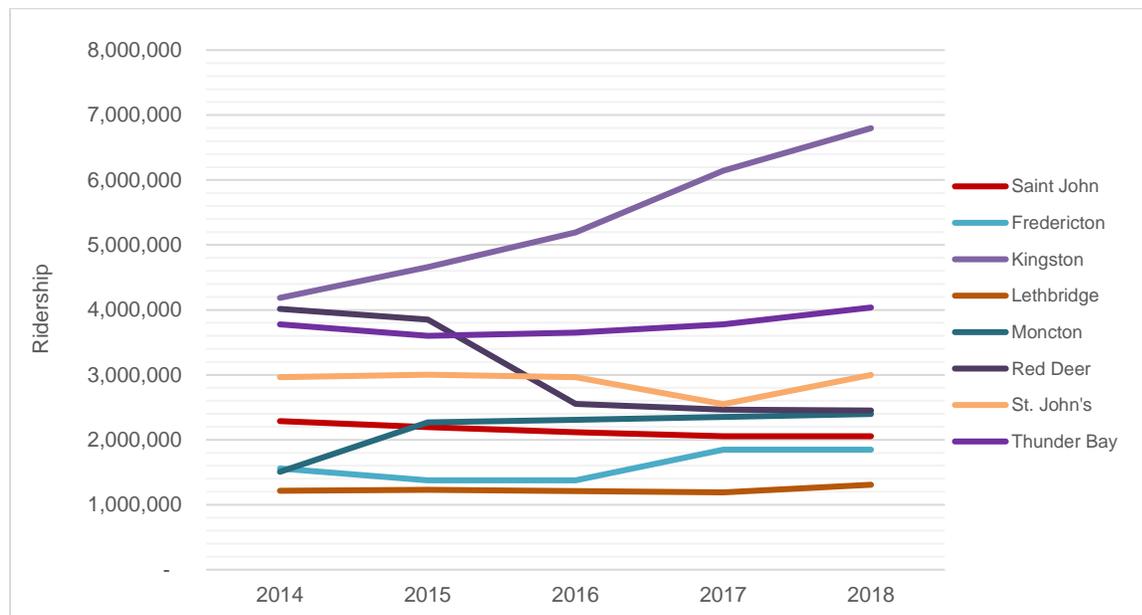
Annual ridership in 2018 for the peer agencies ranged between 1.8 million for Fredericton Transit, to approximately 6.8 million for Kingston Transit. Despite a 17.6% decrease in service area population from 2014 to 2018, Saint John reported a jump in service area from 316 km^2 to 495 km^2 as the reported service area was expanded to include Quispamsis, Rothesay, Hampton and Grand Bay. In the same period, Saint John Transit reported a decrease of approximately 10% in ridership, which may be partially attributed to minimal population growth and retention struggles in New Brunswick, combined with past reductions in service (and therefore reductions in the service area population).

Riders per capita illustrates the average number of transit trips made per year by each member of the service area population and is useful as it helps account for changes in population size. As shown in Figure 8-3, Saint John Transit saw an increase in rides per capita from 2014 to 2018 as a result of a smaller decrease in ridership than service area population, suggesting that the agency is becoming more cost efficient. Rides per capita can be used as an indicator for how much transit is used in a municipality or region.

Peer Review

Figure 8-3: Ridership per Capita, 2014 and 2018
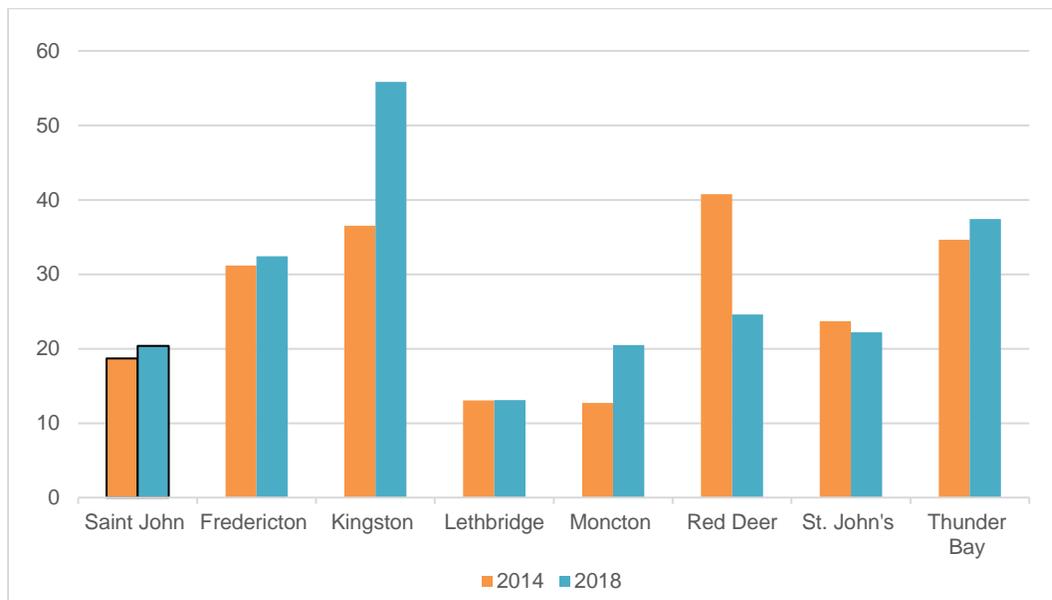
The number of revenue hours shows the availability of transit in a city or region, and revenue hours per capita normalizes this metric by service population. According to CUTA, Saint John Transit operated 102,617 revenue hours in 2014, and 97,665 revenue hours in 2018. Similar to rides per capita, the data shows a slight increase in revenue hours per capita, indicating that total revenue hours did not decrease as significantly as service population between 2014 and 2018 (likely due to reducing frequency and/or service span but maintaining coverage in some instances). Saint John's peer agencies saw increasing revenue hours alongside increasing populations, with the exception of Moncton and Thunder Bay which both faced modest population declines of approximately 1.2% and 1% respectively.

Peer Review

Figure 8-4: Revenue Hours per Capita, 2014 and 2018
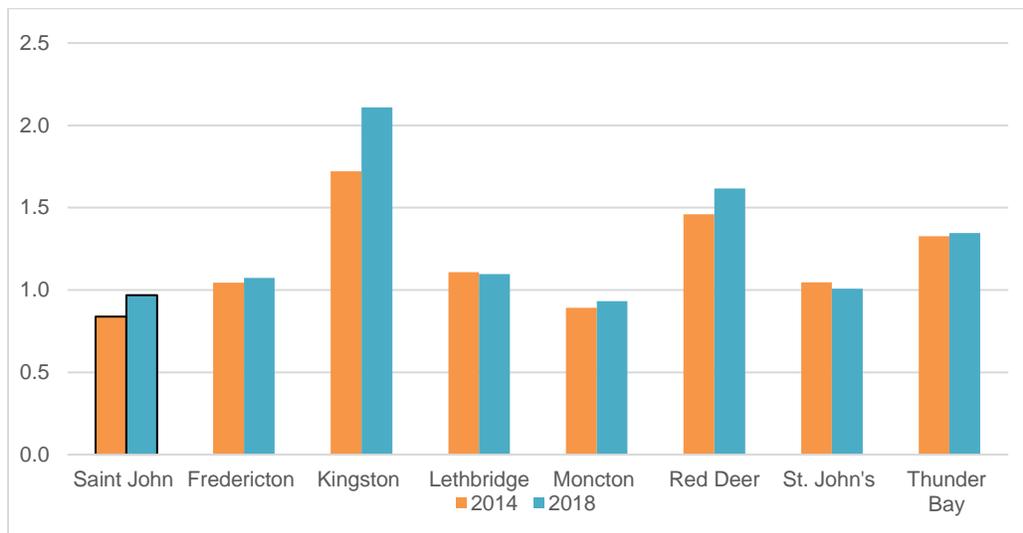
An industry measure of transit productivity results from the amount of service provided (in revenue hours) and its utilization in the form of ridership. As such, trips per revenue hour provides a good understanding of the utilization of a transit system. When compared to its peers, Saint John Transit performs in the middle of the pack, providing 21 rides per revenue hour in 2018, slightly down from 22.3 in 2014 as displayed in Figure 8-5. This 6% drop was a result of the 10% decrease in ridership, but only a 5% decrease in revenue hours.

Figure 8-5: Trips per Revenue Hour, 2014 and 2018
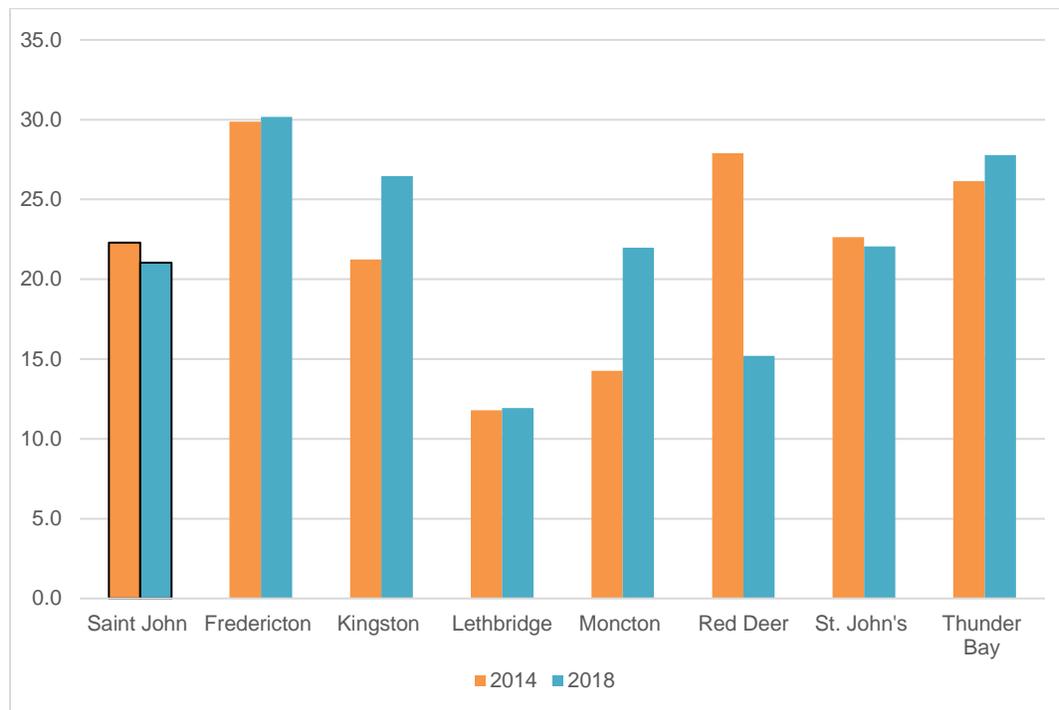
While one measure of an agency's performance centers around ridership and service utilization, another key area is financial investment and efficiency. Saint John's direct operating expenses decreased from $10.5 million in 2014 to $10.1 million in 2018, which represents a 3% decrease.

By looking at operating costs per revenue hour as displayed in Figure 8-6, we can observe the cost efficiency of a transit agency. Saint John's operating expense per hour has seen a slight increase from $102.01 in 2014 to $103.68 in 2018, but is still favourable considering it performs slightly below the peer average of $106.28. It should be noted that increases in operating costs per revenue hour over time can be partially attributed to inflation and the requirements of Collective Bargaining Agreements.

Peer Review

Figure 8-6: Operating Expense per Hour, 2014 and 2018
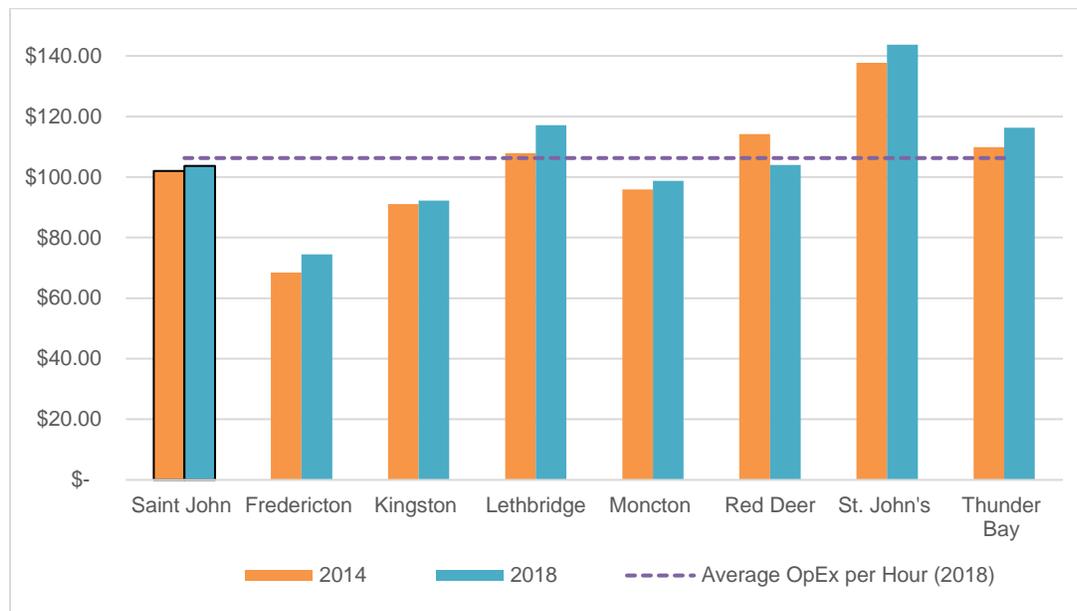
Operating expense per rider is another measure of cost effectiveness for transit agencies. A lower cost per trip is preferable, indicating low operation expenses relative to the number of passengers using the system. Saint John's operating expense was $4.58 per trip in 2014 and $4.93 per trip in 2018, representing a 7.6% increase over 4 years. As shown in Figure 8-7, Saint John's operating expense per rider is on par with respect to others in the peer group and falls below the average both years ($5.18 peer average in 2014 and $5.34 in 2018).

Figure 8-7: Operating Expense per Trip, 2014 and 2018
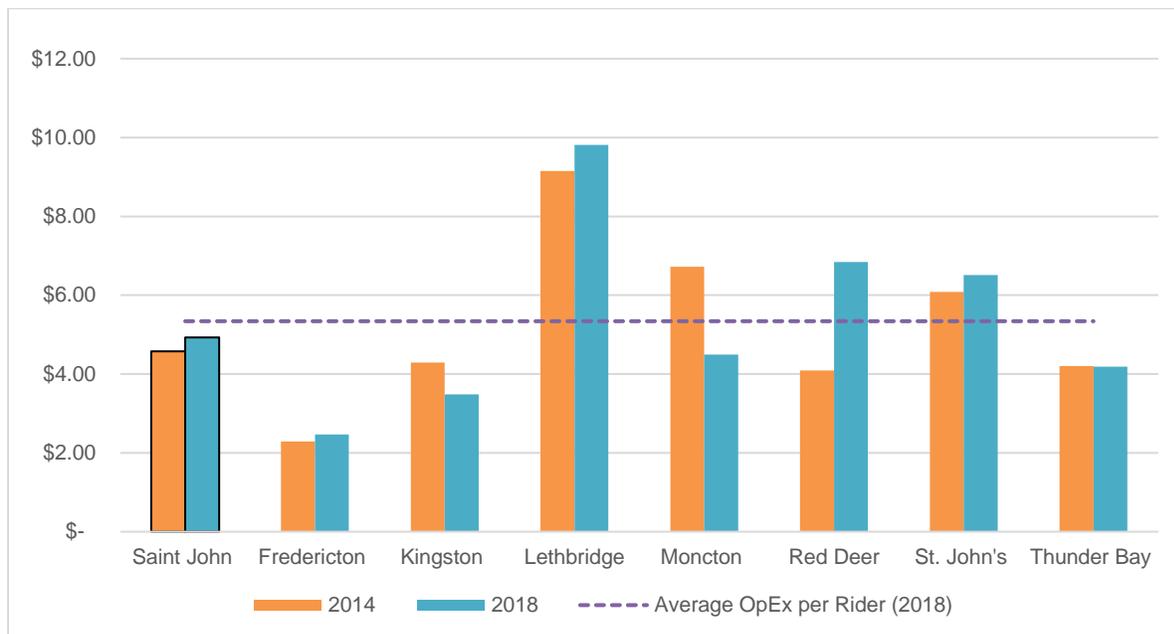
Another important measure of a transit system's financial health is the average or effective fare per trip, that is, the total fare revenue divided by annual ridership. It is important to note that this average fare accounts for the fact that not all passengers pay the full cash fare, and may receive discounts as a result of transit cards, monthly passes or concession fares, such as for seniors or children. Others may evade fares entirely if there are few measures in place to combat fare evasion.

The average fare collected per trip for Saint John Transit was $1.89 in 2014 and $2.00 in 2018, which exceeds the peer averages of $1.59 (2014) and $1.67 (2018). As Figure 8-8 shows, transit agencies operating in different geographical areas all have varying average fares, and some peers saw increasing average fare revenue while others saw decreases. Fare increases can be necessary in the face of rising operating costs, but fare increases must be implemented alongside improvements in transit service to maintain a high value for fare paid. All agencies except for Saint John and Lethbridge increased their fares between 2014 and 2018.

Figure 8-8: Fare Revenue per Trip, 2014 and 2018
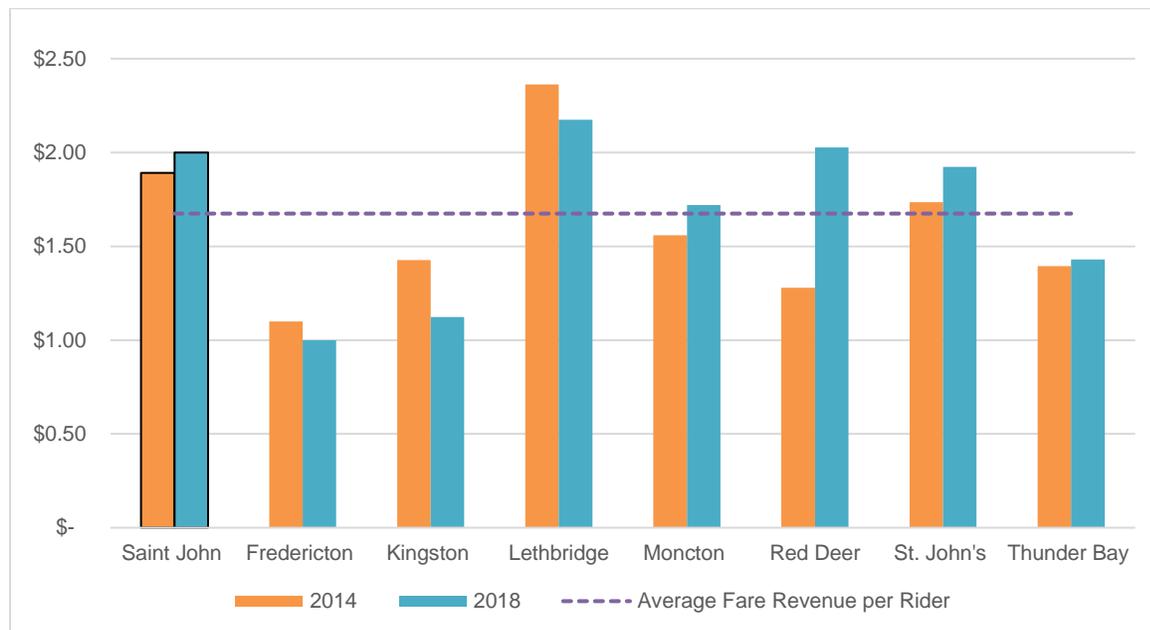
Farebox recovery is another key measure used to determine the financial health of a transit system. By analyzing the amount of operating expenses that are being covered by passenger's fare revenue, we can understand how reliant an agency is on external revenue to operate, including the municipal, regional or provincial tax base. A substantial share of operating expenses should be covered by transit fares, which is reflective of both service quality and usage. Figure 8-9 shows the cost recovery ratio for Saint John Transit and all peer agencies, that is, the proportion of operating expenses that are recovered using farebox revenue. Saint John Transit saw an increase in its cost recovery ratio by approximately 1% between 2014 and 2015, increasing from 44% to 45%. The peer average saw a decrease in cost recovery by 1% during this period, decreasing from 36% to 35%. Alongside having a high average fare among the peer group, Saint John Transit also has the second highest farebox recovery. By keeping operating costs low, Saint John is able to recover approximately 45% of its operating costs through fare revenues, while still maintaining an affordable fare.

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Figure 8-9: Cost Recovery Ratio, 2014 and 2018
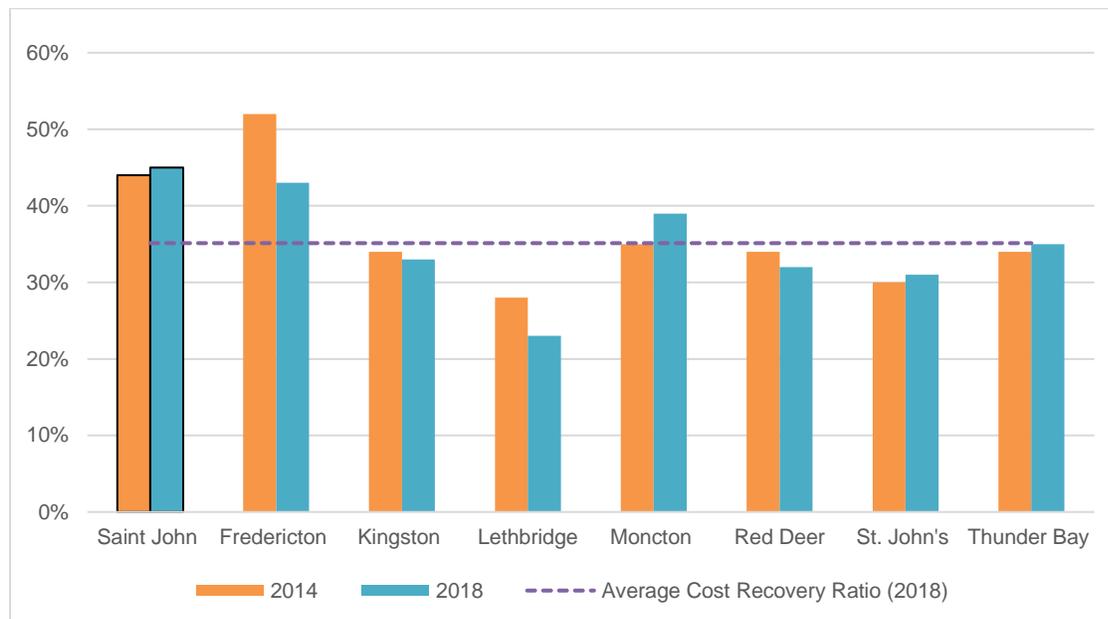
In summary, performance measures of seven peer transit agencies from four different provinces were reviewed to evaluate Saint John's performance relative to peers that operate reasonably comparable transit systems. Based on this analysis, Saint John has above-average financial indicators related to fare revenue, and offers services across a significantly larger area than the rest of the transit agencies. Saint John's ability to recover operating expenses through fares indicates it is less reliant than the average peer agency on external revenues to operate. The agency's ability to maintain a healthy cost recovery ratio and remain financially efficient will be important as service changes are implemented.

Saint John's productivity, measured by riders per revenue hour has decreased over the past four years, accompanied by both decreasing revenue hours and ridership. Moreover, with the third-lowest annual ridership across the peer group, this suggests there are significant opportunities to better serve the community. As the Saint John population has seen an overall decline, it can be expected that ridership and service may be similarly impacted. However, in the same time frame, Saint John has seen an increase in revenue hours per capita, suggesting that despite past service reductions, service availability among the remaining service area population has slightly improved. Improved marketing and communications with customers can help ensure that the service area population is aware of service availability in their neighbourhood, and familiar with how to use the service. In effort to reverse decreasing productivity and increasing operating costs per passenger, the Saint John Transit Operational Audit will seek to evaluate existing services and offer recommendations for designing both a productive and efficient network for Saint John's transit demands.

9.0 VISIONING AND OBJECTIVES

Utilizing the desired outcomes of the Operational Audit, a vision was devised for the future of transit in Saint John and was utilized when crafting proposed recommendations. This vision is supported with high level objectives, evaluation criteria and KPIs to measure and monitor progress towards this vision. The proposed vision statement and subsequent objectives and evaluation metrics are discussed below.

9.1 VISION STATEMENT

The purpose of a vision statement is to outline the future state of Saint John Transit and provide a long-term goal for the agency. The vision serves as a communication tool to riders, staff, and other stakeholders as to what the agency is striving for. The vision statement is intended to be high-reaching and inspiring to management, front-line staff, and the riders, and relatable for all groups of stakeholders. Input from background documents, stakeholder engagement, and other key findings from earlier work in the Operational Audit have been considered in the development of a vision statement for Saint John Transit. A proposed vision statement is as follows:

Keep Saint John connected... Transit provides a safe, reliable, affordable, and customer-focused service that contributes to growth, advances sustainability goals, and encourages everyone to choose transit.

This vision statement is intended to be a starting point, acting as a basis for discussion and for further refinement, acknowledging that the development of a vision statement should be a creative process that involves multiple stakeholder groups, including the City and the Commission. This proposed vision statement was developed in accordance with the following principles:

- Keeping it general to ensure it is relatable to the full suite of target SJT customers, rather than skewing it towards certain neighbourhoods, locations, or population groups. The assumption is that there is merit to each of SJT's current service offerings in their current format, including fixed route, Handi-Bus, Comex, charter, and tour services, although later Operational Audit tasks will explore the extent to which it may be prudent to adjust the parameters on any of these offerings with respect to service design.

- Drawing the link between transit and prosperity to reinforce the notion during a period of budget deficit that there is economic return in investing in transit and it is important to always consider both sides of the equation, i.e. costs and benefits.

- Ensuring we are keeping the customers front of mind in the use of language such as 'connected', 'sustainable', and 'desirable', and omitting language such as 'buses', 'vehicles', and 'routes' in an effort to focus on moving people rather than moving buses.

In working towards the above vision statement, a number of objectives and subsequent evaluation criteria have been developed and discussed below.

9.2 OBJECTIVES

A vision in itself is an abstract statement and it is rarely "achieved", even by the most successful agencies, companies, and organizations. Herein lies the value of having clear and concise objectives. Objectives are supportive of an organization's vision and are more easily tracked and measured. They also tend to be more pertinent to the challenges, priorities, and operating environment of the short-term. Objectives act as a guideline for day-to-day activities throughout an organization. For Saint John Transit, objectives in support of the vision statement include the following:

1. **Build a transit system that provides access to where people want to go.** The intent of this objective is to compel people to use the system through a focus on efficiency, travel time and system performance. The Audit will focus on connecting major places including priority neighbourhoods as well as educational, commercial and employment areas. This will be accomplished through ensuring as best possible that routes and service levels adequately address all targeted areas during relevant time periods (peak hours, evenings, weekends) as warranted and desired by residents, to the extent permitted by the availability of financial and human resources. A balance between service frequency and geographical coverage will be considered in an effort to ensure that reliable, high quality transit service is available for as many residents as possible. Improving frequency and coverage are two strategies that are effective in growing ridership. It can be difficult to accomplish this keeping in mind budgetary restrictions and the dispersed geography of the City, however, there are opportunities to explore alternative service delivery strategies which have proven effective in other jurisdictions. Other important considerations include reducing customer wait times and travel times through route directness, scheduling and on-time performance considerations. To minimize wait times, serving the Saint John Area will be prioritized, expanding service to the surrounding dispersed communities as resources become available and through appropriate service levels. Lastly a critical component to connectivity will be managing strategic relationships with both cycling and pedestrian systems to support multi-modal trips and particularly support these travel modes to and from transit stops.

2. **Foster sustainability and economic prosperity.** The accessibility, convenience, safety, and affordability of transit all impact the extent to which it is a viable option for all residents of Saint John. The development of the City is inherently related to the development and provision of transit service, given the correlation between access to transit and employment. To ensure the two complement each other, development should be encouraged along major corridors, which in turn more easily facilitates transit coverage in these areas, improving its accessibility and convenience. A focus on serving major employment and education sites in the City will be critical to support economic growth and prosperity, keeping in mind that every dollar invested in transit can bring, on average, $4 worth of economic benefits according to a recent study by the American Public Transit Association. Similarly, it will be critical to plan transit and parking accordingly to promote the use of transit and establish a value proposition for transit relative to other modes. Furthermore, as the City of Saint John makes strategic efforts to increase its population and employment, access to transit within emerging settlement areas as well as new development areas should be considered. When considering the future sustainability of the City, transit will serve as a leading green transport option in the City, meeting or exceeding climate mitigation policies set by the City, province and country. Overall, transit systems are best supported by infrastructure and relevant policies, such as Plan SJ, to ensure all riders can travel safely, conveniently and efficiently. A sustainable and economically prosperous transit system will ensure service consistency, long-term growth and help instill transit as a mindset to build the community.

3. **Increase brand and service awareness.** The effective branding and visibility of Saint John Transit services, particularly at major transit hubs and key transfer points, can help to facilitate easy recognition of transit service across the City. With a significant newcomer population anticipated into the future, the promotion of transit service to new residents will be especially critical to grow and highlight the service, linking to the objectives discussed above. A focus on presenting recognizable, consistent and simple branding at all transit stops will increase the ease of use of the service and strengthen a transit culture within the City. Building a strong and recognizable brand will make transit more attractive and accessible to riders, creating an environment where residents make discretionary trips on transit. Branding efforts must also weigh the merits of unified branding against the merits of having spinoff brand(s) such as Comex.

4. **Optimize the return on the investment in transit.** Tax dollars need be used optimally in order for transit service to be deemed efficient – this is particularly true for Saint John given the budget deficit faced within the City, coupled with the lack of transit funding at the provincial level resulting in greater efforts required to secure funds. This is an important consideration not only for the riders, but also for the non-riding taxpayers. Through planning and operations, it will be determined how to best use resources to serve the greatest number of individuals. Realizing efficiencies throughout the entire transit operations (fleet, technology, maintenance, organizational structure, etc.) will be vital to support the short and long term health of the service. With respect to planning, the design of a resilient transit system with the resources available, in terms of the route network and the scheduling, will help avoid the need for continual service reductions based on changes to funding. Furthermore, incentivizing transit as an initiative to reduce personal vehicle use offers cost savings with respect to maintaining and building roadway infrastructure and parking facilities while also reducing the cost of transportation for residents which will free up funds to use elsewhere such as reinvesting back into the local economy through goods and services. The investment in transit will have both financial and non-financial gains which is important to consider when reviewing ridership and revenue numbers. High-quality transit within a city aids in reducing social inequities through providing access to employment, healthcare, education and leisure activities – ultimately increasing the quality of life and economic outcomes of residents. Transit service plays a vital role in enabling essential city services to continue to function by connecting people and places.

9.3 EVALUATION CRITERIA

The measurement and tracking of the objectives set above can be accomplished through evaluation criteria. Together with the objectives, the evaluation criteria will help ensure that Saint John Transit does not stray from its vision. To aid in organization, evaluation criteria may be generally categorized into three fields:

- **Financial**: involves evaluating the affordability of transit and engaging with the monetary viability of the agency in conjunction with suggested development opportunities.

- **Operational**: involves an in-depth technical evaluation of how the transit agency is functioning, to determine which sectors of the agency are performing well and where to focus future efforts.

- **Social**: involves evaluating the impact of transit on general daily resident functions in terms of factors such as equity, accessibility, environmental sustainability, and safety.

Both the financial and operational fields fall under the close watch of the transit provider while the social measures are linked to the transit rider and their experience on the system, and therefore should be

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equally important for the transit provider as the financial and operational measures. Useful performance indicators, once adopted, measured, and reported, will help Saint John Transit to build a culture of accountability and the data gathered can be used to formulate diverse transit policies, expose underutilized resources, reduce fare evasion, and increase transit efficiency vis-à-vis route effectiveness and travel time.

Evaluation criteria related to the above objectives are summarized as follows:

- **Financial Criteria:** measuring **cost-efficiency** of the system will determine whether Saint John Transit is financially sustainable and feasible in both the short and long term, considering how effectively resources are being used to serve the greatest population. Through financial monitoring, resource deployment can be assessed in terms of how well supply is meeting demand. Given that SJT provides various tourist and commuter services, the cost of all services should be reviewed to ensure Saint John residents see a return on their investment in transit, and to ensure the organization is acting prudently in consideration of the budget deficit. Leveraging revenue growth as a means to reduce financial constraints is also a key element to ensuring long-term financial sustainability. A critical measure of efficiency will be how well the system utilizes technology to optimize processes and customer experience. This can be measured by various KPIs including cost recovery ratio, operating cost per boarding, and operating cost per service hour.

- **Operational Criteria:** Measuring **infrastructure prevalence** will highlight the availability of transit amenities within the service area, including bus stops, shelters, benches, lighting and schedule information. Evaluation metrics will be based on applicable standards and design guidelines. Evaluation criteria will gauge how well the infrastructure available supports accessible and convenient transit use throughout the City. Key metrics may include the number of bus stops and key transfer locations with transit amenities as a percentage of total bus stops. Additional operational considerations will be assessing **service quality**, noting the extent to which transit service is attractive, frequent and convenient. Key metrics to evaluate service quality include service hours, average headways, service area, and average travel time. The desired parameters for service will be set and monitored to track ridership growth and customer satisfaction, including how well the system values customers' time. Another important consideration is whether desired destinations in and around Saint John are being travelled to, including where and when commuter services are warranted. Service quality will measure how desirable transit is as a mode choice for residents. Lastly, **transit accessibility** metrics will measure how easily residents may access transit, as well as who is able to or unable to access the service. This will enable the evaluation of both physical and equitable access to transit. A common industry measure is the percentage of the population within walking distance to transit (400- 800 metres).

- **Social Criteria:** Additionally, the cost savings between using transit versus driving will identify how affordable and equitable transit is in Saint John, especially for those who use transit as a primary mode with limited access to other transportation options. Overlapping with operational considerations, the transit coverage in priority neighbourhoods will help to measure **transit equity** in the City. Additionally, **marketing consistency** metrics will serve to evaluate the unity of the Saint John Transit brand and the clarity of external messaging. This impacts the residents' awareness of how to use transit and how positively the service is perceived. This information is best measured and evaluated through customer feedback surveys.

The adoption of KPIs is an effective means of engendering a culture of accountability throughout the Saint John Transit organization with respect to these evaluation criteria. More specific commentary regarding data tracking and performance evaluation is provided below in Section 9.4.

9.4 KEY PERFORMANCE INDICATORS (KPI)

As discussed above the evaluation criteria provide a means of measuring the objectives in support of the vision of Saint John Transit. KPIs will be utilized within each evaluation criterion to quantify how well the objectives, and ultimately the vision, are being achieved. KPIs were considered from a dual-lens – one, from the lens of a transit provider, concerned with fiscal and operational efficiencies, and two, from the lens of the transit rider, concerned with service quality and performance. Performance indicators are useful because they provide an indication of trends in performance, helping identify areas that need attention and correction, as well as areas of success. Performance indicators are also useful for tracking the implementation of priority items as well as recommendations contained in studies such as this Operational Audit.

The performance criteria can be further used for comparative purposes to determine the extent of issues that Saint John Transit may be experiencing, which in turn may facilitate a recalibration of goals based on agency preferences and community values.

9.4.1 Existing KPIs

As a starting point, the existing KPIs utilized by Saint John Transit were reviewed, then, based on the proposed vision statement as well as findings from background studies, analyses, and stakeholder engagement, a number of proposed KPIs have been devised.

Based on feedback from SJT and City staff, there are no KPIs currently used to monitor the health of the system or standards which are used to flag when further investigation into service is required. However, based on CUTA annual reporting and review of the current application reporting tool, SJT is collecting and has the capability to regularly monitor various data to inform planning of the transit system. The KPIs currently available to SJT are outlined in Table 9-1.

Visioning and Objectives

Table 9-1: Existing KPIs available to Saint John Transit

Financial	Operational	Social
Cost recovery ratio (total operating revenues divided by total operating costs) Municipal operating contribution per capita (municipal operating contribution divided by service area population) Cost per passenger (net direct operating cost per regular service passenger) Average fare (total passenger revenues divided by total trips) Cost effectiveness (operating costs divided by total trips) Cost efficiency (operating costs divided by revenue hours)	Service uptake (total trips divided by service area population) Service utilization (total trips divided by revenue hours) Service levels (revenue hours divided by service area population) Average speed (revenue kilometres divided by revenue hours) Annual ridership change On-time performance (percentage of buses that are operating 0-5 minutes late)	(No existing performance criteria were apparent)

Based on what is reported to CUTA and what is tracked in current application, it is evident that there is a focus on financial and operational performance measures. There currently are no apparent measures that are directly social in nature to evaluate how the transit system impacts riders (although the financial and operational measures are indirectly related). The KPIs presently available have the potential to provide a good indication of system efficiency and operation if they are monitored regularly along each service and/or route. There is an opportunity to capture more social and some operational measures that highlight the service quality offered to riders which will help Saint John Transit understand important successes and shortcomings of the system. Proposed opportunities for regular monitoring and developing additional KPIs along with a rationale are discussed in the section below.

9.4.2 Future Opportunities for KPIs

The KPIs recommended are operational and social in nature. As noted above, Saint John Transit already comprehensively captures the financial efficiencies of the system, though these are yet to be monitored for the purpose of helping to inform service changes. The KPIs recommended will serve to monitor the quality and use of the service. It is noted that some of these measures are tracked already through the current application, therefore the future opportunities in some cases are not related to capturing the data, but rather are more focused on ongoing reporting in a way such that trending can be observed leading to more effective decision-making. In addition to the expansion of operational KPIs, a number of social KPIs are also proposed to capture the convenience, affordability and equity of the system.

The recommended additional key performance indicators to achieve the vision and objectives for Saint John Transit are outlined below.

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Visioning and Objectives

Operational Metrics:

- Missed trips (percentage of trips that are missed or excessively late, beyond OTP target)
- % of bus stops or key transfer locations with amenities, including benches, signs, route information etc.
- Transit coverage (percentage of population within 800m of routes)

Social Metrics:

- Travel time ratio (travel time on transit as a percentage of travel time when driving)
- Customer feedback rate (total compliments and complaints per 1,000 trips)
- Transit coverage in priority neighbourhoods (percentage of population in priority neighbourhoods within 800m of routes)
- Concession ridership (number of riders paying concession fares as a percentage of total riders)
- Average savings (cost to the consumer of taking transit as a percentage of the cost to the consumer of driving)

Each KPI recommended is intended to uniquely measure a component of the transit service. Missed or late trips will measure the reliability of the service and will impact the desirability of transit. This should be tracked in conjunction with on-time performance which is currently available though not always reliable or monitored. The percentage of stops with amenities will measure the prevalence of infrastructure throughout the service area to support the accessibility and convenience of transit. Several of these measures, such as the percentage of bus stops with amenities or the average savings, may be passively managed as they are not expected to change on a day-to-day basis, while other measures such as the customer feedback rate and the concession ridership are appropriate to be managed more actively.

Of the social factors recommended, the travel time ratio will help to evaluate how the system values customers' time and minimizes travel times, and how attractive transit is as a mode choice. The customer feedback rate will evaluate the satisfaction and perception of transit in Saint John. Transit coverage will measure accessibility of transit in Saint John, with a particular focus on the coverage offered in priority neighbourhoods as these areas have a higher prevalence of poverty which correlates with higher transit usage where transit often serves as the primary mode. Additionally, the concession ridership will also speak to the equity of the system – currently this would include senior and student passes and, if possible to document, the number of monthly passes offered to newcomers at no cost to the user. Lastly, the average savings will measure the affordability of transit, relative to other travel modes. Together, all of these measures will evaluate the sustainability and success of the system, including the desirability of transit as a mobility option in Saint John.

Furthermore, a key consideration in reporting and monitoring includes compliancy with CUTA reporting requirements. Currently, a number of relevant metrics are not being collected including a breakdown of revenue passenger trips by fare type (concession fares are not shown), total passenger kilometres and total employee paid hours (operators and mechanics) for greater transparency and monitoring. It is recommended that Saint John Transit re-evaluate its tracking processes and adjust measurement practices to facilitate alignment of reporting requirements with what is requested in the annual CUTA submission. This brings the added benefit of additional peer comparison information for Saint John Transit, as well as the improved evaluation of the system relative to larger industry trends.

9.4.3   Consideration for Comex Service

When evaluating the Comex (commuter) services, similar KPIs can be applied as with the conventional fixed route service, however, specific considerations should also be given. With the Comex primarily serving residents outside the City, in evaluating the financial feasibility of the service, the City's cost recovery target should consider the cost sharing agreements between neighbouring municipalities with the intention of ensuring that the City is "made whole" for operating the Comex service. In terms of operational considerations, the Comex service needs to be complementary to other SJT services, facilitating easy transfers between the two, utilizing timed transfers, accurate scheduling and strategic stop locations. Additionally, when considering Comex stops, the infrastructure available should include adequate vehicle and bike parking facilities and accessible infrastructure to allow for riders to use multiple transport modes for the first and last kilometre of their trips. Additionally, when considering the on-time performance or missed trips, higher targets may be set for this service as there are only a few trips scheduled a day. Given the nature of the service, the majority of riders need to arrive at a certain time for work, school or other scheduled activities which places high importance on the reliability of the service. Departure and arrival times should align with predominant school or work start and end times as best as possible. Lastly, with respect to social metrics, the travel time ratio will play a large role in attracting and retaining ridership especially in Saint John which sees a strong driving culture. Direct routing and avoiding service duplication where possible will be critical to match personal vehicle travel times. Lastly, the pricing of this service will be important to draw riders, where the cost should be lower than the cost to drive and park within the City.

9.4.4   Consideration for City Tours and Charter Service

When considering the evaluation of the City Tour and Charter Bus services, performance targets will differ from the conventional fixed-route service. Provided these are auxiliary service offerings, they should be financially profitable to the Commission. Given the lack of monitoring currently completed for these services, the true cost of the service should be observed going forward via passenger fares and passenger counting. The service should only remain if it is determined to be a net income source for the City, with revenue targets and bus utilization targets established to justify these offerings. The marketing of these services can play a critical role in garnering adequate usage. Operationally, the service should be reliable and efficient, though the same desired goals for the conventional system do not apply as this service is recreational in nature. Lastly, the same social criteria may not apply to this service as it is not an essential mobility option for residents in the City. However, if executed successfully, these service offerings can provide revenue generation to help offset operational costs of the conventional system and hopefully catalyze transit expansion and growth.

9.5   ACHIEVING THE VISION

A vision statement was created to outline a desired future state and the role that Saint John Transit would play. This vision was supported by five key objectives. To measure and monitor these objectives a set of evaluation criteria was outlined. Then, to quantify the evaluation criteria, a set of KPIs are recommended which are comprised of the existing KPIs and additional recommended metrics.

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Table 9-2 outlines each evaluation category, the objectives each category evaluates, and which KPIs can be used to measure this. To serve as a tool for future tasks, current opportunities have been identified. Together, these tools aim to achieve the vision set out for Saint John Transit.

Table 9-2: Outline to achieve Saint John Transit's vision

The text is orange represents the new proposed KPIs to be collected

Evaluation Category	Objectives Measured	Performance Indicators	Opportunities (to be further explored in the following tasks)
Financial	3,5	- Cost recovery ratio - Municipal operating contribution per capita - Cost per passenger - Average fare - Operating expense per passenger - Operating cost per revenue hour	- SJT has above-average financial indicators relative to its peers, and one of the largest cost recovery ratios. While reducing reliance on municipal funds can be beneficial, caution should be exercised to prevent an under-investment in transit which can erode the financial sustainability in the long term - Efficient financial performance despite minimal investment in technology suggests that there may not be significant low-hanging fruit to be addressed to accommodate the budget deficit
Operational	1,2,3	- Service uptake - Service utilization - Service levels - Average speed - Annual ridership change - On-time performance - Missed trips - % of bus stops locations with amenities - % of key transfer locations with amenities - Transit coverage	- A ridership reduction was seen over the last five years, partly due to a decreasing population, coupled with an increased service area to include communities in the greater Saint John area, resulting in a challenging operating environment - The exploration of alternative service delivery might grow ridership and improve access to transit to the dispersed population. This will be explored in later tasks. - Technology improvements are feasible through all aspects of the system. Improvements to the current application can be explored to provide accurate data with respect to passenger loads and on-time performance - With improved monitoring, routing can be reviewed to identify any scheduling adjustments required to improve travel times and on-time performance - King's Square, a major transfer point, can be confusing to use with stops located at two different points and routes stopping arbitrarily at different bus bays

			- Generally, there is opportunity to enhance bus stops with greater signage and passenger amenities
Social	1,2,3,4	- Travel time ratio (transit versus driving) - Customer feedback rate - Transit coverage in priority areas - Concession ridership - Average savings (transit versus driving)	- Consider average travel times between commonly accessed points in the City (for example between two City neighbourhoods) to understand the difference between transit versus driving. Explore a similar comparison between the cost of taking transit relative to driving - Explore opportunities for additional driver education surrounding diverse populations in the City, leveraging existing training available at the City already - Saint John Transit already offers some concession discounts. Evaluate further opportunities for fare structure improvements especially with respect to a long-term solution for low-income individuals - Identifying what percentage of ridership concession groups represent can show how accessible this service is to these populations - Consider what percentage of the population is within an accessible range for transit service, especially in priority areas - Provide better signage at stops and transfer points to create stronger brand recognition and consistency, particularly among newcomers and new transit users

9.6 DATA COLLECTION

Further guidance on the collection of data for the recommended KPIs is outlined below.

Operational:

- **On-time performance**: While this metric is already collected by Saint John Transit, it is recommended that on-time performance be more actively monitored at the route level, and targets be set for this KPI based on service availability and resources. An example target may be 90% of trips arriving less than 5 minutes late, with the intention to take remedial actions should routes repeatedly miss this target.

- **Missed trips**: Meaning the percentage of trips that are missed or excessively late on each route. Typically, a trip is considered missed beyond 10 minutes of a scheduled timing point. This can be measured and tracked using the current application technology. Ideally a daily number of missed trips per route can be tracked and averaged throughout the year, however, depending on

resource and data availability, various days can be tracked for each route to provide a representative sample throughout the year. When repeated trips are missed on certain routes or buses are excessive late at certain time points, further investigation should be conducted, and the schedule should be re-visited where applicable. It is recommended that Saint John Transit target zero missed trips.

- **% of bus stops with amenities**: This would require the development of an asset inventory, ideally through an audit of the stop infrastructure in Saint John. It is important to also define "amenities" which may include (but is not limited to) benches, shelters, stop posts, and service information. If this is not available currently, this can be tracked moving forward as bus stops are reviewed, maintained and upgraded, and it can be integrated with larger asset management objectives and activities.

- **% of key transfer locations with amenities**: Similar to the metric above, all transfer locations can be monitored (annually or biannually) for amenities available.

- **Transit coverage**: The coverage offered along the system (or in specific priority areas) can be tracked using a mapping tool such as ArcGIS where a buffer analysis (400 metres from infrequent service and/or 800 metres from frequent service) from each transit stop or route can be determined.

Social:

- **Travel time ratio (transit versus driving)**: This can be measured between two locations, ideally popular and/or familiar destinations within Saint John. The time on transit can be compared to the driving time (collected on google maps) at various points of the day to understand transit's competitiveness with driving. In the case where driving may be significantly faster, routing and stop spacing may be considered to determine if these can be further optimized. Estimates can be validated by comparing to the driving distance versus transit distance between two points, as an additional measure of route directness.

- **Customer feedback rate**: This can be tracked as feedback is received through customer service channels. Consideration of customer feedback both in terms of content and quantity (as a percentage of ridership over a given month) is important.

- **Concession ridership**: This includes the number of riders paying concession fares as a percentage of total riders which can be difficult to measure with paper fares but can be tracked more easily with the implementation of modern fare payment technologies. Using the existing fares, sample days can be counted manually to determine the breakdown of fare types paid.

- **Average savings (transit versus driving):** This can be estimated using high-level costs of a monthly transit pass compared to the cost of owning, maintaining and operating a car in Saint John. It would not need to be tracked on an ongoing basis, but rather recalculated at defined intervals with updated gas prices and fares, if applicable.

Saint John Transit might also consider consulting other transit agencies' guidelines with respect to the collection and monitoring of KPIs, and the setting of benchmarks for performance[2].

10.0 NETWORK GUIDING PRINCIPLES

Based on stakeholder engagement and considerations for transit planning best practices, a set of guiding principles were developed to provide direction for evaluating the current network and crafting recommendations for improvement. These guiding principles are all related to the underlying objective of delivering effective and efficient transit service. They are summarized as follows:

1. **Strengthen what is working and eliminate what is not working**. What are the reasons some routes perform better than others and how can we improve the consistency of route performance across the network?

2. **Improve route directness where possible.** This leads to a simpler network and quicker travel times for the customers. It may induce a higher level of transferring, so improving the seamlessness of transferring is a related objective. A direct route with a transfer should not create longer travel times than an indirect route with no transfer.

3. **Improve the reliability of transit service**. That is, improvements to the route network should formally account and budget for sufficient recovery time to improve on-time performance. When designing the network, route lengths were considered to ensure adequate run times were accounted for based on the desired frequency of each route.

Building off of the existing transit system review, public insights, and the future vision and supporting objectives for SJT, a routing analysis has been completed and outlined below. This analysis is cognizant of the capacity, utilization and financial implications of the service proposed. The recommended routing options have been informed by the following:

- Travel patterns, land uses, future development, and socioeconomic factors in Saint John;

- Core routes, priority neighbourhoods and key points of interest (community centres, hospitals, schools, grocery stores, etc.) determined through public input and data analyses;

- The most efficient and successful service delivery method within the Saint John context; and

- The framework determined through the visioning exercise completed in Task 4. The goal of this routing exercise will be to identify the most effective and efficient means of meeting demand, which will involve the recommendation of routing and operational updates.

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[2] The TransLink system in Vancouver publishes Transit Service Guidelines which can be referenced and applied to Saint John Transit where applicable. The guidelines can be found online here: https://www.translink.ca/~/media/documents/plans_and_projects/transit_service_guideline/transit%20serv ices%20guidelines%20public%20summary.ashx.

11.0 SERVICE GUIDELINES

Building upon the visioning and objectives for Saint John Transit, various service guidelines were considered, along with performance against key performance indicators, to understand the strengths and limitations of each route and recommend changes to the network. A summary of guidelines and principles applied are outlined below.

11.1 SERVICE LAYERS

A well-designed and successful transit system features a mix of layered transit services designed to meet the diverse needs of residents. Transit service layers are distinguished by the level of service (headway or time between buses), the distance between bus stops and the main purpose of the service. As service frequency increases, the number of stops typically reduces as the service type changes from a local service to a frequent service, or sometimes a peak/express service. Figure 11-1 illustrates the various types of service layers than may exist within a transit network.

Figure 11-1: Service layer types
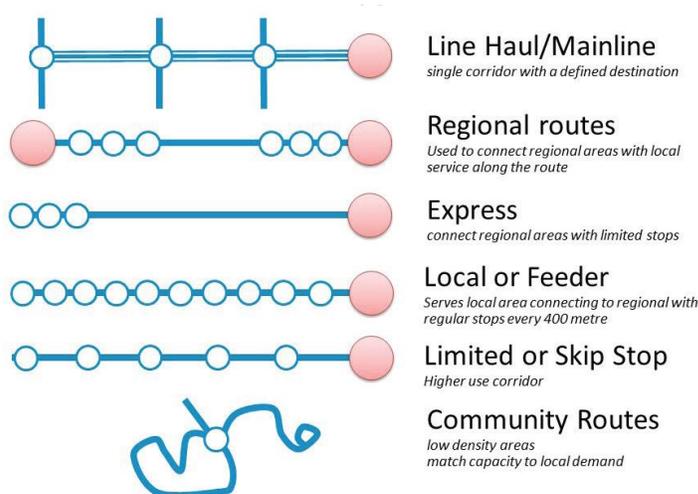
A variety of service layers have been explored to determine which type of transit service is the best fit for each route/area. Examples of service layers considered more broadly across the transit industry that have been reviewed for appropriateness in Saint John include the following:

- **Frequent**: High service levels during peak/off-peak periods along main arterial corridors to provide reliable transit in areas of highest demand, where the rider can 'just show up' to the bus stop and catch the bus without excessive waiting periods.

- **Local**: Routes through lower-density areas with high transit demand which provide more frequent service during peak periods and reduced service off peak.

Service Guidelines

- **Community**: Routes through low-density, lower-demand areas, where transit still provides an important social utility, such as to provide mobility to seniors or providing equitable access to/from areas with greater disadvantaged populations. Service levels are relatively lower.

- **Regional/Commuter**: Long-distance, connecting outlying communities to the larger transit network, with fewer stops to improve travel times. Can also service park-and-rides to allow riders to park at the outlying parking lot and travel hassle-free into the city centre.

- **On-Request**: Transit service which operates using flexible routing and scheduling to maximize resources in lower-demand areas. Trips are booked by phone call or using a smartphone application. Services can be operated by the agency or contracted to on-request transit providers. On-Request routes can operate using a variety of service designs:

    o **Stop-to-stop:** The vehicle takes passengers from their closest bus stop to the closest bus stop to their destination
    o **Stop-to-hub:** The vehicle takes passengers from their closest bus stop to a transfer hub to continue their trip on fixed-route services
    o **Home-to-hub:** The vehicle takes passengers from their exact location ('home') to a transfer hub to continue their trip on fixed-route services

Considering the possible layers above and referencing service recommendations outlined in the Move SJ report, three service layers have been considered for the SJT proposed network, as outlined in Table 11-1.

Table 11-1: Proposed transit service hierarchy
Source: Move SJ, Saint John Transit Long Term Vision

Layer	Headways	Description
Frequent	15 minutes or better (peak)	• Trunk-lines connecting to major trip generators • Operating in the core areas of the City which have many trip generators, and higher densities. • Routes should be direct and buses should be frequent
Local	30-60 minutes	• Feeder routes primarily connecting residential areas to major trunk-lines or local trip generators (institutions, commercial areas) • Routes focus on increased coverage to residential areas over frequency
Targeted	on-request	• Flexible/demand responsive transit options to connect people in very low-density areas to main trunk-lines.
Comex	60 minutes	• Long distance regional/commuter service with limited stop spacing provided past the city border to Rothesay, Quispamsis, and Hampton • Level of service driven by funding contributions from the partnering jurisdictions – the City of Saint John should be 'made whole' financially for operating this service

Service Guidelines

11.2   ON-TIME PERFORMANCE

To understand the reliability of the service as well as the operability of each route, the on-time performance (OTP) was reviewed along each route. Generally, as an industry standard, an OTP of 90% is considered acceptable, but best practice is to aim for 95%. Moreover, it is important to target no early service, given that this typically results in poorer reliability and rider experiences than late service. Whereas a late bus may cause a few extra minutes of waiting time for the rider, an early bus has the potential to force the rider to wait an extra 30 or even 60 minutes for the next bus, depending on the service frequency. When OTP falls below 90%, or when early service is observed to be prevalent, it typically suggests that schedule or routing alterations are required. When OTP falls between 90% and 95%, it typically suggests that schedule or routing alterations *may* be required, particularly as continued urban growth and increasing congestion on the roadways can cause OTP to fall over time if no counter-measures are put in place. OTP on a route by route basis is reviewed in Section 12.0 below.

11.3   TRANSFERS

Fundamental to the network redevelopment is keeping in mind the types of transfers that will be utilized. There are many different types of transfer systems that can be used and each has implications on network design. These include:

- **Pulse**: Routes are scheduled to ensure that they converge on particular transfer hubs at the same time, allowing passengers to transfer from one route to another prior to the buses' departures. A downside of this system is that unreliable service can lead to missed transfers and extend travel times.

- **Timed**: Routes which meet at normal intersections (away from transfer hubs) are timed to allow for transfers. This type of transfer experiences similar challenges to a pulse transfer system.

- **Random**: Route frequencies are high enough to allow for spontaneous transfers which are not bound by scheduling. Requires high investment into frequent transit service to allow for this transfer system to work with minimal waiting times at transfer points.

- **Interlining**: One route may 'turn into' another at the end of a cycle, if there is at least one other connecting route. This approach affords passengers the ability to transfer between routes without worrying about missing their connection and without even exiting the bus.

Generally, transfers tend to be from (to) lower-frequency routes to (from) higher-frequency ones, consistent with the concept of frequent routes acting as the backbone of the system, with local routes and on-request service feeding into the frequent layer. The transit industry has observed that people are willing to make transfers so long as it does not negatively impact their total travel time, and a network that relies on transfers allows for optimized service deployment in the sense that not all routes need to travel to the city centre, for example.

Transfers will be contingent on the OTP of each route, building system reliability. When designing routes, an important balance between cycle time and recovery time will need to be struck in order to ensure there

is sufficient recovery time to maintain strong OTP and permit operators breaks, but not so much recovery time that it becomes an inefficient use of the SJT resources. When evaluating and rebuilding routes, cycle-plus-recovery times of 15, 30 and 60 minutes were prioritized to ensure convenient transfers across the whole system and simple schedules that rely on "clock-faced headways". Clock-faced headways refers to a transit planning practice intended to make the system as easy to understand as possible (and eliminating barriers to use), as users can be confident that their bus is expected to arrive at the same time (or times) every hour. The same is not true if headways are set at a number not divisible into 60, such as every 25 minutes or every 45 minutes. The reliability of the transit system will play an integral role in rebuilding ridership following the pandemic and sustaining ridership in the long-term.

11.4 ROUTE SIMPLICITY

Related to the service layer types, route simplicity is considered when evaluating all routes. Generally, the simpler a route can be designed, the more successful it will be operationally, noting that simple direct routes are not always feasible and local routes will inherently be less direct than frequent routes due to their intended purpose of maximizing coverage. Given the challenging road network in the west, north and East Sides of the city, it was important to balance route directness and simplicity objectives with service area coverage objectives. Figure 11-2 outlines varying levels of route simplicity and what that visually looks like. In undertaking the route optimization for SJT, Stantec generally aimed for the frequent layer to be simple (rather than compound) and for the local layer to be compound (rather than complex).

Figure 11-2: Route simplicity categories
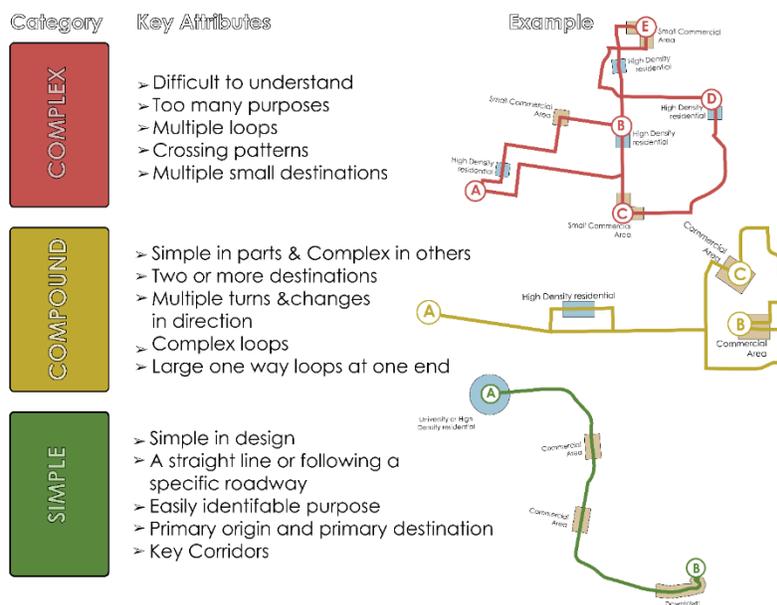
11.5   TRANSIT PROPENSITY

As outlined in the existing conditions report, transit propensity measures provide an outline for the current transit market across the city and can help to understand where resources are best deployed. Overall, the City sees both strengths and challenges in delivering a strong transit service. The background analyses illustrated a large increase in newcomers as well as a significant low-income population in certain areas in the City, both of which often correlate with higher transit use. As such, opportunities may be explored to better capture this ridership and deliver services to residents who rely on it. Additionally, Uptown and the Regional Hospital serve as large employment areas in the City and both are served with frequent (15 minute) transit service throughout the day. The future land use layout of the City will support transit service to key employment, commercial and mixed-use areas found in the city centre, however the low-density residential areas surrounding the city centre and dispersed nature of the City make it challenging to service effectively with fixed routes on a limited operating budget. Lastly, the decline in population in the city centre and increase in the surrounding suburban communities also presents additional challenges. The land use, population density, employment and income distribution across Saint John are illustrated above in Section 4.0.

12.0   ROUTING ANALYSIS

The routing analysis that was completed to inform the creation of the proposed network is detailed below. The existing network has been evaluated in segments divided into Main Line routes, West-Side routes, North and South routes, East-Side routes and Comex routes.

12.1   SYSTEM OVERVIEW

An overview of the existing routes within the network are outlined in Table 12-1. In terms of system ridership, the three main line routes gather the highest system ridership with route 1 achieving 23% and routes 3 and 9 combining for 41% of the system ridership. On average, each route gathers approximately 5% of the system ridership with 18 riders per trip. The overall system OTP of 90% is acceptable, though on the lower end. The routes with below-average OTP, and the routes reporting between 1% and 5% early trips, should be flagged for corrective action. Additionally, various trip lengths are reported to be greater than the frequencies noted, which likely contributes to scheduling challenges and reduced OTP. Furthermore, various routes contain service breaks throughout the day, for example pausing service in the mid-morning and resuming it in the early-afternoon, which limits the perception of reliability and makes the service more difficult to use.

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Routing Analysis

Table 12-1: Saint John Transit existing system overview

Route	% of system ridership	Riders per trip	OTP	Frequency	Trip Length (min)	Weekday Service Span	Round-Trip Distance (km)
1A	23%	34	95%	15 minute peak 30 minute non peak	35	6:05 am - 11:15 pm	26
1B			93%	15 minute peak 30 minute non peak	35	6:20 am - 11:35 pm	
3A	28%	48	90%	30 minutes	35	5:50 am - 11:30 pm	30
3B			87%	30 minutes	35	6:00 am - 12:10 am	
9A	13%	40	92%	30 minutes	35	6:05 am - 6:45 pm	30
9B			91%	30 minutes	35	6:15 am - 7:25 pm	
12	1%	10	90%	60 minutes	55	6:40 am - 9:35 am 12:25 pm - 1:20 pm 4:40 pm - 6:35 pm	36
13	1%	6	98%	60 minutes	30	6:50 am - 6:20 pm	13
14	1%	5	98%	60 minutes	25	6:20 am - 6:45 pm	12
15A	10%	22	87%	30 minutes until 7:15 pm 60 minutes until 11:15 pm	30	6:15 am - 11:15 pm	20
15B			93%	30 minutes until 7:40 pm 60 minutes until 11:40 pm	25	6:15 am - 11:40 pm	
20	4%	13	95%	45 minutes	40	6:10 am - 9:50 pm	14
21	3%	12	90%	60 minutes	20	6:35 am - 9:55 pm	5
23	3%	15	83%	60 minutes	35	5:55 am - 9:30 pm	12
25	1%	12	84%	65 minutes	65	6:15 am - 10:50 am 1:40 pm - 2:45 pm 3:40 pm - 7:05 pm	29
30	3%	12	90%	45 minutes until 6:20 pm 60 minutes until 10:20 pm	25	6:40 am - 10:20 pm	12
31	4%	9	98%	30 minutes until 6:50 pm 60 minutes until 9:50 pm	25	5:55 am - 9:50 pm	9
32	1%	7	96%	70 minutes	60	6:30 am - 9:50 am 11:10am - 12:10pm 4:40 pm - 6:50 pm	41
33	3%	37	68%	60 minutes peak only	55	6:15 am - 9:45 am 2:50 pm - 6:25 pm	29
34	1%	5	93%	45 minutes	10	6:25 am - 6:35 pm	3
51	1%	25	89%	1.5 trips (AM) 2 trips (PM)	75	6:05 am - 7:57 am 3:50 pm - 6:20 pm	72
52	1%	16	85%	70 minutes	70	6:30 am - 9:25 am 4:05 pm - 7:35 pm	42
53	1%	16	86%	65 minutes	60	6:45 am - 8:50 am 3:45 pm - 5:50 pm	48
AVERAGE	**5%**	**18**	**90%**	**40 minutes**	**-**	**-**	**25**

Routing Analysis

Figure 12-1: Existing Saint John Transit network
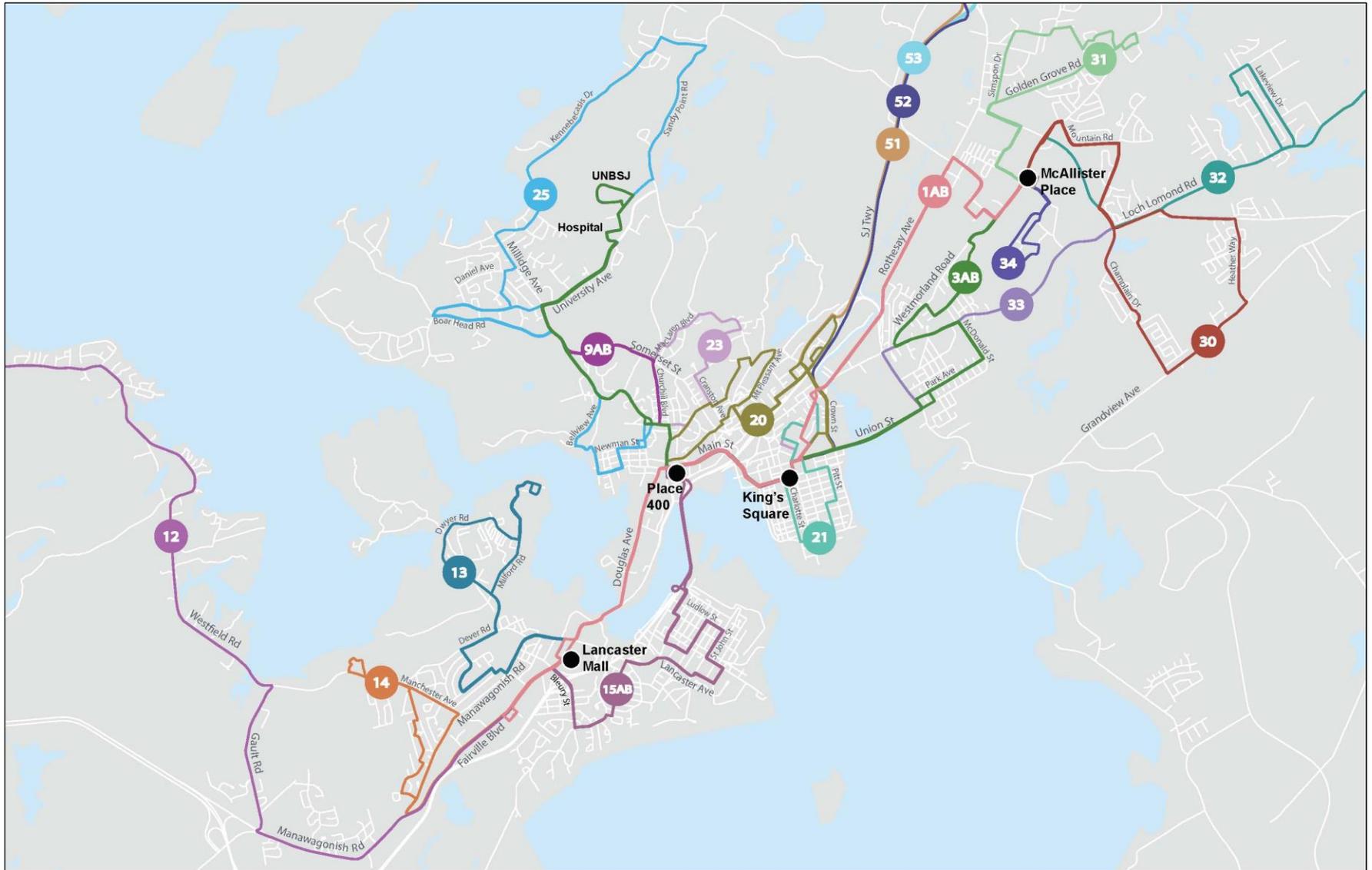
12.2 ROUTE-BY-ROUTE ANALYSIS

As a beginning point to redesign the Saint John Transit network, a route-by-route analysis was completed to understand the purpose, strengths and challenges of each route, keeping in mind transit propensity measures, points of interest and future growth patterns.

12.2.1 Main Lines
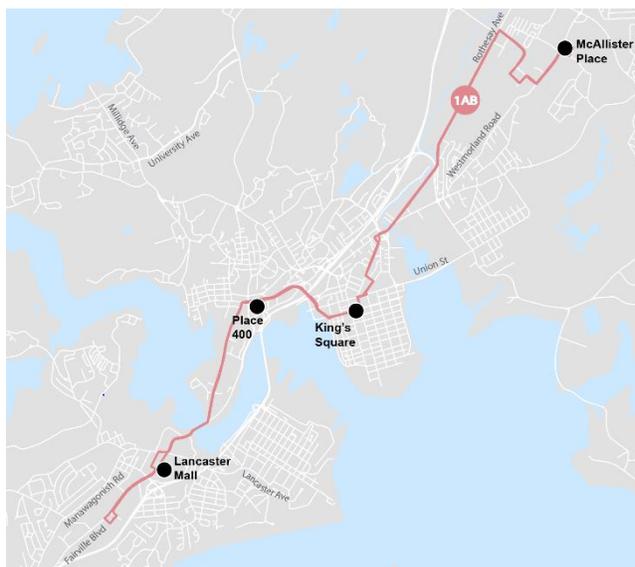
1A Lancaster Mall/Fairville Blvd Plaza / 1B McAllister Place/East Point

- Travels between Lancaster Mall in the west to McAllister Place in the northeast

- Spans east-west through the city with a relatively direct alignment, sees relatively high productivity

- Both routes operate with 30 minute off-peak and 15-minute peak frequencies

- As a mainline route, it captures a significant portion of the system ridership (23%) with a relatively high utilization (34 rides per trip)

- The adequate OTP, strong utilization and direct alignment between major hubs indicate this route is operating well
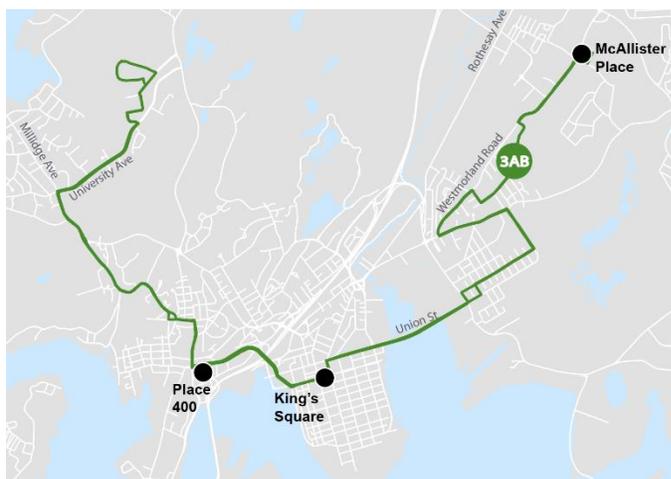
3A Regional/Millidge Ave / 3B McAllister Place

- Connects UNBSJ and the Hospital in the north to McAllister Place

- The most productive route on the system (28% of system ridership and 48 riders per trip)

- OTP is slightly low, particularly on route 3B (87%) suggesting minor adjustments to the alignment may be appropriate

Routing Analysis
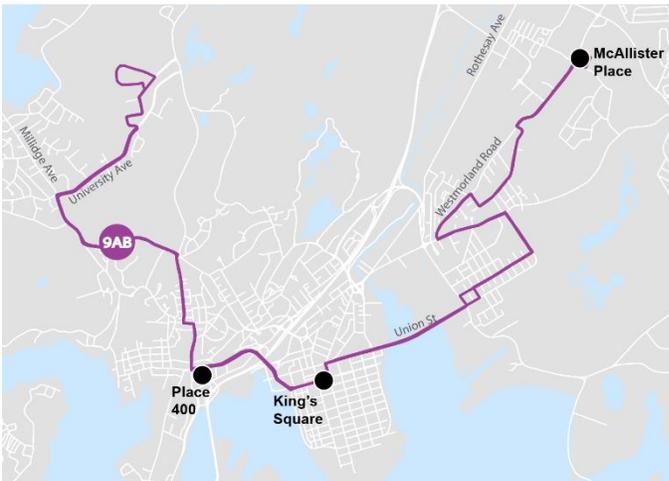
- Alignment is similar to route 9A/B, resulting in opportunities for consolidation to provide once consistent frequent service

9A Regional/Churchill / 9B McAllister Place

- Similar routing to route 3A/B, connecting UNBSJ and the Hospital in the north to McAllister Place

- Captures slightly less of the system ridership relative to other two main line routes, likely due to fewer service hours (currently route 9 stops around 7pm), this route sees high productivity (40 riders per hour) and adequate OTP

- Can explore consolidating routes 3A/9A and 3B/9B to one route with consistent all-day service

12.2.2 West-Side Routes
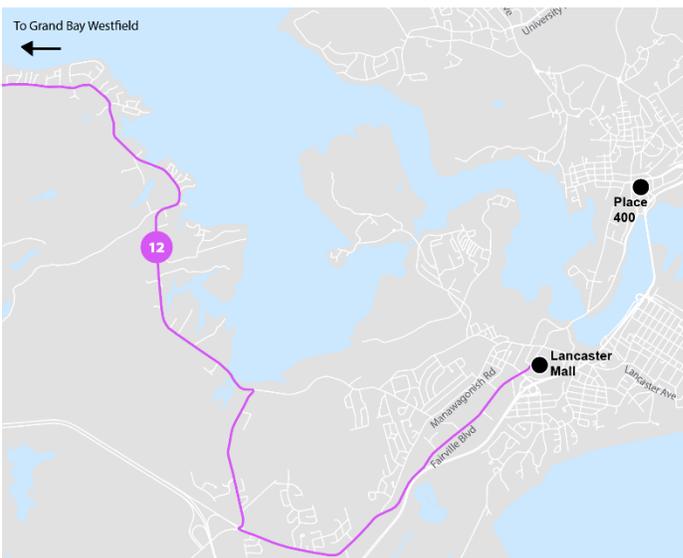
12 Martinon

- Route 12 travels beyond the Saint John urban area to Grand Bay-Westfield in the northwest

- Operates with inconsistent hours, running until 9AM and then resuming around 12/1PM until 6:30PM

- Routing is direct but the length of the trip creates challenges and inefficiencies

- This route carries a small % of overall ridership (1%) or 295 riders a week and sees low productivity with 10 riders per trip on average

- Fixed-route service may not be warranted to this rural-residential area;
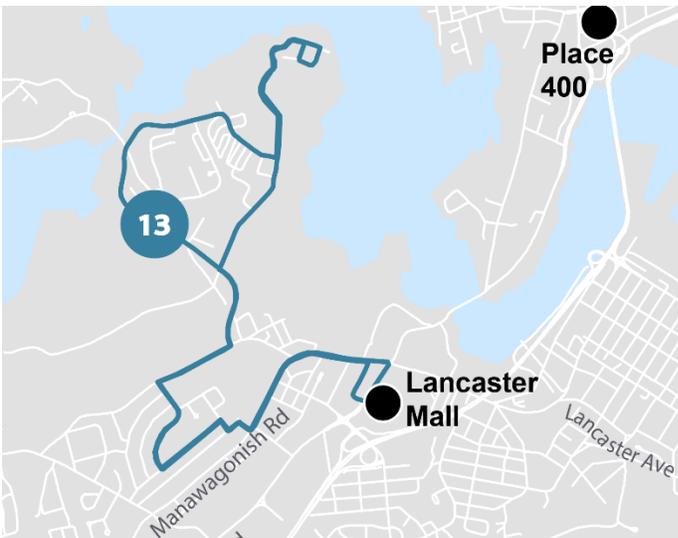
this could be a good candidate for on-request service

13 Milford / Greendale

- Travels from Lancaster Mall to the residential suburb of Milford

- Route 13 is currently circuitous and indirect, operating as one of the least productive routes on the network (6 riders per trip)

- Notably, the Milford area has seen a large population decline between 2011 and 2016 (over 50%)

- The road network makes it challenging to offer adequate coverage in this neighbourhood.

- Given the low-density residential landscape, declining population, and productivity levels, this could be more suitable for a targeted service connecting to Lancaster Mall or perhaps consolidated with another west-side route

14 Churchill Heights

- Serves the Churchill Heights neighbourhood, comprised largely of low-density residential with some commercial uses on Manawagonish Road

- The routing is indirect with very low productivity (5 riders per trip)

- With similar operating conditions to Route 13 this could either be considered for a targeted service to Lancaster Mall or combined into one local service to the Milford and Churchill Heights area

15A/B Harbour Bridge

- Connecting Lancaster Mall to Lower West Side to Uptown, crossing the Harbour Bridge

- This route sees very high productivity for a local service (22 riders per trip) and makes up 10% of the system ridership

- The only connection to the Lower West neighbourhood which is a designated priority neighbourhood

- Notably, the 15A has a slightly long run time of 30 mins and also a below-average OTP of 87%, which was corroborated by public feedback that the route can be unreliable. To improve OTP, a minor route adjustment may be warranted, though this connection is important to maintain

12.2.3 North and South Routes
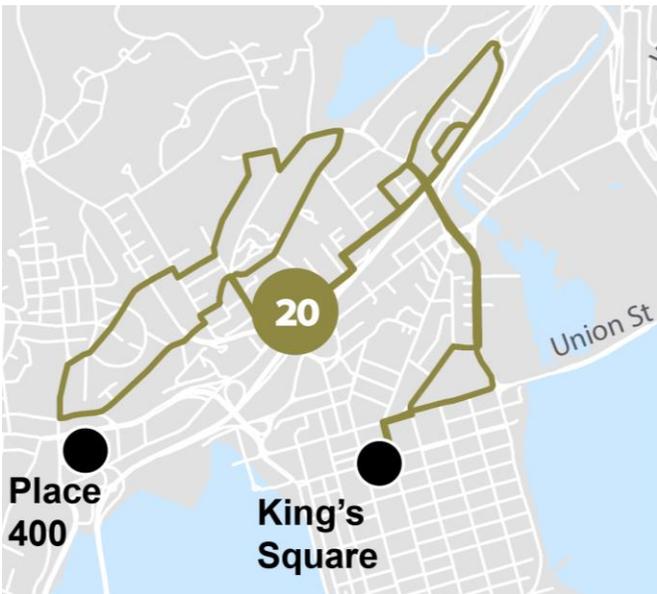
20 Wright St. / Fort Howe

- Provides access to Waterloo Village (including St. Joseph's Hospital), Mount Pleasant and to the edge of the Old North End neighbourhood

- A very circuitous route with many loops and indirect routing

- The current 45-minute headways are confusing for the user and make transfers more challenging

- The service to the Old North End and Waterloo Village duplicates other routing (23 and 25)

- There are opportunities to consolidate segments of routes 20, 21, and 25 to
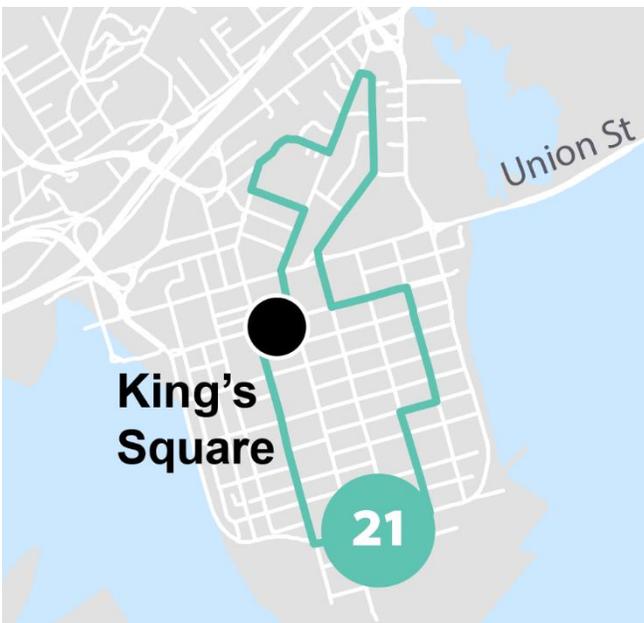
offer more direct and frequent service, and more consistent service hours

21 South End / St. Joseph's

- Provides service between Waterloo Village and the South End (two priority neighbourhoods)

- Route 21 makes up 3% of the system ridership and sees below average productivity (12 riders per trip)

- OTP (90%) suggests that route adjustments are worth considering

- Can explore consolidating parts of route 20 or 23 to provide a north-south connection
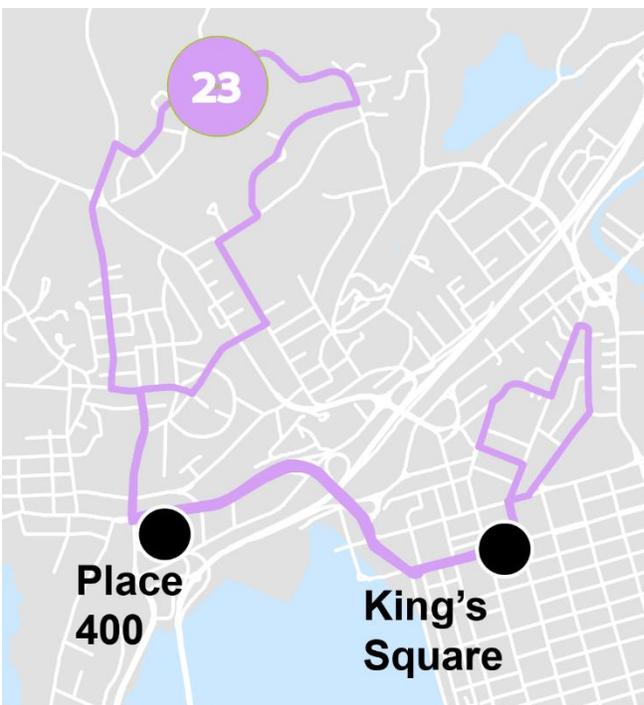
23 Crescent Valley

- Provides connection between Waterloo Village, Uptown and Crescent Valley in the north

- This route offers additional coverage through the Crescent Valley neighbourhood, in addition to 3B

- The low OTP (83%) suggests schedule adjustments are needed; the trip time of 35 mins also suggests the route length should be shortened

- Sees an average level of productivity (15 riders per trip), making up 3% of system ridership

- The coverage in Waterloo Village largely duplicates route 21 (alignment, frequency and service hours) and can likely be consolidated which will improve OTP

Routing Analysis
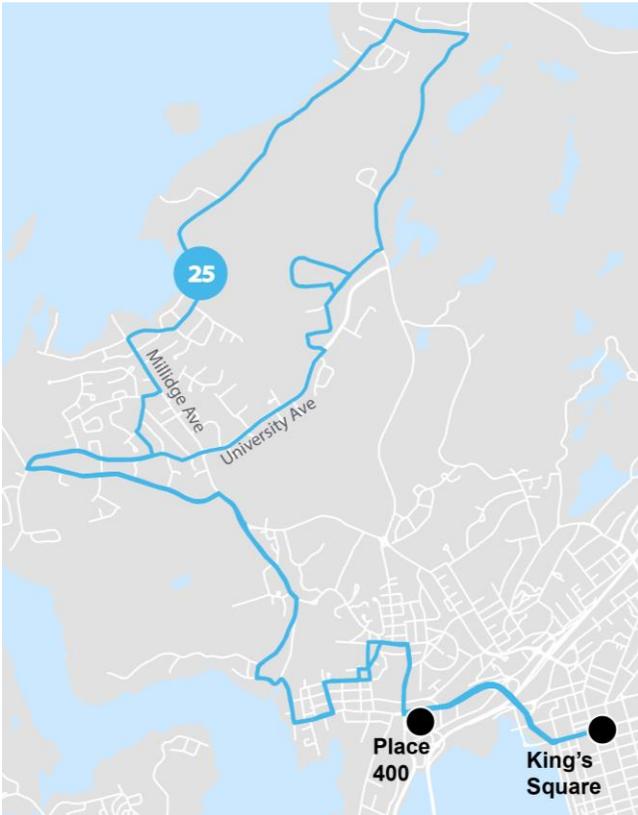
25 Millidgeville / North

- Connects Uptown to the lower North End and Millidgeville, providing access to the regional hospital and UNBSJ

- Low OTP (84%) is likely due to length of the route which operates every 65 min and provisions for no recovery time

- Service to the northern tip of Rockwood Park may be more useful near Lily Lake which is more heavily frequented

- Provided this is the only connection through the Old North End (Priority Area) and the growing neighbourhood of Millidgeville, this coverage should be maintained in some form with consistent all-day service

12.2.4 East-Side Routes

30 Champlain Heights

- Travels from McAllister Place to the Forest Hills and Champlain Heights neighbourhoods in the east, with some duplication with route 33, in Champlain Heights

- Serves many students accessing the NBCC Saint John Grandview Campus

- Both neighbourhoods are largely residential with relatively low population densities

- Routing offers coverage in the more populated areas in Champlain Heights

- Consider amalgamation with other routes and/or offering a consistent 60-minute all-day service

31 Forest Glen

- Travels from McAllister Place to Glen Park neighbourhood which is primarily low-density residential

- The route travels along Golden Grove Road which has some commercial uses and borders Glen Park and Forest Hills. There is a medium/high density residential pocket located along Golden Grove Road which should continue to be served

- The higher density observed along Westmorland Road relative to Majors Brook Drive may warrant a change to the route alignment

Routing Analysis

- Given the low density seen in Glen Park this may be better suited for 60-minute all-day service to shift resources elsewhere on the network

32 Loch Lomond
- Travels from McAllister Place to the Saint John Airport and Willow Grove

- Service is infrequent (every 70 minutes) with breaks throughout the day

- This route shows low productivity (7 riders per trip) representing just 1% of system ridership

- The long routing makes it challenging to efficiently serve the farther-afield destinations within a manageable budget

- Given low frequency and periodic breaks in service this route may be better as an on-request route
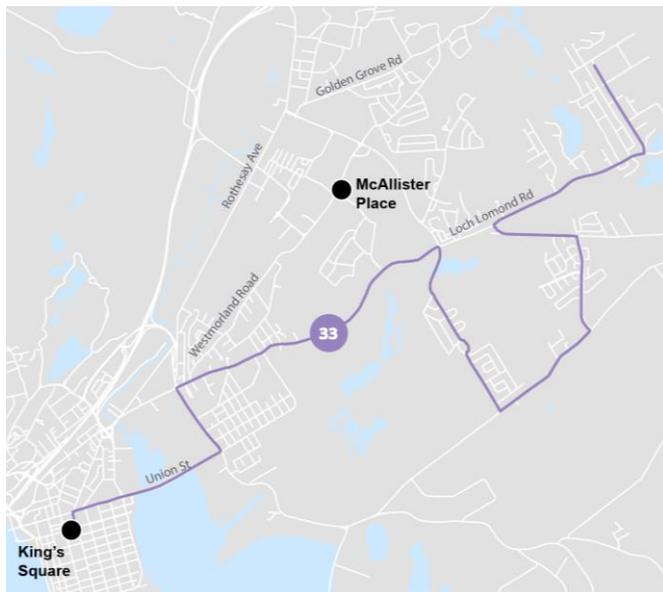
33 Champlain Express
- Travel from Uptown through Saint John East, Champlain Heights (duplicates Route 30) then into Lakewood

- Neighbourhoods served largely represent medium-density communities

- This route has high productivity (37 riders per trip) as it only operates during peak hours

- Very low OTP (68%) suggests schedule or routing changes are required particularly since this undermines this route's objective as an express service

Routing Analysis
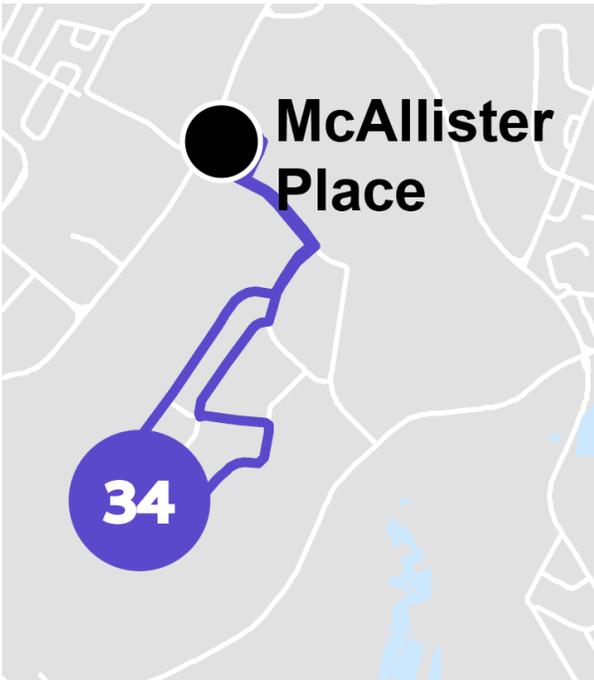
- Consider consolidating with segments of Route 30 and exploring other opportunities to provide service to NBCC

34 Silver Falls
- Connects McAllister Place to the Silver Falls neighbourhood (no evening service) which has a low population density

- Sees the lowest productivity (5 riders per trip) and captures 1% of system ridership

- The neighbourhood is approximately a 15-minute walk to route 1A which provides all day frequent service

- Can potentially consolidate this route with other east-side routes if coverage is important to maintain

12.2.5 Comex Routes

51 Hampton Comex
- Connects the Hampton community to Uptown Saint John
- This route currently makes two trips in the AM and two in the PM
- Low OTP (with 5% of service early) erodes reliability of services especially considering it is a commuter service with limited AM and PM peak trips
- An average of 25 riders per trip suggests the route is well used (highest of all Comex routes)
- Same alignment as route 53 between Quispamsis to Uptown along Route 1
- Given duplication in alignment, consolidation of Comex routes can be explored

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Routing Analysis
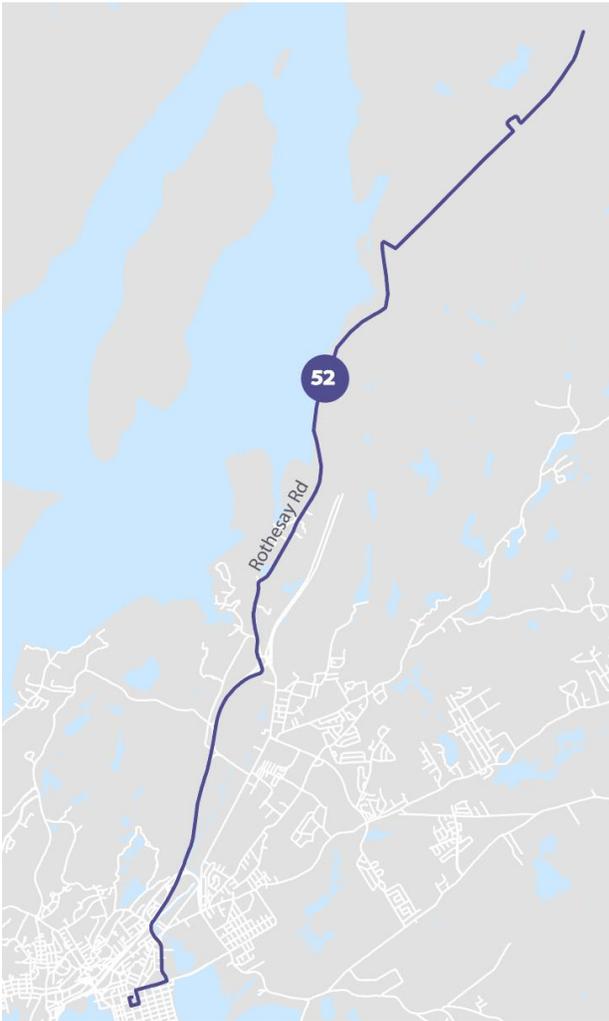
52 Kennebecasis Valley Comex

- Operates between Uptown and Kennebecasis Valley
- Operates parallel to routes 51/53 along Route 100
- Serves overlapping area to route 53 in Quispamsis
- The OTP (85%) suggests schedule adjustments are required (both early and late trips)
- Opportunity to consolidate local stops for route 52/53 and travel into Uptown via Route 100

Proposed Network

53 Quispamsis Comex
- Connects Quispamsis to Uptown
- The low OTP of 85% (14% of trips are late) suggests increased cycle time is required
- Average rides per trip of 16 suggests there is residual capacity
- Follows the same alignment as route 51 from Quispamsis to Uptown (via Route 1)
- Opportunity to consolidate with route 52 (in Quispamsis) and route 53 for remaining stops along Route 1

13.0 PROPOSED NETWORK

Based on the service guidelines and routing analysis above, a proposed network has been developed. The proposed network is illustrated in Figure 13-1 with the full proposed service hours and headways provided in Table 13-1 below.

Each route has been classified based on service layers identified above which are derived from MoveSJ to align with the overall transit and transportation vision for the City. All frequent service routes (1, 3) will offer service Monday-Saturday with peak headways of 15 minutes, which is consistent with the existing service offerings. Then there are local-level routes which will operate six days a week. Peak headways range from 30-60 minutes and weekday service will begin at 6am along all routes. To ensure that critical locations which include priority neighbourhoods, key growth areas (Millidgeville), UNBSJ, NBCC and the

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Proposed Network

Regional Hospital have adequate service throughout the day, all fixed routes are proposed to operate until 9pm with routes 1, 3, and 15 operating until 11:30pm. Furthermore, there is one express route, Route 33, which will function similar to the existing Champlain Express with different routing. This route will provide direct service between NBCC and King's Square during weekday AM and PM peak periods with 30-minute headways. Lastly, the on-request service type is proposed to offer stop-to-hub trips within the designated service areas with operating hours from 6am-6pm.

The recommended routing changes and supporting justifications have been outlined in subsections below by segment (main line, west, north/south, east, and Comex).

Proposed Network

Figure 13-1: Proposed Saint John Transit network
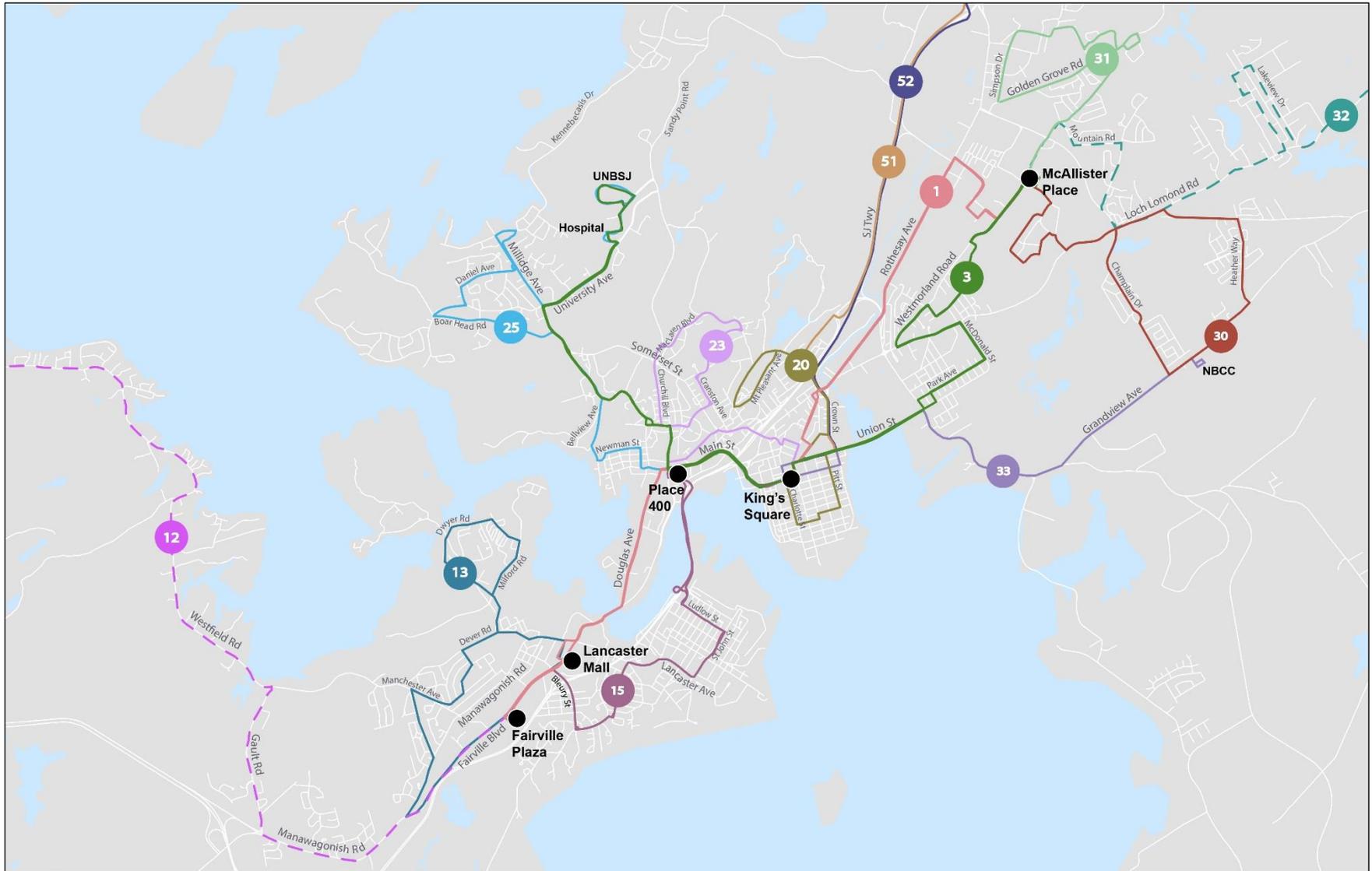
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Proposed Network

Table 13-1: Proposed network service spans

Route #	Route Name	Service Type	Peak Vehicle Req	Weekday		Saturday		Sunday	
				Service Span	Headways	Service Span	Headways	Service Span	Headways
1A/B	Lancaster Mall / Fairville Blvd. Plaza	Frequent	6 buses	6:00am – 11:30pm	15 minutes peak 30 minutes off-peak	7:00am – 11:00pm	30 minutes	medium/long term consideration	
3A/B	Regional / UNB Millidge Avenue	Frequent	6 buses	6:00am – 11:30pm	15 minutes until 7pm 30 minutes from 7pm onwards	7:00am – 11:00pm	30 minutes	medium/long term consideration	
12	Martinon	Targeted	-	6:00am – 6:00pm	on-request	-	-	-	-
13	Milford / Greendale / Churchill Heights	Local	1 bus (w/ rt 14 maintained in short term)	6:00am – 9:00pm	60 minutes	8:00am – 6:00pm	60 minutes	-	-
15A/B	Harbour Bridge	Frequent	2 buses	6:00am – 11:30pm	30 minutes	7:00am – 11:00pm	30 minutes	medium/long term consideration	
20	Wright Street / Fort Howe / South End / St. Joseph's	Local	1 bus	6:00am – 9:00pm	30 minutes peak 60 minutes off-peak	8:00am – 6:00pm	60 minutes	-	-
23	Crescent Valley	Local	1 bus	6:00am – 9:00pm	30 minutes peak 60 minutes off-peak	8:00am – 6:00pm	60 minutes	-	-
25	Millidgeville / North	Local	1 bus	6:00am – 9:00pm	60 minutes	8:00am – 6:00pm	60 minutes	-	-
30	Champlain Heights / Silver Falls	Local	0.5 bus (w/ rt 31)	6:00am – 9:00pm	60 minutes	8:00am – 6:00pm	60 minutes	-	-
31	Forest Glen	Local	0.5 bus (w/ rt 30)	6:00am – 9:00pm	60 minutes	8:00am – 6:00pm	60 minutes	-	-
32	Loch Lomond / Airport	Targeted	-	6:00am – 6:00pm	on-request	-	-	-	-
33	NBCC Express	Express	1 bus	6:00am – 9:00am; 4:00pm – 7:00pm;	30 minutes	-	-	-	-

Proposed Network

13.1   MAIN LINES

The existing and proposed Main Line routing is outlined below and displayed in Figure 13-2.

Figure 13-2: Existing (left) and proposed (right) Main Line routes
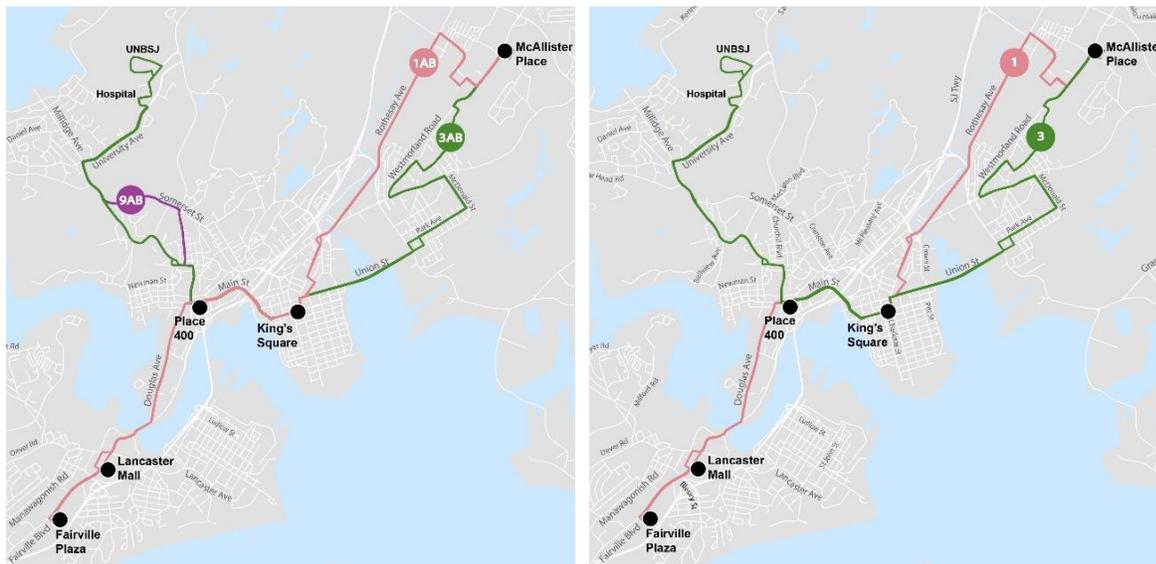
- **Route 1**: Maintain alignment and service frequency of 15-minute peak headways and 30-minute off-peak headways.
- **Route 3**: Consolidate routes 3 and 9 to provide 15-minute daytime service and 30-minute evening service. The route 9 alignment on Somerset St will be removed and local level coverage will be provided in the area by Route 23. This will serve to maintain a more direct service, thereby improving travel times for the user, and improve OTP and therefore service reliability.
- **Overall change**: Modify from 3 to 2 fixed routes, however, will maintain existing frequencies and service hours.

13.2   WEST-SIDE ROUTES

The existing and proposed changes to the West-Side routes are displayed in Figure 13-3 and outlined below.

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Proposed Network

Figure 13-3: Existing (left) and proposed (right) West-Side routes
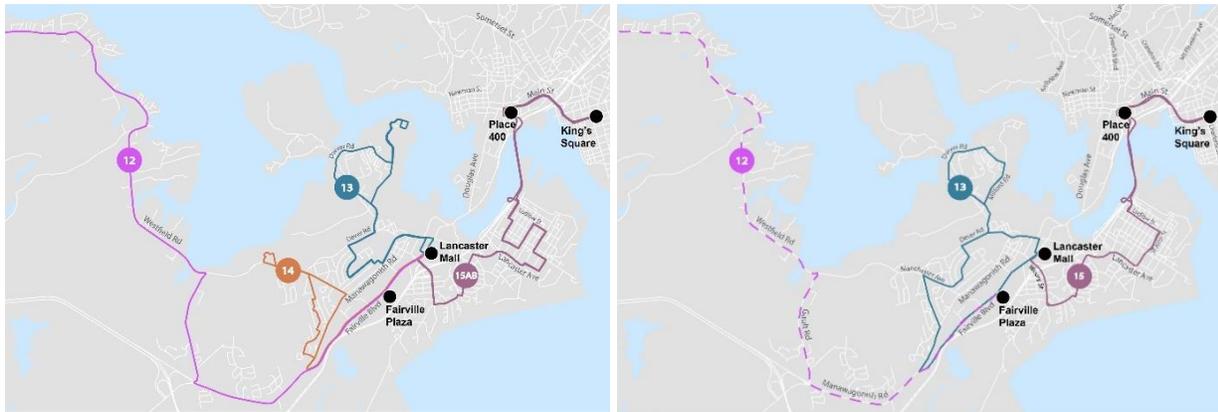
- **Route 12**: Remove fixed-route service to Grand Bay-Westfield which is located outside the city limits. An on-request service (a stop-to-hub service model) is proposed for Lancaster, Island View Heights, the Ridgewood Veterans Wing as well as communities along Westfield Road north to the Grand Bay-Westfield border. The stop-to-hub service model envisions users phoning ahead (or using an app) to request a trip between Fairville Plaza, where a transfer may be made onto Route 1, and any stop within the designated area to the west. Specifics of the stop-to-hub service will be described in further detail in later sections of this report.
- **Route 13**: Consolidate routes 13 and 14 to make one route that serves Milford, Greendale, Quinton Heights and Churchill Heights. Through straightening the alignment, a similar route length is maintained to the existing routes 13 and 14, meaning a cycle time (including layover) of 30 minutes is possible. This route would operate on 60-minute headways throughout the weekday and Saturday with service extended later into the weekday evening to 9pm (currently ends before 7pm). Additionally, Saturday service will begin earlier at 8am (currently begins at 10:30am). Given the current lack of ability to interline this route, in the short term the existing routes 13 and 14 are proposed to operate and interline with one another. The long-term plan would be to interline routes 12 and 13 which cannot be done presently as additional scheduling software would be required. For example, a bus may do a run of Route 13 from 09:00-09:30, then 09:30-10:00 it becomes on-request and picks up riders further to the west along the Route 12 alignment, then 10:00-10:30 another run of route 13, etc. Based on service demand and location of pick-ups/drop-offs a stop-to-hub approach may be more appropriate than a home-to-hub if full-size buses are utilized. Furthermore, this places additional constraints on the on-request service, however this is appropriate given the availability of resources and can be reassessed based on the demand observed. Further information on the proposed on-request service is noted in Section 13.6.1 below.
- **Route 15**: Largely maintain alignment, however, routing is proposed to be straightened in the Lower West Side along Ludlow Street, St. John Street and Lancaster Street to improve the OTP. Propose to operate 30-minute headways throughout the weekdays and Saturday. This offers improved evening service which previously ran at 60-minute headways after 7pm.
- **Overall change**: Altered from 4 to 3 routes (2 fixed, 1 on-request).

13.3 NORTH AND SOUTH ROUTES

The routing recommendations proposed for the North and South routes are illustrated in Figure 13-4 and further detailed below.

Figure 13-4: Existing (left) and proposed (right) North and South routes
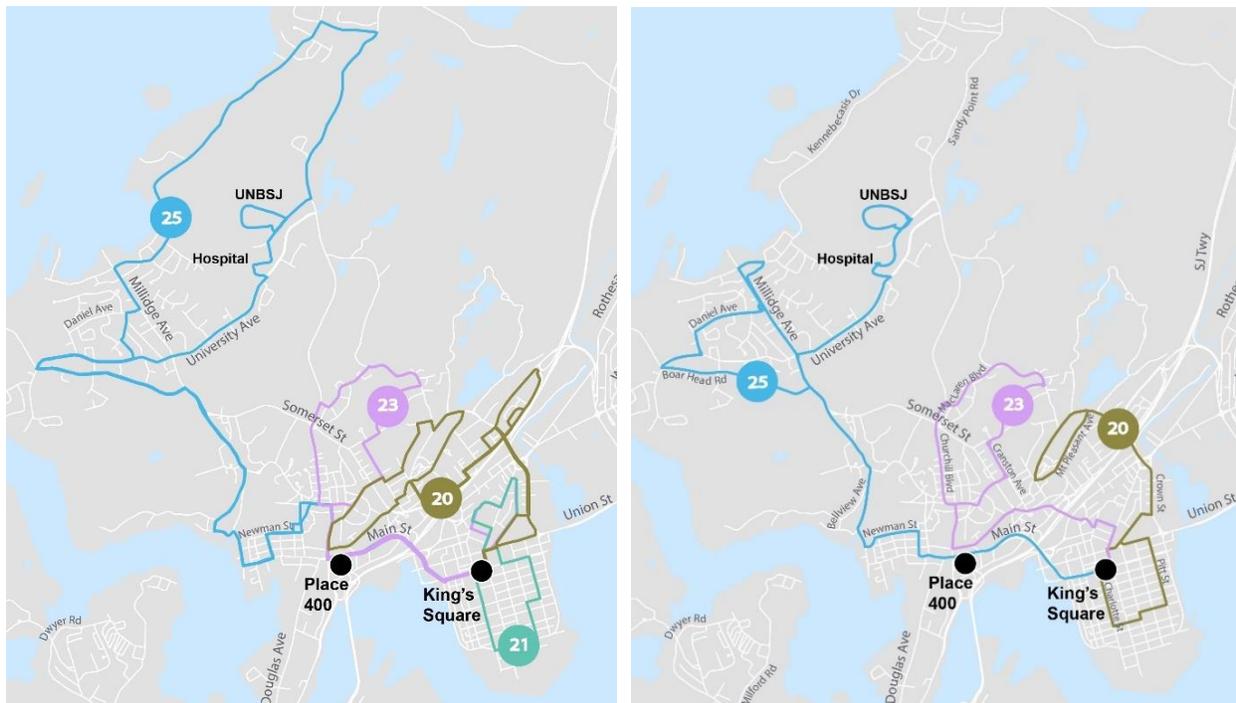
- **Route 20**: Consolidate southern portion of route 21 that serves the South End with a more direct alignment of existing route 20 that serves the Waterloo Village and Mount Pleasant area. Proposed to operate on 60-minute headways throughout the weekdays and Saturday (30-minute headways during weekday peak) rather than the existing 45 minutes to improve clarity, better facilitate transfers, and balance supply with demand. In the long term, if on-request service proves successful, it might be expanded into other areas of the city and connection to Lily Lake in Rockwood Park could be considered where riders can request a drop-off or pick-up from here ahead of time, connecting them to a hub where the can access the fixed-route network.
- **Route 23**: This route will continue to serve Crescent Valley. Key landmarks will still be served including St. Joseph's Hospital, the YMCA, Lansdowne Plaza and connection to two priority neighbourhoods. To reduce service duplication, improve OTP and improve service directness, the routing in Waterloo Village and the North End will be straightened. Waterloo Village will be still be served by both Main Line routes and Route 20 while the North End will still be served by Route 25. Improved headways of 30 minutes during weekday peak hours are proposed, with 60-minute headways proposed off-peak and on Saturdays. Service is proposed to end at 9pm, consistent with other "local" routes in the SJT network. While there is reduced coverage in the Crescent Valley area from the rerouting of Route 9 on Somerset St., these frequency and service consistency enhancements offer improved service.

- **Route 25**: Remove service to northern portion of Rockwood Park as this portion of the park is not frequently accessed. Straighten route alignment through the Old North End and Millidgeville to improve reliability. Proposed improvements to the service headways and span with service operating until 9pm (currently ends at 7pm) on weekdays with consistent headways of 60-minutes with no breaks in service during the day. This route, as well as the other North-South routes due to the number of Priority Neighbourhoods served, should be monitored to identify if further increases to frequency or service hours are warranted in the future should additional operating funding become available.
- **Overall change**: Transition from 4 to 3 fixed routes.

13.4   EAST-SIDE ROUTES

The existing and proposed East-Side routes are displayed in Figure 13-5, along with a description of changes to each route.

Figure 13-5: Existing (left) and proposed (right) East-Side routes
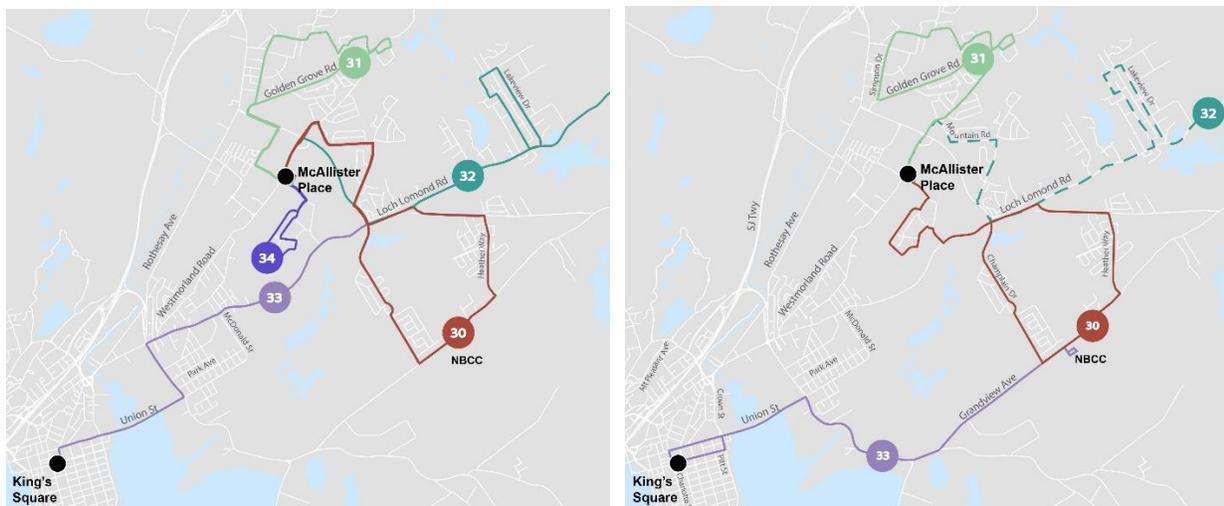
- **Route 30**: Consolidates segments of existing routes 30 and 34 into one route that serves Champlain Heights, Eastwood Park and Silver Falls Park connecting to McAllister Place. The service is proposed to operate at 60-minute headways running until 9pm. The existing 45-minute headways are proposed to be removed to better facilitate scheduling and transfers, as well as simplicity from the users' perspectives (easier to plan travel with clock-faced headways).
- **Route 31**: Slightly shift routing from Majors Brook Drive and McAllister Dr to provide two-way service on Westmorland Rd where greater density exists. The alignment through Glen Falls will remain the same. A consistent 60-minute headway is proposed to align with other local services and to more appropriately match service with existing demand which is a reduction from the existing service. These saved revenue hours have been used elsewhere on the network to increase frequencies, service spans and eliminate service breaks.

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- **Route 32:** Convert to an on-request service to the Saint John Airport (but no further) to offer service more strategically and better meet demand. This is envisioned to be offered as a stop-to-hub service where riders may request a ride between one of the existing bus stops along the route and the fixed-route transfer hub at McAllister Place. The stop-to-hub service would operate similarly to the service proposed for Route 12 with additional coverage in Forest Hills. The longer distances as well as the longer detours that would be needed off of Loch Lomond Rd (compared to Westfield Rd) would make a home-to-hub service more operationally challenging and cost prohibitive. Service is also proposed to terminate at Saint John Airport rather than continuing east to St. Martins Road to reduce travel times and route length. Further information on the proposed on-request service is noted in Section 13.6.1 below.
- **Route 33:** Modify the existing express service to provide a direct connection between King's Square and New Brunswick Community College (NBCC) Grandview campus via Union St., Bayside Dr. and Grandview Ave. This service is proposed to operate during peak hours, presumable AM and PM peak hours, however discussions with NBCC may occur to understand peak travel periods for students. Additionally, this new routing will offer new coverage to a number of industrial employment sites along Grandview Ave and Bayside Dr. which has the potential to garner new ridership. This route will operate with 30-minute headways during weekday AM and PM peak hours. Operating alongside Route 30 which connects McAllister Place and NBCC with reliable all-day service, NBCC is anticipated to be adequately served by SJT.
- **Overall change**: Transition from 5 routes (1 express) to 4 routes (2 fixed, 1 express, 1 on-request)

13.5 COMEX

The existing and proposed Comex routes are illustrated in Figure 13-6, followed by a description of recommendations for each route.

Proposed Network

Figure 13-6: Existing (left) and proposed (right) Comex routes
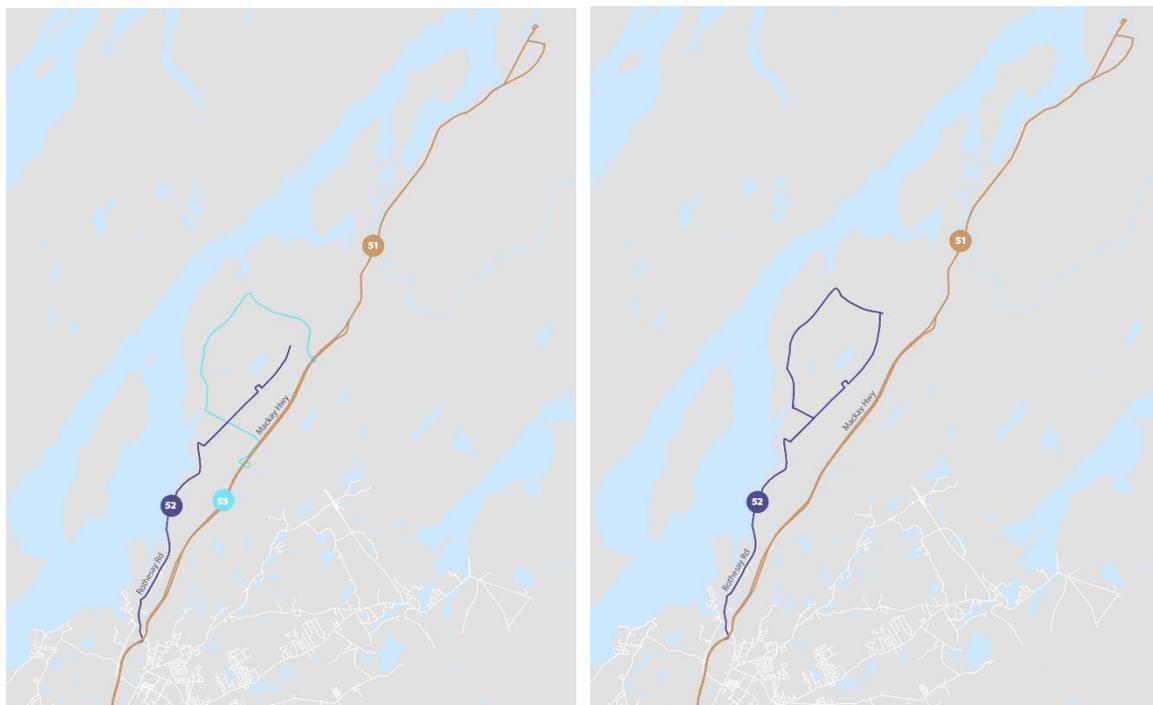
- **Route 51**: Maintain alignment, and make additional stops along Mackay Highway that will be no longer served by route 53. Timing and schedule changes will be needed to reflect additional stops.
- **Route 52**: Consolidate service along current routes 52 and 53, and travel into Uptown via Rothesay Rd. Any previous stops along Mackay Highway will be served via route 51. Timing and schedule changes will be needed to reflect additional stops.
- **Overall change**: Transition from 3 to 2 Comex routes. Comex services should not be operated unless the City of Saint John is "made whole" by the funding partners for all costs directly and indirectly related to operating this service. Given the understanding premise that the City is made whole for Comex operation regardless of whether two or three routes are operated, these recommendations serve the purpose of deploying resources more efficiently such as to manage peak vehicle requirements and improve the level of service on the two remaining routes. There is anticipated to be no benefit (or disbenefit) to SJT's operating budget for implementing these changes.

13.6 SUPPLEMENTING THE PROPOSED NETWORK

13.6.1 On-Request Strategy

The above sections describe a stop-to-hub strategy to replace fixed Route 12, and Route 32. To successfully deploy these on-request services a third-party technology partner will need to be engaged to provide the scheduling software required. There are various providers that Saint John may consider and

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as a first step in the implementation of on-request service, Saint John should initiate exploratory conversations with vendors to confirm the service and delivery model and parameters that are best suited for the areas currently served by fixed routes 12 and 32. It is envisioned that this discussion be a component of the larger software-as-a-service recommendation described further in Section 15.2.

Technology capabilities to run on-request service would need to include the ability to allow riders to book trips from specified starting and ending points, and also to/from predetermined bus stops. Riders would specify their desired pick-up time or window, the size of which would be set by SJT as a policy decision. Small pick-up windows (ex. Pick up between 15 and 30 minutes of booking a trip) come with the advantage of offering an improved customer experience, while large pick-up windows (ex. Pick up between 3- 24 hours of booking a trip) come with the advantage of increased flexibility in trip grouping, and therefore in resource utilization and financial efficiency. With these inputted parameters, along with other SJT policy decisions such as maximum trip times and target number of passengers per vehicle, a software algorithm optimizes the route and scheduling of trips to create travel routes for drivers. As customers wait for their pick-up, they should also have the ability to track the trip so they know when to be ready to board.

It is envisioned that on-request service can be delivered using the agency's Handi-Bus fleet and in collaboration with the Handi-Bus contractor. With Handi-Bus trips rarely exceeding 120 in one day, there is likely sufficient capacity within the existing fleet to provide on-request trips, and it is commonplace across the industry that paratransit fleets often have this spare capacity that can be filled by able-bodied customers booking on-request trips. If spare capacity does not exist at present, it is recommended that capacity be created through the procurement of additional fleet vehicle(s), although Stantec does not recommend this until post-launch on-request data provides compelling evidence for the need for additional Handi-Bus vehicle(s). While the engaging of taxi contractors is a viable back-up plan, the downsides to this are smaller vehicle capacities, the loss of the ability to improve the operating efficiency of Handi-Bus resources, and possible inconsistencies with respect to the extent to which taxi operators deliver service in accordance with the SJT brand. It is also noted that in the long-term, with the procurement of a software-as-a-service solution and the consolidation of routes 13 and 14 as noted above, that on-request service for route 12 may be delivered in-house and interlined with fixed-route 13.

Service-area-wide on-request strategies are also worth considering in the long-term, for extending service hours into the evening after fixed routes cease operation for the day. Belleville, Ontario is an example of a city of similar size to Saint John, who launched an on-request pilot in September 2018 where late night fixed route services were replaced with an on-request service. The agency utilized a mobility app on their existing 40-foot conventional buses to provide dynamic routing and scheduling. This service was stop-to-stop rather than home-to-hub or stop-to-hub, meaning users were transported to and from existing bus stops only. Trips were booked via phone, mobile app, or web booking. A significant increase in ridership was observed, with the number of monthly trips tripling over the pilot period. This resulted in a growth to 5 buses operating on-request, with certain trips operating at full capacity. An average utilization of 30 people per vehicle in the night (9pm to 12am) was observed where there used to be an average utilization of 3 people per vehicle during these hours. Accomplishment of something similar in Saint John may be

more challenging due to a large service area and a challenging geography and road network, but prospects may be investigated further in the long-term budget permitting.

13.6.2 Park-and-Rides

Stantec recommends that SJT explore the implementation of park-and-ride sites that are complementary to the proposed network. While it is acknowledged that SJT has previously explored park-and-rides, and has implemented a "ParcoBus" site at 4347 Loch Lomond Rd, with the replacement of fixed route 32 with on-request service this ParcoBus site will have little relevance going forward. It is recommended that the City explore the possibility for new ParcoBus sites at the termini of the main line routes, including at McAllister Place in the east, Fairville Plaza in the west, and adjacent to UNBSJ in the north. For users to be incentivized to park their vehicle and take transit the rest of the way to their destination, it is critical for the transit service to be frequent and reliable, and without requiring any additional transfers. For these reasons, park-and-ride sites further afield (further west than Fairville Plaza or further east than McAllister Place), along proposed routes 13, 30, or 31 for example, are not recommended.

13.6.3 Interlining Possibilities

The possibility of interlining routes depends on the service spans and service frequencies that are possible within budget limitations. The proposed network was designed keeping in mind interlining opportunities. As noted above, the intent is that routes 12 and 13 will eventually be interlined pending the procurement of scheduling technology / software-as-a-service. In the meantime it is recommended that SJT continue to interline routes 13 and 14 as is done presently. Additionally, routes 20 and 23 will be interlined during off-peak hours on weekdays and on Saturdays. Similarly, routes 30 and 31 will be interlined during weekdays and Saturdays.

14.0 IMPACTS OF THE PROPOSED NETWORK

To evaluate and understand the changes of the proposed network a number of analyses were completed with various factors considered including impacts to coverage, priority neighbourhoods, intensification areas and active transportation connections. Overall, the proposed network remains consistent or offers improvements to the existing network with respect to these considerations. The findings are detailed in the subsections below.

14.1 COVERAGE ANALYSIS

To understand the changes in accessibility of the proposed network relative to the existing network, a buffer analysis was completed on both networks to understand the coverage changes. A summary of the coverage area of both networks within a 400m and 800m buffer are highlighted in Table 14-1 with a map of both buffers illustrated in Figure 14-1 and Figure 14-2. The yellow buffer highlights the existing network

Impacts of the Proposed Network

coverage whereas the blue buffer highlights the proposed network coverage and the green buffer highlights the overlapping coverage of both networks.

Table 14-1: Area covered within a 400m and 800m buffer of the existing and proposed networks
Source: Calculated in ArcGIS

	Coverage Area (sqkm)		
	Existing Network	**Proposed Network**	**Percent Change**
400m buffer	76	66	-13%
800m buffer	123	109	-11%

Looking at the 400m buffer, the existing and proposed networks offer a similar level of coverage within the primary development area of the City including all five priority neighbourhoods. The existing network offer slightly more coverage in the outer edges of the city including in the northern portion of Millidgeville, the northern area of Rockwood Park, however the main area of the park, near Lily Lake, is served by both networks. Additionally, coverage is seen on the outer edges in the West Side within Milford and along Bay Street. However, the proposed service in the West Side will offer a greater service span, with service later into the weekend evenings, while maintaining or improving existing frequencies. Lastly, the proposed express Route 33 offers new coverage along Bayside Drive in the East Side providing access to NBCC and a number of industrial sites.

Similar findings can be observed within an 800m buffer analysis. Both networks reveal that almost all of the primary development area of the City can be accessed within 800m suggesting that both networks offer adequate coverage.

Impacts of the Proposed Network

Figure 14-1: 400m buffer of the existing and proposed networks
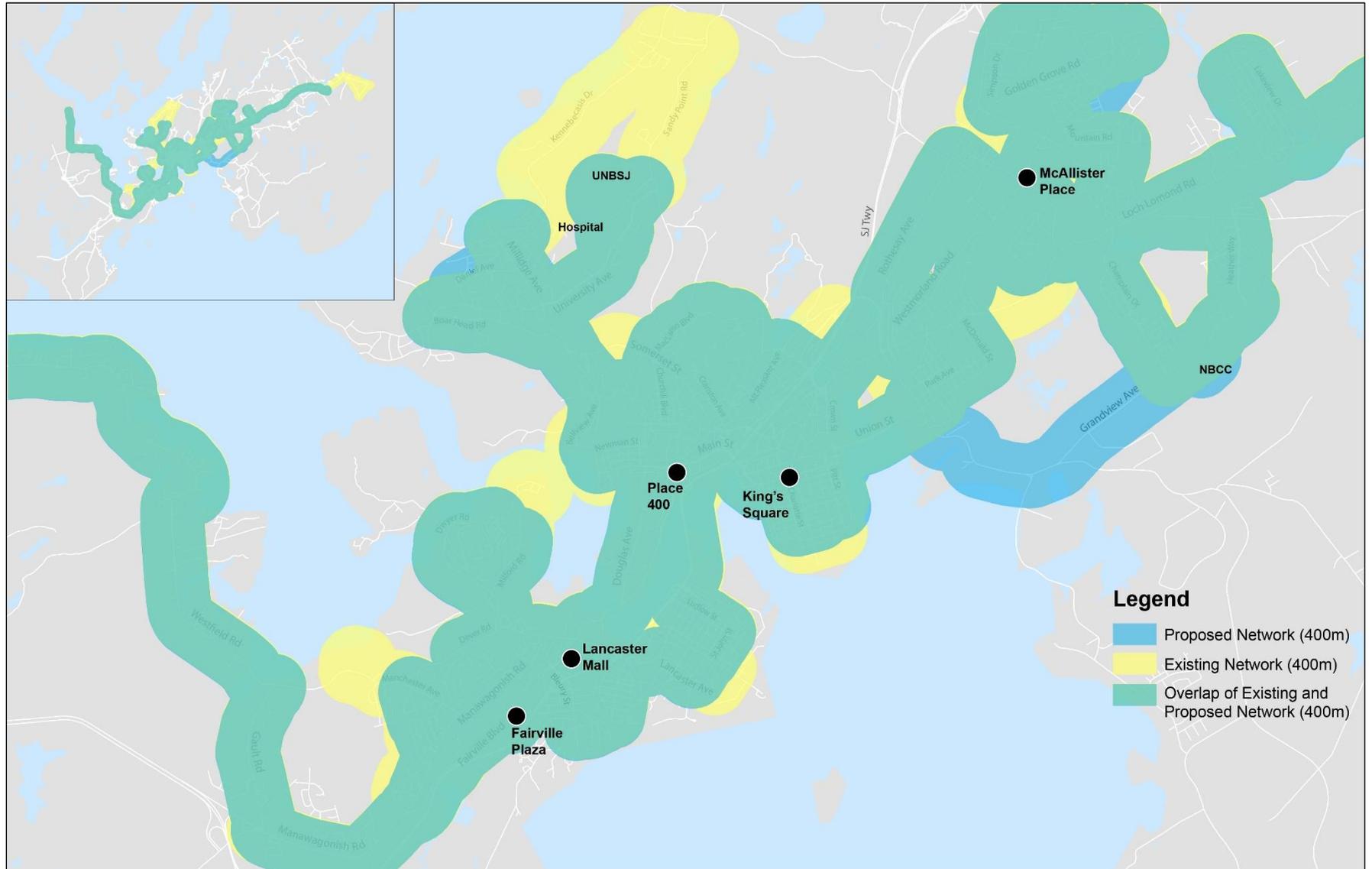
Impacts of the Proposed Network

Figure 14-2: 800m buffer of the existing and proposed networks
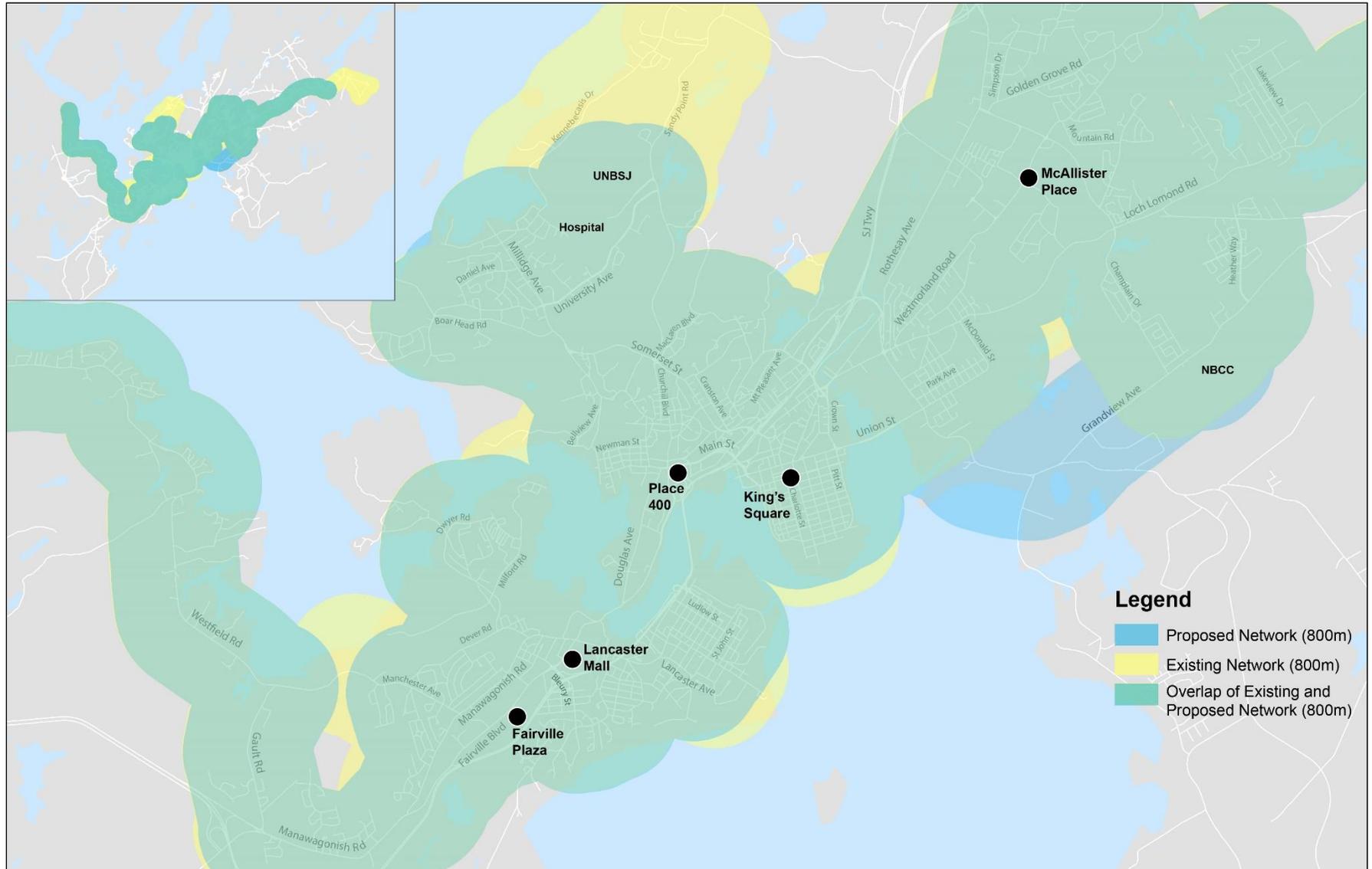
14.2   PRIORITY NEIGHBOURHOODS AND POPULATION GROWTH

In alignment with equity and poverty reduction efforts within Saint John as well as the population growth initiative, priority neighbourhoods and communities with increased growth were given consideration when developing the proposed transit network, understanding that many low-income residents and recent immigrants often use transit as a main transport mode. The impacts to the designated priority neighbourhoods in Saint John as well as Millidgeville, where a significant recent immigrant population resides, are detailed in Figure 14-3 and Table 14-2.

Impacts of the Proposed Network

Figure 14-3: Priority neighbourhoods and population growth area (Millidgeville) relative to proposed network
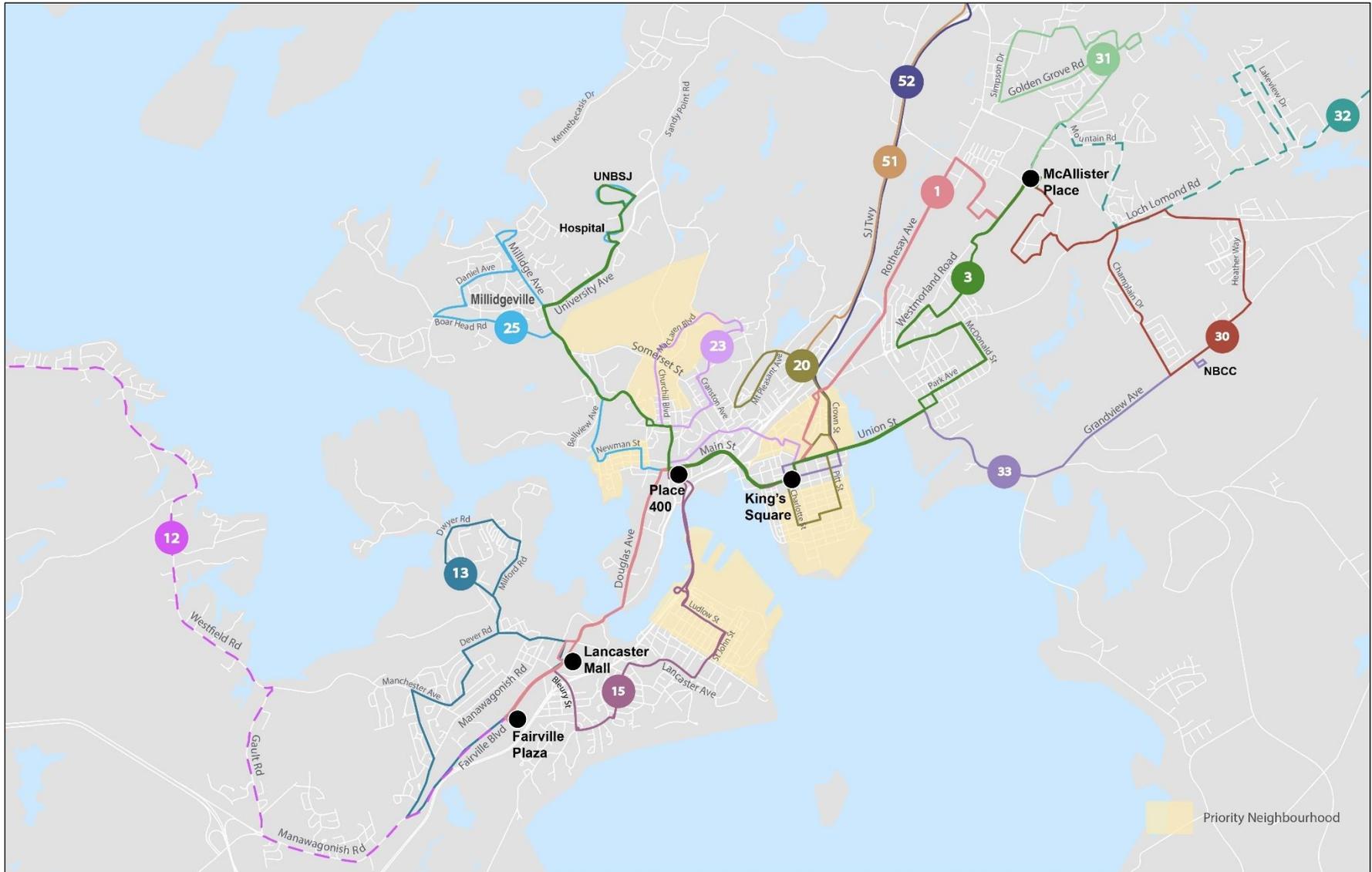
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Impacts of the Proposed Network

Table 14-2: Service changes across priority neighbourhoods and future growth areas in Saint John

Neighbourhood	# of Routes		Service Span		Peak Frequency (min)		Changes Proposed
	Existing	Proposed	Existing	Proposed	Existing	Proposed	
Crescent Valley	2	1	Sporadic	All-day	30	30	The removal of Route 9 on Somerset St. which provided 30-minute service results in a decrease in routes serving the Crescent Valley neighbourhood. However, Route 23, which provides coverage throughout the neighbourhood, will provide 30-minute peak hour service- an increase from the existing service and will operate later into the evening until 9pm on weekdays. Additionally, the consolidation of route 3/9 will provide 15-minute all-day service adjacent to the neighbourhood on Millidge Ave (approximately 1 km) which will operate with increased reliability resulting from a more direct alignment.
Waterloo Village	4	3	All-day	All-day	15	15	Will maintain the coverage and high transit access within this neighbourhood, which is served by main line Route 1. The routing in this neighbourhood has been straightened to reduce service duplications and reallocate to other underserved areas within the city.
Old North End	1	1	Sporadic	All-day	65	60	Proposing all-day 60 min service to replace the current service which operates with 65-minute headways with multiple breaks in service throughout the day. This will ensure more consistent and reliable service in the area. Additionally, the service span will increase to 9pm on weekdays (currently ends at 7pm).
Lower West Side	1	1	All-day	All-day	30	30	Will maintain the existing coverage and see increased headways of 30 minutes all-day on weekdays and Saturdays. This neighbourhood will see more reliable service resulting from minor routing adjustments on Route 15.
South End	1	1	All-day	All-day	60	30	Will maintain similar coverage and frequency, with 30-minute headways being added during weekday peak hours. The consolidation of existing routes 20 and 21 will provide greater access between communities in the North and South Ends within a single trip.
Millidgeville	1	1	Sporadic	All-day	65	60	Proposed all-day 60 min service to replace the current service which operates with 65 min frequencies with multiple breaks in service throughout the day. This will ensure more consistent and reliable service in the area. Additionally, the service span will increase to 9pm on weekdays (currently ends at 7pm).

Impacts of the Proposed Network

14.3 INTENSIFICATION AREAS

The proposed transit network was designed keeping in mind proposed intensification areas outlined in PlanSJ as it will be important that these areas are well served by the future transit network. The intensification areas are discussed below in relation to the proposed transit network with the intensification areas overlaid with the proposed transit network in Figure 14-4 below.

West Side

- Fairville Boulevard: This corridor is proposed to be served by Route 1 with frequent service as well as local-level service via Route 13.

- Gault Street: The low-density residential areas highlighted along Gault Road will be served with on-request service from Route 12 which will offer greater service spans and shorter wait times than the existing service.

- Lower West Side: The low to medium density residential area in the tip of the lower West Side will be served directly by frequent service along Route 15.

North-South

- Uptown: The Uptown area will be served by both frequent routes 1 and 3.

- South End: Local-level service is proposed via Route 20 in the South End.

- Waterloo Village: This area is proposed to be well served by routes 1,3, 20, and 23.

- Millidgeville and the Old North End: Both neighborhoods will be served with greater weekday service spans (without service breaks) via Route 25.

- Crescent Valley: This neighbourhood will continue to be served by Route 23.

East Side

- McAllister Place: The area surrounding McAllister Pace is well served by a number of routes that terminate at the hub including routes 1, 3, 30, 31 and 32. The low-density residential area just north of Loch Lomond will be served via Route 32 on-request service.

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Impacts of the Proposed Network

Figure 14-4: Intensification areas relative to the proposed network
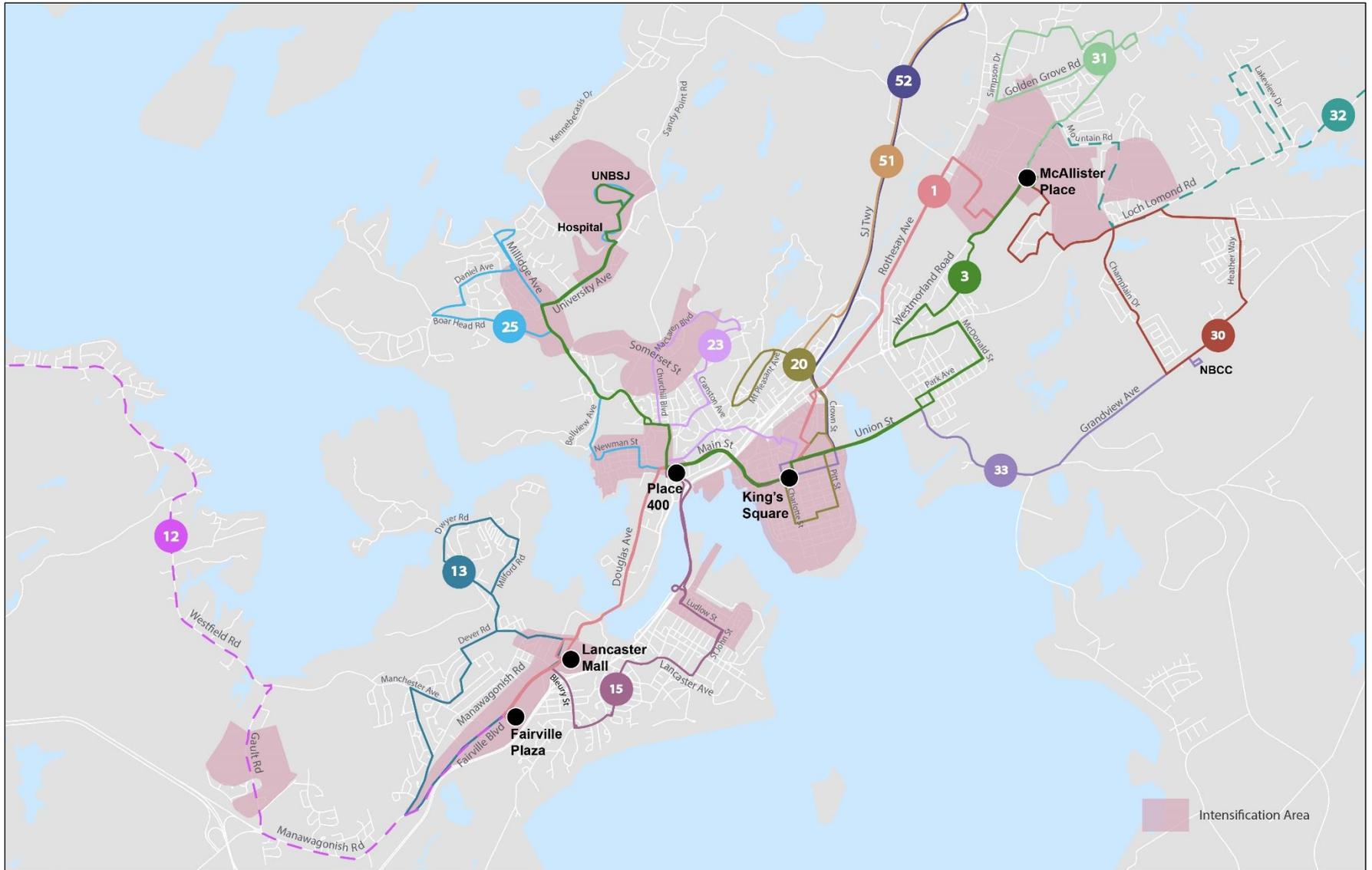
14.4   ACTIVE TRANSPORTATION NETWORK

The cycling plan presented in PlanSJ outlined three priority cycling routes including the Blue Route (Uptown to North End and University), Purple Route (Uptown to Rockwood Park) and Yellow Route (Manawagonish Rd to Douglas Ave). The Blue Route connects to Route 3 at the University and Hospital. Additional connections can be made to routes 1, 15, and 25 at Place 400. Additionally, the Purple Route operates in close proximity to King's Square where a number of routes can be connected to including all frequent routes. Lastly, the Yellow Route in the West Side can connect to routes 1, 13, and 15 at Lancaster Mall.

The designated bike routes have been overlaid on the proposed transit in Figure 14-5.

Impacts of the Proposed Network
Figure 14-5: Bike routes relative to the proposed network
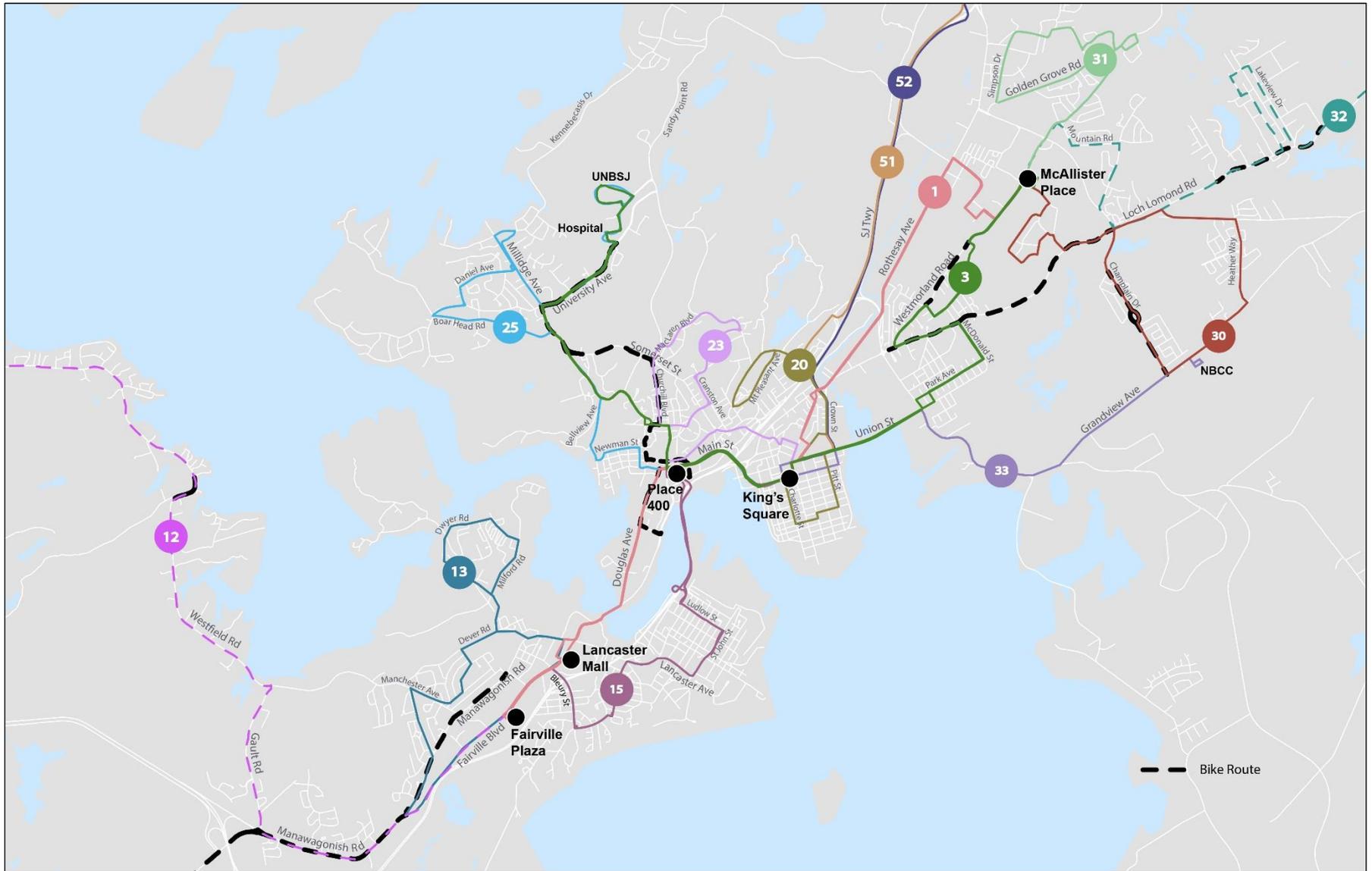
15.0 INTERNAL OPERATIONS EVALUATION

Stantec reviewed the internal operations of SJT. The focus of our evaluation was to determine how the organization is structured and to identify opportunities to improve the effectiveness and efficiency of how the service is delivered.

Our review is structured according to the following groupings:

- Administration (including paratransit service)

- Scheduling, Planning and Dispatch

- Operations

- Operating, Maintenance and Storage Facility (OMSF)

- Organizational Structure

To inform our review, Stantec reviewed data to the extent available and met with staff at SJT. Our observations compared with industry best practices and our experiences with peers, are captured in the following sub-sections. These observations form the basis upon which recommendations are developed and discussed in Section 16.0.

15.1 ADMINISTRATION

Stantec met with SJT administrative and management staff to review their duties and have a general discussion to explore areas for improvement.

General Comments

Staff mentioned how the agency is currently governed as a commission. The agency is accountable to an appointed Board of Directors. It was acknowledged by staff that SJT can be successful if brought into the City, though it would be dependent on who would oversee transit and how it would be corporately structured within the City. It is felt that such a structure might foster closer working relationships with the City. Most importantly, if SJT could secure greater levels of support and resourcing (or benefit from increased involvement from shared services) through such an arrangement, they would find this prospect encouraging. Important to note, irrespective of whether a transit agency is a city department or a standalone commission, all face the same challenges of adequate staffing and trying to do "more with less".

SJT has too many fare categories for a system of its size. There are approximately a dozen fare products which are too many as it can be confusing to the user while also inducing additional administrative responsibilities. Simpler fare tables, with fare categories on an "means-based", or "ability to pay", basis would be more consistent with recent practice in the transit industry in North America.

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Internal Operations Evaluation

Overall, SJT as a service runs well for the level of subsidy it receives; however, there are opportunities for significant improvement that would drive greater ridership and cost recovery. These opportunities will become increasingly critical in the context of an $850,000 budget decrease, to ensure service quality does not deteriorate by a commensurate amount.

Staffing

Although SJT has an organizational chart, there is an impression that SJT does not have a proper organizational structure; rather we heard from all disciplines we spoke with that work is managed through an "all-hands-on-deck" approach. Clarity is desired on the duties per role across the organization from top to bottom. Enforcement is then needed on those roles and duties to make sure individuals are pulling their weight; this is something currently lacking. With SJT being a lean organization in terms of its staffing, there is also limited capacity to take on new responsibilities such as these, which restricts the organization's ability to operate at peak efficiency.

Administrative functions are performed by three staff - one part-time and two full-time individuals. Most of the time spent by staff is for financial administration including for example fare reconciliation, distribution of paper fare products to SJT's distributor network and preparation of financial statements. In addition to transit, taxi administrative tasks are also handled by the same individuals. Staff approximated 80% of their time is dedicated to transit, with the remaining 20% to taxi licensing.

Overall, there is adequate staffing to complete the duties assigned, however, there is not additional time available to take on new duties or expand roles. On the surface it may seem that if SJT can make do with the current duties and roles. "Why expand when we are looking to reduce the budget by $850,000?" However, in some cases further investment can lead to improved efficiencies. Moreover, there is room to optimize existing duties, but the SJT organization has limited ability to tolerate a learning curve in the immediate term as staff get used to new responsibilities.

Stantec recognizes that SJT is already seeking opportunities to improve the efficiency of its resources. For example, consolidating fare product distribution at the City would limit the need for staff to spend considerable time driving around to visit each vendor and drop off the fare media. It is important, then, for the freed-up capacity to be re-assigned in the most critical areas. And it must also be acknowledged that despite these improvements, further improvements may be possible for example through a targeted investment in technology such as an electronic fare collection system. These possibilities will be explored further in Section 15, but generally it is noted that the more time that can be freed up for marketing tasks, the larger of a ridership (and therefore revenue) benefit the system is likely to realize.

Marketing and New Revenue Potential

SJT undertakes no formal marketing to attract new riders, a determent to the agency. Overall, there is a perception of a lack of community awareness about SJT. Additional investment in marketing and customer service can further promote the agency and its services, deal with customer compliments and complaints, as well as expand the charter business (and in a post-COVID world, the ferry tour business).

According to staff, charters used to be a substantial revenue source but have tapered off in recent years. This was corroborated through reviewing SJT's financial statements where charter revenues have been

on a steady decline over the last ten years. Without resources currently vested in growing this market, it is difficult to understand the rationale for the drop-off in charter service (assuming there are reasons beyond minimal staff involvement), and seek opportunities to grow this area of the SJT operation to its potential. Potential customers of charter service include schools, major employers and event organizers. It will be important to consider the implications on fleet and staffing if/as charter service grows, particularly if there is substantial demand for charter service during peak hours. It is important for SJT to be strategic about how it operates its charters, and its ability to deliver charter service during weekday peak hours is more modest.

Additionally, in the longer term post-COVID when cruise ships with significant patronage become a reality again, ferry tour services might be expanded beyond what was provided pre-COVID. At present, SJT staff estimate how many people are coming off tour boats based on historical averages. For example, staff know that on a 300-person Disney Cruise, approximately 50 people will use SJT's ferry tour service. Staff mentioned that in the past, SJT used to have a dedicated person who used to have contact with incoming cruise lines and had a pre-negotiated deal with them and knew exactly how many customers they would be receiving on the ferry tours when the boat docked. Revisiting this approach of pre-negotiation can lead to improved revenues and ferry tour operations that are always right-sized to the demand.

Overall, there is opportunity to increase SJT's revenues by boosting charter services (short term) and ferry tour services (long term). However, to unlock the opportunity, an investment into incremental marketing / customer service resources is necessary to grow these two potential businesses.

Handi-Bus

The City's specialized transit service (paratransit) is provided by an independent third-party contractor, Independence Plus. Staff advise that SJT funds paratransit services and provides all functions except service delivery (i.e. operating the vehicles) and ride scheduling. Functions provided include fleet acquisition, fueling, maintenance, etc. The contractor is not accountable to the City in any way nor is there a formal reporting structure to SJT. Independence Plus does not provide any operational data or any information about the services it provides. Staff advise that a formal contract was never executed with the City or SJT, rather the arrangement was based on a "handshake agreement". While Independence Plus appears to have been a good partner thus far, and there have not been any serious incidents, the lack of knowledge about the operator's day to day functions is of concern to Stantec. Since there is no direct SJT oversight, there may be concerns about how, specifically, Handi-Bus service is being delivered, and whether it being delivered in the most efficient way possible. Staff advised that whatever revenue is made by Independence Plus is kept by the operator – keeping this in mind it will be important to consider that any recommended fare changes to Handi-Bus may have implications with respect to SJT's handshake agreement with Independence Plus. Finally, it is acknowledged that while the contracted hourly rate is competitive, this is an expectation in light of SJT seeing none of the revenue but absorbing the cost of procuring and maintaining the vehicles. Annual cost of the paratransit service is approximately $450,000.

15.2   SCHEDULING / PLANNING / DISPATCH

Like administrative staff, Stantec met with SJT scheduling, planning and dispatch staff to review their duties and have a general discussion to explore areas for improvement.

General Comments

The bulk of SJT's operation is run by three individuals – a service supervisor, a dispatcher and an inspector. It was stated the bulk of the work is completed during work core hours. SJT does not have shifts to cover the full span of service, which is another sign that the SJT organization is a lean one. All three individuals have a "hands-on" approach to meeting daily service requirements. While they have general duties aligning to titles, there is considerable overlap to help each other "get the job done".

SJT struggles to provide good customer service. Currently, customer service functions (answering phone calls, handling customer complaints, walk-ins, etc.) are handled by scheduling, planning, and dispatch. Contrasted to other peer agencies in North America, this is an unusual practice. This function is typically aligned with a dual role of marketing/customer service coordinator in smaller agencies like SJT. The role may also be shared outside of transit with City shared services, provided the City's integrated customer service centre's staff are appropriately briefed on all of the information and nuances related to transit. Self-admittedly, there are currently no existing skillsets within SJT to provide good customer service, nor the right individuals. We also heard that SJT does not communicate effectively with the public at bus stops or other "touch points" such as social media or the internet, where SJT is entirely reliant on the City's shared services. This points to the need to either create additional capacity for this at SJT or foster a more streamlined working relationship with the City.

Several challenges have been identified related to the shared services model provided by the City of Saint John to SJT, particularly with respect to website and social media needs. The transit system map is an example of this – the system map is very confusing, not user intuitive and is of limited help to SJT customers. Staff routinely field complaint calls about poor system map usability. Moreover, staff expressed concern with the speed in which service interruption information is disseminated. SJT has a Twitter account which is monitored by one person on a time-permitting basis. The intent in setting up the account was to communicate service interruptions in real time, but SJT's Twitter feed is a low priority among the "all-hands-on-deck" approach to keeping service operational, and as such, communications are very delayed and of little use. Last, staff commented on how the SJT website is controlled by City; as such, there is no way for SJT to post service interruption data, etc. without contacting someone at the City. They advised that this arrangement is not always convenient, especially after-hours, when they need to get notices up as soon as possible, particularly in winter months when customers are waiting at bus stops in the cold. If the City proceeds with bringing SJT into the fold as a City department, these challenges should be appreciated and opportunities to streamline efforts should be discussed with the appropriate parties.

Technology

SJT does not use any software to schedule services. All scheduling is done once a year using MS Excel. Because the current scheduling process is labour intensive and entirely manual, combined with a lean

"all-hands-on-deck" organization, staff are not able to adjust service levels throughout the year. This limits SJT's ability to be responsive to fluctuations in demand, and consequently limits SJT's ability to right-size the supply and lower the cost of providing service. As an example, service could be reduced between the Christmas and New Year's timeframe, a common strategy at peer transit agencies, since many people are off on vacation during these periods. Another example may be to reduce service to the university during summer months when fewer classes are in session.

In addition, while SJT presently interlines some of its routes, scheduling software may shed light on more creative fleet deployment and interlining possibilities. Much like the airline industry, interlining routes allows for schedule compression which saves operating dollars. Moreover, operators enjoy interlined routes because it breaks up the monotony and fatigue of driving the same route over and over again during the course of a day; as added benefits, it increases operator alertness leading to increased customer safety, and it can minimize the need for customers to make transfers. However, to leverage these opportunities to fully optimize operating costs and minimize deadhead, SJT would need to invest in scheduling technology, either as a capital expense or a software-as-a-service model. The investment in technology also needs to be supported through dedicated staffing and training.

Stantec discussed real-time bus tracking and customer-facing technology with staff. While there have been version updates over the years, the current application is a 20-year-old platform which is showing its age and is no longer particularly effective. Staff routinely receive complaints from SJT riders about inaccurate next bus arrival information and the limited functionality of the trip planning interface. According to staff, customers find the app to be slow, dated and insufficient to meet their overall needs.

SJT is in need of a modern and functional GPS system. At present, SJT's dispatcher can approximately see where buses are using the current application's GPS tool, but data transmission is delayed, thus the information received is not in real-time. As such, there is limited potential for SJT's dispatcher to respond to service issues or to hold buses to be able to ensure connections are made. Magnifying the issue, SJT does not have any street supervisors. As such, nobody is monitoring service on the street. Both modern technology and street supervision are important tools that allow a transit agency to modernize service and deliver on customer commitments. Currently, if something significant occurs like an accident or injury, one of the three staff will go out and investigate, but this means something else will not be completed. In sum, a "one-stop shop" app capable of scheduling, providing real time user information, trip planning functionality, transfer-points, etc. might be very beneficial both to operations and the customer.

Stantec was advised that the City's Public Works vehicles are being outfitted by a GPS tracking solution from GeoTab. Staff inquired whether there was a potential to share this technology with the SJT's fleet. Stantec advises that the GeoTab tracking technology is rudimentary in its GPS functionality and not robust enough for transit purposes to warrant such an investment on SJT's part. First, the GeoTab device is not capable of generating a sufficient real-time General Transit Feed Specification (GTFS) file. A GTFS feed is necessary for advanced trip planning purposes on popular platforms such as Google Maps or the Transit App. Additionally, the device is not capable of informing an operator whether they are running on-schedule or if they are running 'hot' or 'cold'. Such information is helpful to operators so they can adjust their speed or hold a bus if they are not on schedule and missing assigned timing points. Last, from the dispatcher's perspective, a GeoTab solution does not provide sufficient real-time information to deal with

service interruptions, provide instructions to operators to alter operations, and does not offer other attributes unique to transit. Through industry contacts, Stantec was advised that Mississauga Transit (MiWay) tried to integrate their AVL system with their public works fleet a few years ago. However, we understand that this did not go well, presumably due to the challenges identified. As such, future plans to establish a common platform for tracking were abandoned.

Stantec completed a desktop review to see whether any transit agencies in North America have tried this approach. We were unable to identify any transit operator in North America that is using a GeoTab-type technology for transit services.

Fares

Cash handling is a cost driver to SJT, and every month SJT is billed $700 by Brinks to transport collected cash to the bank. If funds could be diverted into a technology solution, such as an electronic fare management system, some of these cash handling expenses can be foregone. Alternatively, some transit agencies have partnered with their local police forces to supply cash-escorting services (i.e. a police officer goes with someone from the transit agency staff to the bank to make the deposit). This may be an option for SJT to lower the cost of cash transporting services and is something that could be explored.

Fare Evasion

Fare evasion is problematic for transit agencies as it enables revenue leakage that would otherwise contribute to the farebox recovery ratio and the overall financial health of the agency. Every transit agency has some level of fare evasion. Staff commented that fare evasion is a substantial problem for SJT. While fare evasion is likely indeed a problem, however, it is also a problem that the transit industry faces as a whole and it is a difficult problem to measure regardless of the level of technology that a transit agency has invested in. As such, there is insufficient evidence to suggest that fare evasion at SJT is any worse than industry average. Fare evasion takes many forms, but each has the same result—a rider being transported by the transit agency without paying the appropriate fare for the service provided.

Typical forms of fare evasion include:

- No Fare Paid: No money or valid pass/ticket/transfer collected or accepted by a bus operator;

- Short Fare: Less than the correct or total cash fare is tendered by the customer; and,

- Expired/Invalid Fare Media: Fare media, including transfers, presented to a bus operator is expired, invalid, manipulated original or fake.

Like in all communities, Stantec acknowledges that there are individuals in Saint John that cannot afford to pay for transit fares. We believe a low-income strategy predicated on one's ability to pay is the optimal solution. The fare evasion referenced here pertains to customers who can afford to pay for fares but deliberately choose not to do so for a variety of reasons. Inappropriate fare structures can also add to instances of fare evasion unintentionally if fare tables are overly complicated, but also deliberately from perceived low value for money and poor service quality.

Despite the inability to accurately track fare evasion and the inconclusive data, there is still opportunity for SJT to take measures to reduce fare evasion and therefore increase the amount of revenue being collected and improve the operating budget. These measures are discussed in Section 16.0. As a point of reference, it is noted that the national average for fare evasion is understood to be approximately equal to 3% of farebox revenues.

Comex Service

Staff highlighted uncertainty about the Comex service cost model with regards to whether the agreements in place with the neighbouring communities are sufficient to fully recover the costs associated with operating Comex. There is a general sentiment that the agreements are "enough" but Stantec was not provided with sufficient evidence to confirm that indirect costs such as maintenance and fleet amortization/replacement are considered in these agreements.

15.3   OPERATIONS

Stantec held a 90-minute workshop with frontline staff in the lunchroom at SJT. Fifteen operators attended the session where input was provided on a variety of topics. Highlights of the discussion are presented below.

General Comments

Operators stated that the UNBSJ route (route 3/9) is the most important one in the system since it carries the most passengers. They believe that more frequent service, to the extent possible, will help encourage ridership while ensuring there is adequate capacity on buses to meet demand.

Marketing was identified as an area of concern. Operators, like other staff, believe SJT needs to invest in formal marketing to promote services and raise community awareness of the agency. Operators would like to see more residents riding transit services in the community.

Service Issues

Operators that attended the session stated that they feel that most runs are too tight, and they cannot keep to schedule. Consensus amongst operators was that the Champlain Express (route 33) is the worst route to keep on schedule because of inadequate running time. This was confirmed in our review of the data where route 33 was seen to operate at 68% OTP. Operators advised that, depending on the run, there is supposed to be between 5-10 minutes of recovery time built in, but they rarely have that time. Operators advised that connections between buses are often missed; the timings often do not work, and operators field many complaints from riders on this issue. Over the course of the day, operators get behind schedule because they require refreshment breaks which they believe have not been scheduled adequately. Operators believe more buses and more frequency is necessary on select routes.

Further, operators highlighted that there are increasingly seeing more customers riding transit who require assistive mobility devices to ride transit. Helping persons who require the use of wheelchairs to load/unload from buses pushes them off schedule. This is also true with customers who travel with bikes. Operators feel the time to load/unload bikes is not adequately scheduled for. As the city and the

conventional fixed-route transit system becomes increasingly accessible, and as the population ages, there will be a proportional increase in the amount of customers with mobility devices looking to board. This is another reason why SJT should strive for OTP greater than 95%, to proactively address the challenges posed by additional dwell time at stops for boarding and alighting.

Fare Evasion

Like planning, scheduling and dispatch staff, operators expressed concern with levels of fare evasion. Aside from short-pays and no-pays, operators noted other common fare evasion methods such as pass backs and half-torn, purposely obscured, monthly passes.

Overtime Costs

Operators feel that overtime costs at the agency are high because the SJT does not have an adequate extra board. Operators feel that overtime costs could be lowered if more full-time operators were hired and there was less of a reliance on part-time staff. Stantec notes in its review of the data provided, however, that overtime expenses for operators are approximately $70k (in 2019), which is only a little over 2% of the total wages-plus-overtime expenses associated with operators. This is already low as far as overtime expenses go, and therefore it is not clear if changing the staff composition of the operator role will have any effect.

Infrastructure

Operators believe that system-wide infrastructure is lacking and requires investment. First, operators stated that bus stop signs need significant improvement. The current ones lack visibility and prominence. As such, customers do not know where to wait, and operators sometimes pass them by since they did not know someone was waiting for the bus, or they were waiting in the wrong location. Second, bus stop clearing in winter was identified as a major issue. There are large snowbanks and the buses cannot pick up waiting passengers where they are supposed to, or customers need to put their safety at risk to board buses. Last, operators have difficulty or cannot load customers requiring assistive mobility devices in the winter because of the insufficient snow clearing. There is often nowhere to deploy their ramps for level, or near-level boarding.

15.4   OPERATING, MAINTENANCE AND STORAGE FACILITY (OMSF)

General Comments

All SJT staff and management Stantec spoke with highlighted the challenges of SJT's OMSF located at 55 McDonald St. The OMSF was purpose built for SJT but sized on the "agency of the past" – one with a substantially larger fleet and continuous service expansion. Over the years as service contracted, the OMSF was deemed to be too large for the existing transit agency, and other uses for the space inside of the OMSF were found including a public library at the front of the building.

The OMSF was redesigned to accommodate the library, but now SJT's administrative offices are restricted for space as the library occupies substantial floor space. As a result, SJT staff have been "squeezed" into space that does not allow for proper operational flow or private meeting areas to have

sensitive or disciplinary discussions with operators. For instance, staff raised concerns that disciplinary meetings with operators are held in the planning/scheduling/dispatch office, adjacent to the operator's breakroom, where other operators can hear the discussion. Best practice is to establish a dedicated space for these types of meetings. In a similar vein, the OMSF does not have a proper meeting room for administrative staff. Rather, the operator's breakroom is used for larger gatherings when operators are out on their runs.

The second floor of the facility is programmed for office space but remains unfinished. When entering the building, there is a small area secure area where customers can speak to someone in the scheduling/dispatch/operations office through a window. Overall, the administrative footprint occupied by SJT is relatively small and constrained, considering the overall size of the facility and the space initially provisioned for agency staff.

Scheduling/Planning/Dispatch Office

The scheduling/planning/dispatch office is a small space adjacent to the operator's breakroom. Operators receive dispatch assignments through a small window between the office and the breakroom. This office was formerly a decent-sized meeting room, but when the OMSF was redesigned to accommodate the library, SJT lost this space and it was repurposed into this office that accommodates three individuals.

Administrative Offices

The administrative offices occupied by the three staff and transportation manager are down a hallway and to the left of the operator's breakroom. Overall, the offices are a decent size and function fine. If there is ever observed to be low employee morale on account of constrained office space, opportunities should be sought to explore buildout of the second floor of the facility.

Co-Located Fleet and Maintenance Staff

Staff discussed plans in the City of Saint John Operational Review to co-locate the city's other transportation fleet at the OMSF. Overall, space wise, the building can accommodate the city's other transportation vehicles currently housed elsewhere, presuming transit services do not grow in the future, nor does the fleet of other transportation vehicles. This co-location may bring budgetary benefit for SJT, on the same premise as how SJT currently recognizes operating revenue from the library's use of OMSF space.

15.5 ORGANIZATIONAL STRUCTURE

The chart in Figure 15-1 shows the current SJT organizational structure. The Transportation Manager is responsible for day-to-day fixed route operations and has two direct reporting staff—the service supervisor and administrative staff. Dispatch (also known as the inspector) is responsible for overseeing bus operators and ensuring the service on the street is performing as committed to SJT's customers On the other end of the organizational chart, the maintenance department is overseen by the manager, and then a foreman oversees mechanics and service staff.

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Figure 15-1: Existing SJT Organizational Structure
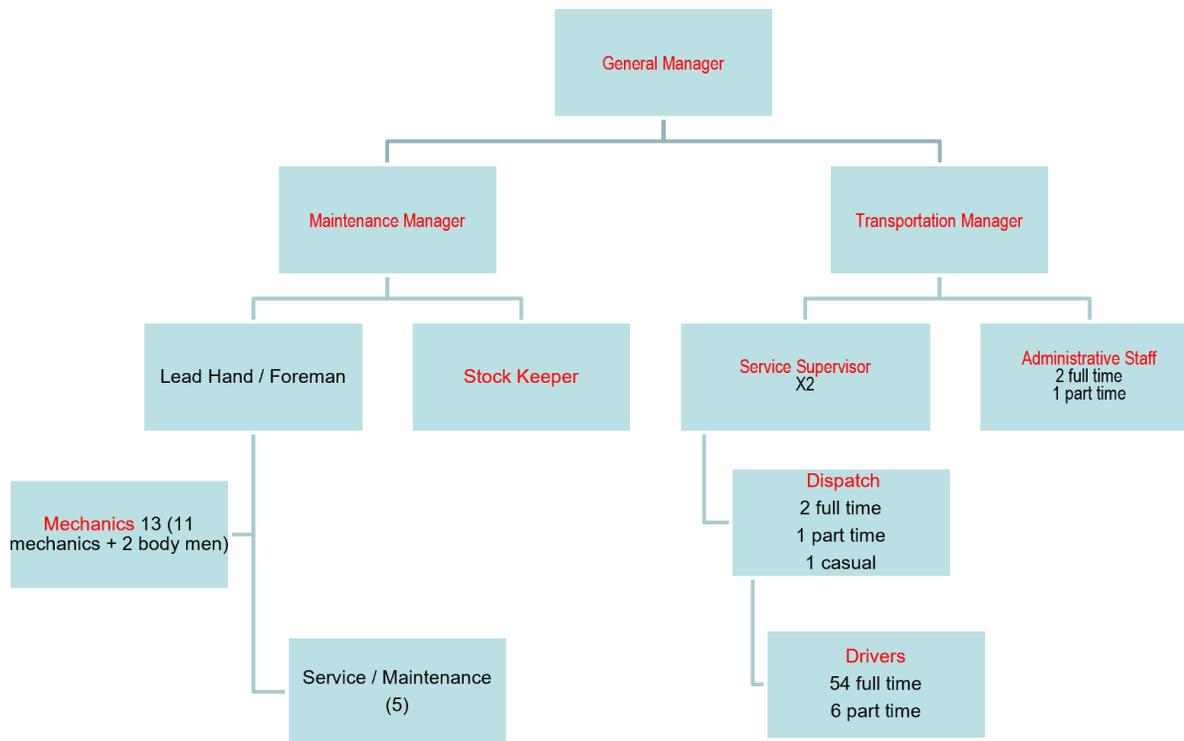
There are important administrative areas of the SJT operation that are not being properly served because of the disproportionately small size of the administrative staff relative to the scope and size of the operation. These are areas crucial to meeting the transportation needs of residents of Saint John, but they are also areas that are "cost drivers" in the agency's budget that with more oversight could be operated more efficiently.

There are also areas of risk that need to be addressed. For example, as noted above, nobody from SJT presently oversees contracted paratransit operations. While SJT has been fortunate thus far, someone at the agency needs to have the responsibility of "watching" the contractor and holding them accountable for performance. While it is an entirely turnkey operation in its current form, it is still seen as an extension of the City of Saint John and SJT.

While SJT is small agency, there is the need for growth particularly for marketing/customer service, planning, and street supervision functions as alluded to earlier. Moreover, lack of role clarity may have some benefits in that there are informal redundancies, but this can also result in confusion about responsibilities, reporting, and overall employee and talent attraction and retention.

Based on our experience with peer agencies, a basic list of functional areas (departments or divisions) include:

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- **Customer service** – responsible for assisting riders with any issues or questions, trip planning, receiving and responding to customer complaints and compliments. This department at many agencies also is involved in the intake and registration of new registrants for paratransit services. Finally, this department would also oversee a lost-and-found.

- **Communications** – responsible for all communications and marketing unrelated to the customer service. This includes the development of public-facing information about routes, service changes, schedules, and fares, as well as additional content for the website, marketing materials, and managing ancillary revenue contracts (advertising, etc.).

- **Finance/Accounting** – responsible for all money matters including payroll, accounting, fare collection, financial analysis, and account management.

- **Human Resources** – responsible for all human resource matters as well as employee safety.

- **Operations** – responsible for all activities related to the day-to-day operation, somewhat akin to the "Service Supervisor" function

- **Fleet and Facilities or Maintenance** – responsible for bus servicing, cleaning and fueling, as well as vehicle maintenance and overhaul. Also responsible for any physical assets at the garage/OSMF as well as any off-site facilities, like bus stops, shelters, transit centres, etc.

- **Information Technology** – many agencies are now creating IT departments to deal not only with tech issues for staff (software issues, etc.) but as well as to leverage the vast amounts of data from bus technologies, like automatic vehicle locators and passenger counters. Processing and analyzing this and other data can help provide all departments with insights and evidence for informed decision making.

- **Planning and Development** – supports operations with scheduling and planning activities, like developing schedules, analyzing system performance, and planning for service or policy changes

- **Paratransit / Specialized Transit** – most agencies, whether they operate paratransit service in-house or as a contracted service, have a dedicated manager of the paratransit service branch of the transit agency. The manager oversees day-to-day operations, ensuring service is delivered, addressing problems as they arise and so on. In an agency where service is contracted, like SJT, the paratransit manager administers the contract and oversees the contractor, ensuring that the contractor provides service as stipulated in the contract. For SJT, given that paratransit is currently operating without a contract, a paratransit or mobility supervisor representing the interests of the agency and the customers could be an important role to add and exist.

This list is rather substantial and while SJT is unlikely to require all functions all of the time, we note that a communications division responsible for marketing with the mandate to grow ridership (outreach, promotion, etc.) and address customer service (inform about service changes, detours, and other alerts) would be a top priority, followed by hiring an on-street supervisor who would be part of the operations division. SJT should have discussions with the City's shared services to understand the extent to which of these functions would fall under the City's mandate, versus which functions SJT would remain responsible for.

A planning division would also be important in fleshing out the recommendations of this study and leading their implementation as it relates to service restructuring, schedule development, and seasonality evaluation to add and reduce service to respond to seasonal variations in demand. In addition, many of the functions noted above could potentially be shared (or may be shared further) with the City if resources are unavailable for dedicated full-time transit staff, such as IT, HR, and finance/accounting, as is currently the practice.

Finally, as uncovered through our discussions and analysis, the 'all-hands-on-deck' approach has several shortcomings, implying that a restructuring or reorganization would provide benefits to the agency, such as a clearer understanding of roles and responsibilities, as well as delineation of reporting. At a minimum, clarifying roles and titles, providing opportunities for training and advancement, can improve staff morale, productivity, and retention.

16.0 INTERNAL OPERATIONS RECOMMENDATIONS

SJT has been and will continue to be a successful transit agency. Providing vital mobility to Saint John residents, as well as those in surrounding communities has never been more important and will remain at the forefront of SJT's mandate. Stantec was impressed by the deep camaraderie and "get it done" spirit that pulses through the agency. In undertaking our review, it was evident that SJT staff care about the agency, the community and the customers it serves.

At the same time, while SJT should be commended for doing an exemplary job of accomplishing a lot with minimal human assets, the organization in its current form is starved for adequate staffing and modern technology. In addition, there are internal practices that are dated and in need of modernization. Overall, Stantec believes targeted investments into SJT would improve service quality leading to greater ridership and greater revenues for the system, and set the system up for optimal effectiveness and efficiency into the long-term.

Stantec's recommendations from our internal review are outlined in the subsections below. Whereas in the section above we discussed administration and organizational structure separately, in this section we have combined them as the recommendations for each are interrelated.

16.1 ADMINISTRATION AND ORGANIZATIONAL STRUCTURE

Prepare for restructuring as a City department and continue with current methods of service delivery

SJT is currently governed as a commission and is accountable to an appointed Board of Directors. This is uncommon among smaller transit agencies which are typically governed as a department within the City (or Town, Municipality, etc.). Discussions are presently underway to dissolve the commission and reorganize SJT as a department within the City. This restructuring would be appropriate for SJT as it may result in improved alignment on a policy and strategic standpoint, as well as greater levels of support and

resourcing across other City departments, particularly as it relates to shared services such as marketing, communications, and customer service. At the same time, the streamlining of these efforts can lead to additional efficiencies of labour recognized citywide. It is important to note, however, that for transit to succeed as a City department, it must be structured appropriately within the City and have an appropriate amount of oversight; and the level of shared services support across other City departments must be sufficient. Details of the reorganization are not known at present, other than that the intention is for SJT to report up to Transportation and Environment Services. Generally speaking, Stantec feels the potential benefits of this restructuring exceed the potential risks. As noted earlier in the report, it is important to reiterate that irrespective of whether a transit agency is a city department or a standalone commission, all face the same challenges of adequate staffing and trying to do "more with less".

Stantec recommends that SJT continue to operate conventional transit service in-house. Doing so helps SJT to avoid concerns related to service quality, control, and cost, that agencies that contract service out typically have. In addition, as a province with relatively small transit agencies, New Brunswick does not attract the top-tier players in the service contracting industry. As such, Stantec believes SJT would be challenged to see a competitive bidding process ensue that results in high quality service provision.

By maintaining the in-house operation of service, SJT also minimizes risks related to:

- **Flexibility:** In-house service operation allows SJT to be more flexible and nimbler in the types and levels of services it provides to the public. The importance of this is more pronounced with several different types of service offerings which must be integrated to varying extents – conventional, specialized (Handi-Bus), Comex, charters, ferry tours, and potentially on-request transit.

- **Efficiency:** In-house service operation provides SJT a means of ensuring that services are delivered in the most efficient way possible. While contracted operations can sometimes be more financially viable depending on the contracted rate, there is often less clarity and less incentive surrounding the identification and elimination of unproductive services or the rationalizing of work rules to the local environment to achieve greater productivity.

There are advantages to continue contracting out the operations of the Handi-Bus service. Due to the complexities of operating paratransit services, combined with the lean organizational structures that transit agencies often have, the practice of contracting out for paratransit services is a common one. Aside from SJT, there are many examples of transit agencies that opt for in-house delivery of conventional services and contracted delivery of paratransit services, such as the transit agencies in St. John's, Laval, and Winnipeg. Contracting out of paratransit services allows transit agencies to avoid costly training, administration, and scheduling expenses, while avoiding the risk of not having adequate capacity to deliver trips during periods where there are surges in demand. Moreover, Stantec notes that the third-party operation of Handi-Bus is done at a competitive hourly rate that would be hard to improve upon with in-house operation. At the same time, Stantec acknowledges that there is uncertainty in what an optimal operating structure looks like until a service contract is in place.

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Develop and implement operating contract for paratransit and on-request services

Stantec recommends that SJT develop a performance-based operations contract for combined paratransit and on-request service delivery in place of routes 12 and 32, and go to market with an RFP to procure these services. This newly created operations contract should outline minimum expectations of the contractor with respect to provision of paratransit and on-request services including performance standards and key performance indicators. The contract should also outline reporting mechanisms, including a dashboard which is provided to SJT monthly for validation and review. Stantec would also advocate that SJT implement incentives and disincentives for strong and poor performance in the new contract, consistent with the industry best practices implemented at highly successful transit agencies such as York Region Transit.

Once a contract is in place which will facilitate improved contractor performance and improved management and data collection efforts, it is recommended that SJT review additional opportunities for efficiency at that time. This might include revisiting the question about whether contracting for paratransit (and on-request service) is the most effective and efficient service delivery strategy.

In the long-term as SJT improves its scheduling capabilities through new technology acquisitions discussed below, this permits the ability to operate in-house an interlined on-request service (route 12) and fixed-route service (route 13). By trialing this strategy in-house, SJT will have a clearer comparison of the costs and benefits of in-house versus contracted operations and can make a more informed decision at that time about which strategy to continue forward with.

Review the Comex cost-sharing agreements in tandem with the transition from three Comex routes to two

Stantec recommends that SJT continue to operate Comex service. Despite the transitioning from three Comex routes to two as discussed earlier in this report, the neighbouring jurisdictions should be encouraged to continue committing the same level of funding as present such as to facilitate improved service levels across the two routes in response to stakeholder feedback. At the same time, during renegotiations, SJT should undertake a careful analysis to ensure all direct and indirect costs (including provisions for fleet replacement) are addressed in the agreement and confirm that SJT is being made whole for operating this service.

In light of the proposal for on-request route 12 to travel no further than the City of Saint John border, it is also recommended to engage in exploratory conversations with Grand Bay to identify if there is appetite on their end to contribute funding in a similar Comex-type of arrangement and retain the fixed-route service (as an alternative to on-request). Without funding contributions from Grand Bay, we do not recommend continuing this service as a fixed-route and past the City of Saint John border, as City of Saint John taxpayers should not be subsidizing service for Grand Bay residents, particularly in light of current budget challenges. It must also be appreciated that it would not be prudent to operate on-request service past the border, as this could potentially create long trip durations making it difficult to interline on-request route 12 with fixed-route 13.

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Establish formal reporting relationship with paratransit contractor

In a similar vein, at present SJT has no direct oversight of the services rendered by its third-party contractor for paratransit services. It does not receive any data pertaining to operations nor are there any formal performance requirements established. From Stantec's experience at other transit properties with similar set ups, where there is a lack of oversight, there is considerable opportunity for abuse. Stantec recommends that a formal relationship be established between SJT's Transportation Manager and the contractor where the contractor can be held accountable for its performance consistent with the requirements of the contract that will be established.

Rebrand Handi-Bus service

Across North America, properties have been rebranding their paratransit programs to deemphasize the exclusivity of the service. In addition, monikers including 'Handi' or 'Care' are increasingly seen as being derogatory to individuals that require those types of service. Important to consider, Stantec recommends that the Handi-Bus brand be eliminated and replaced by the overall SJT brand, consistent with recent best practice in the industry. Handi-Bus customers should feel like they are users of SJT similar to how able-bodied customers feel when they are riding the conventional fixed routes. Moreover, if the paratransit contractor will also deliver on-request trips in lieu of operating fixed route 32 (and fixed route 12 in the short-term), it is conceivable that able-bodied and paratransit customers may be "co-mingled" in the same vehicle at the same time depending on scheduling. This strategy of co-mingling has been used successfully by many transit agencies across Canada such as Oakville Transit, and relies on there being sufficient capacity operationally to fill empty seats on paratransit vehicles with able-bodied passengers using on-request service. With a fleet of 8 Handi-Bus vehicles and paratransit demand rarely exceeding 120 passengers in one day, this suggests that co-mingling is a viable strategy for SJT.

Revamp organizational structure, roles, and responsibilities

Stantec recommends organizational updates with better clarified roles and responsibilities. Although new roles and a recommended organizational structure are presented below, there is a caveat in that these recommendations are based on SJT's current organizational structure. Stantec acknowledges that the organizational structure may naturally evolve pending the dissolution of the Commission and the restructuring as a department within the City, particularly as it relates to shared services. Therefore, it is recommended that the City and SJT focus on implementing the underlying concepts of these recommendations, while adapting the recommendations themselves as needed depending on ongoing restructuring developments.

New roles that Stantec is recommending for the SJT organization include: a joint Marketing and Customer Service Specialist, a Planning and Development Specialist, a Finance Specialist, and On-Street Supervision. This is *not* to suggest additional headcount or full-time equivalents are necessary for each of these positions; unless noted otherwise, these roles and responsibilities can mostly be covered off within existing resources.

A joint Marketing and Customer Service Specialist would be responsible for customer service, managing the customer communications about route changes, detours and other alerts, developing and

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implementing standard operating procedures for the handling scheduling and routing information requests, developing marketing materials and promotions to educate the public about SJT services, as well as routine customer inquiries such as lost and found. To capitalize on new revenue opportunities, this individual would also be responsible for expanding SJT's Charter and, in the long term, Ferry Tours businesses by proactively securing new business and developing new partnerships. Partnerships with organizations might also take the form of EcoPass arrangements, whereby more organizations can be encouraged to participate in the employer-sponsored monthly pass program which offers a discount for companies that choose to purchase monthly passes for their employees in bulk. EcoPass arrangements bring SJT a guaranteed revenue stream while also bringing clarity to the task of service planning in ensuring there is an adequate supply of service to the work locations of EcoPass participants to meet the demand created by bulk-purchased passes.

The Service Supervisor would function as an Operations Supervisor, ensuring that service is delivered as scheduled and that issues are dealt with swiftly. As such, we recommend an On-Street Supervisor who would oversee and address issues like bus breakdowns, delays, bus holding, etc.

A Planning and Development Specialist would be tasked with developing schedules, short- and long-range service plans, revising routes, and monitoring network performance. This staff would be expected to work closely with the municipal departments of transportation, public works, and planning and development to ensure that transit works cohesively with the City of Saint John.

A Finance Specialist would oversee accounting, fare collection, and all other money matters.

Also, in the reorganized chart shown below, it is assumed that all paratransit-related oversight functions would become the responsibility of the Transportation Manager. This includes overseeing operations, developing and administering a new contract, monitoring service performance, and representing the best interests of SJT and its customers.

Figure 16-1 compares the existing (current) organizational chart with the proposed chart. The major difference is the restructuring of current "Admin Staff" into more differentiated or specialized roles consistent with industry best practice to appropriately plan and deliver transit services—planning and development, marketing and customer service, and finance. Finally, an on-street supervisor would be in the field supervising operations, tracking schedule adherence, enabling active techniques, like bus holding, short-turns, etc. A glaring lack, based on our analysis, is the first-hand knowledge of what's happening 'on-the-street' which impacts customer satisfaction, operator dispatching, and more. Having a staff member dedicated to supervising and acting to correct issues is vital—Stantec recommended a similar role for Fredericton Transit and having implemented our recommendation, Fredericton Transit has found that service issues have been substantially reduced and that on-time performance has increased, leading to ridership growth.

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Figure 16-1: Current and Proposed SJT Organizational Structures
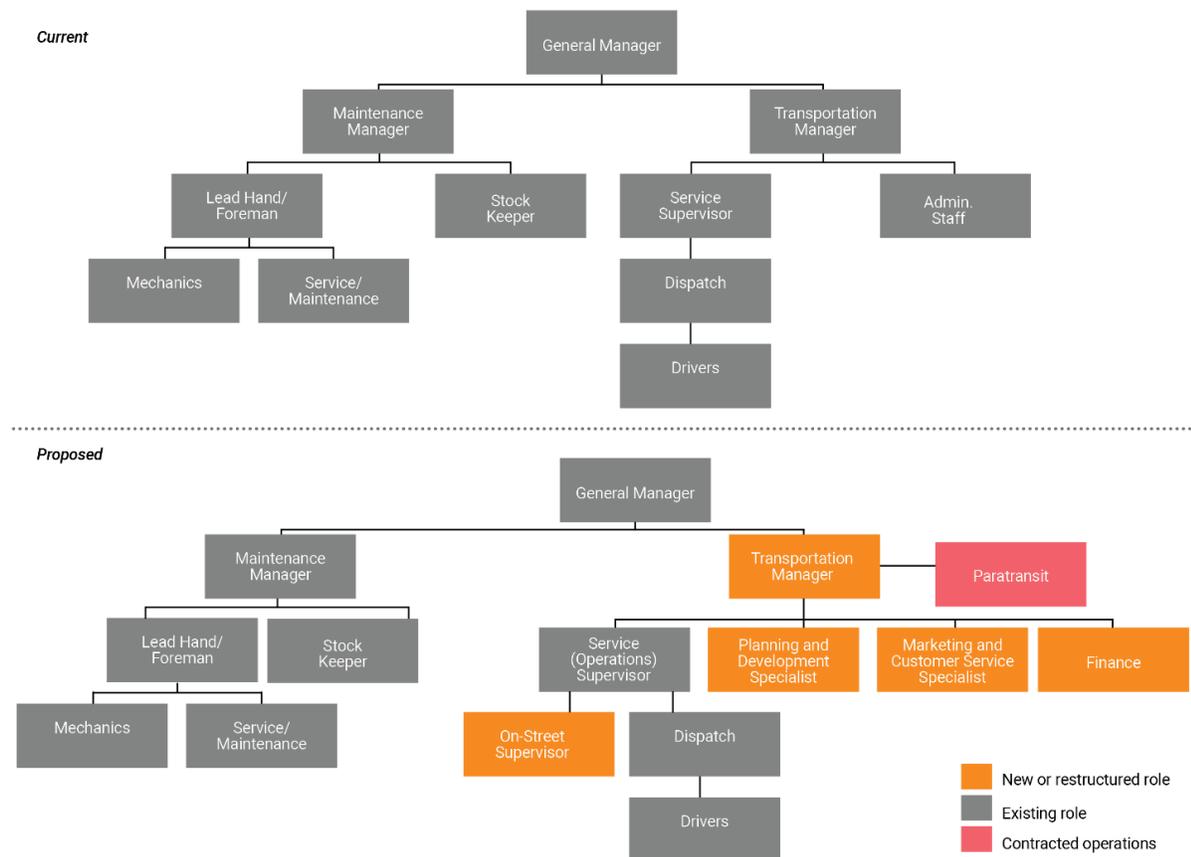
To reiterate, we note that our proposed reorganization may not necessarily require a growth in the number of staff, but rather re-dedication of certain staff to other roles, if possible. For example, if Dispatch can spare one staff, this staff can serve as on-street supervisor. However, new training and skill upgrades may require staff to attend training courses and conferences. And an increase of 0.5 FTE may be necessary at minimum, to ensure the planning and development, marketing and customer service, and finance roles can all be staffed with 1 FTE (currently there are only 2 full-time and 1 part-time admin).

With the uncertainty surrounding the extent to which additional job functions will be taken over by other City functions upon reorganizing SJT as a City department, it is recommended that SJT be cognizant of the unique challenges that transit faces. For example, if customer service and marketing/communications functions transition to the City's shared services, it will be important to ensure:

1. That knowledge transfer to shared services is thorough and that there is consistency among shared services staff with respect to transit knowledge and service quality;

2. That adequate resources remain under SJT to ensure that an effective and collaborative working relationship can be fostered; and

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3. That the nuances of transit are considered, for example it will be important to have a plan in place for proactive communication (ex. advising customers about a route detour) rather than focusing only on reactive communication (ex. responding to customer queries).

Develop job descriptions for each role in the organization structure

In tandem with the organizational restructuring, Stantec recommends that SJT develop job descriptions consistent with Human Resources best practices. A job description is an internal document that clearly states the essential job requirements, job duties, job responsibilities, and skills required to perform a specific role. More detailed job descriptions will cover how success is measured in the role so it can be used during performance evaluations. Having clearly defined job descriptions will eliminate ambiguity which can be a source of frustration for staff in any organization.

Relatedly, Stantec recommends that SJT explore succession planning in collaboration with City human resources services. This will ensure the SJT does not have any critical organizational voids for an extended period of time. In addition, apprenticeship in the OMSF is akin to succession planning in the office, and Stantec recommends that SJT explore the potential for an apprenticeship program in the maintenance department. Current mechanics have a wealth of knowledge in the niche field of bus maintenance, that can be passed on to aspiring youth (who work at more favourable hourly rates when they are still early in their careers).

Expand charter tours businesses (and ferry tours when appropriate)

Given fiscal challenges, there is often a focus on reducing costs, rather than expanding revenue sources.

Stantec believes there is a considerable opportunity to expand those services which contribute significantly to the financial health of the agency, namely charter services, and in the long term, ferry tour services. It is recommended that staffing capacity be created to enable proactive contact with employers and schools in the city. In the long term these responsibilities can be extended to cruise lines to pre-negotiate deals and ticket sales prior to the boat docking. Cruise lines can also be asked to supply SJT with an accurate headcount of customers SJT would be receiving on their ferry tours when the boat docked. Stantec recommends these responsibilities of proactive contact with employers, schools, and (eventually) cruise lines should be clarified in the role description of SJT's marketing/communications resources, and may constitute part of the responsibilities of the incremental 0.5 FTE as noted above.

In support of the recommendation to expand charter services, Stantec notes the current hourly rate for clients to book charter services is set at $185.00, which represents a significant (over 70%) profit margin compared to the $107.87 that it costs to operate service. That is, for every hour of charter services delivered, approximately $77.13 is returned to SJT's bottom line, which can be reallocated to improving other aspects of transit operations. Additionally, in 2019 approximately $554k in charter revenues were budgeted for, but only $265k in charter revenues were recognized, suggesting that a significant market for charter services exists and there is ample room to expand the current offering.

16.2   SCHEDULING, PLANNING AND DISPATCH

Invest in scheduling/dispatch and customer information software to exploit operational efficiencies

The right technology can improve the operational effectiveness and efficiency of a transit agency. Solutions that would provide demonstrable benefits to SJT include:

- Modern Computer Aided Dispatch / Automated Vehicle Location (CAD/AVL)

    CAD/AVL describes the use of computers and Global Positioning Systems (GPS) in dispatching and tracking transit vehicles. CAD/AVL is accompanied by added costs of operating and maintaining additional computer equipment, but transit agencies benefit from improvements to customer service and operations through real-time information. Because modern CAD/AVL is becoming so common, it is increasingly becoming expected as standard for fixed-route systems. Although two individual products, CAD and AVL are generally discussed as one in the transit context as it is not a prudent investment to have one without the other.

    Many operators have found that CAD/AVL has helped to improve service by increasing schedule adherence and enabling agencies to easily monitor bus driver performance. CAD/AVL also helps to reduce response time to operational problems by improving communication between bus drivers and dispatchers. Dispatchers can handle communication with and monitoring of a greater volume of vehicles. Passengers also perceive their transit systems to be more modern and reliable because they can access real-time bus arrival information. CAD/AVL also aids in planning by collecting better historical data. CAD/AVL has also been proven to improve safety and security on transit vehicles because many systems include a silent alarm and video monitoring capabilities. For example, Denver's Regional Transportation District saw a 20-percent drop in assaults after adding a CAD/AVL system to its vehicles.

- Modern Mobile Data Terminal (MDT)

    An MDT is usually a portable computer added to buses to assist with information and data management at service delivery. The computer may be a laptop, tablet computer, or customized hardware. There are many applications for MDTs such as managing paratransit trip manifests, collecting passenger and fare data, communicating with dispatch, and trip routing. MDTs are an effective tool for analyzing operations data in greater detail than with traditional pen-and-paper data collection. MDTs are typically grouped as an integrated bundle with CAD/AVL and allow the agency to make most out of its investment into such a system. Without MDTs, CAD/AVL is of limited use. While SJT does currently have MDTs for its current application, they are dated and lack modern amenities.

    Common functions include:

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- CAD/AVL: MDTs can incorporate CAD/AVL by processing location data to transmit to a central server or dispatch. Some are also capable of serving as a GPS-based navigation assistant for vehicle operators.

- Communication: MDTs can be used to facilitate efficient communication between vehicles and dispatch. This is often in the form of pre-programmed text messaging, which uses significantly less bandwidth than voice calls over a two-way radio system.

- Data entry and information management: A common use for MDTs is to collect a greater level of operating detail than might otherwise be possible. This may include the ability for the driver to categorize passenger counts by fare type (half-fare, adult, passes, etc.), by boarding or disembarking location, and so on. Some systems can incorporate some level of automation, such as pairing a location from the AVL component with the passenger fare type.

SJT would benefit significantly from procuring integrated scheduling, dispatching and real time rider-information software for its fixed route services, but could also include paratransit. The current process of manually scheduling fixed route services using MS Excel and then using a separate platform to track buses with a delayed signal, is antiquated and resource intensive. It also limits the agency in its ability to adopt multiple schedules periods throughout a year which will better 'size' demand to supply of transit services, realizing operational savings from reduced service hours and interlining of routes. Further, Stantec believes SJT customers deserve better in way of next bus arrival information and trip planning – this is what will keep them loyal riders in an age of competing interests from Transportation Network Companies whose arrival in Saint John is likely just a matter of time.

Stantec recommends that SJT invest in a modern CAD/AVL/MDT technology solution. An integrated CAD/AVL/MDT solution would allow SJT to manage its operations dynamically, allow it to be informed for decision making and provide to better user information to its customers. Additionally, modern MDTs can be used to collect rider counts negating the need for a true APC system which needs to be calibrated and maintained, and the data cleansed, over an ongoing basis. Irrespective, it is best practice to validate even manual counts on MDTs against another source.

There are generally two classes of scheduling/dispatching/real-time information software in this space: agency-owned proprietary and Software-as-a-Service (SaaS). Both classes are discussed below as well as the pros/cons of each.

Agency-owned proprietary software

Historically most embraced, this class of scheduling software is most familiar to transit agencies. Under this model, the agency would purchase and own proprietary software from a vendor such as GIRO, Trapeze/TripSpark, Route Match, and the accompanying Mobile Data Terminals (MDTs) for each vehicle in the fleet. From working at other transit properties, Stantec has found that essentially all products offered by the major players are similar in their functionality and purpose. In working with other transit properties across North America, we hear what most differentiates the vendors is post-sale support and dedication to customer service. In this regard, some are better than others. While historically popular,

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agency-owned proprietary software solutions require a significant capital investment to purchase the software as well as the on-vehicle equipment. Under this model, the transit agency is responsible for procuring software updates in the future.

Pros:

- Stable, proven platforms for transit

- Robust on-vehicle equipment stands up to daily wear-and-tear

Cons:

- Slower to deploy

- Large capital investment is required upfront for software and on-vehicle equipment

- Annual service/maintenance fee can be high (10% of capital cost per annum)

- Agency must purchase future software updates

- Difficult to change vendors in future if agency is not satisfied

- Requires a Data Analyst to review data, analyze and make recommendations

Software-as-a-Service (SaaS)

SaaS or leased software platforms are quickly gaining traction in transit industry. The reason for their recent popularity is that they can be deployed quickly and with a much lighter investment for on-vehicle equipment. SaaS is particularly popular with smaller agencies where the investment is usually limited to an off-the-shelf tablet (iPad or Android) and can be deployed in as little as a one month's time. Seeing a lucrative opportunity, there are new vendors appearing in the marketplace almost daily vying for market share; however, there are more recognized vendors such as Optibus and Spare Labs that have been around a few years and are working successfully with peer transit agencies.

Since the software is leased from the vendor, the vendor supplies future version updates without charge. Further, the transit agency has more options to switch software vendors in the future if they are unhappy with the product since they are powered by off-the-shelf tablets as discussed.

Pros:

- Quicker to deploy compared to agency-owned proprietary software.

- Equipment investment is limited usually to an off-the-shelf tablet

- Better suited to smaller transit agencies with limited resources

- Software updates are provided free-of-charge since the product is being "rented" by the vendor

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- Agency pays vendor on "per-deployment / per-vehicle" cost (i.e. $X dollars per vehicle) and no other maintenance fees

- Can change software vendors more nimbly if required since all are powered by off-the-shelf tablets

- Ability to comingle paratransit and non-paratransit customers to deliver on-request service in lieu of routes 12 and 32 (and thereby optimize vehicle utilization)

- Online and app-based trip booking capabilities reduce call-taking requirements

Cons:

- 'Staying power' is not yet proven; too soon to know which ones will be around in longer term

- Need to be willing (and have the capacity) to work with vendor as a "partner" to help perfect the product

- Companies are largely staffed by "tech" people and not necessarily individuals with transit background; they are still learning how to best work with transit, and transit agencies will likely have to provide more coaching on how their business operates as a result

Invest in SaaS Solution for SJT

'Right-sizing' scheduling/dispatch/rider information software requirements to a transit agency is tricky. Given SJT's current inflection point, Stantec believes a SaaS solution would be most appropriate for the agency. When compared to agency-owned proprietary software, we believe SaaS is better suited because of the lower upfront investment required and the ability to go-live much faster. Since the City of Saint John is relatively small and compact, any of the SaaS solutions on the marketplace could meet the agency's needs. We believe a SaaS solution will reduce SJT operating costs since it will allow for schedule compression, interlining and adjustment of transit supply in direct response to demand. It is important to note, an investment in technology must also be supported with an investment in training to be able to use the software to achieve operational savings.

On the revenue side of the equation, investment in a SaaS solution will result in improved customer experience, helping to build the loyalty of existing riders while removing barriers for non-users to consider transit. Over time, this is expected to result in ridership growth for SJT, which in turn will contribute to revenue growth. People with access to real-time transit information have been shown to spend 15-percent less time waiting at bus stops than people without this information. Additionally, a study of Chicago's bus routes found that access to reliable real-time transit information increased average daily ridership by 2-percent. New York City's bus system found that this information also led to an increase in ridership, resulting in $5 million per year in additional fare revenue.[3] While New York City is not a good

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[3] http://www.wri.org/blog/2016/02/real-time-transit-data-good-people-and-cities-whats-holding-technology-back

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comparator for Saint John, if we use the 2-percent ridership increase seen in Chicago as a proxy, SJT might be looking at additional fare revenues of over $75,000 per year.

Finally, it must be considered that a SaaS solution is needed before route 13 as proposed can be implemented; hence the reason why the proposal for route 13 is indicated to be a long-term recommendation. The proposed route 13 represents a consolidation of existing routes 13 and 14 and is proposed to be operated on 60-minute headways, though the cycle time is designed for 30-minute headways. Such as not to recommend the vehicle be unproductive for the balance of 30 minutes, Stantec is recommending the interlining of fixed route 13 with on-request route 12. In doing so, the Handi-Bus contractor would no longer operate on-request route 12 and this function would be brought in-house with the service no longer co-mingled with Handi-Bus service. Users of the on-request route 12 would then be offered trips only within a 30-minute window of every hour, as the vehicle would be operating route 13 for the remaining 30 minutes. Despite these drawbacks operationally, this is the most prudent course of action in terms of appropriately matching supply with demand in the west parts of the city, and it would provide SJT with a basis upon which to evaluate whether in-house operation of on-request service (route 12) is more or less effective and efficient than contracted operation of on-request service (route 32). Therefore, it can be reasoned that procurement of SaaS can unlock an additional approximately $230,000 of savings per year, as this is the approximate savings associated with the consolidation of existing routes 13 and 14.

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Invest in fare collection system to reduce operational costs and improve customer experience

The number of transit payment options has increased with mobile payments, open payments and more. Agencies can now choose between operating branded fare cards; contactless open payment systems (which allow the use of non-affiliated credit and debit cards); mobile phones; wearables or other smart tokens (easily portable devices which can display and transit balances, connect to other devices via near-field communication or Bluetooth, etc.), such as the Barclaycard in London, UK; digital ticketing systems with video-based assistance, such as the NextAgent system in Essen, Germany; smart stations (which provide integrated ticketing platforms enabling connections to other transportation modes such as commuter rail or taxis); or region-wide fare cards which can be used across transportation modes and platforms, such as those used in Sweden and Scotland.

The other payment system often overlooked is account management systems which are proving to be very effective for the delivery of certain types of services and for certain types of riders. Account management systems are perfect payment solutions for riders of accessible services who are seniors and the disabled that may have challenges using traditional fare products. Mobile and open payment systems can communicate with a back office or central management system to validate the rider's eligibility to ride the service and to deduct the value of the ride the rider is taking from a prepaid account. In addition to accessible service programs, account management payment systems work well with bus programs where riders received some form of subsidy from an employer.

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SJT is in need of modern fare collection technology that would be of direct benefit both to customers and staff. At present, SJT is unable to realize operational efficiencies that would materialize from having modern fare technology in place. Stantec recommends that SJT procure a simple open and mobile fare collection solution. We believe modernizing the fare collection system is a prudent step to reduce the agency's administrative and fare collection costs while also affording riders more choice in how they want to pay for service. We suggest a simple validator product such as the one developed by eiGPS or Token Transit is an appropriate solution and at a very reasonable price point. We understand that the approximate cost of the validator unit is approximately $300-$500 per bus installed.

Our team heard that cash handling and paper-based fare media are administrative cost drivers for SJT and should be minimized in the future. While there are management and maintenance considerations associated with modern fare technologies, the level of effort is less than what is required with respect to managing large amounts of cash as well as paper-based fare media. Once a modern fare solution has been implemented, paper-based fare media can be phased out and cash fares can be disincentivized. Closed-source payment, such as proprietary fare cards, are becoming obsolete, so moving to open-source fare payment, such as Interac, Visa, MasterCard, etc., and mobile is a much more viable, and cost-effective option. Another option is to explore the opportunity to leverage the near-field technology available in the SaaS tablets, if SJT procures them. This near-field technology could be used to process payments assuming an appropriate app is procured for that function.

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Table 16-1: Summary of Recommended Technology Solutions

Solution	Category	Capital Cost*, ** ($ - initial)	O&M Cost*, ** ($ - ongoing annual)	Time Horizon	Example Providers	Notes	Expected ROI
Advanced fare payment system	Rider and operations	$300 to $13,500 per bus	Minimal up to $35,000 per year	Year 2/3	CUBIC eiGPS Route Match Strategic Mapping Token Transit	Capital cost dependent on sophistication of system installed. Stantec advocates for a simple solution.	A modern fare collection system is a prudent step to reduce the agency's administrative and fare collection costs that affords riders more choice in how they want to pay for service. Current practice of cash handling and paper-based fare media are administrative cost drivers for to SJT and can be minimized with this investment.
Integrated CAD/AVL/MDT Solution	Operations and rider	$3,000 to $15,000 per bus	~ 10-15% of initial capital cost	Year 3/4	Constat, Route Match, Passio, Clever Devices	Capital cost dependent on sophistication of system installed	An integrated CAD/AVL/MDT solution would allow SJT to manage its operations dynamically, allow it to be informed for decision making and provide to better user information to its customers. Additionally, MDTs can be used to collect rider counts by stop. Finally, the solution would result in ridership uplift and enable the interlining of on-request route 12 with fixed route 13.

* Order of Magnitude Estimates
** USD pricing converted at 1.375 exchange rate

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Simplify the fare structure

As noted earlier in this report, SJT's fare structure is complex given the size of the agency. The current fare structure is illustrated in Table 16-2.

Table 16-2: Saint John Transit current fare products

Fare Type	Price	Notes
Single Cash Fare		
Adult Cash Fare (age 15 and over)	$2.75	
Senior Citizen Cash Fare (65 and over)	$2.50	
Child Cash Fare (age 6 to 14)	$2.50	
Child Cash Fare (age 5 and under)	-	First 3 children are free
Monthly Passes		
Monthly Adult Pass	$77	
Monthly Student Pass	$66	
Monthly Senior/Child Pass	$55	
Transcards (multiple rides)		
Adult 10-rides	$25	
Adult 20-rides	$50	
Seniors/Student 10-rides	$22	
Seniors/Student 20-rides	$44	
Comex Service		
One-way cash fare	$4	
10 ride punchcard	$38	
20 ride punchcard	$68	
Monthly pass	$125	Monthly pass holders can transfer to regular Saint John Transit buses for free
Employee Sponsored Monthly Pass		
Monthly Pass*	$112.50	A 10% discount is offered for companies to purchase a minimum of 20 monthly passes (Comex and regular passes)

A simpler fare structure would be easier for the users to understand and means fewer moving parts for the agency to manage. Stantec recommends consolidating Transcards with the Monthly Passes once an open/mobile fare payment system is procured and rolled out. That is, users should be able to pay-as-you-go or buy a monthly pass, without the need for a physical pass. Fare discounts should be sufficient enough to encourage use of the open/mobile fare payment system, but not so large as to significantly erode revenue from the fare box. Stantec recommends a discount of 10% on the equivalent cash fare to start. Once the open/mobile fare payment system is operational, the physical Transcards and Monthly Passes should be eliminated in lieu.

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Stantec also recommends consolidating the concession discounts for children, students, and seniors. The present setup is somewhat confusing where, for example, seniors have the same discount as children for cash fares and monthly passes, but the same discount as students for Transcards, and meanwhile children don't have a Transcard discount and students don't have a cash fare discount. Consistency should be applied for all concession groups across all fare categories and discounts should be consolidated where appropriate.

Aside from ensuring consistency across the application of concession discounts, Stantec does not recommend any changes to the fare amounts themselves. It is noted that generally transit customers are willing to pay more for better service. While the premise of the Operational Audit is to improve the system and "do more with less", given the media and public attention surrounding the $850,000 budget reduction, Stantec feels it would be an imprudent course of action to increase fares alongside a net decrease in amount of service provided. While a fare increase is never something that external stakeholders get excited about, a fare increase at this time would not be received well and would not help to maintain ridership in the context of the budget reduction.

Finally, Stantec recommends that Saint John explore the introduction of a low-income fare product in the long-term to enable customers with low or fixed incomes to avoid devoting a large portion of income to transit. This is consistent with the premise of setting fares according to one's ability to pay. Given that this initiative would be consistent with the mandates of other City departments as well as organizations such as the YMCA, it is recommended that SJT collaborate with such third party group(s) to administer the program on SJT's behalf. Individuals or families applying for a low-income pass can submit a document from the Canada Revenue Agency or a similar source to the third party who will assess their eligibility in accordance with clearly defined criteria agreed to with SJT which might include standard measures such as the low-income cutoff. SJT must be involved in these policy discussions to help manage demand, such that only those who truly need the low-income pass receive it, and revenue and cost recovery objectives are not severely impacted. There is also the option to piggyback on pre-existing eligibility assessment processes related to New Brunswick Social Development's programs, if appropriate. Benefits of this initiative would include ridership growth, the better integration into society of low-income individuals, and economic benefits across the City of Saint John. Low-income passes can be purchased in bulk by participating third party organizations, who in turn would be responsible for assessing eligibility and distributing the passes to those who demonstrate need. They need not have a different appearance from "regular" adult monthly passes, and they too should be integrated into the open/mobile fare payment system once it has been deployed. Stantec recommends exploring the feasibility of this following the implementation of short-term recommendations.

Low-income pass initiatives administered by third parties are a strategy that has been deployed successfully at many transit agencies across Canada large and small, such as Calgary Transit and Kingston Transit. SJT must be cognizant, however, that the uptick in ridership from low-income pass initiatives is often not enough to offset the lost revenue associated with the fare discount. The exact amount of lost revenue is dependent on a myriad of factors, hence the importance of SJT being involved in matters related to policy and demand management, but as a proxy a 2011 report stated that Guelph

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Transit lost about $221,000 in revenue in 2010[4]. The population of Guelph's service area in 2010 is comparable to the population of Saint John's service area in 2020. Due to possible budget implications associated with a low-income pass initiative, this recommendation is slated for the medium-to-long-term as it would present additional challenges with respect to meeting the $850,000 budget reduction target in the short-term.

Finally, it is noted that presently Handi-Bus charges higher fares than conventional transit. Fare parity is an important consideration in any specialized transit program. While there is no provincial mandate requiring fare parity in New Brunswick, in other jurisdictions, Human Rights legislation is a mechanism that has been used to mandate transit agencies to honour fare parity. A precedent was set on September 22, 2016 in the City of Yellowknife, Northwest Territory where a human rights adjudicator ruled it was unfair of Yellowknife not to offer a monthly pass to users of the accessible transit system, and ordered it to stop using a fare structure discriminating against persons using public transit on the basis of disability.

Fares for Handi-Bus are currently $5.00 per trip, $45.00 per 10 trips, or $80.00 per 20 trips. This means lowering Handi-Bus fares to match the conventional transit fares. Although Handi-Bus trips are more costly to deliver, it is important to have fare parity as SJT can be on the receiving end of Human Rights complaints filed by Handi-Bus users that observe this inequity. The processing of Human Rights complaints are often costlier than the alternative of the foregone revenue, and moreover, Human Rights complaints can create negative PR for SJT and undermine efforts related to marketing and communications. It is noted that Ontario has passed legislation through the Accessibility for Ontarians with Disabilities Act which mandates fare parity between conventional transit and paratransit. The provinces of Manitoba and Nova Scotia are following suit with the Accessibility for Manitobans Act and the Nova Scotia Accessibility Act respectively, and it is likely just a matter of time before similar legislation is enacted in New Brunswick.

Develop a fare evasion plan and enforce it

Recognizing that fare evasion is currently robbing the agency of much-needed revenue (albeit unclear exactly how much), Stantec recommends developing and enforcing a fare evasion plan. Curbing fare evasion is not simple. Doing it correctly requires a multi-pronged approach that must consider all angles. There is no single "magic bullet" that can solve the issue on its own. To combat this issue, Stantec suggests that SJT develop a fare evasion plan that would address the following:

- Determines what is an acceptable level for fare evasion recognizing that there is a trade-off between enforcement costs and the level of fare evasion;

- Identifies enforcement activities that will be done to achieve the fare evasion target;

- Outlines formal procedure on what operators should do in instances where evasion is occurring;

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[4] https://www.guelphmercury.com/news-story/5861156-low-income-bus-users-could-see-price-break/

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- Establishes a public education strategy. This public education effort should be both for the operators and for the customers—Stantec advocates for a "fare is fair" campaign to raise awareness of the issue or other peer-to-peer strategies;

- Provides operator training on "protecting the fare box" in tandem with established standard operating procedures; and

- Establishes performance measures (KPIs) for fare evasion and enforcement—essentially a communications tool for the frontline and public on how we are doing.

It is noted that several of these elements of the fare evasion may be challenging for SJT to define at present before additional technologies have been invested, such as the fare collection system described above, due to limited data on the current levels of fare evasion. Moreover, execution of the fare evasion plan may rely, in part, on developing and leveraging this technology. However, while a formal fare evasion plan may be a medium-to-long-term exercise, it is never too early to start identifying internal policies and procedures, as well as public-facing campaigns to help combat fare evasion.

Improve bus stop infrastructure and customer comfort and accessibility amenities

Bus stop signage in Saint John can be difficult to see, which does very little to act as a marketing tool for transit and creates barriers to use for would-be users. Improved bus stop signage and additional bus shelters are not only contributors to a positive customer experience, but can be leveraged for marketing purposes. Other transit agencies in North America that have renewed and modernized their bus stop signage have been increases in ridership because of the natural interest that is created by the new image. In the case of shelters, they can also become a source of advertising revenue. Stantec suggests investment in new signage and shelters is warranted and can have a positive impact on the perceptions of SJT. Shelter investment should be strategic, and based on factors such as daily ridership, service frequency, stop's exposure to the elements, stop's proximity to seniors or persons with disabilities, and the stop's potential as a transfer point. Best practice is to develop a bus stop hierarchy in accordance with these factors, with stops grouped together in different categories. Then, every bus stop within each category should have the same number of amenities, and different amenities can be added to (or removed from) stops on an ongoing basis as bus stops transition from one level in the hierarchy to another. TransLink in Vancouver is an example of an agency with robust bus infrastructure design guidelines[5]. SJT can consider developing in the long term a 'light' version of what TransLink has developed.

At King's Square in particular, it is unclear to customers where they are supposed to wait for their bus, as there are no designated stop locations for each route. This can make the process of transferring stressful for some users, and near-impossible for users with mobility challenges who only have a limited amount of time to understand where their bus is waiting and then make it on-board the bus in time. Stantec recommends designating specific stop locations for each route at King's Square (and all other transfer

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[5] https://www.translink.ca/-/media/Documents/plans_and_projects/transit_oriented_communities/Bus_Infrastructure_Design_Guidelines-Sept_2018.pdf

points), so it is very clear to the customer where they should expect to board their bus. Figure 16-2 illustrates the lack of signage and user information at King's Square.

Figure 16-2: Route 15 on layover at King's Square

It is important to appreciate that challenges related to bus stop infrastructure can be exacerbated in the winter when snow becomes an additional impediment to accessing the bus, especially for persons with disabilities and/or mobility challenges. It is near impossible for buses to deploy the ramp if a snowbank is in the way. While snow removal is outside of the control of SJT, it is recommended that SJT collaborate closely with the City and foster ongoing dialogue in matters related to snow removal. The aim is to ensure as best possible that bus stops, along with the adjacent streets and sidewalks, are given priority with respect to snow removal efforts. In some other snowy cities like Thunder Bay Ontario, a 24-hour service level policy is in place to ensure all bus stops are cleared within 24 hours of a major snow event ending.

As a rule of thumb, in the long term for capital planning purposes SJT can envision approximately $1,000 per stop for information/signage upgrades and $1,500 per stop for new benches, and $10,000 per stop for new shelters. These are conservative (high end) estimates.

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Bolster Public Marketing Efforts

Stantec is a proponent of simple, economical, and proven methods to market transit. In the age of constant "digital noise", word of mouth marketing is making a strong comeback. Of course, this does not diminish the role or need for strong web and app platforms to support those initiatives. As Saint John Transit evaluates the role and future opportunities for marketing, Stantec highlights some of the most successful marketing approaches for consideration:

Establish a "Transit is Cool" culture

There is a new generation of customer with a latent demand for public transit but the value proposition of Saint John Transit has not been sufficiently established. Saint John Transit could embark on a public education campaign that taps into the lifestyle, environmental, and economic benefits associated with taking transit. Below are some examples of "transit is cool" campaigns from LA Metro in Los Angeles and from King County Metro in Seattle. The latter's "just one trip" campaign was developed on the premise that if a customer tries transit once they will be hooked afterwards.

Figure 16-3: Transit advertising from LA Metro

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Figure 16-4: Transit advertising from King County Metro

It is noted that transit marketing does not need to be elaborate nor a cost-driver to be effective. At Fort Sask Transit in Fort Saskatchewan, Alberta, the agency made replica bus stop signs that contained user information, and placed them all over the city to raise awareness for its services. Below, the replica sign is shown at the entrance of a local Canadian Tire store. The cost of the replica signage was reportedly under $500 and was entirely "homemade" by City employees.

Figure 16-5: Transit advertising from Fort Sask Transit

Finally, from its experiences, Stantec believes nothing is more effective at attracting discretionary riders than being in the community promoting the message. This is a simple solution to educate would-be riders about transit and raise awareness. Oftentimes, people are interested in trying transit but intimidated at the prospect of the "first ride". Shown below, again in Fort Saskatchewan, is a community festival where

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one of Fort Sask Transit's buses is parked and used as a "free attraction" for families – bus bowling. This fun and innovative approach to community engagement was well received and is believed to be directly linked to new ridership. While opportunities in Saint John may be on hold in the immediate term due to concerns surrounding COVID-19, Stantec recommends pursuing similar guerilla and street marketing opportunities in the future. Stantec recommends that Saint John Transit partner with local high schools, UNBSJ, and NBCC Saint John to recruit volunteers and form "street teams" to assist with engagement efforts.

Figure 16-6: Cooperative marketing for transit at community events

Local businesses and organizations can help promote Saint John Transit through use of their own media opportunities such as shelf talkers in grocery stores, digital screens in retailers such as Tim Hortons, kiosks at shopping centres and inserts in company/organization communications.

Suggested messaging opportunities for local business partners could include:

- Sponsorship and/or advocacy of Saint John Transit and public transit use

- Promotional discounts for those that use Saint John Transit

While the messaging is focused on service, the underlying intent for Saint John Transit is that the agency has wide support in the community it serves. Here (below) is an example of a very successful cooperative marketing relationship between Famima, a bakery, and LADOT in Los Angeles. In this example, customers are given a discount for showing their monthly transit pass at the bakery, can purchase transit fare media at the store and are shown on a map how to get to the business using the transit routes that serve the location. A similar approach could be used in Saint John to engage local

businesses, particularly those in Uptown, that would be mutually beneficial both to transit and the business.

Figure 16-7: Cross-promotion of transit use and retailers

Rider-centric technology that facilitates integrated mobility are a customer expectation

Saint John Transit needs to be prepared to communicate with the customers of the future; customers who are tech-expectant. SJT would benefit from a new web platform that reflects a modernized transit system. The new web and app platforms require a rider-centric approach that implements a comprehensive user experience strategy, modern creative direction and design reflecting SJT's master values, an operational content strategy, future-proofed technology strategy, social media integration and intuitive customer service mechanisms. The new web and app platforms must also have an eye towards consolidation of integrated mobility options and the future direction of the agency. It should provide wayfinding, trip planning and fare payment capabilities. The Société de transport de Montréal (STM) has digital properties that are very robust and is a strong Canadian example of these functions being done well (Figure 16-8).

Figure 16-8: Example of a well-designed and interactive transit agency website, STM
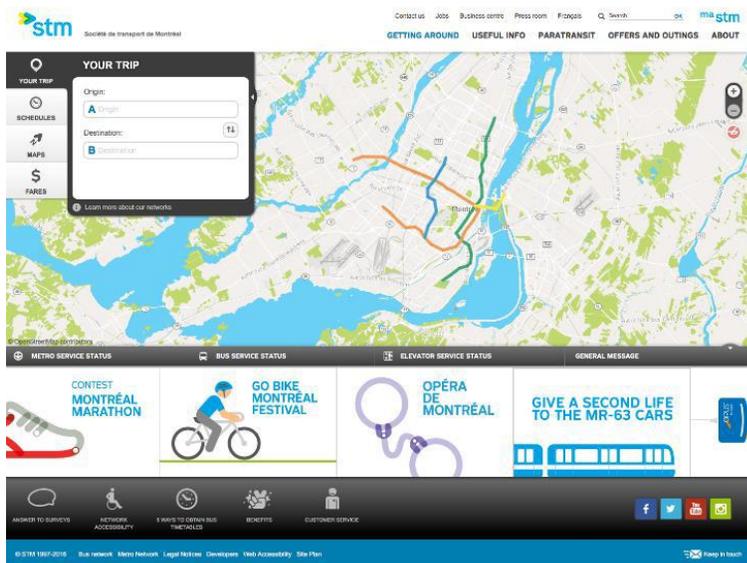
These capabilities, however, should not come at the detriment of the clarity and simplicity of the design. As noted above, the system map is one area of the SJT website that would benefit from additional clarity and simplicity. Stantec recommends including a static version of the map that clearly shows all routes, so users can better appreciate how the network comes together and how transfers may be made to get to their destinations. Stantec acknowledges that the City has already identified the SJT website as needing improvement and commends the City for taking the initiative to get the ball rolling on website updates.

Marketing to internal transit staff cannot be overlooked

In speaking with front-line staff, we found that they are proud supporters of the organization, however they require more support on how to communicate the positive impact SJT has on the mobility, economy, and society as a whole in Saint John. It is important to consistently inform and train staff on how to communicate with transit's customers. For ease of education and information distribution, this can be produced as a series of actionable online self-help and or guidance systems that both staff and riders can refer to that enable front line staff to act as ambassadors of the SJT brand, vision, objectives, and services. An example of this is shown in Figure 16-9 – *BC Transit's Employee Engagement Action Plan*.

Figure 16-9: Internal marketing, BC Transit

16.4   OPERATING, MAINTENANCE, AND STORAGE FACILITY (OMSF)

Retire unusable vehicles and re-evaluate fleet needs in more depth post-implementation

SJT's fleet consists of 46 buses, 8 Handi-Buses, and 5 motor vehicles. Buses range in age from 1 to 16 years old, and the average age of the fleet is approximately 8 years, which is old considering that many transit agencies retire their vehicles after 12-14 years and tend to have an average age of a little over 6 years. Likewise, Handi-Buses range in age from 4 to 12 years old; meanwhile, the lifespan of cutaway vehicles is typically approximately 7 years. This contributes to challenges with respect to the

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performance and reliability of the fleet – challenges which are exacerbated in consideration that SJT does not conduct any mid-lifecycle refurbishment of its vehicles.

At present, 27 conventional buses are required at peak, which translates to a spare ratio of 70%. This is large considering that transit agency spare ratios most often fall within a range of 20%-60%. The large spare ratio is explainable in a few ways. First, considering that the fleet size has remained constant over the last several years despite service reductions, this means that the fleet is sized for a larger operation than what SJT operates presently. Second, the age of the fleet combined with the absence of mid-lifecycle refurbishments has created excessive vehicle downtime where as many as 14 buses can be inoperable at any one time. Third, a modest amount of capacity is provisioned for charter service or overload trips, where as many as 30 conventional buses might be operational at once.

Stantec recommends that SJT retire its two articulated buses which are currently out of commission and occupy significant space in the OMSF. In addition, Stantec recommends that SJT retire its three buses that began service in 2004 (the oldest vehicles in the fleet). This would bring SJT's fleet down to 41 buses. Comparatively, 23 conventional buses will be required at peak pending the implementation of the recommended route network, meaning the spare ratio grows to 78%. While it is likely that further vehicles can be retired and there is room for the spare ratio to come down, the retirement of five vehicles gives SJT a starting point. Given the age and condition of these vehicles, selling the vehicles is not likely to be viable, however, the salvage value of parts and materials can be estimated at approximately $3,000 per bus. Moreover, the retirement of these vehicles can create additional (albeit modest) operating cost savings in the form of foregoing the cost of the license and insurance on a per unit basis, as well as the cost of any mandated recurring safety inspections.

Stantec also recommends, upon the City fleet's co-location in the transit OMSF, that opportunities be sought by SJT to leverage the City's fleet management system for the improved tracking of maintenance activities, fuel consumption, wrench time, and other variables, to provide further insights into the appropriate spare ratio and into the costs of maintaining an aged fleet. The City's processes of tracking a vehicle's optimal replacement point (ORP) based on age, odometer reading, maintenance spending, fuel consumption, and vehicle condition may also prove valuable for transit, and SJT can consider setting a threshold ORP beyond which a vehicle is prioritized for replacement.

No changes to the Handi-Bus fleet size are recommended at this time, though as funding becomes available it is recommended that SJT replace its oldest vehicles with newer models.

In the longer term, before any further shrinkage of the size of the SJT fleet, Stantec recommends that SJT undertake a thorough fleet review with the additional context of having implemented an updated route network and on-request service in the short term, and assuming that the co-location of the City fleet in the transit OMSF proceeds as planned as well. The thorough fleet review to be undertaken in the long term should consider the following items:

- Are we forecasting further service reductions, or have mobility needs and budget realities shifted and perhaps we are looking to grow the service? Have we been successful in expanding charter service, and is the fleet size appropriate given the current state of charter service and ferry tours? Acknowledging also that it would be imprudent to keep a significant number of additional vehicles

on hand just in the event of significant charter requests during peak hours – this would not be justified.

- With improved documentation of transit fleet performance in hand via use of the City's fleet management system, what spare ratio, procurement practices, and vehicle lifecycles would be appropriate for SJT? If further shrinkage of the fleet size is appropriate, are the oldest vehicles indeed the ones that are most appropriate to retire in consideration of each vehicle's actual reliability and operating condition? Is there evidence that the current spare ratio is creating a sense of complacency (rather than urgency) with respect to responding to needed repairs?

- Relatedly, is it appropriate for SJT to consider undertaking mid-lifecycle refurbishments as a strategy for extending the fleet's lifespan while reducing downtime and spare ratio requirements? The cost of mid-lifecycle refurbishments can vary from agency to agency, but as a point of reference, York Region Transit's mid-lifecycle refurbishments cost approximately $180,000. This is a significant investment that allows York Region Transit to extend vehicle life to 18 years. Other transit agencies with less thorough refurbishments often look to spend in the range of $100,000 to $150,000 per bus.

- The potential to procure smaller vehicles for operation on less-busy routes. Pros and cons of operating smaller vehicles are illustrated in Table 16-3 and might be explored further in the thorough fleet review –

Table 16-3: Pros and Cons of Smaller Vehicles

Pros of Smaller Vehicles	Cons of Smaller Vehicles
Lower operating costs	The bulk of operating costs still remain in the form of operator wages and benefits
Lower capital costs to procure	Shorter lifespans (~7 years, versus ~12 years for larger vehicles)
Improved optics of avoiding the perception of money being "wasted" on mostly-empty buses operating on less-busy routes	Vehicles are less comfortable from the users' perspective, and less opportunity for physical distancing
Ability to double as paratransit/on-request vehicles creating more flexibility in resource deployment	Operational flexibility with respect to the busier routes may diminish if the size of the 40-foot bus fleet shrinks in lieu
Space freed up in the OMSF	Can detract from the streamlining of maintenance activities and parts/inventory management
Easier for operators to maneuver and ideal for interlining fixed route 13 with on-request route 12	

- The potential to procure zero-emission buses. Given the industry-wide desire for a move to zero-emission technology, a demonstration test would be a viable starting point for Saint John if there is appetite for this. The demonstration test would evaluate a vehicle's suitability for the operating profile, i.e. confirming whether a full battery charge will be adequate for the entire day's service hours. While exploring zero-emission buses may not be the most effective use of limited funds given the current financial situation of the City, dedicated grant and funding programs are becoming increasingly prevalent industry-wide, and SJT should begin thinking about this now, as the cost of being proactive is always less than the cost of being reactive.

- Given the co-location of the OMSF and City fleet facilities, it might be explored whether any of the motor vehicles in the SJT fleet may be given dual-purpose across other aspects of the City's public works in the event they are presently underutilized. Additionally, other efficiencies from co-location are recommended to be explored. While mechanics for buses require a specialized skillset, and while bus parts tend to be unique from other motor vehicle parts, there may be opportunities to utilize service staff labour across both fleets, as well as pursuing pool purchasing for consumables like fluids and filters.

Redesign and expand OMSF office layout to provide more space for staff

OMSFs are "people facilities". They are places where people in the transit industry spend a considerable part of their days. Indeed, their set up can affect the mental health, morale and well-being of all that work within them.

SJT's OMSF used to have more floor space when initially commissioned but this was scaled back because it was deemed too large for the staff headcount at the time. The available space was repurposed into a public library and transit staff compressed into a relatively small area of the facility. The second floor, while designed for office space, was never set up and remains unfinished. It is presently used for miscellaneous storage.

The SJT OMSF does not have proper space for confidential conversations, nor meeting rooms for larger staff functions (such as operator training or team meetings). Formerly a meeting room before the first redesign, the current scheduling/operations/dispatch office is a particularly constrained space.

Stantec recommends that the SJT Transit OMSF office space be expanded to introduce common elements found in modern transit facilities – private meeting rooms and additional space for both existing staff, as well as proposed new additions. Specifically, SJT should consider outfitting the second floor with office space to provide more space for staff when warranted.

17.0 OPERATIONAL COST IMPACTS

Stantec presents below an estimation of the financial impacts of the proposed short-term recommendations, illustrating how savings of $850,000 may be achieved in 2021. These operational impacts are based on the following factors:

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Operational Cost Impacts

- Cost savings gained from a reduction in revenue service hours as a result of the short-term network;

- Additional cost of on-request service;

- Additional cost required for adding 0.5 FTE to the labour force; and

- The revenue reduction associated with fare parity between Handi-Bus service and conventional service.

Notably, the additional revenue generation from anticipated ridership increases have not been factored into the operational cost impacts to remain conservative. However, the proposed service improvements including increased service efficiencies, improved OTP and improved schedules are anticipated to grow ridership. Lastly, long-term recommendations such as new technology procurements (increase in costs) and the consolidation of routes 13 and 14 (decrease in costs) do not factor into this analysis.

First, we provide a summary of the existing and proposed route service spans and headways, along with a table indicating the forecasted change in revenue-hours by route.

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Operational Cost Impacts

Figure 17-1: Existing service table

Route #	Route Name	Service Type	Peak Vehicle Req	Weekday Service Span	Weekday Headways	Saturday Service Span	Saturday Headways	Sunday Service Span	Sunday Headways
1A/B	Lancaster Mall / Fairville Blvd. Plaza	Frequent	6 buses	6:05 am - 11:15 pm	15 minute peak 30 minute non peak	7:05 am - 10:55 pm	30 minutes	10:35 am - 6:10 pm	60 minutes
3A/B	Regional / UNB Millidge Avenue	Frequent	3 buses	5:50 am - 11:30 pm	30 minutes	6:20 am - 11:00 pm	30 minutes	10:50 am - 6:40 pm	30 minutes
9A/B	Regional / UNB Churchill Blvd.	Frequent	3 buses	6:05 am - 6:45 pm	30 minutes	-	-	-	-
12	Martinon	Local	1 bus	6:40 am - 9:35 am 12:25 pm - 1:20 pm 4:40 pm - 6:35 pm	60 minutes	-	-	-	-
13	Milford / Greendale	Local	0.5 bus (w/ rt 14)	6:50 am - 6:20 pm	60 minutes	10:50 am - 5:20 pm	60 minutes	-	-
14	Churchill Heights	Local	0.5 bus (w/ rt 13)	6:20 am - 6:45 pm	60 minutes	10:20 am - 5:45 pm	60 minutes	-	-
15A/B	Harbour Bridge	Local	2 buses	6:15 am - 11:15 pm	30 minutes until 7:15 pm 60 minutes until 11:15 pm	6:45 am - 9:45 pm	60 minutes until 11:15 am 30 minutes until 6:15 pm 60 minutes until 10:15 pm	10:45 am - 6:15 pm	60 minutes
20	Wright Street / Fort Howe	Local	1 bus	6:10 am - 9:50 pm	45 minutes	9:55 am - 6:05 pm	45 minutes	-	-
21	South End / St. Joseph's	Local	0.5 bus (w/ rt 23)	6:35 am - 9:55 pm	60 minutes	7:35 am - 5:55 pm	60 minutes	-	-
23	Crescent Valley	Local	0.5 bus (w/ rt 21)	5:55 am - 9:30 pm	60 minutes	7:55 am - 5:55 pm	60 minutes	-	-
25	Millidgeville / North	Local	1 bus	6:15 am - 10:50 am 1:40 pm - 2:45 pm 3:40 pm - 7:05 pm	65 minutes	9:45 am - 4:40 pm	70 minutes	-	-
30	Champlain Heights	Local	0.5 bus (w/ rt 34)	6:40 am - 10:20 pm	45 minutes until 6:20 pm 60 minutes until 10:20 pm	10:25 am - 6:20 pm	45 minutes	-	-
31	Forest Glen	Local	1 bus	5:55 am - 9:50 pm	30 minutes until 6:50 pm 60 minutes until 9:50 pm	7:25 am - 6:50 pm	30 minutes	10:05 am - 5:30 pm	60 minutes
32	Loch Lomond	Local	1 bus	6:30 am - 9:50 am 11:10 am - 12:10 pm 4:40 pm - 6:50 pm	70 minutes	-	-	-	-
33	Champlain Express	Express	2 buses	6:15 am - 9:45 am 2:50 pm - 6:25 pm	60 minutes (Jul-Aug) 30 minutes (Sep-Jun)	-	-	-	-
34	Silver Falls	Local	0.5 bus (w/ rt 30)	6:25 am - 6:35 pm	45 minutes	10:55 am - 5:50 pm	45 minutes	-	-

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Operational Cost Impacts

Figure 17-2: Recommended service table

Route #	Route Name	Service Type	Peak Vehicle Req	Weekday		Saturday		Sunday	
				Service Span	Headways	Service Span	Headways	Service Span	Headways
1A/B	Lancaster Mall / Fairville Blvd. Plaza	Frequent	6 buses	6:00am – 11:30pm	15 minutes peak 30 minutes off-peak	7:00am – 11:00pm	30 minutes	medium/long term consideration	
3A/B	Regional / UNB Millidge Avenue	Frequent	6 buses	6:00am – 11:30pm	15 minutes until 7pm 30 minutes from 7pm	7:00am – 11:00pm	30 minutes	medium/long term consideration	
12	Martinon	Targeted	-	6:00am – 6:00pm	on-request	-	-	-	-
13	Milford / Greendale / Churchill Heights	Local	1 bus (w/ rt 14 maintained in short term)	6:00am – 9:00pm	60 minutes	8:00am – 6:00pm	60 minutes	-	-
15A/B	Harbour Bridge	Frequent	2 buses	6:00am – 11:30pm	30 minutes	7:00am – 11:00pm	30 minutes	medium/long term consideration	
20	South End / Waterloo Village / Mount Pleasant	Local	1 bus	6:00am – 9:00pm	30 minutes peak 60 minutes off-peak	8:00am – 6:00pm	60 minutes	-	-
23	Crescent Valley / St. Joseph's	Local	1 bus	6:00am – 9:00pm	30 minutes peak 60 minutes off-peak	8:00am – 6:00pm	60 minutes	-	-
25	Millidgeville / North	Local	1 bus	6:00am – 9:00pm	60 minutes	8:00am – 6:00pm	60 minutes	-	-
30	Champlain Heights / Silver Falls	Local	0.5 bus (w/ rt 31)	6:00am – 9:00pm	60 minutes	8:00am – 6:00pm	60 minutes	-	-
31	Forest Glen	Local	0.5 bus (w/ rt 30)	6:00am – 9:00pm	60 minutes	8:00am – 6:00pm	60 minutes	-	-
32	Forest Hills / Loch Lomond / Airport	Targeted	-	6:00am – 6:00pm	on-request	-	-	-	-
33	NBCC Express	Express	1 bus	6:00am – 9:00am; 4:00pm – 7:00pm;	30 minutes	-	-	-	-

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Operational Cost Impacts

Table 17-1: Forecasted Changes in Revenue-Hours by Route

Route	Forecasted Change in Revenue-Hrs	Rationale for Variance
1	-298	Slight expansion of service span (to 6:00am – 11:30pm on weekdays) and duration of peak service hours, offset by removal of Sunday service.
3	+7,960	Service on Route 9 reallocated to Route 3. Net decrease in revenue-hours due to removal of Sunday service plus a slight shrinkage of service span, to 6:00am – 11:30pm on weekdays and 7:00am – 11:00pm on Saturdays.
9	-9,754	
12	-1,530	Revenue-hours reallocated away from fixed-route service to on-request service.
13	+461	Service span extended to 6:00am – 9:00pm on weekdays and 8:00am – 6:00pm on Saturdays.
14	+307	Service span extended to 6:00am – 9:00pm on weekdays and 8:00am – 6:00pm on Saturdays.
15	+1,200	Slight expansion of service span, to 6:00am – 11:30pm on weekdays and 7:00am – 11:00pm on Saturdays, plus headways improved to 30 minutes all-day. Partially offset by removal of Sunday service.
20	-1,508	Reduction in the route's cycle time (to 30 minutes) while holding the number of weekday departures constant. Partially offset by improvement of Saturday service span (to 8:00am – 6:00pm).
21	-2,326	Fixed-route removed as the South End, Waterloo Village, and area around Wright St. is proposed to be covered by route 20.
23	+612	Increase in frequency to 30-minute headways during weekday peak hours. Partially offset by a slight reduction in weekday service span (to 6:00am – 9:00pm).
25	+1,797	Increase in service span on both weekdays and Saturdays (to 6:00am – 9:00pm and 8:00am – 6:00pm respectively), and runtime and headways adjusted to every 60 minutes.
30	-664	Slight reduction in service span, to 6:00am – 9:00pm on weekdays. Headways adjusted so service is delivered consistently every 60 minutes. Partially offset by improvement of service span on Saturdays, to 8:00am – 6:00pm.
31	-2,331	Reduction in service span (to 6:00am – 9:00pm on weekdays and 8:00am – 6:00pm on Saturdays) and in frequency (to 60-minute headways), and elimination of Sunday service.
32	-1,530	Revenue-hours reallocated away from fixed-route service to on-request service.
33	-2,139	Reduction in route length and cycle time means fewer trips are delivered per day but headways are maintained at 30 minutes.
34	-1,214	Fixed-route removed as Silver Falls is proposed to be covered by route 30.
TOTAL	**-10,957**	

Next, we estimate the cost savings associated with the reduction in fixed-route revenue-hours. From here, we will add back the incremental costs associated with implementing on-request service and associated with other implementation considerations discussed in the Operational Audit.

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Operational Cost Impacts

Cost Savings of Fixed-Route Recommendations

Assuming an average cost-per-hour of $107.87, consistent with the data most recently reported to the Canadian Urban Transit Association (2018), but inflated to 2020$, fixed-route annual cost savings are estimated at approximately $1,180,000. Comex service is not included in this analysis on the understanding that it is a cost-neutral service today (i.e. revenues equal to costs), and that it will continue to be a cost-neutral service in the future.

Costs of On-Request Recommendations

Incremental cost estimates for operating on-request service are based on the average cost-per-hour of Handi-Bus ($25.64), as reported to the Canadian Urban Transit Association in 2017, inflated to 2020$. The assumption is that on-request trips would be delivered by the Handi-Bus fleet with on-request passengers co-mingled with Handi-Bus passengers. However, even if a different delivery strategy is used, the Handi-Bus cost-per-hour remains a reasonable proxy.

Stantec is estimating approximately 4,318 incremental revenue-hours of on-request service assuming similar ridership demand to the levels currently experienced by routes 12 and 32. Multiplied by the cost-per-hour, this equates to annual incremental costs of approximately $110,000 (compared to approximately $330,000 in savings specific to the elimination of fixed routes 12 and 32).

The net annual cost savings, therefore, can be estimated as $1,070,000 ($1,180,000 minus $110,000).

Additional Costs

To achieve the desired benefits, Stantec recommends adding 0.5 FTE as noted in the organizational structure recommendations. Assuming an operating budget impact of $30,000 for this additional labour, this could reduce the operating budget savings to $1,040,000.

Further, Stantec recommends updates to the fare structure such that Handi-Bus fares are in parity with conventional transit fares. Stantec expressed previously in this report that it has concerns that the City of Saint John and SJT could be exposed to a potential New Brunswick Human Rights Act challenge. On the understanding that Handi-Bus fares are forecasted to be $162,150 in 2020, and conservatively assuming a decrease in average fare of approximately 50% (the actual percentage is likely to be slightly lower), this is expected to negatively impact SJT's operating budget by about $80,000. This further reduces the operating budget savings to $960,000. Notably, it is possible and likely that the reduction in Handi-Bus fare will induce new trips, however, Stantec would propose the elimination of Handi-Bus service on Sundays to be commensurate (and equitable) with the conventional transit system, so these increases are likely to be offset.

Additional budget impact considerations beyond these are assumed to have $0 impact in the short-term.

Summary of Cost Impacts

Stantec is forecasting implementation of the short-term Operational Audit recommendations to bring approximately $960,000 in annual cost savings to SJT. Stantec acknowledges that $960,000 is

in excess of the targeted budget reduction of $850,000. This is not to suggest that it would be prudent for SJT to exceed this targeted budget reduction, rather the intention is to provide a conservative estimate such that if savings do not materialize quite as expected, there is a buffer in place that will still allow SJT to meet the budget target. In the event that it is midway through 2021 and SJT is tracking to exceed the $850,000 target, it is recommended that service be added back to the extent possible, for instance through reintroducing Sunday service or through extending the service span to 10:00pm on routes 20 and 23 during the weekdays.

Additional Ridership and Revenue Considerations

Although ridership and corresponding fare revenue impacts have not been considered in the analysis above, we would be remiss not to consider the impact the recommended route network is expected to have on ridership. Network-wide, Stantec is estimating a growth in systemwide ridership in the short-term of approximately 50,000 trips per year, or around 2.5% of existing annual ridership. This estimate relies on estimated route productivity improvements on a ridership-per-revenue-hour basis permitted by improvements to the route alignments, as well as through implementation of the other strategies outlined in the recommendations – particularly those related to improved marketing efforts, user information, and on-street supervision. At an average fare of $1.82 per trip, this translates into a likely-to-occur revenue uplift of approximately $91,000 per year.

Notably, in considering revenue opportunities it is also critical to note that the Province of New Brunswick does not provide a provincial subsidy for transit unlike all other provinces and territories in Canada. As Saint John Transit explores long-term financial feasibility, advocating for provincial funding will help to relieve some of the financial responsibility placed solely on the City and SJT riders while also aligning with funding models utilized in other jurisdictions.

18.0 IMPLEMENTATION PLAN

Indications have been made throughout the preceding sections in some instances as to whether recommendations are short-term or long-term in nature. Stantec summarizes in this section an implementation plan, which has been created to serve as a guide to make changes throughout the Saint John Transit organization. Action items have been prioritized into short- and long-term actions whereby short-term actions aim to address the annual budget deficit whereas long-term actions consider items that will aid in achieving the long term vision for the transit agency and ensure financial and social sustainability into the future.

18.1 SCENARIO ASSESSMENT

Throughout the duration of the Operational Audit, numerous operational scenarios were devised and considered based on the five key objectives outlined above in Section 8.0 to guide the future development of SJT, including:

1. Build ridership and strategic relationships.
2. Minimize travel times.

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3. Foster sustainability and economic prosperity.
4. Increase brand and service awareness.
5. Optimize the return on the investment in transit.

Ultimately, three operational scenarios were considered:

1. **Existing Conditions**: the current network with no alterations.
2. **Proposed Short-Term Proposal**: includes proposed alignments and service changes that can be quickly operationalized to meet the budget deficit.
3. **Proposed Long-Term Proposal**: builds on the Short-Term Network to create a more resilient transit system through improvements such as dynamic scheduling and monitoring technology, improved infrastructure, and enhanced branding and marketing efforts.

Following this, each scenario was reviewed using the high-level evaluation criteria categories including financial, operational and social, to understand how each scenario will meet the ultimate vision. The financial, operational and social considerations of each scenario have been discussed in Table 18-1.

Table 18-1: Transit network scenario review

	Financial	Operational	Social
Existing Conditions	- The Existing Conditions do not offer any additional financial savings as the current operations will continue as is	- Operationally, this network performs acceptably and is a vital service to many residents - Through public feedback and data analyses, the existing network was noted to have some challenges with reliability (OTP) with additional service hours desired during evenings and weekends, particularly to key destinations and priority neighbourhoods	- The Existing Conditions features a strong mainline network coupled with feeder routes that provides coverage throughout most of the Primary Development Area, however, lower income residents note challenges with accessing services during off-peak times and greater service is desired outside of Uptown
Short-Term Proposal	- The Short-Term Proposal offers immediate financial efficiencies that will aid in reducing the budget deficit, with $960k in savings projected	- The Short-Term Proposal will operate with efficiencies resulting from more direct routing, consistent schedules and the consolidation of duplicated route segments - Given the minimal investment opportunities into technology, marketing or infrastructure due to immediate budget limitations, the network presents additional potential for realizing operational efficiencies including scheduling software to efficiently deliver on-request and paratransit trips	- The Short-Term Proposal will offer equal or greater service levels to priority neighbourhoods and other key destinations compared to the Existing Conditions - An overall reduced coverage is observed relative to the Existing Conditions due to improved route directness, however many routes have expanded service hours and/or greater frequencies

Implementation Plan

Long-Term Proposal	- The Long-Term Proposal will require additional investment, however these are anticipated to show a return via more efficient routing and enhanced user experience, translating into greater ridership. Improvements include the purchasing of an SaaS solution and improved stop infrastructure. - The increased resources for marketing and outreach will help to create greater brand awareness and potential partnerships resulting in additional revenue sources	- Operationally, the Long-Term Proposal is expected to perform the best given the additional investment to improve and optimize service - This includes the ability to interline Route 12 and 13 given the new on-request scheduling capabilities, and mobile fare payments which reduces administrative efforts	- This network will offer comparable social benefits to the short-term network - The enhanced investment in marketing and outreach efforts will have direct social benefits and help to better instill a transit culture within the City

18.2   SHORT-TERM ACTIONS

18.2.1 Service Planning

1. **Make route revisions as per the final preferred network outlined in Section 11.** In the short-term, initial works to achieve this plan include necessary rerouting and public communication efforts to promote these changes to the public. Given the timeline for this network, it is proposed this network be implemented using the current infrastructure, technology and fleet available to SJT today, with stops no longer in use removed. This network is intended to help in addressing the municipal budget deficit in the short-term.
    - **In the short-term existing routes 13 and 14 will operate with their current routing** to optimize on interlining capabilities. In the long-term the new proposed Route 13 will be operated and interlined with Route 12 using dynamic scheduling technology.
    - **The Short-Term Proposal will utilize the current methods of booking paratransit rides to book on-request trips (via the Handi-Bus call centre)**. Currently, these trips will be booked using the available capacity on the Handi-Bus service. Service monitoring into the future will help understand if capacity issues arise and if additional vehicles will be required.
    - **Transition from 3 to 2 Comex routes.** Comex services should not be operated unless the City of Saint John is fully compensated by the funding partners for all direct and indirect costs of the service. It is understood that the City is made whole for Comex operation which is anticipated to be the case regardless of whether two or three routes are operated. This service proposal is intended to deploy resources more efficiently such as to manage peak vehicle requirements and improve the level of service on the two remaining routes. There is anticipated to be no benefit (or disbenefit) to SJT's operating budget for implementing these changes.
2. **Begin/continue collecting the noted KPIs and ramp up ongoing evaluation efforts** to perform more comprehensive monitoring which will allow for more informed decision making. Discussions with the current technology provider will be required to understand current monitoring deficiencies and how these can be corrected in the short-term until additional investment in technology is possible. As a starting point there is some reporting capabilities available today

including on-time performance and weekly passenger trips by route which can be regularly monitored to help identify where corrective action is required. Notably, the on-time performance data should be discussed with the current collector to identify the cause for inaccuracy in the data and how to rectify this.

Administration and Organizational Structure

3. **Develop and implement operating contract for paratransit and on-request services.** SJT should prioritize the development of a performance-based operations contract for combined paratransit and on-request service delivery and go to market with an RFP to procure these services. The new contracts should include performance standards and key performance indicators derived from the metrics provided in Section 9.4 to ensure greater transparency. Provided that the optimal delivery of on-request service, including interlining on-request and fixed-route services, is contingent on this revised contract this should be completed in the short-term. As part of the contract, a **formal reporting relationship with the paratransit contractor should be established.** Presently, SJT has no direct oversight of the services rendered by its third-party contractor for paratransit services. A formal relationship between SJT's Transportation Manager and the contractor is recommended to establish in the short-term. This formalization will allow the contractor to be held accountable for its performance which can be measured by the KPIs outlined in the contract. Additionally, the regular monitoring of this service can help to inform service planning decisions into the future, including the comingling of paratransit and on-request service based on available capacity and evolving demand as well as the most efficient service delivery model.

4. **Adjust roles and responsibilities within the SJT organization and add a 0.5 FTE.** As shown in the analysis above, Stantec believes that SJT can add a 0.5 FTE and still meet the $850,000 budget reduction target. On-street supervision should commence. The organizational chart should be restructured to shift the "Administrative Staff" into distinct roles to effectively assign roles and responsibilities. The three existing Administrative Staff roles should be specified into the following roles in the short-term:

   • *Marketing and Customer Service Specialist*: responsible for customer service, customer communications, detours and other alerts, developing and implementing standard operating procedures for handling scheduling and routing information requests, developing marketing materials and promotions to educate the public about SJT services, as well as routine customer inquiries such as lost and found. This role will proactively secure new business and developing new partnerships including the Chartered Services or EcoPass program. The new peak hour express service on Route 33 traveling along Bayside Dr and Grandview Ave presents an opportunity for a potential EcoPass program with several industrial employment sites. To ensure long-term financial sustainability, it is critical that SJT establish secured revenue sources to be resilient through funding changes.

   • *Planning and Development Specialist:* tasked with developing schedules, short- and long-range service plans, revising routes, and monitoring network performance. This staff member would be expected to work closely with the municipal departments of transportation, public works, and planning and development to ensure that transit works cohesively with the City of Saint John.

- *Finance Specialist:* oversee accounting, fare collection, and all other money matters. This will be critical to tracking the financial health of the agency and flag any challenges or new opportunities to build the financial sustainability of the system.

In conjunction with role adjustments, develop job descriptions for each role in the organization structure. Job descriptions will help to clearly identify internally what roles and responsibilities are performed by each team member. This helps to internally monitor what tasks are being completed, establish clear accountability and remove ambiguity among staff members. Additionally, this will help to identify what skillsets or resources within the City that will need to be leveraged. **Furthermore, consider additional organizational updates required in the event that SJT is brought under the City as a department.** Building on the short-term organizational restructuring where more distinct roles will be assigned within the administrative staff, these can be further refined as needed in the long-term. It will be important to evaluate the effectiveness of the working relationship with the City's shared services on an ongoing basis, and work together with the appropriate departments to rectify any gaps that may be present.

18.2.2 Operations

5. **Shift bus stop infrastructure and accessibility amenities to align with the proposed routes.** Stop infrastructure will need to be redistributed from the old route alignments to the proposed alignments as each new route goes into service. Notably, many of the proposed routes are largely made up of segments of the existing routes and therefore not much stop infrastructure will have to be moved, however the stops that will no longer be in use should be removed to avoid customer and operator confusion. In the long-term, efforts to bolster stop infrastructure can be pursued pending available funding, as outlined in the subsection below.

6. **Simplify the fare structure.** The recommended fare changes in the short-term, along with their respective justifications include:

- *Consolidating the concession discounts for children, students, and seniors.* Notably, there are several deviations between discounts for various groups causing inconsistencies and complications on the user end.

- *Maintain current fare for now.* Given the intent of this Audit is to "do more with less", it would be imprudent to increase fares for a net reduction in service hours and likely disincentivize many transit users as well as negatively impact any potential new growth in ridership.

- *Update Handi-Bus fare structure to be consistent with conventional transit.* Being equitable in the Handi-Bus and conventional transit service offerings is the right thing to do, even if legislation is not yet in place to mandate this.

18.3 LONG TERM ACTIONS

18.3.1 Service Planning

7. Make the noted enhancements to the network outlined in Section 12, these include:
    - **Interline Route 12 and 13 using the dynamic scheduling technology**. To visualize this, a daily schedule will consist of a run of Route 13 from 09:00-09:30, then 09:30-10:00 it becomes on-request and picks up riders along the stops of Route 12, 10:00-10:30

> another run of route 13, etc. Based on service demand and location of pick-ups/drop-offs a stop-to-hub approach is likely most appropriate and will utilize the current stop infrastructure present along Route 12.
>
> - **Explore the provision of additional stops along Route 33 at industrial employment sites.** In the short-term Route 33 will provide express service between NBCC and King's Square during peak periods. Given the several industrial sites passed along Bayside Drive such as Irving Oil Refinery, Irving Paper and Gulf Operators, the potential to expand ridership through an EcoPass program with these employers can be explored if schedules align. These major employers should be approached to discuss potential arrangements.

18.3.2 Administration and Organizational Structure

8. **Rebrand Handi-Bus service** to deemphasize the exclusivity of the service and remain consistent with the overall SJT branding, ultimately creating a more inclusive service. Realizing financial and resource constraints in the short-term, this initiative should be explored once the financial health and operations have been addressed. This rebrand will also assist in better co-mingling the paratransit and on-request services.

9. **Expand charter and ferry tours businesses.** Explore opportunities to expand those services which contribute significantly to the financial health of the agency, namely charter services and ferry tour services. The expansion of charter services should be accelerated to the short-term as much as possible, though it will be important for adequate resources to be in place first and Stantec acknowledges that staff may be busy with the implementation of other short-term recommendations. The additional revenue gained from these services can be used to improve and support other aspects of the service. Proactively planning revenue-generating services will help to reduce the need for service cuts in the event of potential funding reductions in the future.

18.3.3 Scheduling, Planning and Dispatch

10. **Invest in scheduling/dispatch and customer information software to exploit operational efficiencies** including Modern Computer Aided Dispatch / Automated Vehicle Location (CAD/AVL), Modern Mobile Data Terminal (MDT), and scheduling/dispatching/real-time information software (SaaS solution recommended). This will help to ensure that services can be deployed efficiently and reliably including improved OTP and operating on-request services which can potentially be expanded in the future to underserved or growing areas in the city offering potential ridership growth. These technology needs should be incorporated into City's long-term capital planning.

18.3.4 Operations

11. **Invest in a fare collection system to reduce operational costs and improve customer experience.** Stantec recommends that SJT procure a simple open and mobile fare collection solution like a validator product such as the one developed by eiGPS or Token Transit which is an suitable solution and at a reasonable price point (approximately $300-$500 per bus installed). Another option is to leverage the near-field technology offered in the SaaS tablets, if they were to be procured. As noted in the recommendations section above, the timelines for procuring an advanced fare payment system are within the next 2-3 years followed by an integrated CAD/AVL/MDT solution within the next 3-4 years. The first will help reduce administrative cost

drivers of cash handling and paper-based fare for SJT while the later will allow for more accurate tracking information (for the agency and customers), support better real-time response to service issues, and collect rider counts by stop which will allow for enhanced data capture for future planning. When integrating advanced fare collection systems, payment options for those that do not have access to this technology or are unbanked will need to be considered.

12. **Simplify the fare structure.** The recommended fare changes in the long-term, along with their respective justifications include:

    • *Consolidate various fare products once* an open/mobile fare payment system is procured and rolled out. This will enable riders to pay-as-you-go or buy a monthly pass, without the need for a physical pass. This change will reduce customer confusion, making it easier to use the service and reduce the administrative burden of processing various fare products.

    • *Explore a low-income fare product.* In alignment with poverty reduction goals in Saint John as well as in tandem with an industry shift to more equitable transit operations, this pass will allow customers with low or fixed incomes to avoid devoting a disproportionate amount of their income to transit. Partnering organizations to consider in this initiative include the YMCA, Nick Nicolle Community Centre (as well as other community centres located within priority neighbourhoods) and ONE Change, among many others.

13. **Develop a fare evasion plan and enforce it.** This includes establishing an acceptable target for fare evasion that balances the revenue loss of fare evasion and cost of enforcement, identify enforcement activities and formal procedures to achieve this target, build a public education strategy, provide operator training, and establish KPIs. To ensure this initiative does not disproportionately impact lower-income riders, an enforcement strategy should be paired with the exploration of low-income fares to ensure that transit is affordable to all residents and that enforcement targets those who choose not to pay rather than those who struggle to afford to.

14. **Improve bus stop infrastructure and customer comfort and accessibility amenities.** The current bus stops present visibility challenges (further amplified in the winter), lead to customer confusion and do little to attract future users. Once immediate stop changes are operationalized to accommodate the proposed network and budget deficit, improvements to various infrastructure will contribute to increasing the usability and value of the SJT service. This can be done strategically by targeting high-usage stops (which can be identified through the technology upgrades noted above), stops near seniors or persons with disabilities, and stops at transfer points. This is critical to create a convenient and accessible user experience which works to maintain and grow ridership.

15. **Bolster public marketing efforts.** This can be achieved through a number of approaches highlighted within the recommendations. This will serve to achieve many objectives that build on the long-term vision for SJT including building ridership, increasing brand and service awareness, and optimizing the return on the investment in transit. To ensure all the improvements noted above are fully capitalized on, the service needs to be marketed to residents and visitors to ensure that transit continues to permeate into the culture of the city.

18.3.5 Operating, Maintenance, and Storage Facility (OMSF)

16. **Undertake a thorough review of the SJT fleet.** This will help to understand whether the fleet is right-sized for the operation, with appropriate capacity for the expansion of charter service in

parallel with proposed reductions in revenue-hours of fixed route service. This fleet study should also help to prepare for future vehicle planning including the exploration of smaller vehicles for lower-usage routes, zero-emission buses and any further interoperability between the transit and City vehicle fleet in light of the consolidated facilities. This study should aid in the development of a fleet asset management plan that integrates with financial policies. While this study may not be feasible to conduct currently given the financial constraints, this level of analysis will help to plan for future operations and will ultimately lead to more efficient operations once the right fleet mix and size has been concluded. This proactive analysis will help to establish further cost savings through the fleet composition and will help SJT position itself for future industry shifts.

17. **Redesign and expand OMSF office layout to provide more space for staff.** The SJT Transit OMSF office space should be redesigned and expanded to introduce common elements found in modern transit facilities – private meeting rooms and additional space for both existing staff, as well as proposed new additions. This includes outfitting the second floor with office space which was its original intention but was never finished. In addition to the functional benefits this will offer to daily operations, the enhancement of this space will boost employee morale and well-being which will likely have positive impacts to the operations as well as employee retention.

18.4   ADDITIONAL PREPARATIONS FOR ON-REQUEST TRANSIT

18.4.1 Demand-Response Service Models

When considering demand-response service (which encompasses paratransit and on-request services), there are various operating models and service delivery models which can be explored. To operate this service, some agencies opt for dedicated agency resources, while others employ dedicated contracted resources which are overseen by the agency. A third model is to opt for fully contracted services that are overseen by contractors. In the case of Saint John, it is recommended that a contracted model be explored which is overseen by Saint John Transit. The current agreement with Independence Plus can be reviewed, with the operation of on-request service forming some of the terms in the establishment of a formal service contract, with the intention to also leverage the same resources for the targeted (on-request) service as this is proposed to be comingled with Handi-Bus services.

With respect to service models, on-request services can take many forms. A stop-to-hub model was determined to be the most appropriate along Route 12 and 32. Designated stops can be used (maintaining the existing stop infrastructure) and vehicles will transport riders between the fixed-route system (Lancaster Mall for Route 12 and McAllister Place for Route 32) and designated stops along the on-request routes. This stop-to-hub model provides benefits in the form of more structure and predictability, and better cost management, but has drawbacks in that it is less convenient from the riders' perspective. Additionally, the stop-to-hub model will minimize confusion, maximize trip grouping possibilities, and minimize additional infrastructure costs. However, these stops should be reviewed to determine which are necessary, as it may not make sense to carry forward all of the stops in the launch of the demand-response service. The on-request service will operate on weekdays from 6am to 6pm which is similar to the existing service span along routes 12 and 32. Notably, Handi-Bus service will continue to deploy a curb-to-curb model.

Given that this on-request service is a new form of service for SJT, there are uncertainties with respect to demand forecasting. Therefore it will be important for SJT to play an active role in managing demand,

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especially in the short term, to ensure the solution can still be delivered with the residual capacity of the paratransit vehicles and within existing operations and maintenance budgets. Necessary parameters will be required to build a service which is achievable within these identified constraints. SJT would need to work with Independence Plus to devise a comprehensive service plan.

Prior to implementation, several decisions will need to be finalized, including:

1. Service area boundary for demand-response service;

2. Designated stops and hubs;

3. Appropriate time period required to book a trip;

4. Balancing travel time and optimizing vehicle load – can develop service parameters including passengers per trip/hour, maximum wait times, and maximum in-vehicle time;

5. Trip request structure, which can include a guaranteed drop-off time with a pick-up window or a guaranteed pick-up time with a drop-off window;

6. The cost of a demand-response trip which is recommended to reflect the same costing structure as the fixed-route system to ensure interoperability with the fixed-route system;

7. Fare payments which can potentially leverage the same system as paratransit vehicles;

8. Missed trips or late cancellation policies can be developed or based on the same policies which apply for paratransit trips; and

9. Privacy, liability and safety of working with a third-party technology provider.

In terms of demand forecasting, it is challenging to forecast a steady-state demand for this service prior to implementation as oftentimes the initial stage may see fewer trip groupings due to lack of awareness and ongoing optimization of the scheduling system. As such, a sufficient monitoring period is beneficial to allow for demand to be determined and scheduling optimization to be refined. At a minimum, it is presumed that the current demand seen on Route 12 and 32 will remain. It is noted that on-request customers should not be given priority over Handi-Bus customers, and in the unlikely event that SJT needs to start denying trips due to demand, it is the on-request service that should be re-evaluated rather than the Handi-Bus service.

In summary, the benefits of on-request services include:

1. Flexible routing or scheduling to meet customer demand;

2. Use of technology (mobile apps) to correlate supply and demand;

3. Optimized fleet deployment resulting from the comingling of different customer types; and

4. Connections provided between several transportation services to complete trips.

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18.4.2 Potential Technology Partners

Notably, if SJT proceeds with a SaaS solution through a technology partner as recommended, that will unlock the possibility of delivering on-request trips in-house. This is the recommended model for Route 12 (on-request) which is proposed to interline with Route 13 (fixed-route). Therefore, Stantec is envisioning a transition at this stage whereby the operation of on-request Route 12 is no longer contracted out and is brought back in-house.

To deploy on-request services in such a fashion, a third-party technology partner will be required to provide the scheduling software required. In selecting a partner, SJT should allocate significant time for conversations with potential partners to discuss what they are able to offer and at what price point. SJT may consider releasing an RFI (request for information) prior to proceeding with an RFP or an RFQ to procure these services. Optibus and Spare Labs have been noted above in Section 14.2 as two possible partners, however, SJT's exploratory conversations should not be limited to only these two, as other organizations may be suitable partners as well. We recommend SJT take this to open procurement.

18.4.3 Demand-Response Transit Case Studies

Many transit agencies across Canada have been deploying demand-response services to provide the right-size service in communities that are not adequately served by conventional fixed-route services or to expand coverage areas of transit service. Case studies in Belleville, Guelph and Waterloo are highlighted below as reference points for SJT as an illustration of these concepts at play.

18.4.3.1 Belleville, Ontario

Belleville Transit launched a demand-response pilot in September 2018 where they replaced two fixed route late night services with a demand-response service. The agency utilized a mobility app on their existing 40-foot conventional buses to provide dynamic routing and scheduling. This service was stop-to-stop as opposed to door-to-door, meaning users were transported to and from existing bus stops, rather to and from their homes. Trips were booked via phone, mobile app, or web booking. A significant increase in ridership was observed- with the number of monthly trips tripling over the pilot period. This resulted in a growth in fleet from 2 to 5 buses with certain trips operating at full capacity. An average utilization of 30 people per vehicle in the evening (9pm to 12am) was observed where there used to be an average utilization of 3 people per vehicle during these hours. This resulted in a trip cost of $4.60 per ride. The demand-response service was implemented quickly, in approximately one week, due to the convenience associated with using the existing fleet for service delivery.

18.4.3.2 Guelph, Ontario

As part of a replacement of their paratransit scheduling software, Guelph Transit implemented a demand-response mobile app to provide dynamic scheduling and a new trip booking interface for paratransit riders. The new booking system is anticipated to reduce scheduling time and rider wait times. The dynamic scheduling will allow for more same-day trip requests to be made. As part of the update all

paratransit vehicles are equipped with a tablet. This software was tested in a pilot in 2019 with the intention to expand to low-demand conventional fixed-routes or low-ridership periods of the day.

18.4.3.3 Waterloo Region, Ontario

Grand River Transit, serving the Waterloo Region, offers a rural flex route service which connects Kitchener to Wilmot (New Hamburg) with a number of rural areas in between. The service is intended to serve areas that are traditionally more challenging to provide fixed-route transit service. A number of fixed-routes are available with several flex-stops which can be booked in advance. Flex-stops are required to be booked by phone an hour in advance where riders are not guaranteed flex-route stop requests. While this system does not require additional technology, phone booking may offer challenges with more real-time or dynamic trip scheduling.

18.4.3.4 Case Study Take-Aways

The case in Belleville illustrates the advantages of demand-response transit and the ability to scale up as required. Additionally, the potential ridership gains which can be achieved by utilizing demand-response transit to serve low ridership areas or to use during lower demand periods are evident. The implementation of demand-response transit in Guelph illustrates the added efficiencies and interoperability of comingling paratransit services with demand-response service in lower demand areas. By utilizing a single booking system this allows for optimal trip groupings and scheduling. Lastly, the application of rural flex-routes in the Waterloo Region provides transit service in challenging areas with a service that is relatively quick to implement and does not rely on additional technology.

In both Belleville and Guelph, a software-as-a-service model was utilized where both agencies utilized their existing fleet and purchased the dynamic scheduling software from a third-party technology provider. Additionally, both agencies piloted this technology to determine the applicability and uptake in the communities they serve. Upon successful pilots, these services are being considered for permanent implementation.

18.4.4 Paratransit Impacts

Paratransit systems across Canada were launched at a time when road and sidewalk infrastructure was less accessible, conventional transit vehicles were exclusively high floor and involved the climbing of stairs for boarding and alighting, and the accessibility legislation had not yet been enacted. Over the last several years, however, significant improvements to accessibility have been made, and as a result the distinction between conventional and paratransit is becoming increasingly blurred. With improved accessibility comes the opportunity to improve the integration of conventional and paratransit services – an opportunity which properties across Canada are taking advantage of through strategies such as Family of Services (trip delivery using both paratransit and conventional modes) and the comingling of paratransit and conventional customers in the same vehicle. In developing recommendations for the Operational Audit, and in future decision-making related to transit service and operations, it is important to consider the interplay between conventional and paratransit and understand how tweaks to one service offering will impact the other.

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The recommendations discussed in the Operational Audit, while not specific to the paratransit system, are also expected to bring positive impacts to Handi-Bus customers:

1. Additional software proposed to enable demand-response transit will also benefit Handi-Bus customers by providing them additional means of booking trips.

2. The rollout of innovative fare payment technologies will benefit Handi-Bus customers in additional to conventional transit customers.

3. The proposed comingling of Handi-Bus customers with demand-response transit customers will contribute to sentiments of inclusion while reducing feelings of Handi-Bus customers being "relegated" to another service.

4. The additional KPI tracking will facilitate the ability for informed decision-making and proactive improvements to both conventional transit and Handi-Bus service going forward.

18.5   OTHER IMPLEMENTATION CONSIDERATIONS

18.5.1 Achieving the $850,000 budget reduction target

The financial estimates described in Section 17.0 hinge primarily on an assumed average cost-per-hour of $107.87 for fixed-route service. While this is common industry practice with respect to estimating budgetary impacts of service level changes, in reality implementation is more complex than simply adding or removing service and watching the budget change. That is, the $107.87 per hour figure represents not only the direct costs of operating service (wages, fuel, etc.) but also the indirect costs of operating service (maintenance, supplies, etc.). Specifically, all costs related to operations and maintenance are assumed to be proportional to the total number of revenue-hours of service delivered, and all costs related to administration and management of SJT are exempt from this calculation and are assumed to be fixed costs regardless of the amount of service delivered. In implementing the recommended route network, SJT must adjust budgets proportionally across all line items in cost centres 7010 and 7020, and alter scheduling, purchasing, and other spending practices accordingly to ensure it can deliver within budget.

At the same time, SJT must also consider how the increased reliance on the Handi-Bus fleet factors into the budget adjustments. That is, the $1,180,000 in fixed-route savings and $110,000 in incremental costs for on-request service should be examined separately in the context of identifying budgetary updates, as some line items may warrant more significant budget decreases than $850,000 in savings across the organization would suggest, while other line items may warrant budget increases.

As noted earlier in the report, if SJT is partway through 2021 and is tracking for a budget reduction of greater than $850,000 compared to 2020, it is recommended that SJT consider adding service back as appropriate to bring the year-end spending more in-line with the $850,000 target. Stantec suggests that re-instating Sunday service or extending the service span to 10:00pm on routes 20 and 23 during the weekdays may be good places to start, however, it is recommended that SJT keep its finger on the pulse of transit demand and how it evolves over the coming months in the wake of the COVID-19 pandemic. At the same time, SJT should improve its tracking of the KPIs discussed in this report to the extent possible

in the short-term to facilitate improved decision-making. It will be important for SJT to ensure the supply is matched with demand as best possible, and ramp service up to the extent possible to match the growing demand for transit services as people slowly resume their pre-pandemic travel habits.

18.5.2 Bus Stop Locations

Stops should be placed within reasonable distances from one another, and be context sensitive so that stops are closer together in urban settings, but further apart in more suburban and rural settings. Furthermore, service layer type will dictate the spacing guidelines, where more frequent (main line) service contains stops that are further apart to ensure the route operates quickly and directly. Local services can operate with stops slightly closer together, noting that these services are less frequent. The idea is to balance stops to ensure access to transit, but not overburden a route with stops so that operating speeds and travel times deteriorate.

General guidelines outlined in Move SJ should be followed with respect to stop spacing and walking distances to service. Although 1250m is established as a minimum threshold, best practice is to plan for a walk distance of no more than 800-1000m, even on the most frequent routes. Furthermore, as outlined in Table 18-2, the planning document recommends that stops along frequent routes should generally be spaced out approximately 300-400 metres apart, considering the prevalence of supporting pedestrian infrastructure. For more local level service, stop spacing should aim for between 250-300 metres to ensure adequate coverage and walkability. Targeted (on-request) services, in particular for the stop-to-hub service proposed in lieu of route 32, can utilize the existing route 32 stops. For targeted service that operates as a home-to-hub service, designated stops are not distinguished.

Table 18-2: Bus Stop Spacing Considerations

	Frequent	Local	Targeted
Stop Spacing	300-400m	250-300m	250-300m (only at fixed stops at terminals for home-to-hub service type)
Walking Distance to Service	1250m	500m	Within defined catchment area

18.6   CONCLUSION

The Saint John Transit Operational Audit offers a unique opportunity to assess and redesign the operational performance of SJT in the wake of changing demographics, evolving transit demand, and budgetary challenges. The long-term Transportation Strategy Plan completed in 2018, MoveSJ, has provided the City with a vision to encourage multi-modal transportation through transit, parking, and active transportation strategies. The Operational Audit builds on the work previously completed by taking a closer look at all facets of the SJT operation for the purpose of identifying opportunities to improve the effectiveness and efficiency of the transit system. This report summarizes the Stantec team's findings, as well as recommendations and an implementation plan. The intent is to provide the City with tailored

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strategies that will ensure a cost-effective and high-quality transit system that will sustain the local environment and support the needs of residents now and for years to come.

Appendix A   PROPOSED NETWORK TURN-BY-TURN ROUTING

A.1   ROUTE 1A/B LANCASTER MALL / FAIRVILLE BLVD. PLAZA

- Maintains existing alignment

A.2   3A/B REGIONAL / UNB MILLIDGE AVENUE

- Maintains existing alignment

A.3   12 MARTINON

- On-request therefore routing will depend on demand/ trips booked

A.4   13 MILFORD / GREENDALE / CHURCHILL HEIGHTS

- Make right turn out of Lancaster Mall (terminus)

- Left turn on Main St W

- Right turn on Church Ave / Dever Rd

- Turn right on Green Head Rd traveling north in a clockwise rotation to Dwyer Rd - Kingsville Rd - Milford Rd

- Turn left from Milford rd to Green Head Rd continuing southbound

- Turn left on Dever Rd continuing westbound

- Turn left on Greendale Cres

- Turn left on Mollins Dr

- Turn right on Manchester Ave and continue north

- Turn left on Anderson Dr / Bayview Dr continuing southbound

- Turn right on Manawagonish Rd continuing westbound

- Turn left on Fairville Blvd continuing eastbound making a right turn into Lancaster Mall where the route terminates

A.5   15A/B HARBOUR BRIDGE

West to East (travel in opposite direction from East to West)

- Similar alignment to existing route (minor changes)

- Beginning in Lancaster Mall turn left onto Fairville Blvd

- Turn left on Bleury St continuing south

- Turn left on Sand Cove Rd

- Turn right onto Driscoll Dr

- Turn left on Dunn Ave continuing northbound

- Turn right on Lancaster St and veer right to travel northbound on Dufferin Row/ St. John St.

- Turn left on Ludlow St

- Turn right onto King St W

- Turn left onto Route 1 (St John Throughway) to continue eastbound over the river

- Turn right onto Main Street/ St Patrick St

- Turn left onto King Street continuing eastbound into King's Square (terminus)

A.6   20 SOUTH END / WATERLOO VILLAGE / MOUNT PLEASANT

- Begin at King's Square, from King's Square N turn left to travel southbound on Charlotte St

- Turn left on Queen Square S continuing east onto St. Andrew St

- Turn left onto Carmarthen St

- Turn right onto Queen St

- Turn left onto Pitt St continuing northbound

- Turn left onto Union St

- Turn right onto Prince Edward St

- Turn right onto Paul Harris St

- Turn left onto Crown St continuing northbound on Mount Pleasant Ave and westbound on Hawthorne Ave

- Turn left onto Mount Pleasant Ave

- Turn right onto Mount Pleasant Ave/ Crown St

- Turn right onto Paul Harris St

- Turn left onto Prince Edward St

- Turn right onto Union St

- Turn left onto Sydney St

- Turn right onto King Square N into King Square (terminus)

A.7   23 CRESCENT VALLEY / ST. JOSEPH'S

- Begin at King's Square, from King's Square S turn left on Sydney St to travel northbound and continue north along Waterloo St

- Turn left on Cliff St

- Turn left onto Coburg St

- Turn right onto Garden St continuing northbound on Somerset St

- Turn left onto Magazine St continuing westbound onto Metcalf St

- Turn right onto Lansdowne Ave

- Turn right onto Wellesley Ave

- Turn left onto Cranston Ave

- Turn right onto Thornbrough St

- Turn left onto Sandy Point Rd

- Turn left onto MacLaren Blvd

- Turn right onto Itty Bitty Way

- Turn left onto Samuel Davis Dr continuing south onto Churchill Blvd

- Turn left at Visart St

- Turn right onto Lansdowne Ave continuing southbound

- Turn left onto Metcalf St continuing eastbound on Magazine St

- Turn right onto Somerset St continuing southbound onto Garden St

- Turn left on Coburg St

- Turn right on Cliff St

- Turn right onto Waterloo St continuing southbound onto Sydney St

- Turn right on King Square N to King Square (terminus)

A.8   25 MILLIDGEVILLE / NORTH

- from King's Square travel westbound on King St continuing onto St Patrick St/ Main St

- Turn right onto Durham St

- Turn left onto Newman St continuing south onto Holly St

- Turn right onto Victoria St

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- Turn right on Bridge St continuing north via Spar Cove Rd

- Turn left onto Millidge Ave continuing northbound

- Turn right onto Kennebacasis Dr

- Turn right onto Meadowbank Ave

- Turn left onto Millidge Ave continuing southbound

- Turn right onto Daniel Ave

- Turn left onto Marlin Dr

- Turn right onto Woodward Ave

- Turn left onto Boars Head Rd continuing eastbound

- Turn left onto Millidge Ave continuing north

- Turn right onto University Ave

- Turn left into the internal Saint John Regional Hospital road

- Turn left onto Tucker Park Rd into UNB, circling around and traveling back outwards via the internal Saint John Regional Hospital road

- Turn right onto University Ave

- Turn left onto Millidge Ave continuing south

- Turn right onto Spar Cove Rd

- Turn left onto Bridge St

- Turn left onto Victoria St

- Turn left onto Holly St continuing east on Newman St

- Turn right onto Durham St

- Turn left onto Main St continuing eastbound and south along St Patrick St

- Turn left onto Market Square/ King St traveling eastbound to King's Square terminus (Charlotte St – King Square S – Sydney St – King Square N – Charlotte St)

A.9   30 CHAMPLAIN HEIGHTS / SILVER FALLS PARK

- Beginning in McAllister Place turn left on Consumers Dr and continue southbound

- Turn right on Mark Dr

- Turn right on Michael Cres continuing around on Nason Rd

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- Turn left on Martha Ave

- Turn right on Mark Dr

- Turn right on Commerce Dr

- Turn left on Loch Lomond Rd continuing eastbound

- Turn right on Hickey Rd

- Turn right on Heather Way

- Turn right on Grandview Ave

- Turn right on Champlain Dr continuing northbound

- Turn left onto Loch Lomond Rd

- Turn right onto Commerce Dr

- Turn left onto Mark Dr

- Turn left onto Martha Ave

- Turn right onto Nason Rd continuing onto Michael Cres

- Turn left onto Mark Dr

- Turn left on Consumers Dr

- Turn right into McAllister Place (terminus)

A.10 31 FOREST GLEN

- Beginning at McAllister Place turn right onto Westmorland street continuing northbound

- Turn left onto Golden Grove Road continuing westbound

- Turn right on Simpson Dr

- Turn right on Glen Rd

- Turn right on Belgian Rd

- Turn right onto John T. McMillan Ave

- Turn left on Upland Rd

- Turn right on Roxbury Dr continuing around the loop

- Turn left on Golden Grove Rd

- Turn right on Mystery Lake Dr

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- Turn right on Coldbrook Crescent

- Turn left on Essex St E

- Turn left on Golden Grove Rd

- Turn left on Westmorland Rd continuing southbound to McAllister Place (terminus)

A.11   32 FOREST HILLS / LOCH LOMOND / AIRPORT

- On-request therefore routing will depend on demand/ trips booked

A.12   33 NBCC EXPRESS

West to East (travel in opposite direction from East to West)

- Beginning at King's Square travel eastbound on King St E

- Turn left on Crown St

- Turn right on Union St/ Courtenay Bay Causeway continuing eastbound

- Turn right on Bayside Dr

- Veer left onto Grandview Dr continuing eastbound to NBCC

- Turn around at NBCC and continue back to King's Square in the opposite direction using Union St and Charlotte St to return to King's Square (rather than Crown St and King St E)

Appendix B STAKEHOLDER ENGAGEMENT SUMMARY

As a component of the Saint John Transit Operational Audit, Stantec and the City of Saint John (the City) hosted several engagement activities to solicit the direct input from riders, non-riders and key stakeholders of Saint John Transit (SJT). These activities were predominantly held over two days including March 12 and 13, 2020. The following activities occurred:

- Online survey
- Public meeting
- Ride-alongs
- Off-board engagement
- Bus operator workshop
- SJT staff meetings
- Transportation equity meeting
- Newcomer meeting
- Population growth meeting
- Neighbourhood focus group
- Transportation provider meeting
- Saint John Ability Advisory Committee meeting

The public meeting and online survey were advertised around transit shelters located in key hubs throughout the city, on Facebook and through the City and SJT websites. Additionally, the event was advertised to riders and non-riders during in-person engagement.

The purpose of the engagement was two-fold:
- to collect feedback from riders, non-riders and key stakeholders to understand their priorities, as well as the challenges and successes of the current SJT system; and
- to gain insights from SJT and City staff to understand the operations and the operating landscape.

The information collected was complied and reviewed to understand opportunities and challenges, and their relative importance, to help inform the existing conditions review of the transit system.

B.1   KEY THEMES

Through meeting with various stakeholders, lots of feedback was received. It became clear that people are, by and large, satisfied with the service and have a positive impression of SJT. Many residents, including low-income residents and recent immigrants, depend on the transit service to access work, school and other essential services. At the same time, a number of themes emerged with respect to common challenges with the transit system –

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Service span:
- Riders noted the desire for extended service hours outside of main line routes during evenings and weekends. It was noted that people are experiencing difficulty accessing various jobs, notably in customer service and industrial workplaces, and other roles without traditional 9-5 schedules.

Service frequency:
- Greater service frequency is desired during the day on various routes, especially for those where service stops operating during the midday.
- Students expressed additional frequency is desired in the evening to return from campus. The University was noted to be well served by Main Line routes 3 and 9 whereas the Community College has less frequent bus service with limited service during evenings and weekends.

Customer information:
- There is opportunity to improve bus stop signage, schedule clarity and wayfinding. This would be especially beneficial for those who may not be overly familiar with the system including newcomers, non-English speakers and students.
- Automated next stop announcements and digital displays are periodically not working. Relatedly, bus times on the current app were noted to be unreliable.

Service reliability:
- Many riders reported that they frequently observe instances of buses arriving significantly early or late. For routes with infrequent service this can result in considerable wait times.

Policies and practices:
- Fare evasion was mentioned to be prevalent across the system, and labour-intensive fare collection practices detract from efficiency.
- The scheduling of service is done manually which requires significant time, which effective prevent SJT from adjusting service based on the season.

B.2   ONLINE SURVEY

A total of 1,213 surveys were completed by a combination of Saint John Transit riders and non-riders, with 77% of respondents reporting that they had taken transit in the past 3 months, and 23% responding that they had not. This survey therefore captures important information about satisfaction levels of current riders and provides insight into how non-riders may be attracted to the system in the future.

Overview

Stantec administered this survey to obtain feedback from riders and non-riders in the context of the Transit Operational Audit. The survey highlighted what aspects of the transit service respondents are satisfied with, and aspects which need attention. While a majority of respondents felt that the service is a positive addition to Saint John, a variety of concerns were expressed by respondents who are deeply familiar with the service. Key considerations expressed include:

- **Driver Behaviours:** While many respondents were satisfied with the level of customer service received by the bus operators, some reported negative experiences which have damaged their

outlook on Saint John Transit. Examples of such behaviours include aggressive driving styles, quickly pulling out of stops before riders are able to sit, and the perception of unsanctioned breaks contributing to issues with schedule adherence.

- **Frequency:** Respondents felt that bus frequencies on some routes were not adequate for their needs. This issue is intertwined with other service factors such as directness of routes, and schedule adherence.

- **Evening and Weekend Service:** Respondents reported that bus schedules on weekends, and especially Sundays, don't reflect the reality for many Saint John Transit riders who use the service to access employment on all days of the week. Similarly, some riders finish shifts after the last bus on their route(s) has departed, forcing them to find alternative modes of transportation to return home.

- **Cleanliness of Buses and Quality of Bus Stop Infrastructure:** Riders reported that the cleanliness of buses and bus stops can sometimes be below expectations. Riders reported difficulty in the winter accessing some bus stops due to build-up of snow and ice. Transfers can be made more difficult when waiting at transfer locations which lack bus shelters to protect from inclement weather.

- **Service Coverage and Connectivity:** Both riders and non-riders remarked that the coverage of existing bus routes did not service all areas of the city. In general, respondents expressed frustration at the cycle of ongoing service cuts, reducing or eliminating transit service in areas such as Red Head. Some comments also pointed out that the existing route structure is largely designed to move passengers from outlying areas to Uptown, but don't provide strong crosstown connections.

Demographics

The age and gender of the survey respondents is shown below in Figure 18-2 and Figure 17-1 respectively. The first figure shows a distribution of respondents across each age interval between 25 and 64 (working age), roughly equal to around 20% each. Riders 18-24, likely comprising of post-secondary students, followed these age groups, with 12% of respondents. Riders who are 65+ comprised of nearly 7%. The gender of survey respondents was majority female (64%), although the significant response rate to the survey means we received input from a considerable number of males too, in absolute terms.

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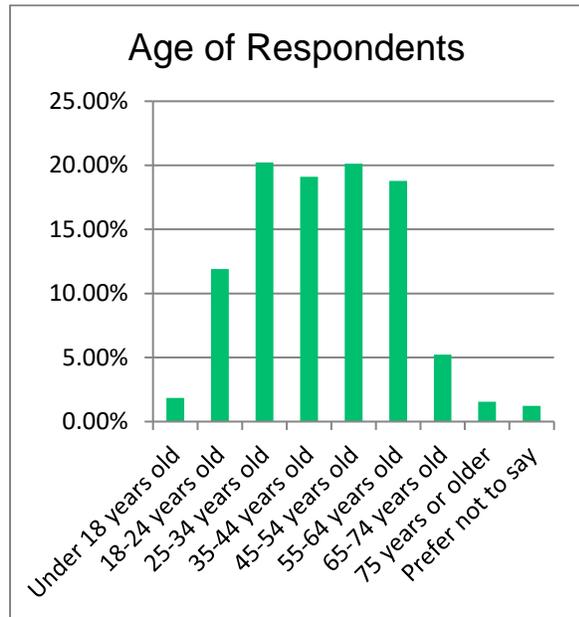
Figure 18-2: Age of respondents
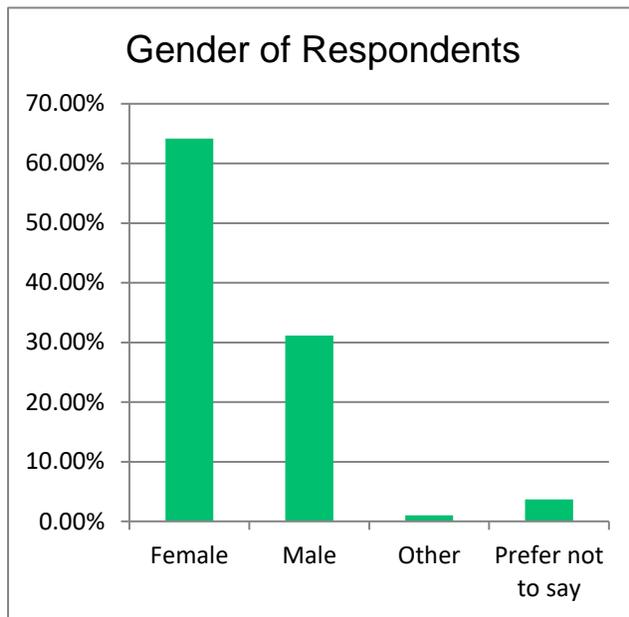
Figure 18-1: Gender of respondents

Demographic data also revealed that majority of respondents were on the lower end of the income scale, with the most common responses of total household income being $20,001-$40,000 (19%), $0-20,000 (18%), and $40,001-$60,000 (14%). The most notable professions of respondents included professional work (34%), retail (14%), and students (11%).

The geographic location of the survey respondents was mapped using self-reported postal code data below in Figure 18-3.The data is shown overlaid on a map of the Saint John area, organized by Forward Sortation Area (FSA), which are the areas denoted by the first three digits of the postal code. Central areas, which have higher transit mode share, generally had the highest number of survey respondents.

Figure 18-3: Mapping of survey respondents by Forward Sortation Area
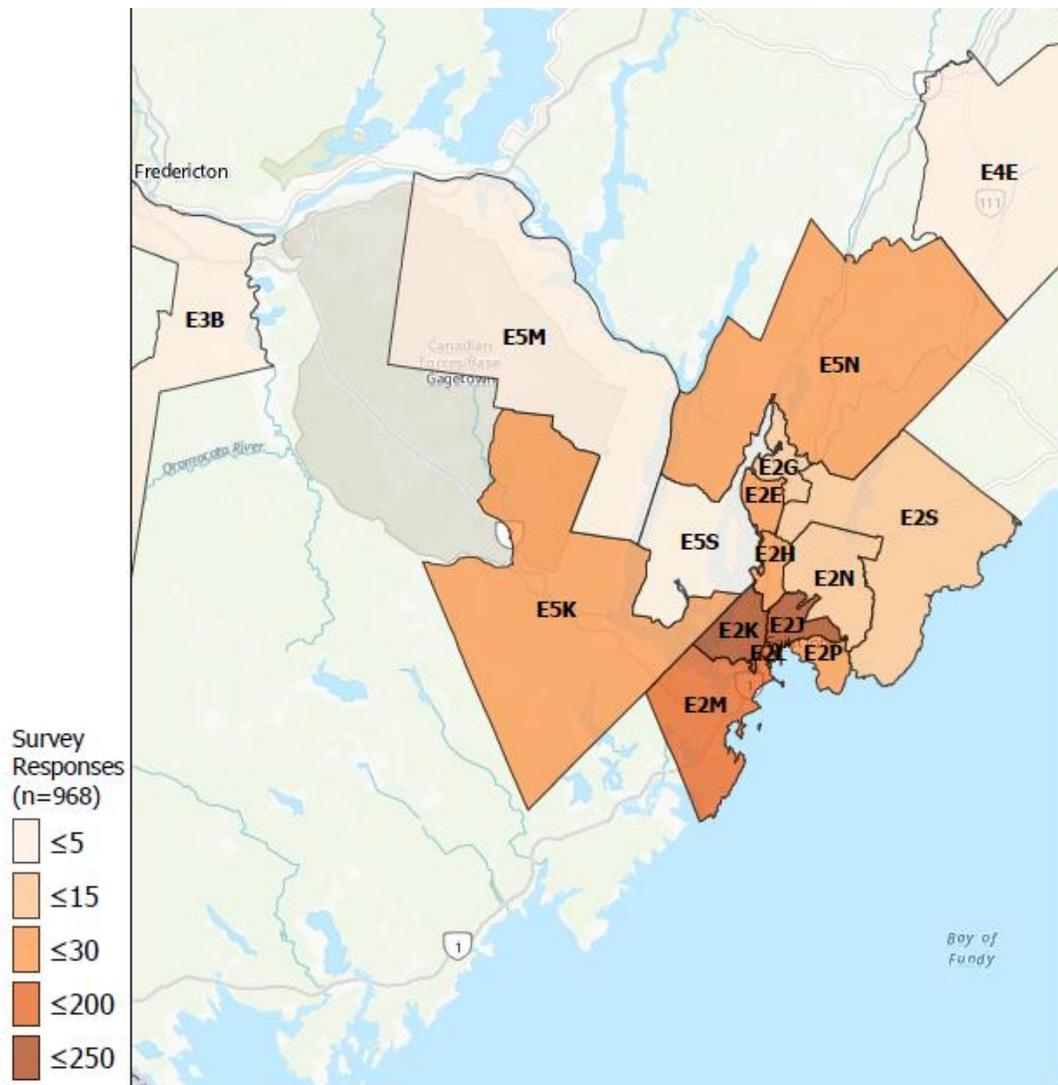
©This data includes information copied with permission from Canada Post Corporation

Attitudes Towards Transit

Overall satisfaction with the service varied between riders and non-riders. Of those who have used transit services within the past 3 months, 82% of respondents indicated that they have a positive impression of the service. Amongst non-riders, only 63% have a positive impression of the service. Overall, 78% of respondents reported a positive impression of the service.

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Based on a scale of 1 to 5 from extremely dissatisfied to extremely satisfied, riders reported that they were least satisfied with the cleanliness on the bus/at the stop, information on the bus/at the stop and fare cost; whereas, they were most satisfied with the behaviour/attitude of the driver, their ability to get a seat on the bus, and safety on the bus/at the stop. It should be noted that all service factors received positive impressions on average, confirming an overall favourable impression of the service. Figure 18-4 illustrates the satisfaction with each transit service element by percentage of respondents.

Figure 18-4: Satisfaction with transit service factors

When asked to provide input on specific aspects of transit service, the response was not as consistently positive. Based on a scale of 1 to 5 from strongly disagree to strongly agree, these statements on transit service were assessed to determine the overall opinion of riders. The responses indicated that riders were most supportive of transit priority measures, existing early morning transit service, and directness of existing routes. Riders felt strongly that current Sunday and holiday service did not meet their needs (pre-pandemic). Three statements were divisive, with the averaged responses within ±2% of 'Neutral': Improved route frequency in exchange for a farther walk to the bus stop, satisfaction with existing Saturday service, and satisfaction with existing evening/night service. Figure 18-5 shows the full results of this survey question.

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Figure 18-5: Response to Transit Service Statements
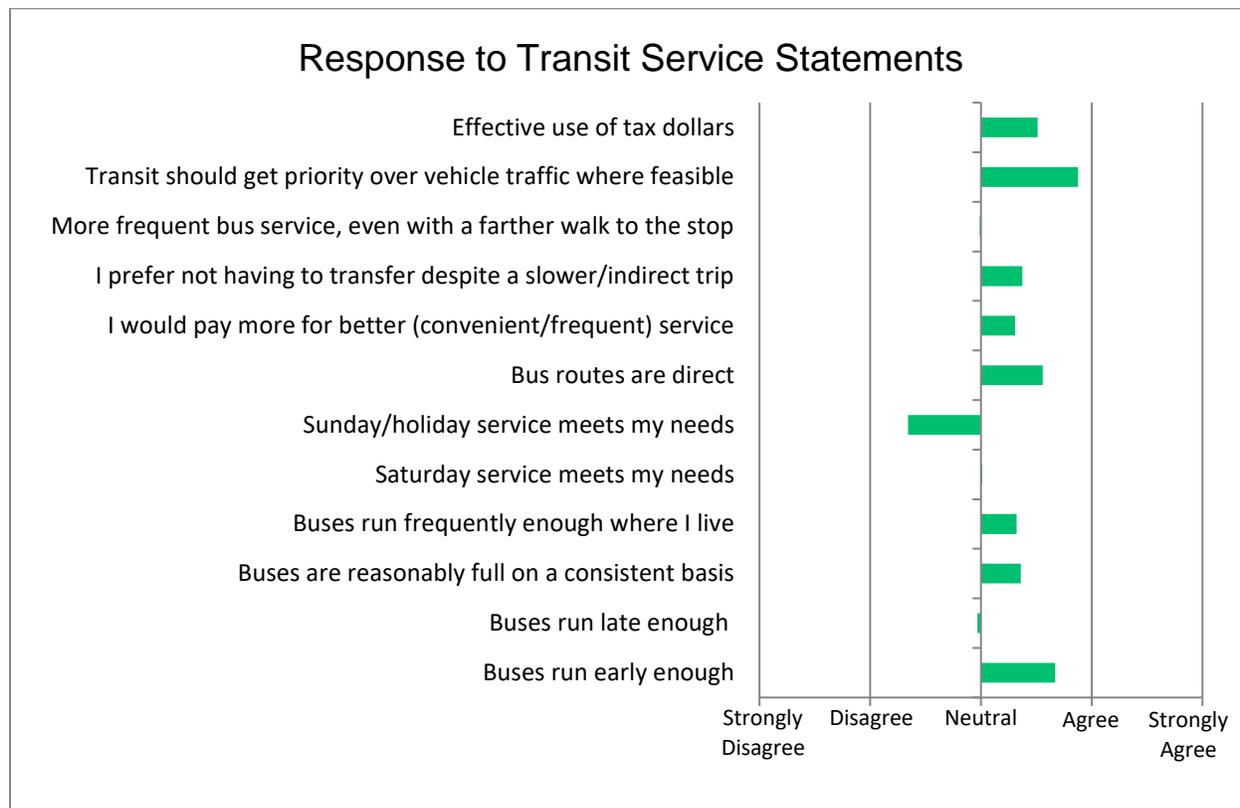
Non-riders were asked to provide input on why they choose not to use transit. Analysis of the survey results reveal that the primary reasons that non-riders do not use Saint John Transit's services were that routes and schedules do not cover the non-riders' needs, the service is too infrequent, and travel times are not competitive with their primary mode of transportation (often driving). Despite this, non-riders perceived transit to be safe, reliable, and adequately priced.

These findings indicate the gaps that non-riders are most sensitive to. In Saint John, the decision to utilize other modes of transportation such as the personal automobile is completely a functional decision. That is, stigmas surrounding transit use is less prevalent among residents of Saint John compared to some other cities. The reasons non-riders choose not to use Saint John Transit are illustrated below in Figure 18-6.

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Figure 18-6: Non-rider transit service factors

Figure 18-6: Non-rider transit service factors
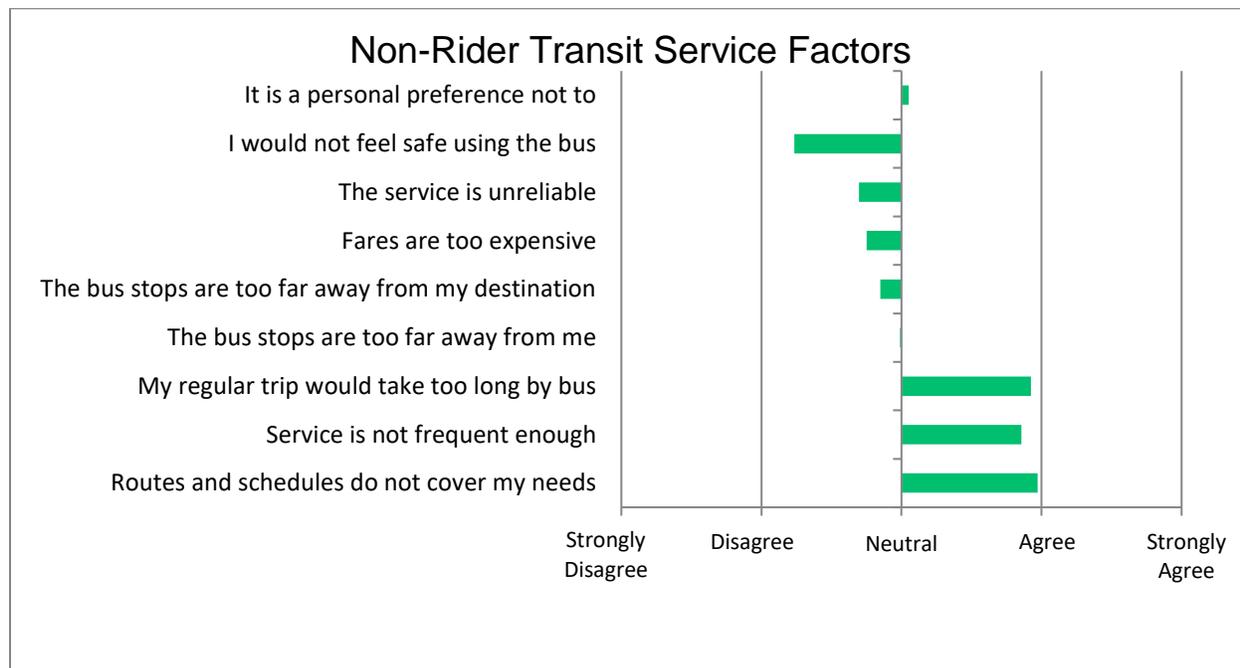
A series of statements were posed to non-riders to gauge their sentiment on transit use. Overall, non-riders were supportive of transit services in Saint John. Interestingly, non-riders supported transit priority measures over vehicle traffic, and believed in the power of transit to reduce traffic congestion. They also were in favour of increasing funding to Saint John Transit to provide better services, and correspondingly were against the prospect of a decrease in transit funding. This paints a picture of a population who understands the role that transit plays within a city, and is supportive of its future. Full results below in Figure 18-7.

Figure 18-7: Response to non-rider transit service statements

Figure 18-7: Response to non-rider transit service statements
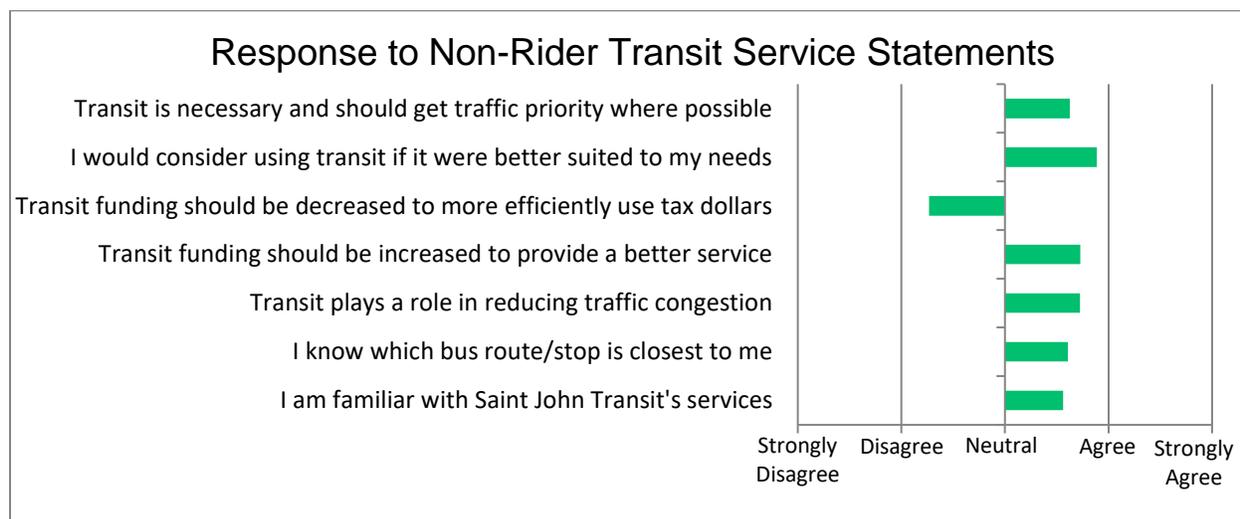
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Travel Patterns

A central component of the survey included the identification of the respondents' common transit trip, including origin, destination, and route. This information was used to determine the geographic areas which experience higher transit usage and should be prioritized as part of operational audit. Figure 18-8 below compares Saint John Transit ridership data with survey responses to illustrate the general ridership split across all of the transit system's routes. As seen in the figure, the survey responses align closely with ridership patterns, with the highest deviation from Saint John Transit's data at 5.0% on Route 9AB. This survey, while not intended to be a comprehensive ridership count, also serves as a 'sanity check' to confirm that ridership data can be relied upon as it appears to be in agreement with the trends of survey responses and also with what was observed in-person (anecdotally) during stakeholder engagement and ride-alongs.

Figure 18-8: Comparison of ridership data and survey responses
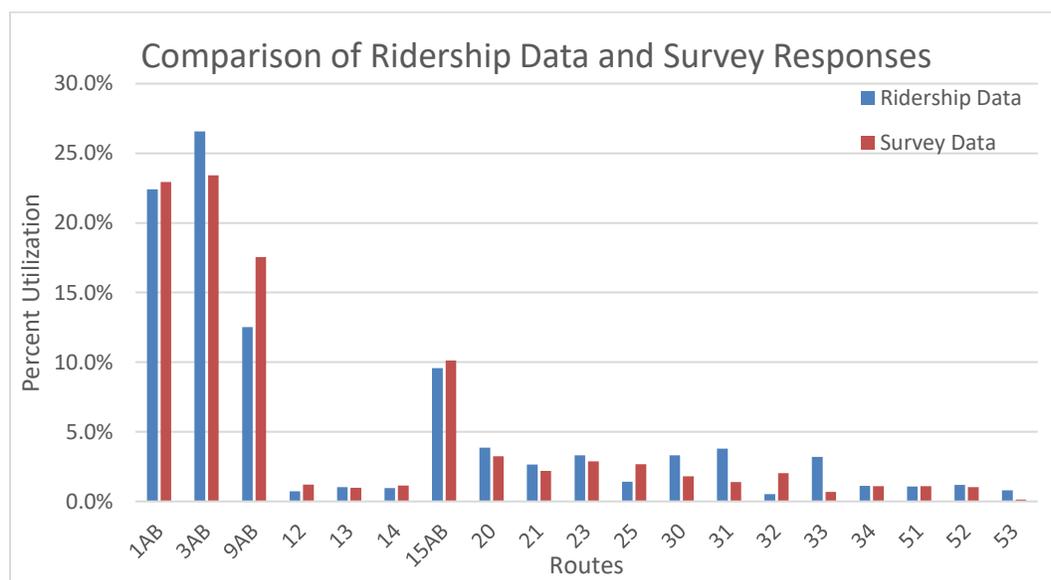
Next, data collected in the survey was correlated with geographic location data to determine the overall transit usage by FSA. A 'transit usage index' was developed based on the response to the survey question regarding frequency of transit use (seen in the following section in Figure 18-11**Error! Reference source not found.**), along with data delineating riders from non-riders. FSAs with the highest transit usage index are those with the highest average frequency of transit usage. Figure 18-9 below graphically shows the results of this analysis, superimposed on the mapping of existing bus routes. As expected, most central areas with higher densities of bus stops and routes show higher usage of transit on average. Surprisingly, the FSA reporting the higher transit usage index was Hampton (E5N), slightly edging out Millidgeville/North End (E2K). However, the smaller sample sizes for outlying areas have likely contributed to less representative results.

Figure 18-9: Mapping of transit usage by forward sortation area

Saint John Transit Usage Index Based on Survey Responses
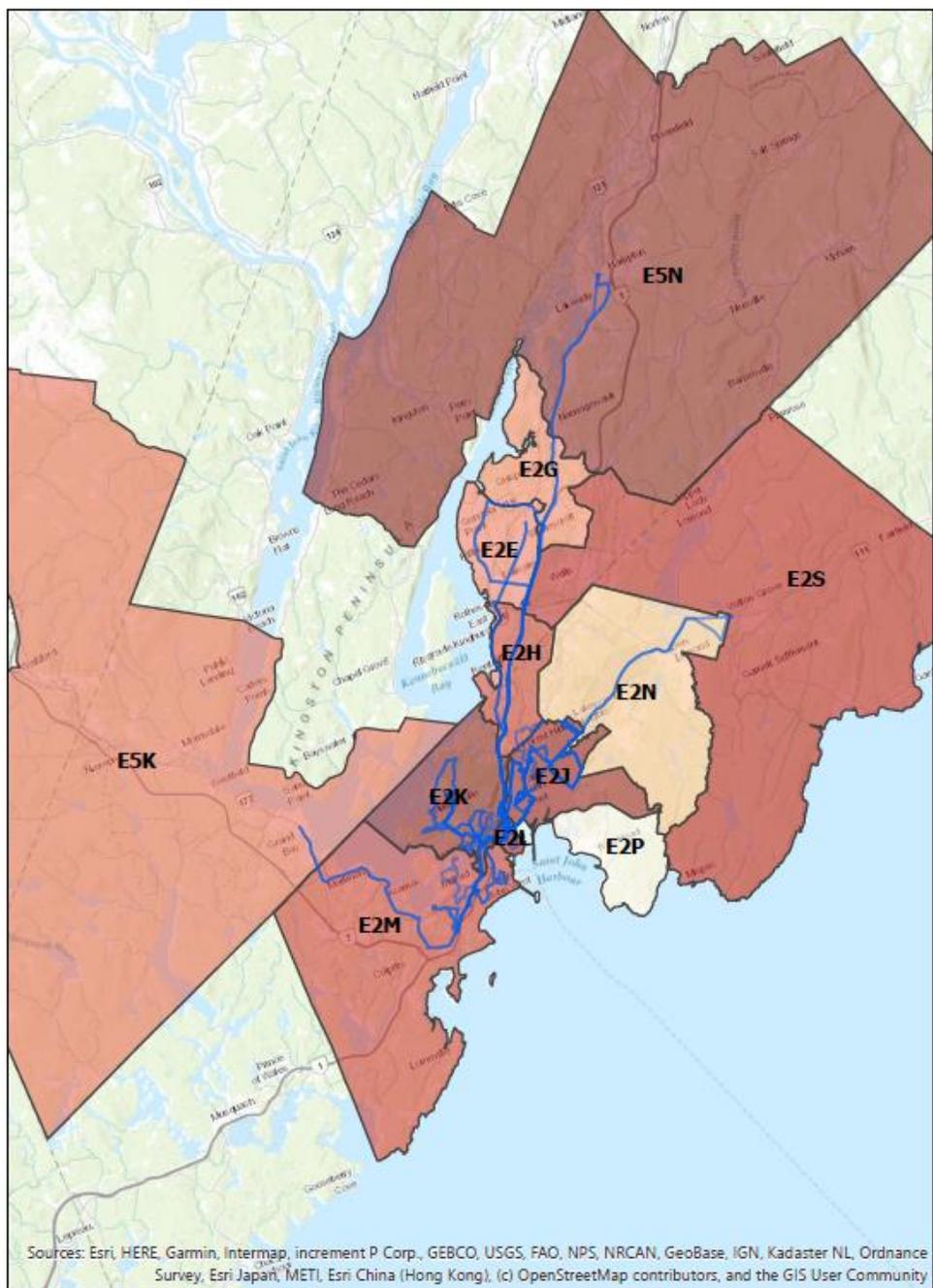
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The reported origin and destination data was analyzed to produce an 'alluvial diagram', which graphically displays the travel patterns of survey respondents. The most common trip was Saint John City Centre to Saint John East, followed by travel within Saint John East, and then travel within Saint John City Centre. The full diagram is provided below in **Error! Reference source not found.**.

Figure 18-10: Origin-destination pairs
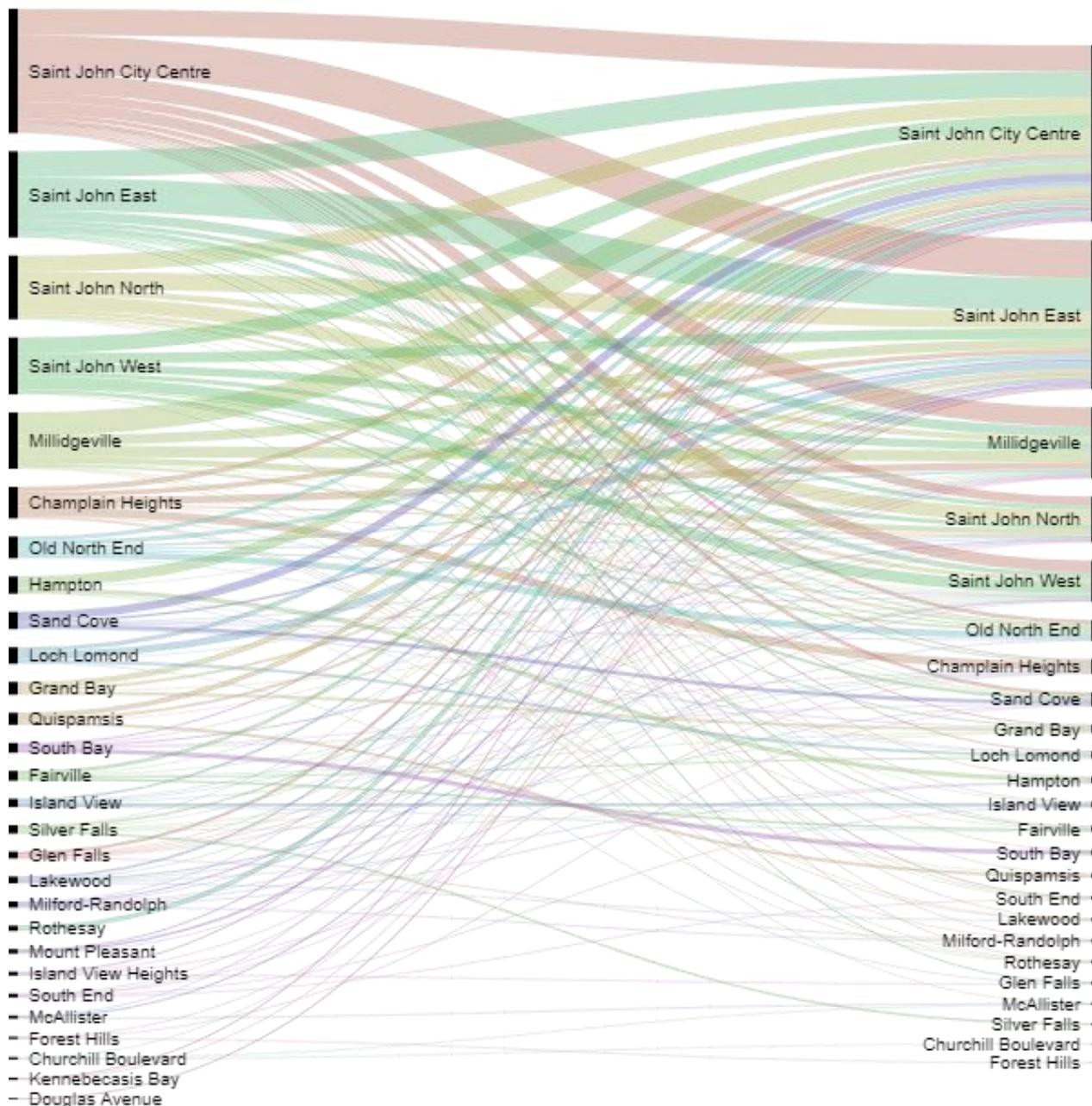
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Transit Trip Characteristics

The transit usage habits of riders were explored within the survey. This information is crucial to understand the motivations behind Saint John Transit riders, and develop strategies to prioritize the most important functions of the service in line with rider needs. Frequency of transit usage by respondents is illustrated below in Figure 18-11.

Figure 18-11: Frequency of transit usage
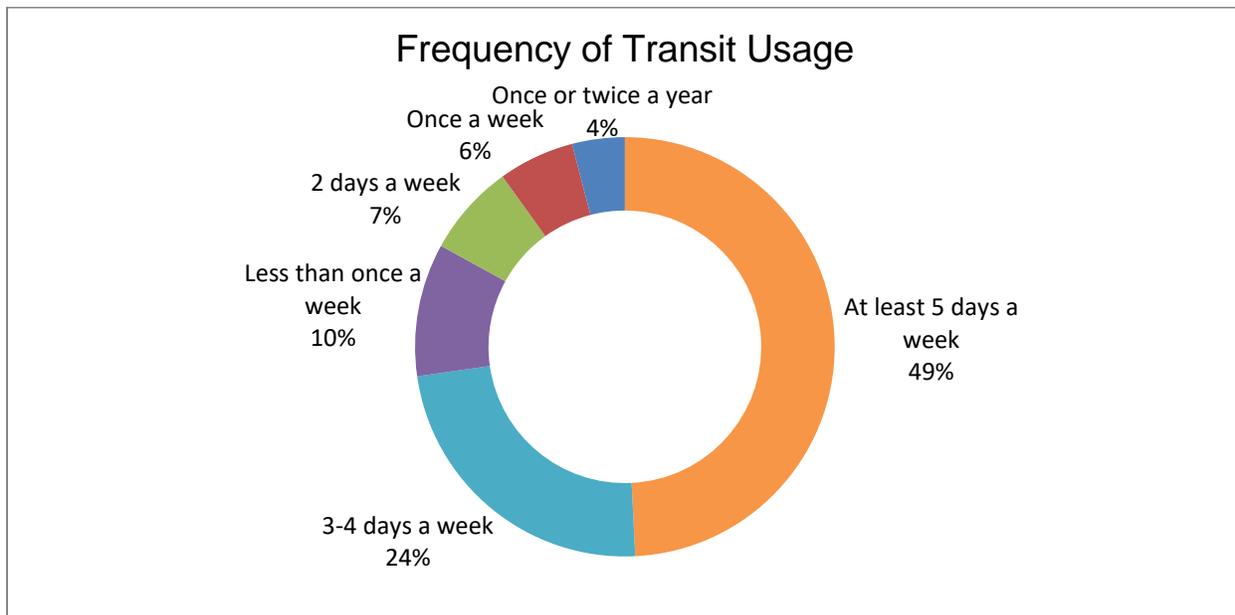
The response indicates that approximately half (49%) of all users ride transit at least five days a week, indicating usage patterns that are consistent with commuting for work or school. The next greatest proportion of riders was those who use transit 3-4 days a week, which could be consistent with commuting for post-secondary education, part-time work, or a variety of other functions. Nearly three-quarters (73%) of respondents use transit at least three times a week, and could be classified as 'frequent riders'. To obtain a more accurate picture of intentions behind transit use, Figure 18-12 below classifies respondents by their primary trip purposes.

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Figure 18-12: Purpose of trip breakdown

Purpose of Trip Breakdown

- Leisure 2%
- Other 3%
- Health care 5%
- Commuting to/from school 8%
- Personal errands 8%
- Shopping 10%
- Work-related trip (not commuting) 2%
- Picking up or dropping off a child 1%
- Commuting to/from work 61%
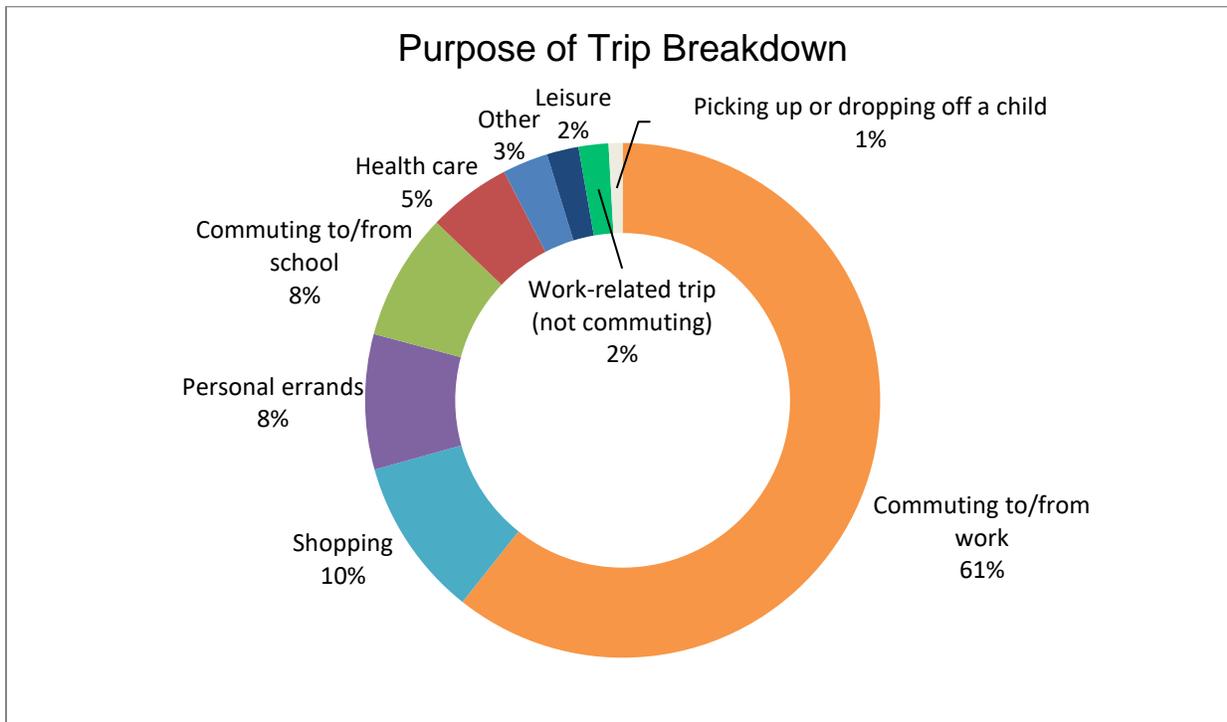
The figure above provides more detail into the purpose of the respondents' common transit trips. The three primary purposes are commuting for work (61%), shopping (10%) and personal errands (8%). As expected, the combined percentage of work and school travel, at 69%, aligns closely with the percentage of 'frequent riders' identified in the previous figure. Responses to transit usage by time of day indicate expected peak demand during rush hour, with the strongest demand outside of these hours during midday (10am-2pm) and evening (6pm-9pm).

Figure 18-13: Transit use by time of day

Transit Use by Time of Day

- Night (after 9pm)
- Evening (6pm – 9pm)
- Mid-afternoon (4pm – 6pm)
- Early afternoon (2am – 4pm)
- Midday (10am – 2pm)
- Mid-morning (7am – 10am)
- Early morning (up until 7am)

0% 10% 20% 30% 40% 50% 60% 70%
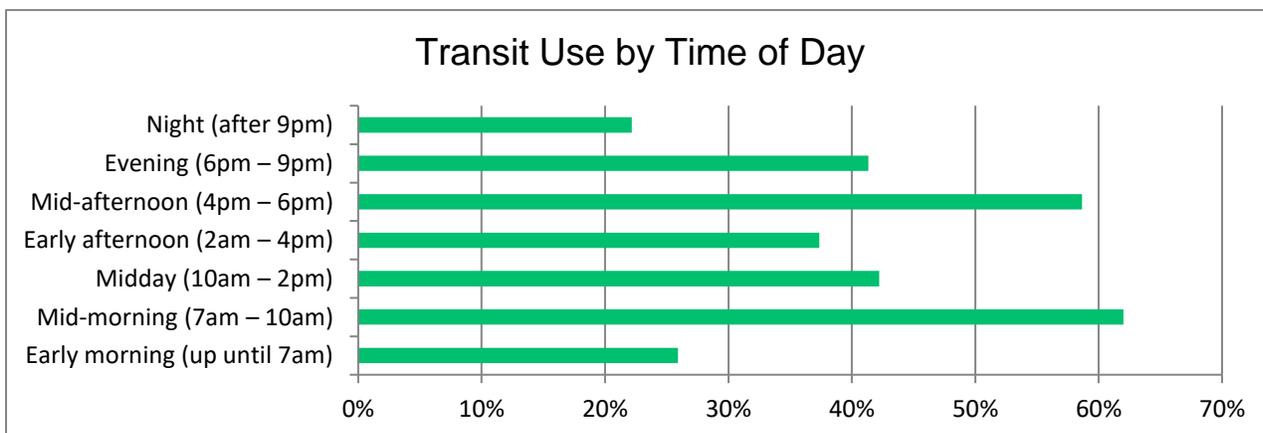
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Half of respondents (50%) indicated that they transfer between buses to arrive at their final destination. The most frequently used transfer locations are King's Square (45%), McAllister Place (42%) and Lancaster Mall (28%). Of those that responded "Other", the transfer location mentioned most was at Lansdowne Avenue.

Figure 18-14: Transfer locations

As shown below, modes other than transit are utilized to complete common trips. Walking was clearly indicated to be the most common travel mode, with 36% of respondents reporting less than a 5-minute walk, 34% of respondents walking 5-10 minutes, and 32% of respondents reporting walking more than 10 minutes. Perhaps surprisingly, the next most commonly reported travel mode was taking a taxi (17%), although this could tie into use of accessible transit services. Park-and-ride usage accounted for 5% of travel modes. Other transit modes which were written in include: driving oneself, motorcycling, skateboarding, and carpooling.

Figure 18-15: Other travel modes utilized on transit trips
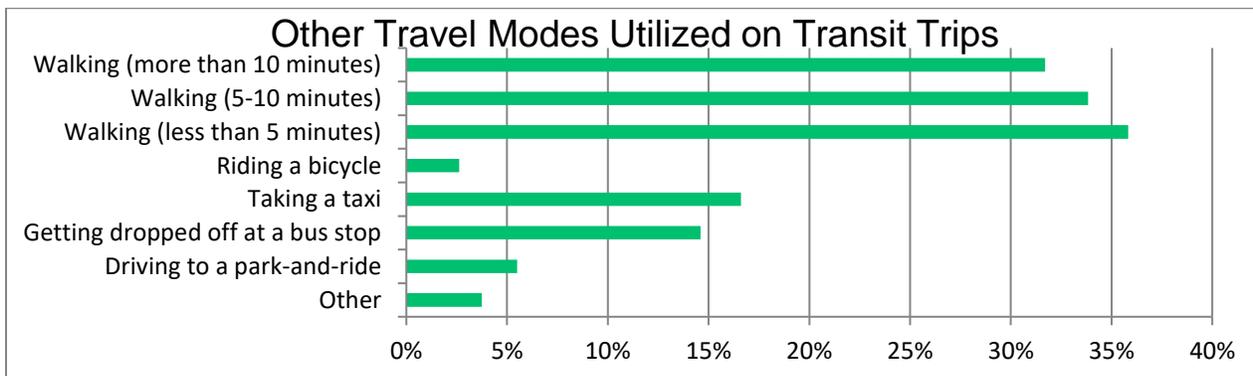
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Transit Payment and Information Systems

Saint John Transit provides several payment options. The most popular option is the monthly pass, with 39% of respondents using this option. 34% of respondents reported using paper 'Transcard' punch cards for fare payment, in addition to 25% of riders paying with cash. A combined 2% of respondents reported using employer-sponsored monthly passes or other methods of payment, which included social services-sponsored monthly passes.

Figure 18-16: Fare payment choices

Saint John Transit riders have a variety of methods available to them to check bus schedules. The vast majority reported consulting schedules online (78%). This was followed by paper schedules posted at the stop (27%) and mobile phone applications other than Google Maps (26%). Overwhelmingly, the app used was NextBus, but respondents mentioned using others such as Apple Maps and Transit. Respondents however noted unreliability and inaccurate information when using the "next bus arrival time" feature within NextBus, consistent with what was learned during in-person stakeholder engagement activities. Of all survey respondents, 90% indicated that they have a smartphone, and this roughly aligns with the prevalence of digital methods for checking the schedule versus paper. The full breakdown of responses is below in Figure 18-17.

Figure 18-17: Accessing bus schedule information
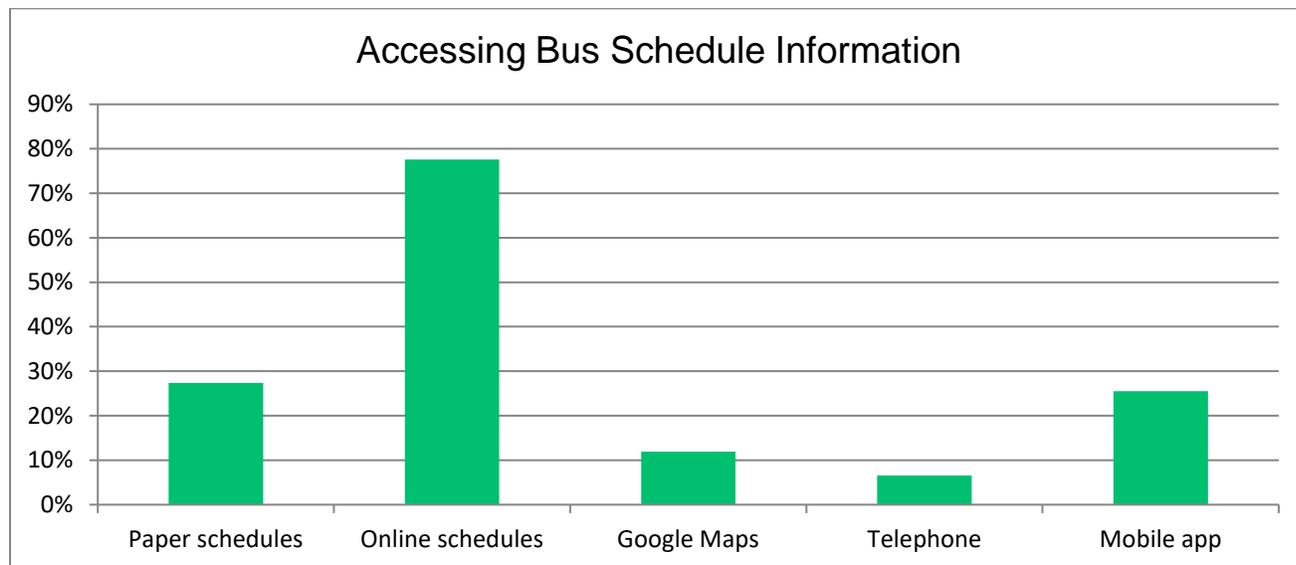
B.3 PUBLIC MEETING

A public open house was held on Thursday March 12, 2020 to speak with residents and SJT riders about their current use of the transit system and discuss any feedback on the service they wished to share. The meeting began with a brief presentation before opening up to a classroom-style discussion and concluding with breakout discussions in small groups. A number of key items were brought up at this meeting, which are summarized as follows:

- Transit interfaces with other elements of the transportation network and cannot be reviewed in a closed system. Saint John is currently very car-centric and a shift in mindset as well as integrated transportation-transit planning decision-making can bring mobility benefits. Additionally, the integration of transit with other city services was recommended to make transit information and service more widely accessible and potentially offer operational efficiencies.

- It's important to consider the impacts of climate change on SJT operations in the long term. The benefits in mitigating climate change through transit use might be highlighted to attract new users and grow ridership. Relatedly, smaller and more fuel-efficient buses were suggested as a cost efficiency measure.

- The possibility of a demand-response service was viewed favourably in areas with limited service (low frequencies, inconvenient routes, etc.).

- Various residents highlighted the importance of accessible transit to serve all members of the community, including persons with a variety of disabilities.

- Public transit in Saint John was highlighted to be a vital service in the city and a "lifeline" for many residents. Any potential service restructurings or reductions should careful consider the impact to the day-to-day users.

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- Riders noted issues with on-time performance and reliability with buses often arriving early or late, and creating extended wait times for service as a result. Additionally, the general sentiment is that there may be opportunity to time transfers better to minimize wait times.

- In areas not served by the Main Line routes, service hours were noted to be insufficient including gaps in service during the midday and service ending too early on evenings and weekends. Interlining or combining routes was suggested to optimize service. The extent to which bus frequencies change throughout the day was also referred to as confusing.

- More frequent service is desired in areas outside of Uptown, most notably in areas towards the north and west. Residents noted there was limited to no service in these areas after 6pm.

- Service to the University and Community College are critical to maintain, with greater service levels (improved frequency and service span) desired at the Community College.

- Many residents find transit is not convenient to travel to retail, manual labour, or industrial jobs due to shift times outside of the traditional 9-5 and minimal transit service outside of these hours. A lack of evening and weekend service was noted.

- The current user smartphone application is often inaccurate, making it difficult to plan trips or transfers.

- There is the perception that many bus stops are unmarked or poorly marked, which causes confusion for riders. The Customer Service Policy might also be posted/available on buses. Advertising opportunities might be further explored as an additional revenue source including more advertising on buses, benches and shelters.

- Several residents noted that if the service was improved, they would be willing to pay more for it.

- Service to the Regional Hospital stops near the basement however it would be more beneficial for it to stop at the front entrance for convenience and safety, if possible.

- A day pass was suggested as this would benefit residents and tourists who are looking to run errands or access multiple points in the city.

- Expansion of the park-and-ride facilities may help to attract more ridership.

- New technologies should be explored to update the fare collection system and reduce fare evasion on the system.

B.4   RIDE-ALONGS

To gain a deeper understanding of how riders use the system, the Stantec team performed ride-alongs at various time points and on various bus routes including all Main Line routes to speak with riders and get a sense of service capacity and ridership trends. This was a nice complement to the public meeting. Whereas the public meeting brought the benefit of hearing from those most affected by certain aspects of the SJT service, the ride-alongs afforded the opportunity to hear from the "average" transit user. A summary of takeaways are outlined below:

- Many riders expressed satisfaction with the service, indicating that they would have no other means of travel if the service was not present and the service suits their needs.

- Infrequent service along some routes creates challenges with access to education, employment and recreation during various times notably evenings and weekends.

- Families with young children and strollers expressed difficulty using the bus simultaneously with riders with wheelchairs or large bags (though this is largely outside of agencies' control and is not atypical of comments about the transit industry more generally speaking).

- Various students expressed general satisfaction with the service to the University of New Brunswick Saint John (university) though students attending the New Brunswick Community College (college) noted challenges with using transit later in the evening as service ends relatively early in the evening. The college is served by Route 30 which ends at 10pm on weekdays with limited midday and afternoon service on Saturdays and no service Sundays.

- While the majority of riders noted that bus operators were very friendly, a small group of customers indicated challenges with certain bus operators in terms of their courtesy and customer service.

B.5   OFF-BOARD ENGAGEMENT

To supplement the ride-alongs both riders and non-riders at various community hubs were approached to gain insights on transit experiences and perceptions of transit, as well as what prevents some residents from using the system. Off-board engagement was conducted at King's Square, Lancaster Mall, UNBSJ, the Regional Hospital, and McAllister Place. The following was uncovered:

- The main reason for non-riders not using the service was that the routes do not travel to the places that people need to access and/or the times of service are inconvenient (frequency and service span).

- Additionally, many riders waiting at hubs including King's Square and McAllister Place indicated confusion with knowing where buses will board and off-board as there are no designated spaces for certain routes. Additionally, at King's Square due to space challenges, various routes begin and end at different points at the square which creates confusion for riders who are not yet familiar with the system, and creates barriers to use for non-riders.

B.6   BUS OPERATOR WORKSHOP

Operators have unique insights into the strengths and challenges of transit systems from driving the routes every day. To develop a more intimate understanding of the day-to-day operations, SJT operators were consulted to get their insights on the challenges and opportunities they experience with the current bus system. Takeaways from the operator workshop are summarized below.

- Operators expressed concern that some routes leave little wiggle room in the schedule, which detracts from on-time performance. This was noted in particular for Route 33 Champlain Express. Relatedly, the limited on-time performance creates challenges in the form of mixed connections for riders that need to transfer.

- Routes 3 and 9 servicing the university were stated to be important routes where service levels should be maintained.

- Fare evasion was mentioned to be a significant source of revenue loss for SJT. This manifests in a variety of forms including riders not paying and passes being inappropriately shared. The modernization of the fare collection system might help to combat this.

- There was general agreement that there is room to update the route network, given that the last routing review and revisions were completed over ten years ago in 2009.

- The industrial park located on Grandview Avenue presents an opportunity for additional service coverage. Also, it was mentioned that the Millidgeville area is an opportunity for additional service given the current and future growth.

- There have been four service reductions over the last ten years which makes it difficult to retain and grow ridership and instill a culture of reliability in the customers' minds.

- Additional marketing would help to promote the service and connect with potential business partners. Furthermore, the promotion of transit as a green option would help generate additional ridership.

- There is difficulty with winter maintenance of stops where large snowbanks exist.

- Bus stop improvements (delineation of stop locations at hubs, additional user information, more visibility, etc.) are required to make service easier to understand and easier to use.

- Additional park and rides might be considered at strategic locations.

- The use of transit by the most vulnerable members of the community was stressed. It is very important to not leave anybody hanging with no means of transportation.

B.7   SJT STAFF MEETINGS

In addition to speaking with bus operators Stantec conducted meetings with Saint John Transit administrative, scheduling, and planning staff to obtain a holistic understanding of the service, operations, and processes. Key insights are detailed below.

Administrative Staff

Through speaking with administrative staff (also responsible for finance duties), the following was found:

- In total there are three administrative staff members consisting of two full-time and one part-time employees.

- The last fare increase was in 2015, and it is probably a good time to think about the appropriateness of the current fare structure.

- The carbon tax was applied to Saint John Transit this year which is a new expense, however no new funding was received to help offset this cost which added further budgetary constraints.

- Cash handling is labour intensive and burdensome including $700 per month paid to Brinks to deliver cash to the bank. Additionally, operations and scheduling staff count cash in the office which poses security concerns.

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- The distribution of paper passes is a burden and requires approximately three days a month of labour to drive around and hand out passes to distributors. Relatedly, an electronic fare payment system would be welcomed.

- There is no budget for marketing and no marketing manager at present.

- Charter service is a substantial revenue source and could be expanded. There could be opportunities to expand the charter service program but there is no staff capacity at present to coordinate further efforts. SJT often runs charters for schools, major employers, events, etc.

- Ferry tours are also another substantial revenue source but are not fully optimized right now which presents an additional opportunity to increase revenues
    o Currently, SJT has to guess how many people are coming off of tour boats. Historical estimates are used to determine the number of people who will get on the bus, for instance, SJT knows roughly on a Disney Cruise they will get approximately 50 people of 300 on the boat, etc.
    o In the past, SJT used to have a person that negotiated with cruise lines and they knew exactly how many customers were expected. A significant opportunity exists there to increase revenues

Scheduling/Planning/Dispatch

- In total it is a lean operation with three individuals who run majority of the operations.

- No scheduling software is currently used by SJT and the scheduling is completed in Microsoft Excel.

- The schedule is set once a year offering no multiple block periods (i.e. opportunities to adjust schedules according to the season).

- Schools and post-secondary institutions would benefit from more service.

- Fare evasion is a significant issue, anecdotally, though annual lost revenue is unknown since there is inadequate technology to track this.

- The current application is dated (20 years old) and not the most effective. There are many complaints about the corresponding smartphone app as well.

- The system map on the website is challenging and unclear to use.

- The SJT website is controlled by the City with no way currently for SJT to post service interruption data or other updates quickly without contacting someone in the City. A more streamlined approach is required to communicate real-time updates with the public.

- Twitter account is monitored by one person on a time permitting basis; it is currently a low priority. Although the intent is to communicate service interruptions, given the limited capacity on the team, updates are often very delayed.

- Dispatchers can approximately see where buses are from the current application's GPS tool, however, the data is delayed so this is unreliable in real-time.

- Given technology challenges there is limited potential for the dispatcher to respond effectively to service issues.

- There are no street supervisors therefore when there are issues an employee from the office will need to go out. It is believed that street supervision is required.

B.8   TRANSPORTATION EQUITY MEETING

To gain further insight on the current transit needs and challenges of low-income riders and residents in Saint John, Stantec met with representatives from the Saint John Learning Exchange and the Human Development Council. The Learning Exchange is a non-profit that works with adults to provide education, training and career development and the Human Development Council addresses social issues within Greater Saint John through research and coordination.

The following items were highlighted:

- Many residents who do not live and/or work near high-quality transit experience challenges taking transit to their workplaces, especially during off-peak hours including evenings and weekends.

- Saint John faces unique challenges with an absence of provincial funding for transit unlike most provinces in Canada.

- Various destinations that are frequented by low-income residents are challenging to access via transit which is often the primary mode of travel for many. Some highlighted destinations include:

  o The foodbank located adjacent to the Irving Plant

  o Various parts of the West Side of the City are isolated or have limited transit service periods

- A low-income bus pass would be valuable in Saint John as the city, like the rest of the province, experiences high rates of poverty.

- Various recreation and green spaces, such as Rockwood Park, are inaccessible by transit.

- Accessibility is a critical consideration as New Brunswick experiences one of the highest rates of persons with disability in the country.

- While transit fares are an issue for some low-income users, the overall transit experience is noted to be a more prevalent issue. Specific challenges include buses leaving early, limited bus stop signage, and difficulty of making transfers.

- Issues related to driver behaviour were noted including several drivers not helping riders with wheelchair securements as well as a lack of patience for riders with more limited mobility.

- Some riders expressed a desire for a transit day pass to allow for multiple trips to be organized.

- Affordability of the Handi-Bus service was raised which costs just under double the conventional service.

- From a funding standpoint it was inquired whether there is the potential to offset transit costs for low-income riders with parking revenues.

- The Comex service is valuable but it does not run often enough during the day for people to use it to its full potential.

B.9   NEWCOMER MEETING

To gain a better understanding of the transit needs of newcomer populations in Saint John Stantec met with Newcomer Connection, a program operated by the YMCA that offers a diverse range of services to new immigrants in Saint John. They have approximately 2,000 clients, many of whom live in low-income housing and rely on transit. Highlights from this meeting including transit opportunities and challenges are outlined below:

- While most families are reliant on transit there are also some single car families that are somewhat dependent on transit.

- A part of the program teaches newcomers how to use the buses and understand the schedules. This is organized through a "Community Guides" program funded through the federal government for refugee clients.

- Many immigrants and refugees speak English, however greater use of visual cues at bus stops an on board the buses would be useful for non-English speakers.

- Immigrants and refugees by and large have smart phones, and are able to access transit information digitally. More information about schedules and how to use the app, etc. is desirable.

- Typical places frequented by newcomers include the Uptown business district and the city centre, McAllister Place (transfer point), call centres at the East Side of the City, Millidgeville, the hospital, and the university.

- Newcomers typically prioritize living where there is affordable housing including areas to the east around Forest Hills and Silver Falls which require two to three transfers to access the YMCA. Affordable housing in the South End, which has better transit access, is at capacity.

- Suggested opportunities for greater transit service include along the Comex routes, to Saint John West, and to Churchill Heights where housing is more affordable.

- From a social services perspective, coverage is most important. The service in the south end including service hours and frequency are out of balance based on the number of people.

- Many newcomers who access the centre use a monthly pass. Refugees who are on social assistance receive monthly passes for six months.

- It is desired to focus on providing high quality-transit near affordable housing and to transit-dependant populations.

- Many newcomers access the YMCA centre from near Somerset Street and Churchill Boulevard. Not too many live in Rothesay or Grand Bay-Westfield due to transit limitations.

B.10 SAINT JOHN POPULATION GROWTH MEETING

Between the 2011 and 2016 census, Saint John was the only census metropolitan areas (CMA) in Canada to see a decrease in population. In response the city created a growth strategy. To reverse this trend the City is focused on attracting newcomers and is endeavouring to understand how to retain them.

A study is currently underway where much of the feedback from newcomers was related to transit. Key highlights are detailed below:

- It is predicted that nearly 100% of the City's net population growth will come from immigration, with many of these folks relying the transit service. The more that transit is a viable and attractive means of transportation for them, the more likely they are to use transit before forming other travel habits.

- A significant portion of immigrants come to Saint John to study at both the university and college. Both institutions see a growing number of international students.

- A significant portion of recent immigrants reside in Millidgeville, where improved service might be warranted.

- Greater coordination between transit and land use planning would be beneficial. For example, anecdotally it was stated that there are many rental properties that are not near transit.

- Currently, the university is well served by transit (Routes 3 and 9) however the college is served with less frequent service, especially during evenings and weekends (Route 30). This limits housing locations for students who do not have a car and also promotes vehicle ownership once students have the means, especially if they remain in the city after school to work.

- Many international students are mature students and come to Saint John with their families. Transit considerations need to go beyond transportation to and from class.

- There are many Islamic people in Saint John and there is currently no service provided to the main mosque located in Rothesay.

- Many immigrant communities note challenges taking children to recreational complexes for sports games and activities. The commute there on transit often requires significant transfers and involves long travel times.

- Advertising transit service at points of entry to the city (such as the airport) would be beneficial.

- The lack of signage at bus stops and unclear informational material make it challenging for people new to the city to use the transit service.

- Significant growth in the city is anticipated in Millidgeville and the Uptown peninsula.

B.11   NEIGHBOURHOOD FOCUS GROUP

To understand the transit needs and priorities of specific neighbourhoods, Stantec met with various neighbourhood and community organizations including representatives from Waterloo Village Association, Horizon Health, and Crescent Valley Resource Centre. Feedback included:

- Transfers are not well-timed. There may be opportunities to better connect the bus routes and to streamline the transfers to minimize wait times.

- It is challenging to use strollers, walkers and wheelchairs on buses.

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- Students heavily rely on transit. Bus shelters are minimal in many areas and lighting can be poor on smaller residential roads. As a starting point additional shelters might be placed in areas near hospitals and senior citizen populations.

- Improved service to St. Joseph's Hospital may be beneficial.

- Sunday service was removed from Crescent Valley, which impacts people's livelihood that don't have another means of transportation.

- There is a desire to review the fare structure and consider affordable options such as low-income or family bus passes.

- Service was removed to the Walmart at East Point Mall, which requires riders to now alight at Lancaster Mall.

- There are various seniors complexes within Milledgeville, including Brentwood Towers, that might benefit from service more specific to their needs such as a community route or circulator.

- It is desired for transit to provide better connections to parks and recreational spaces. For example, there is no bus service to Irving Nature Park on weekends, and exploring means of servicing Rockwood Park would be appreciated.

- Transit connectivity to King's Square is important to maintain.

- There are physical barriers to transit accessibility including bus stops in ditches, bus stops located on uneven ground, and lack of snow plowing at bus stop locations.

- In the South End seniors have to walk long distances to access bus stops. The route in the South End no longer travels to Shoppers Drug Mart on Crown St. Connection to medical facilities and grocery stores are needed during the evening. Additionally, many minimum-wage employers such as call centres have working hours during evenings and weekends.

- Obstructions at bus stops including snowbanks and trees can sometimes result in drivers not seeing passengers waiting to board and they drive by without stopping.

- More access to user information on non-digital platforms is desired, and there may be opportunity to better promote the services offered.

- The cost of transit is a smaller issue compared to the accessibility and reliability of the service. This includes navigating confusing and inconvenient stop locations as well as unreliable service in terms of its on-time performance. Challenges using the service can leave a poor perception of transit for many residents.

- There is the perception that service cuts are most often made in priority neighbourhoods where service is needed the most.

- Some riders have expressed challenges with driver attitudes where drivers may be disrespectful or unaware of how to interact with riders with various disabilities. Further driver education may be warranted.

- Participants come from all corners of the city to the Nick Nicolle Community Centre, and improved transit connectivity to the centre is desired. The centre is open from 7:30am to 10:30pm and is one of the busiest centres in the city.

- Bus service ends too early for many residents who live in the North End, resulting in many people getting stuck in the evening, requiring an expensive taxi ride (or a very long walk) home.

B.12   TRANSPORTATION PROVIDER MEETING

A2B Transportation was consulted to supplement our understanding of urban mobility in Saint John from the perspective of another transportation provider. The aim is to identify the extent to which challenges may be unique or shared across multiple providers and provide a basis for exploring possibilities to collaborate such that the whole is greater than the sum of the parts when it comes to public transportation options in Saint John. Operating since 2011, A2B Transportation provides an accessible transportation service to take individuals to and from medical services and required appointments. They largely work with public organizations to fill transport needs and provide transportation for foster children and dialysis patients, among other clients. Takeaways from this meeting are listed as follows:

- A2B employs eight full-time and two part-time employees. There is the sentiment that demand outpaces supply, however, accessible vehicles are expensive to purchase.

- As customers cannot call directly to book trips, many customers in wheelchairs are turned down and recommended to the Handi-Bus service.

- Anecdotally, A2B has observed Handi-Bus vehicles picking up passengers at hospitals individually with multiple vehicles, which suggests there is opportunity to improve the efficiency of trip scheduling.

- Due to regulations on the age of a vehicle (must be a 2013 model or later), transportation operators, including taxis, need to retire more vehicles even if they are still perceived to be safe to use, which increases operating costs. This has partially contributed to a perceived shortage of taxis in the City, especially in the evenings where wait times were stated to be up to 45 minutes.

- Transit accessibility for persons with disabilities is critical as there are very few fully accessible taxi vehicles to accommodate wheelchairs.

- Handi-Bus has called A2B to help fill their demand and vice versa. Collaboration can lead to better trip grouping, in turn helping to improve effectiveness and efficiency all around.

B.13   SAINT JOHN ABILITY ADVISORY COMMITTEE MEETING

To better understand the level of accessibility of SJT, Stantec met with the Ability Advisory Committee (AAC). The intent of the AAC is to raise awareness and advocate for accessibility and inclusion within the City of Saint John. Additionally, the AAC has developed sensitivity training which is in place in various city manuals and also advises the transit commission on creating a more accessible system. Takeaways from the meeting with the AAC are as follows:

- Reliability regarding next stop announcements on buses are noted to be an issue with the system often not working, providing incorrect information, or announcing stops with not enough time to plan to exit the bus.

- AAC suggests that it be policy that all bus drivers call out the stops, however SJT has noted that this cannot be done.

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- Transfers are often inconvenient and just traveling to work or going to an appointment may force someone to take a taxi.

- When travelling on the Comex buses going to Rothesay, Quispamsis, or Hampton there are limited runs each day. What this means is for a medical appointment in Quispamsis, for example, a full day of work needs to be taken off.

- Transit service is good on the main line routes and for accessing the commercial areas of the city, however, when it comes to residential neighbourhoods, many people cannot get to their homes and rely on the Handi-Bus because walk distances are too long. This is exacerbated in the wintertime, especially for those with mobility issues.

- Not all shelters are fully accessible which is challenging for those who access different bus stops regularly. The primary challenges with respect to shelter accessibility for some shelters include limited connectivity to the sidewalk and limited visibility.

- There is a desire for more awareness across all transit users surrounding the priority seating and who it is intended for. There are also space limitations with strollers and mobility devices on the bus.

- Various safety concerns were identified, including the following:

    o Operators do not always properly conduct wheelchair securement.

    o Operators do not always kneel the bus for riders with walkers and wheelchairs.

    o Operators sometimes talk with passengers while operating which can be distracting and pose safety issues.

    o Riders are sometimes standing in front of the yellow line which blocks the windshield and makes it challenging for riders and the driver to see where they are going.

    o Passengers sometimes sit on their walkers on the bus which is dangerous.

- People with disabilities are often living in poverty and have challenges affording transit fares. At the same time, they are dependent on transit service. There is a desire to review SJT's fare structure accordingly.

- It is desired for the Transit Commission and the City to collaborate on placing crosswalks by bus stops and ensure that crosswalks are painted and maintained regularly. For example, there is no sidewalk at the bus stop across from Costco on Retail Drive and no crosswalks on Rothesay Avenue at all.

- Bus routes (Route 3) are desired to connect to East Point Shopping Centre.

- With regards to stop placement, especially in parking lots of shopping centres, careful consideration should be given to accessibility for persons of varying disabilities as there are some challenges with current stop locations.

- Rider communication: riders are not always aware that they can ask drivers to kneel the bus.

- There is limited service to parks and recreation spaces, especially on the weekend. When there are special events happening on weekends some form of accessible transit would be beneficial.

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- The Handi-Bus has challenging hours of operation with no evening or Sunday service, requiring taxis to be used which are expensive. Additionally, the Handi-Bus is more expensive compared other transit services (and peer paratransit systems).

- King's Square is crowded and it can be confusing to find buses here, especially when it is difficult to understand which bus is pulling up where. This is especially challenging for those with mobility limitations.

- Using letters within the bus route numbering is confusing, for instance 9A versus 9B, etc. Additionally, changes in service between the AM and PM adds confusion.

Appendix C   PEER AGENCY INDUSTRY EMPLOYMENT

Employment by Good-Producing Industry

Economic Region:	Avalon Peninsula, NL (St. John's)	Moncton-Richibucto, NB	Saint John-St. Stephen, NB	Fredericton-Oromocto, NB	Kingston-Pembroke, ON	Northwest, ON (Thunder Bay)	Lethbridge-Medicine Hat, AB	Red Deer, AB
% Share Employed in Goods-Producing Sector	**18%**	**18%**	**23%**	**15%**	**18%**	**20%**	**30%**	**30%**
Agriculture	2%	7%	4%	9%	6%	-	26%	15%
Natural Resources	28%	13%	11%	12%	-	22%	12%	27%
Utilities	7%	3%	6%	12%	6%	10%	-	-
Construction	42%	34%	33%	44%	45%	37%	30%	35%
Manufacturing	21%	43%	47%	24%	42%	28%	30%	22%

Table: 14-10-0092-01 (formerly CANSIM 282-0125)

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<u>Employment by Services-Producing Industry</u>

Economic Region:	Avalon Peninsula, NL (St. John's)	Moncton-Richibucto, NB	Saint John-St. Stephen, NB	Fredericton-Oromocto, NB	Kingston-Pembroke, ON	Northwest, ON (Thunder Bay)	Lethbridge-Medicine Hat, AB	Red Deer, AB
% Share Employed in Service Sector	**82%**	**82%**	**77%**	**84%**	**82%**	**80%**	**70%**	**70%**
Wholesale & Retail Trade	18%	20%	18%	17%	17%	17%	22%	20%
Transportation and warehousing	6%	8%	5%	6%	4%	7%	7%	6%
Finance, insurance, real estate, rental and leasing	5%	7%	7%	5%	5%	4%	5%	6%
Professional, scientific and technical services	7%	6%	7%	8%	8%	5%	6%	7%
Business, building and other support services	4%	6%	8%	5%	7%	3%	4%	5%
Educational services	9%	8%	9%	12%	12%	11%	12%	7%
Health care and social assistance	20%	19%	20%	19%	21%	25%	21%	22%
Information, culture and recreation	5%	5%	5%	5%	4%	4%	3%	3%
Accommodation and food services	9%	8%	9%	8%	9%	9%	9%	10%
Other services (except public administration)	5%	4%	6%	5%	4%	6%	6%	9%
Public administration	11%	8%	7%	12%	9%	8%	6%	6%