SAINT JOHN

Draft Report

Move SJ: Transportation Plan

IBI

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In association with Crandall Engineering
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1 Introduction and Overview

MoveSJ is the City of Saint John's Transportation Plan that will guide how people and goods will move throughout the city. The plan is a long term strategic document that presents a series of network recommendations, policy recommendations, and strategic actions that will help Saint John achieve its transportation vision over the course of the Plan's implementation. The Plan is designed to help Saint John's transportation system meet the needs of pedestrians, cyclists, transit riders, motorists and goods movement traffic.

1.1 Background and Vision

In developing PlanSJ, Saint John's 2012 Municipal Plan, one of the key messages expressed by the community was that the City needed to create a balanced transportation network where public transit and active transportation are viable and desirable travel options. As a result, PlanSJ directed Council to develop and maintain a comprehensive Transportation Plan for the City which advances the development of a multi-modal transportation system for the community *(Policy TM-1)*.

In response, the City initiated this study, MoveSJ, to develop the Transportation Plan for Saint John that provides transportation infrastructure and policy recommendations from now through to 2041.

A key focus on MoveSJ is promoting improved mobility and greater transportation choice for people and goods in the City. The aspirational goal is:

> **Providing each Saint John citizen the opportunity to use the mode of transportation of their choice and be safe while doing so.**

Transportation Master Plans are critical to the coordination of a city's transportation network. While population levels are projected to remain stable in Saint John, the economy is always changing and so are people's preferences and new technologies. This presents a series of opportunities and challenges for Saint John moving into the future. For example, Saint John's road network provides ample space for personal vehicles, so how can the road space be transformed to provide opportunities for all modes, including walking, cycling, transit and personal vehicles?

MoveSJ provides guidance for how Saint John can answer this question and more. This was done by outlining improvements and recommendations in the following 10 areas, which are summarized in this report:

- Supporting Sustainable Transportation Choice;
- Road Network Improvements;

- Road Classification Strategy;
- Road Safety Strategy;
- Parking Strategy;
- Round About Strategy;
- Goods Movement Strategy;
- Pedestrian Strategy;
- Cycling Strategy; and,
- The Long Term Transit Vision.

1.2 The Role of MoveSJ in City Development

MoveSJ will help the City plan for an efficient transportation system that moves people and goods safely throughout the city into the future. This includes integrating active modes (walking and cycling) and transit within the City's existing street network. MoveSJ built on previous planning work including PlanSJ, the municipal plan, which identified strategic objectives and the 2010 Trails and Bikeways Strategic Plan, which identified cycling routes. MoveSJ reviewed previous plans and studies and updated recommendations where needed to reflect changes to travel patterns and to reflect new and emerging priorities.

This comprehensive transportation plan ties together the pieces that have been previously identified, be it new trails, new roads, or new policy initiatives and will help the City prioritize future investments and move towards meeting its strategic goals. MoveSJ will consider the transportation system as a whole and enable the City to provide a coordinated response to future growth, new residential developments, and new employment patterns.

1.3 Plan Development

MoveSJ was undertaken in three phases.

- **Phase 1 Research:** Initiated in 2015, the first phase included a review of the existing transportation system and data collection.
- **Phase 2 Plan Development:** Initiated in 2017, the second phase included the development of a pedestrian strategy, long term transit vision, parking strategy, and goods movement strategy. A transportation model was also developed in Phase 2, which later informed network recommendations in Phase 3.

- **Phase 3 Plan Finalization:** The final phase was initiated in 2019. It completes the development of supporting strategies and presents the overall study findings in this Transportation Plan report.

Exhibit 1.1 presents the study process.

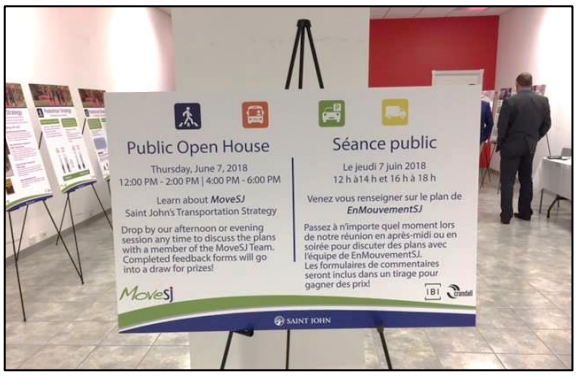
Exhibit 1.1: MoveSJ Study Process

Background / Model Development / Mode Split Targets	Demand Model Development	Roadway Classification System
Goals Development	Pedestrian Strategy	Cycling Strategy
Model Maintenance Assessment	Goods Movement Strategy	Comprehensive System Improvement Plan
Neighbourhood and Structure Plan Guidelines	Long Term Transit Vision	Road Safety Strategy
Community Engagement	Parking Strategy	Modern Roundabouts
Council / Committee Presentation	Community Engagement	Community Consultation
	Council / Committee Presentation	Council / Committee Presentation

1.4 Engagement and Consultation

MoveSJ was developed with input from City staff, residents, business and community stakeholders and Council that was critical in preparing the plan.

Community engagement was initiated in Phase 1 to gather feedback on transportation priorities, opportunities and trip information. This included an online survey, a household travel survey and a short public opinion survey for those residents who completed the travel survey. Local business/industry groups and community groups were invited to participate in stakeholder meetings early in the study process to provide feedback on study objectives and issues of particular interest to the Saint John community.



Public open houses were hosted at the end of each phase to present study findings to date and allow the public to comment. Interim findings were also presented to City Council at the end of each phase.

What We Heard – Phase 1

The key trends that emerged from the Phase 1 engagement include the need to:

- Balance the transportation system for transit, walking and personal automobiles;
- Maintain good road conditions, and provide and maintain sidewalks; and,
- Increase transit service and ridership.

What We Heard – Phase 2

Phase 2 engagement gathered feedback on the first four MoveSJ strategies including transit, pedestrians, parking and truck routes. The key trends that emerged from the Phase 2 engagement are:

- Walking is a good option in Uptown Saint John but could be improved elsewhere;
- Increased frequency and off-peak service for transit would be beneficial;
- Non-residential parking could be better managed to discourage single occupant vehicles; and,
- There are safety concerns about heavy trucks on residential streets.

1.5 Alignment with PlanSJ

In 2011, the City of Saint John completed a new Municipal Plan that provides direction for the growth and development of Saint John forward to 2040. The

Municipal Plan, known as PlanSJ, was undertaken with considerable community engagement and captures the aspirations of Saint John residents for the City's future.

The Vision for PlanSJ is to become a more urban-focused City by prioritizing the transformation of key neighbourhoods through new investment, population and growth.

In support of that Vision, PlanSJ aspires to develop and maintain a balanced transportation system that meets the needs of all community members.

The primary purpose of MoveSJ is to achieve and build upon the strategic directions outlined in PlanSJ by providing guidance through long-term recommendations for multi-modal mobility. The implementation of both city-wide plans will result in a more walkable and transit-oriented Saint John, where residents can enjoy the amenities of their city without having to rely on personal vehicles.

PlanSJ contains the following transportation and mobility goals:

- Develop and maintain a balanced transportation system that meets the needs of all community members with a variety of options including active transportation opportunities such as cycling and walking, good public transit service to key destinations within the Primary Development Area, private automobiles, and taxis;
- Maintain and enhance the City's roadway network;
- Effectively regulate parking, particularly in the Uptown Primary Centre and Intensification Areas, to ensure an adequate supply and parking management approach that supports public transit;
- Work with rail providers to maintain and develop adequate rail services to promote economic development within the City;
- Recognize the importance of the Port to the regional economy and to work with the Saint John Port Authority to ensure continued marine traffic and marine-related uses at the Port;
- Recognize the importance of air transportation to the regional economy and to work with the Saint John Airport Authority to ensure continued air travel and related air services at the Airport; and,
- Maintain and develop an efficient transportation system for the movement of goods within and through the City;

Based on the preceding goals of PlanSJ, input from the community and practices in other similar-sized communities, transportation goals have been developed. The planning direction and the study's transportation goals as follows:

#1 Provide direction for the transportation system to the year 2040, with short, medium and long-term initiatives that are compatible with the goals and policies of PlanSJ.

#2 Develop a balanced transportation system that supports active, accessible, affordable and healthy options for transportation and active living.

#3 Develop an integrated transportation system that provides efficient connections for people and goods between all modes, including automobiles, public transit, walking, cycling, trucks, rail, air and marine.

#4 Evaluate the potential feasibility of a regional public transit system that supports the needs of the citizens and business community of the Saint John area, provides efficient service to Primary Development Areas, and supports the intensification goals of PlanSJ.

#5 Develop and maintain an active transportation network that serves the needs of all users for both transportation and recreation, and removes barriers to active transportation in the City.

#6 Maintain and enhance the City's roadway network, optimizing existing infrastructure and capital investment before new infrastructure is built.

#7 Support a prosperous Saint John through an efficient transportation system for goods movement that supports industry, promotes economic development and connects rail services, marine ports and the airport.

2 Current and Future Conditions

Located on the north side of the Bay of Fundy, the City of Saint John is the largest city in New Brunswick by land area and second largest by population. Encompassing a land mass of approximately 316 km^2, the City is home to 68,000.[1]

This chapter provides a summary of the current and future conditions in Saint John that impact the mobility of Saint John's citizens. This includes factors like the shape of the city (how big it is, where people live and work), the population, and also the features of the transportation system including the road, pedestrian, cycling and transit networks.

2.1 Land Use

Geography

Saint John has significant natural heritage and hydrological features which define the city and its transportation system. This included the Bay of Fundy, Rockwood Park, and Irving Nature Park and the Kennebecasis River which merges into the St. John River, bisecting much of the City before flowing into the City's Inner Harbour. The natural and diverse topography of the City and the proximity to the Bay of Fundy and St. John River creates an attractive urban landscape, but also create barriers to the development of transportation corridors in the City and the greater region. These barriers sometime mean there are a limited number of routes to move from one area of the city to another which can extend the distance that must be travelled.

Urban Structure

Saint John has three distinct settlement areas: the urban core, the suburban neighbourhoods, and the rural settlement areas. Approximately 42% of the population lives in the urban core area (5% of land base), 40% in suburban neighbourhoods (19% of land base), and 18% in rural settlement area (76% of land base). This low-density land use is a result of the 1967 amalgamation of surrounding communities and subsequent urban sprawl which has expanded the urban boundary. Low density land use and ribbon development along long corridors present transportation planning challenges such as providing efficient transit service and cost-effective active transportation facilities as well as maintaining an extensive road network.

The central business district (Uptown), is situated on the Central Peninsula which extends south into the Saint John Harbour and is bound by water on three sides.

[1] 2016 Census of Canada.

Uptown is comprised of a mix of commercial development, residential land uses, and historic buildings.

2.2 Socio-economic and demographics

As of 2016, the population of Saint John was approximately 68,000. The City has forecasted a population increase of 18% to about 80,300 by 2041. During the same period, employment in Saint John is anticipated to increase by approximately 32% from 43,300 in 2016 to 57,200 in 2041. Population and employment growth are expected to be fueled by continued growth in the technology and health care employment fields and anticipated growth in local-export based industries.

Exhibit 2.1 and Exhibit 2.2 illustrate anticipated growth areas. The majority of the population growth is expected to occur in east and west ends of the city. This growth in population could result in an increase in east-west travel towards the urban core, adding to the traffic on busy east-west corridors such as Highway 1, Loch Lomond Road, and Rothesay Avenue.

Growth in employment will occur in and around the Saint John Regional Hospital and University and in the west end and in the existing commercial and industrial areas in the east. Anticipated growth in both population and employment in the west end could introduce more opportunities for living and working within the same community.

Exhibit 2.1: Population Growth by Traffic Zone

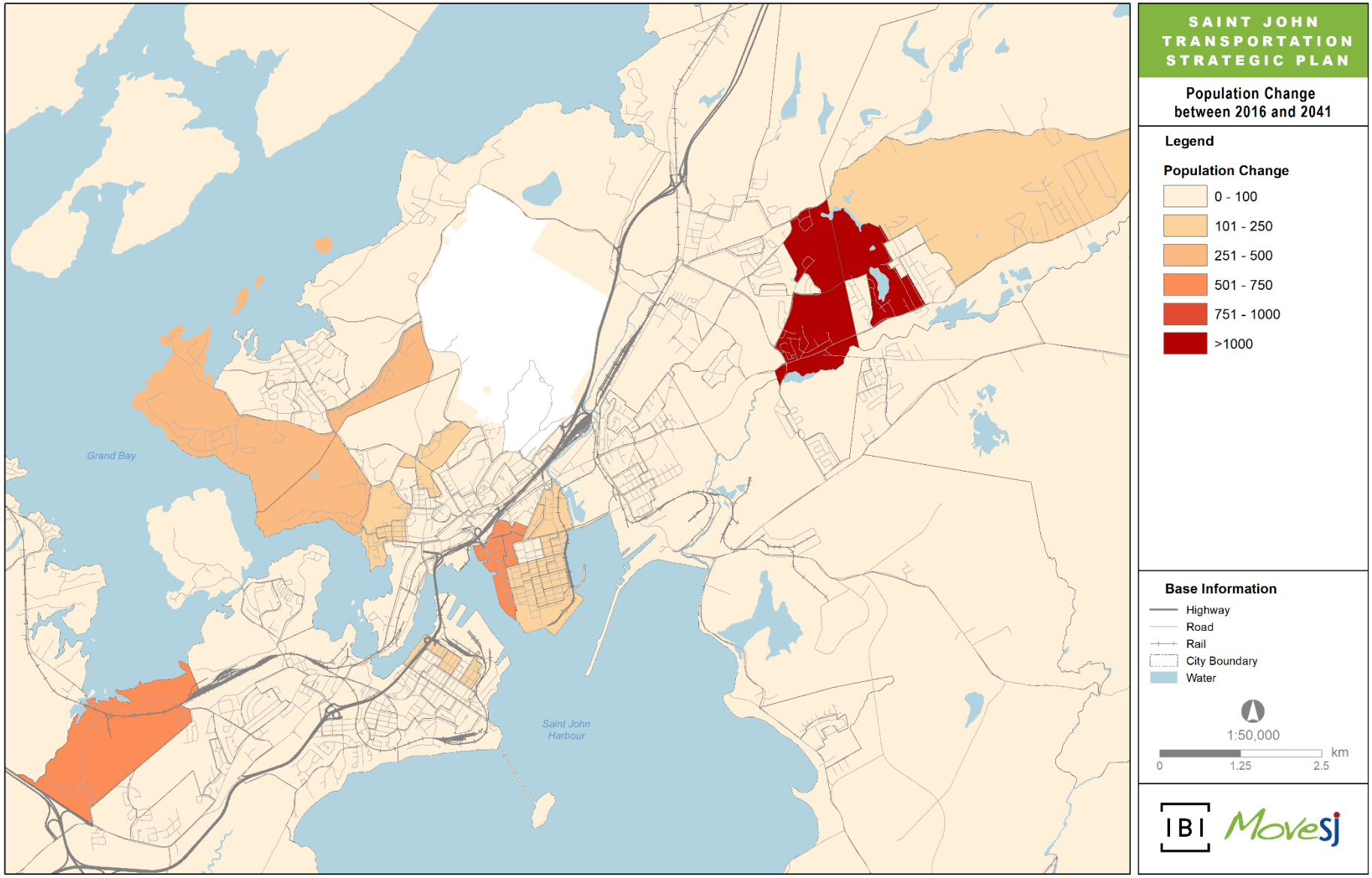
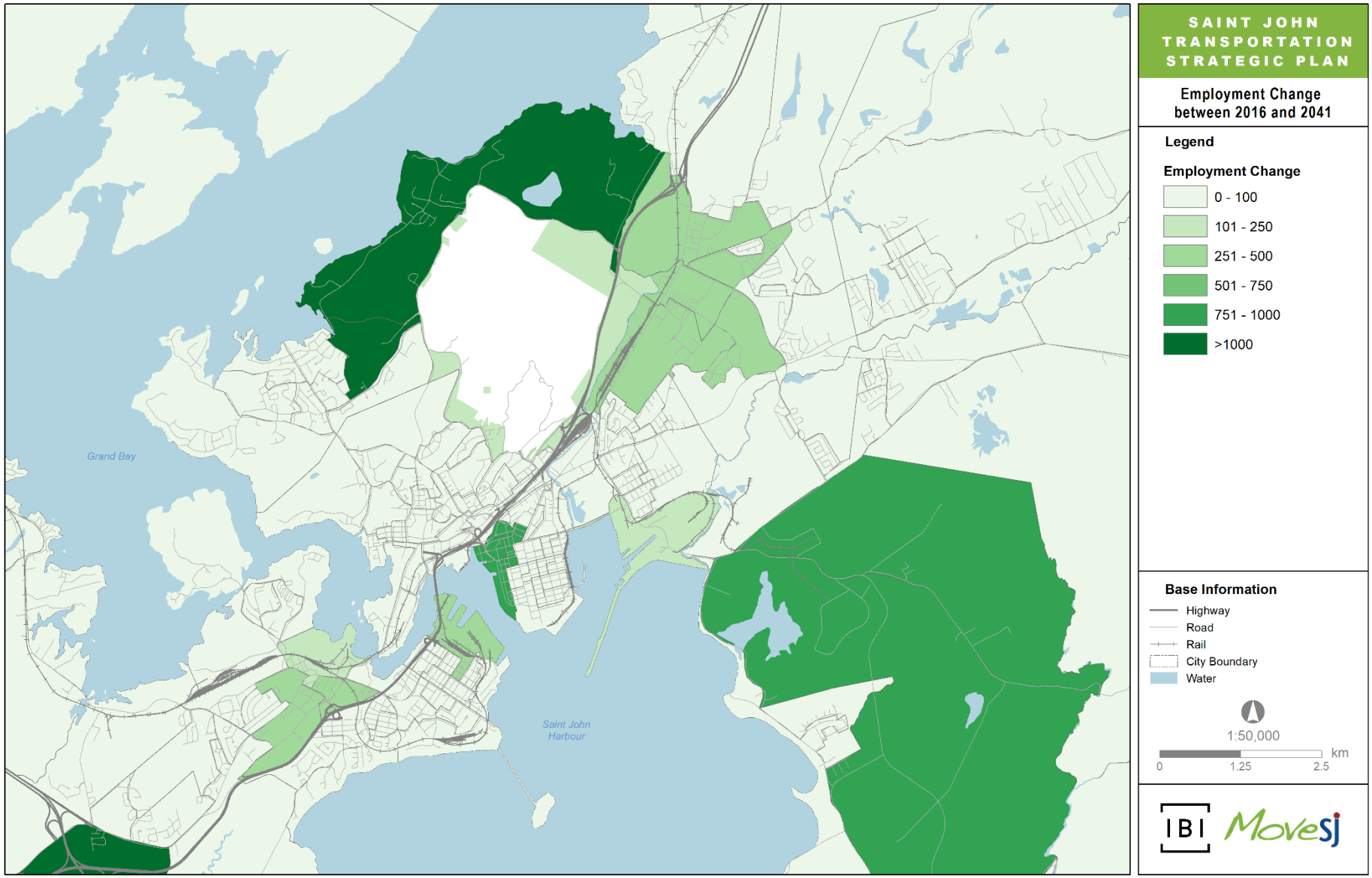


Exhibit 2.2: Employment (Jobs) Growth by Traffic Zone



One of the major demographic trends in cities across Canada is the rapidly ageing population. Exhibit 2.3 compares the age distribution in Saint John from the 2011 and 2016 census datasets. The proportion of people over 50 years old has increased from 39% to 42%, and this trend is expected to continue. As the population ages, greater consideration will need to be given to accessible mobility for all ages to access services and opportunities will increase as a greater proportion of the population will need alternatives to private car travel.

Exhibit 2.3: Change in Age Distribution in City of Saint John, 2011-2016

Affordable mobility is increasingly important in Saint John. The average income of Saint John households was $52,132 in 2015 and 22.5% of the population were considered low income[2]. The low income rate in Saint John is higher than the New Brunswick rate of 17.1% and the nation-wide rate of 14.2%. Providing affordable travel options means better access to employment, education, community services, health services, etc. for all Saint John residents.

[2] As per Statistics Canada: Low-income status is determined based on low-income measure, after-tax (LIM-AT). For a one-person household, the after-tax low-income measure (LIM-AT) was $22,460 in 2015. For larger households, this amount was adjusted upward by multiplying it by the square root of household size. Persons in a private household with after-tax income below this threshold were considered to be low income.

2.3 Roads

The City of Saint John contains a roadway network of 760 linear km, the majority of which are municipal streets maintained by the City. This equates to approximately 11 km of roadway for every 1000 residents. This is a higher ratio than similar cities and presents a significant challenge for maintenance, capital planning, and sustainability. The extensive roadway inventory is a result, in large part, of the amalgamation and urban sprawl which has resulted in an extensive road network that is required to connect low density developments in the city.

2.3.1 Existing Network

Saint John's road network is anchored by the four-lane, divided Saint John Throughway (provincial Route 1) traversing the width of the City. With 13 interchange/access points along its 20 km route through Saint John, the Throughway carries traffic across the City, providing a higher-speed, longer-distance alternative to the City's arterial and collector roads. The Throughway provides convenient vehicular access to the Port, city centre, and industrial areas. Despite its convenience for motor vehicles, the Throughway bisects the City, dividing north from south, and separating once vibrant neighbourhoods from the Uptown city centre.

Adjacent to and extending out from the Throughway are a number of major arterials. Most major arterials have four travel lanes and are part of the truck route system. The most prominent arterials in Saint John are:

West • Fairville Boulevard • Main Street West • Lancaster Avenue North • Main Street • Somerset Street	South • City Road/Station Street • Crown Street • Garden Street East • Courtenay Bay Causeway • Thorne Avenue • Bayside Drive • Rothesay Avenue • McAllister Drive • Loch Lomond Road • Westmorland Road

The Harbour Bridge (on Route 1) and Reversing Falls Bridge (on Route 100) are the only two crossings of the mouth of the Saint John River and facilitate east-west movement both on a local and regional level. Harbour Bridge carries a high volume of commuters connecting residential areas to the west to the city centre and industry. Reversing Falls Bridge serves more local traffic and provides an important truck connection to the Irving Pulp and Paper Mill and other nearby industries.

Reversing Falls Bridge is the only option for east-west travel for pedestrians and cyclists across the Saint John River. The Harbour Bridge does not provide any facilities for pedestrians or cyclists.

The predominant flow of traffic in Saint John is inbound in the morning peak into the city centre and outbound in the afternoon peak. Traffic congestion is not a widespread issue in Saint John. Route 1 and its frequent interchanges disperse motorized traffic throughout the City, minimizing bottlenecks along arterial and collector corridors. Capacity issues are generally limited to individual turning movements at higher volume intersections. Locations with the most concentrated congestion and noticeable deficiencies at individual turning movements include:

- McAllister Drive / Loch Lomond Road (associated with retail development)
- McAllister Drive / Westmorland Road (associated with retail development)
- McAllister Drive / Majors Brook Drive
- Rothesay Avenue / Ashburn Lake Road
- Bayside Drive / Loch Lomond Road (after opening of One Mile House)
- Somerset Street / Paradise Row (PM peak operates better in the model than in the field due to signal timing optimization and coordination)
- Somerset Street / Route 1 EB Ramps
- Somerset Street / Garden Street

2.3.2 Future Conditions

The Saint John Model was used to forecast traffic demand for 2041, assess future network needs, and analyze road network alternatives. The Saint John Model is a travel demand forecasting model developed in 2016 as a transportation planning tool to estimate traffic demand based on where people live, work, shop and go to school.[3] The Saint John Model was used to forecast future travel patterns based on projected growth in Saint John and identify future congested corridors.

By 2041, travel demand to, from and within Saint John is estimated to be 26,000 vehicular trips in the morning peak hour, a growth of approximately 14%. Of these trips, 3,900 (15%) are short trips less than 2 km in length which are prime candidates for active and sustainable modes.

[3] For model details see the Phase 2 Report: Travel Demand Forecasting Model Development

2.3.3 Identified Road Issues and Planned Improvements

Previous transportation studies and the work undertaken in Phases 1 and 2 of MoveSJ, identified several areas with operational traffic issues. These include:

Route 1/Ashburn Lake Road/Retail Drive Interchange – This interchange has been identified for a potential upgrade to a full movement interchange. Currently, westbound Route 1 only has access to/from Ashburn Lake Road on the north side of Route 1, while eastbound Route 1 only has access to/from Ashburn Lake Road/Retail Drive on the south side of the Route 1. The proposed upgrade of the interchange would remove the current barrier that results in vehicles diverting to the next upstream or downstream interchange to access Route 1.

Rothesay Avenue/Ashburn Lake Road – The set of staggered T-intersections at Rothesay Avenue and Ashburn Lake Road have been identified as a high priority intersection for the City to address. Improvements to the intersection involve realigning the roads to combine the staggered intersections into a single intersection. However, there are many complications with the improvements including property acquisition, moving a rail crossing, and creek crossing. The intersection improvements have been proposed as part of the Route 1/Ashburn Lake Road/Retail Drive Interchange improvements.

Somerset Street/Route 1 Interchange – This interchange has been identified as a congested interchange. The congestion affects the surrounding intersections on Somerset Street (i.e. Somerset Street/Paradise Row and Somerset Street/Garden Street).

Simms Corner – There have been concerns raised about the existing configuration of the intersection of Main Street West/Lancaster Avenue/ Bridge Road/Fairville Boulevard (known as Simms Corner). The intersection currently operates as a stop-controlled intersection with plans for either signalization or reconfiguration as a roundabout. In either case, the redesign needs to consider the rail line, which crosses both Mail Street West and Fairville Boulevard, and truck movements through the intersection. More information on this intersection is provided in Section 6.5.

Capacity-constrained Corridors – based on the assessment of 2041 future conditions, the following corridors were also identified capacity-constrained:

- Route 1, east of Rothesay Avenue;
- Loch Lomond Road, east of McDonald Street;
- Rothesay Avenue, northeast of Ashburn Lake Road;
- Sandy Point Road and Foster Thurston Drive; and,
- Bridge Road-Chelsey Drive (Route 100), from Main Street West to Douglas Road.

2.4 Parking

2.4.1 Existing Parking Supply

Parking supply in the Uptown Core is comprised of over 5,800 parking spaces including on-street parking, municipally-owned off-street parking, and privately-owned off-street parking.

At a system level, on-street and off-street parking supply is typically only 50% utilized during weekday daytime hours (10 am- 5pm). However, parking occupancy is not evenly distributed across all lots. Higher occupancy rates occur in the Central Business District, where some lots are nearing capacity during daytime hours.

Parking supply is a concern on Friday evenings, especially within the restaurant district where on-street parking operates near capacity during this time period. However, sufficient parking opportunities are available within walking distance (300-400 meters).

Overall, parking supply in the Uptown Core is sufficient to meet existing parking demand.

Outside of the Uptown Core, public parking is generally free. Saint John offers a Residential Zone Parking Permit Program to assist local residents in finding on-street parking where parking is not available off-street.

2.4.2 Future Parking Demand

Given the expected growth within the City of Saint John over the next 10 years, long-term planning is needed to ensure that the future parking demand can be accommodated. Future parking demand within the Uptown Peninsula is anticipated to be impacted by the following factors:

- Parking demand growth due to population growth in the Saint John region;
- Targeted personal vehicle modal split reduction (5% over the 10-year horizon);
- New developments within the study area; and
- Parking supply losses or gains.

The increased activity of existing land uses and the modal split reduction of personal vehicles is anticipated to result in a net growth in overall parking demand across the Uptown Peninsula area.

The impact of new developments and parking supply changes is anticipated to be localized to areas within close proximity to the new developments or parking supply changes. Such changes include the full closure of the Canterbury and Princess Lot and the Canterbury and Grannan Lot. Two new parking garages,

JDI Garage and the Irving Oil Garage, have been constructed and are operational. While JDI employees have relocated to the JDI Garage from municipal lots, freeing up public parking spaces, the Irving Oil Garage will replace an existing lot and only serve Irving Oil employees, resulting in loss of municipal parking spaces.

The parking demand in the Uptown Peninsula is expected to increase compared to existing conditions. However, given the significant portion of unused parking supply, the network is expected to still operate below capacity. A parking supply expansion is not considered necessary.

2.4.3 Street Maintenance

Providing sufficient on-street parking must be balanced with street maintenance operations (i.e. cleaning and snow removal). Saint John currently employs two strategies to facilitate street maintenance:

- **Alternating side parking** is where parking is permitted on the odd-number side of the street between the 1st and 15th day of each month while parking is permitted on the even-numbered side between the 16th and last day of the month. This strategy allows the City to clean, remove snow, and maintain both sides of the street while providing continuous on-street parking opportunities.
- **A Temporary Overnight Snow Ban** is something that the City can issue to provide crews with an opportunity to clear the road network of snow. The parking ban remains in effect between 11:00 PM and 7:00 AM of the next day. During on-street parking snow bans, the City provides residents free parking opportunities in designated off-street lots throughout the Uptown core. Residents are permitted to park in these lots between 6:00 PM and 7:00 AM the following day.

2.5 Goods Movement

In Saint John, heavy trucks need to access property using many roads from a diverse industrial base. This includes a working Port spread along the lower South and West parts of the City, the largest oil refinery in Canada, a liquefied natural gas terminal, a pulp mill and a paper mill on two different sites, other industrial sites, two industrial parks containing a variety of industrial uses and potential future energy projects particularly on the east side of the City.

Goods movement is an important consideration given that Saint John is an industrial city. Access to City streets for use by trucks including those that form shortest routes (distance and/or time) and/or safer routes are important to trucking companies as well as the customers to which they are delivering. Goods movement by truck is important for the City and surrounding area, along with connections and transfers to rail, marine and air transportation modes.

The needs of industry and trucks must be balanced with other components of this plan. Saint John is aiming to encourage more walking and cycling, which can have impacts on truck traffic. As Saint John expands its network of cycling and pedestrian friendly streets, it will be important to consider the needs of trucks, particularly in Uptown Saint John, where businesses receive frequent deliveries.

The One Mile House Interchange

The One Mile House Interchange was completed in 2013 and marks a major change in the truck route network since the last truck route study in 2002. This interchange links Route 1 with Rothesay Avenue, more specifically, Bayside Drive. A key objective of this interchange was to provide a more direct route for truck traffic from Route 1 to the McAllister and Grandview Industrial Parks via Bayside Drive, and subsequently reducing truck traffic on Crown Street, City Road, Rothesay Avenue, and Loch Lomond Road.

An additional benefit of adding the One Mile House Interchange to the network was the potential for rerouting truck traffic away from congested and undesirable areas, including the Lower Cove Loop identified in the 2002 study. This issue was addressed by designating Water Street as a no-truck route.

2.6 Pedestrian and Cycling Network

Pedestrian Network

The City has 402km of sidewalk within its limits. The City provides sidewalks on one or both sides of most arterial and collectors streets and generally on both sides of streets in high pedestrian areas such as the Uptown Peninsula. Sidewalks are also typically provided on one side of local streets where curb is present (such as in residential subdivisions). Several streets in rural parts of the City do not have any sidewalks, so in response, the City has introduced a rural standard for residential development where there are resident concerns about the lack of sidewalks. The City improves sidewalk conditions (including renewals, adding boulevards, widening sidewalks, and improving accessibility) as part of other street reconstruction efforts and asphalt resurfacing program.

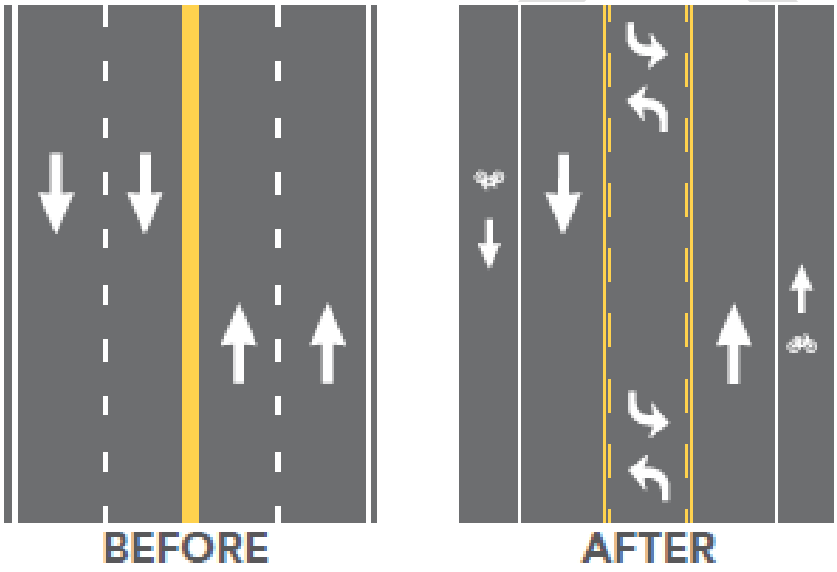
Except for Harbour Passage, multi-use trails for transportation movement are limited in the City. Short trails are provided in some neighbourhoods to improve connectivity (e.g. Champlain Heights, Donaldson/Rae Street), while most other trails are mainly recreational (e.g. Rockwood Park, Irving Nature Park). Urban trail construction is challenging in Saint John due to limited space, topography, and the haphazard patchwork of property boundaries throughout the City.

Cycling Network

The City of Saint John's cycling network currently consists of 12 km of bike lanes and 34 km of shared lanes. Major routes include Harbour Passage, Campus Harbour Connection and the Trans-Canada Trail (also known as The Great

Trail). The City has made progress in recent years to expand its cycling network, including implementing recommendations and policies from PlanSJ and the 2010 Trails and Bikeways Strategic Plan. On-road facilities are being implemented alongside infrastructure renewal projects such as “road diets” on select four-lane corridors. “Road diets” are when a road with extra car capacity, reallocates space to other features such as bike lanes, turn lanes, bus lanes or pedestrian islands to improve safety and operation of the roadway for all users as seen in Exhibit 2.4.

Exhibit 2.4: Example of a road diet where a four-lane road is transformed into a two-lane road with a turning lane and bike lanes.



Source: U.S. Department of Transportation Federal Highway Administration.

The goal of MoveSJ is to further this progress by updating and prioritizing the network proposed in the 2010 Plan and identifying additional active transportation facilities.

2.7 Transit

Public transit is an important part of the overall transportation system for Saint John. Saint John Transit was established in 1979 and is the largest public transit system in New Brunswick. Saint John Transit serves over 108,000 people in Saint John, Quispamsis, Rothesay, Hampton, and Grand Bay-Westfield.

There are 20 fixed routes serving the City of Saint John plus 3 fixed Comex routes providing service to Quispamsis, Rothesay, Hampton, and Grand Bay-Westfield. The transit system in Saint John faces numerous challenges:

- **Funding uncertainty** – over the next three years, significant budget cuts to transit will be required due to funding shortfalls.

- **Challenging geography** – the City's development over time has resulted in various outlying low-density and rural settlement areas within the municipal boundaries. In addition, growth in suburbs in Kings County (including Hampton, Quispamsis, and Rothesay) has increased demand for travel between Saint John and these areas. The transit system's outward expansion to serve these areas has limited its ability to improve service in both the core and outlying areas.
- **Under-Performance** – Since 2010, ridership and amount of service provided has decreased by over 18%. As a result, cost to operate service has increased.
- **Data Shortage** – the ability to monitor and improve service in areas where it's needed is highly dependent on up-to-date quantitative data. Presently, there is minimal quantitative data about the performance of specific routes and the system as a whole.

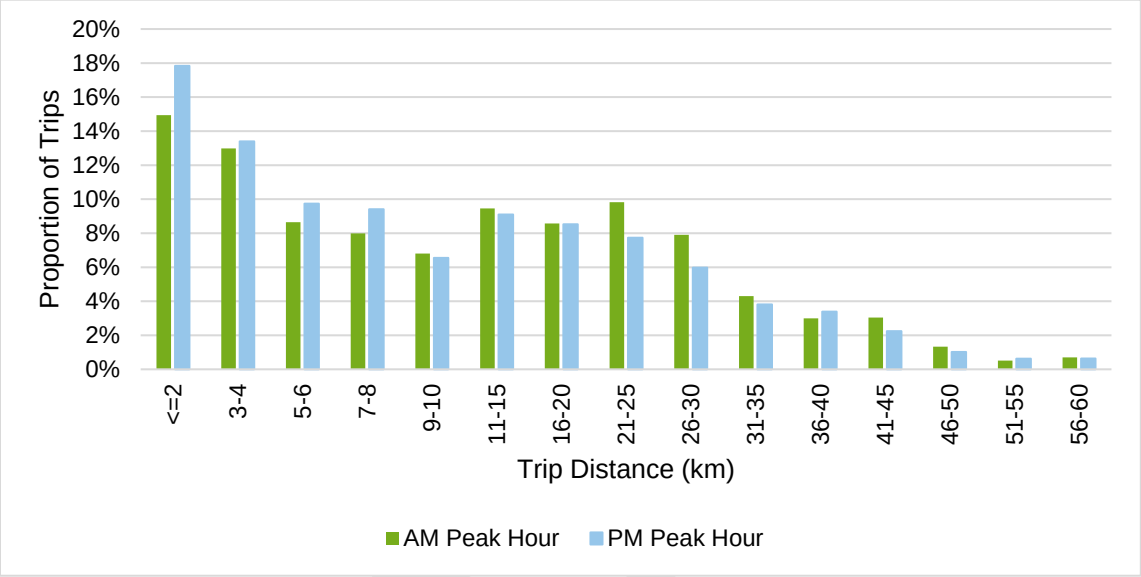
2.8 Transportation Patterns and Trends

As part of Phase 1 of MoveSJ, the City conducted a household travel survey. This survey provided valuable information on the travel patterns of Saint John residents and residents of surrounding communities. The key patterns and trends for this household travel survey are outlined below.

There are Many Short Trips and a High Level of Self Containment in Saint John

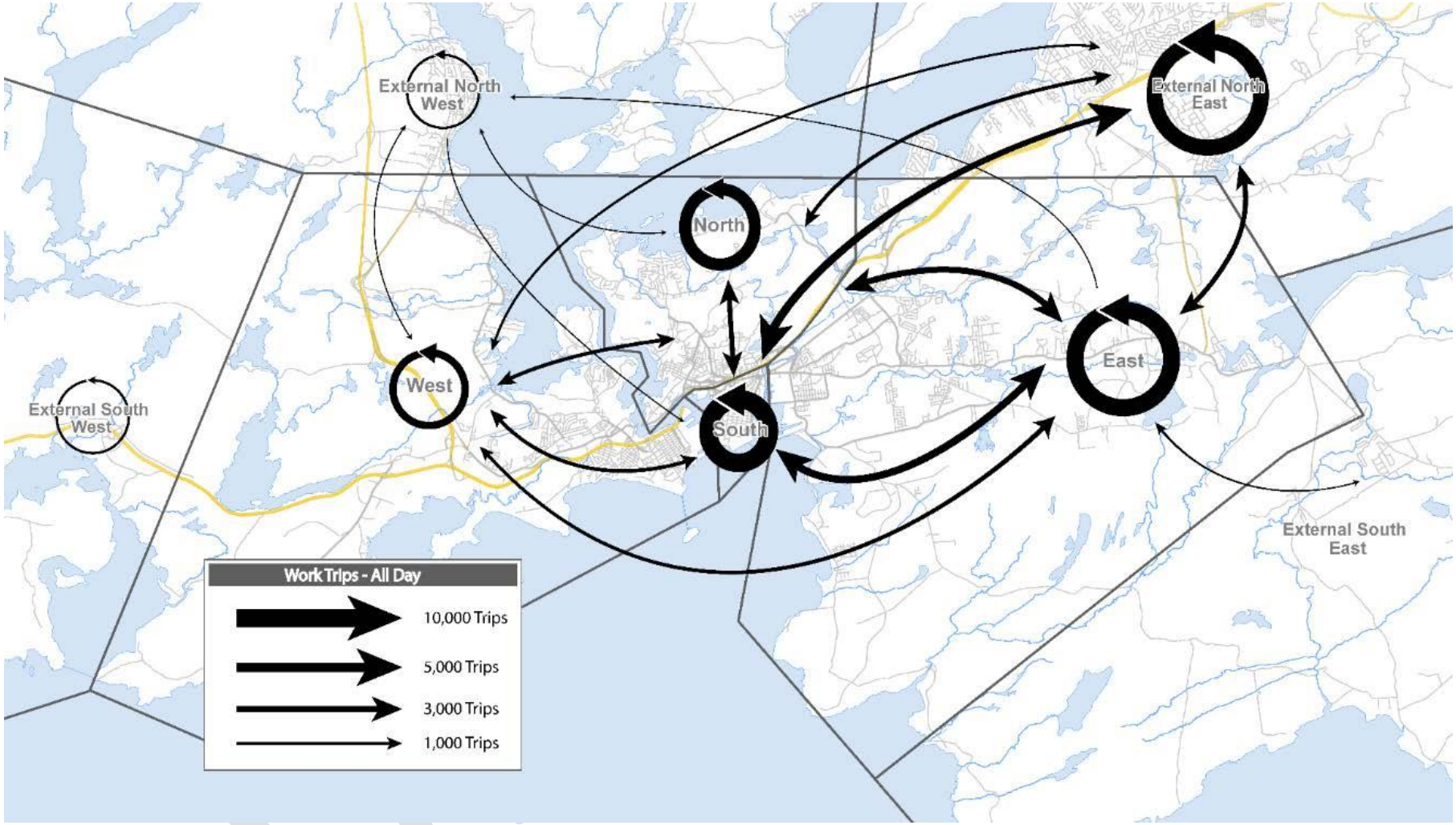
Of the estimated 24,000 car trips made in the morning peak hour and 30,000 car trips in the afternoon peak hour, approximately 15-17% of these trips are less than 2 km. Short trips less than 2 km are excellent candidates for a shift to walking and cycling if safe routes and supportive policies are in place. Exhibit 2.5 illustrates the estimated peak hour trip distances based on the 2015 travel survey data.

Exhibit 2.5: Peak Hour Trip Distance (Saint John Model, 2016)



Travel patterns in all areas of Saint John show a high level of self-containment, particularly for work trips, as shown in Exhibit 2.6. This means that the majority of trips start and end within the same “district”. Although the districts represent fairly large areas, the observed travel patterns suggest that many areas of Saint John contain a broad mix of uses that allows people to live, work and complete their daily errands within their local corner of the city.

Exhibit 2.6: Work Trip Travel Patterns

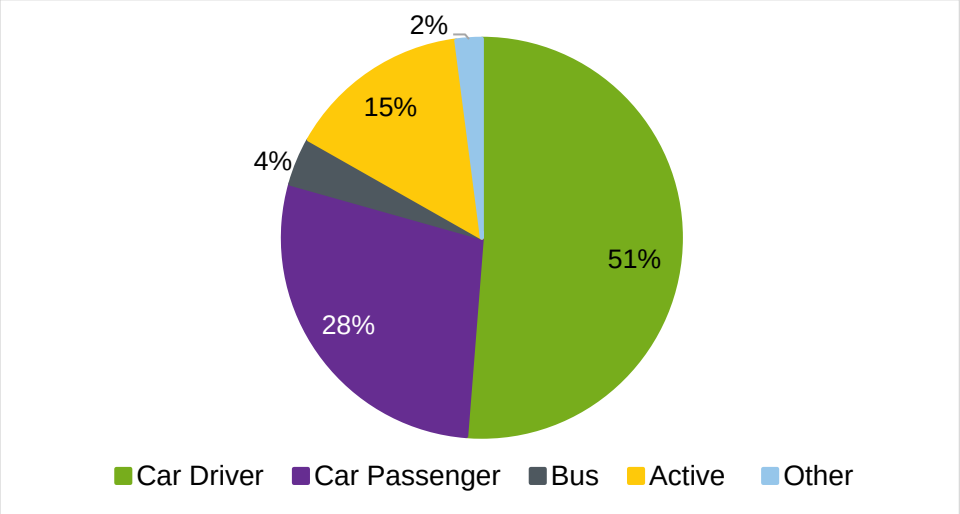


Source: 2015 Saint John Household Travel Survey

Driving is the Dominant Mode

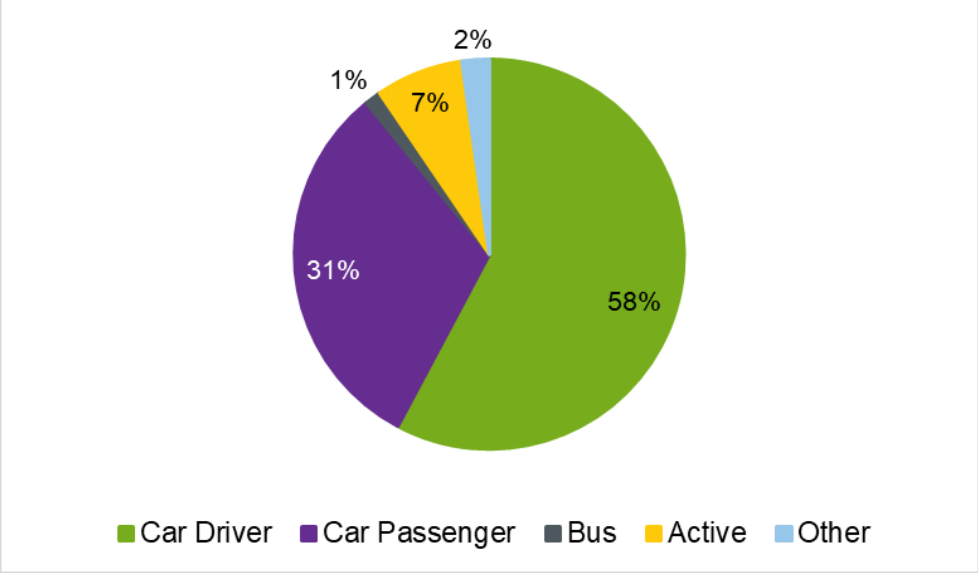
On a typical weekday in the Saint John region, 82% of trips are made by car (either as a driver or passenger). Within the City of Saint John, car usage is slightly lower at 79%, whereas 89% of trips outside of the City are made by car. The higher car usage outside of the city reflects the lack of all-day transit service as an alternative to the car and the suburban built form where travel distances are greater. Exhibit 2.7 and Exhibit 2.8 show mode share for Saint John residents and residents living outside City boundaries, respectively.

Exhibit 2.7: Trips by Primary Mode (Saint John Residents)



Source: 2015 Household Travel Survey

Exhibit 2.8: Trips by Primary Mode (External Residents)



Source: 2015 Household Travel Survey

Active Trips are More Likely to be Made in Saint John

Results from the 2015 household travel survey show that 15% of trips in Saint John were made by active modes, and 7% of trips in the outer areas were made by active modes. The compact central core and student population at the university campus likely contribute to these figures.

To see how Saint John compares to peer cities, the Census Journey to Work data was used as a basis for comparison. The 2016 Journey to Work data only considers commuting to work whereas the City's 2015 Household Travel Survey collected mode information on all types of trips for a sample of the population. When reviewing only commute trips in the Census data, Saint John residents make less active (walk and cycle) trips to work than other peer cities in Atlantic Canada. It is noted that carpooling is more likely in Saint John than in the peer cities.

Exhibit 2.9: Comparison of Travel Modes for Journey to Work in Peer Cities from the 2016 Census of Canada

City	Driver (car, truck, van)	Passenger (car, truck, van)	Public Transit	Walk, bicycle and all other modes
Saint John, NB	**72.8%**	**11.2%**	**6.6%**	**9.4%**
Moncton, NB	75.7%	8.9%	5.0%	10.3%
Fredericton, NB	75.4%	8.3%	4.4%	12.0%
Halifax, NS	70.4%	7.3%	11.8%	10.5%
Charlottetown, PE	73.4%	8.9%	3.1%	14.6%
St. John's, NL	75.5%	9.9%	5.2%	9.4%

Source: Journey to Work, 2016 Census of Canada

Emerging Trends will have a Significant Impact on Transportation

There are also several societal trends that are having or will have a substantial impact on transportation. These include:

- **New mobility:** Advances in technology continue to change how people move around the city. From ride hailing/ride sharing offered by private transportation networks to Automated Vehicles (AVs), major change is on the horizon. It is essential for cities to monitor technological advances and introduce policy that encourages technology to contribute to rather than detract from strategic objectives.
- **Climate change adaptation:** Transportation is a major contributor to greenhouse gas emissions. Alternative, more sustainable modes of travel are needed to reduce impacts on the environment. The

transportation system also needs to be designed to be more resilient to stronger and/or more frequent weather events due to climate change.

- **Goods movement:** With the continued rise in e-commerce, cities can expect to see a rise in delivery-related traffic in residential areas. Further, the needs of trucks and local businesses that rely on frequent deliveries must be balanced with the need for comfortable and safe active transportation routes, sometimes within the same corridor.

3 Transportation Needs and Challenges

Phase 1 of MoveSJ identified the following transportation related needs and challenges. These needs and challenges informed the infrastructure and policy recommendations of this plan. These needs and challenges were identified through consultation with City staff, stakeholders, and the public, in addition to technical analysis and reviews of previous transportation planning work undertaken in Saint John.

Age and Abundance of Infrastructure: Much of the City's transportation needs (and related complaints) involve aging infrastructure. Many streets and sidewalks have reached the end of their structural life and are in need of rehabilitation or replacement. In response, improvements have been made to roadway asphalt and sidewalk conditions in recent years. However, a challenge for the City in capital planning of improvements is the large amount of roadway infrastructure it has per capita. There is an opportunity for the City to make efficient use of existing infrastructure, rather than add new infrastructure. New infrastructure may be limited to improved highway access, adding strategic links to improve connectivity and serving new infill development areas.

Accessible Pedestrian Connections: Outside of the Uptown Core, the City of Saint John has a sprawling layout with limited grid development. Being an older city that spread into the surrounding topography over time, many streets are hilly, curved, and have narrow rights-of-way. There are many gaps in the sidewalk network and many sidewalks are in poor condition, especially in the older parts of the city. These conditions present challenges to provide accessible sidewalks and roadside paths along city streets. However, filling these gaps also presents an opportunity to make walking in Saint John safer and easier.

Active Transportation Routes: Until recently, the City of Saint John offered limited active transportation (AT) facilities. There are several barriers to providing attractive AT routes - Route 1 bisects the City and is a barrier for continuous north-south AT routes, while the Harbour Bridge and Reversing Falls Bridge present barriers to East-West connectivity in their current form.

The City's centrepiece for walking and cycling has been Harbour Passage, a paved multi-use pathway around the perimeter of the Inner Harbour. The City would benefit greatly from additional multi-use pathways where corridors can be identified. Within the last couple of years, the City has begun adding bike lanes, and shared lanes that connect to bike routes. Two priority routes being developed/upgraded are the "Campus-Harbour Connection", a north-south route from the University to the Uptown, and the east-west Trans-Canada Trail. "Road diets" have also been applied on four-lane corridors to add bike lanes without road widening.

Traffic Signal Infrastructure: Many of the traffic signals in the City operate on old 4-phase controllers with pre-timed operation. In many cases, the controllers and supporting electrical systems have reached their maximum operational capabilities, so the opportunity to add new phases or additional signal heads is limited. There are also no bicycle signals. Signalized intersections for motorized traffic and pedestrians could be improved by updating the signal equipment and adding detection. Updates to traffic signal infrastructure can also be expected to result in a reduction in Greenhouse Gas Emissions. The City would require an implementation plan to replace its signal infrastructure over a multi-year period.

Localized Congestion: There are several localized locations where traffic congestion is a significant issue during peak periods. However, limited congestion throughout the City offers the opportunity to reallocate road space to other modes, particularly cycling.

Public Transit Service: The provision of convenient, affordable and effective public transit in Saint John is essential for managing vehicular flow through the City, while helping to achieve the sustainability goals established in the Municipal Plan by replacing personal automobile trips with transit. Support for enhanced ridership also comes from related transit-supportive measures involving parking supply and cost primarily in the core area, transit supportive urban and subdivision design, and effective marketing of the transit services.

Truck Access: Being that Saint John is a very industrial city with Canada's largest oil refinery, an LNG import terminal, active port, pulp and tissue mills, Moosehead brewery and other manufacturing industries, truck movement is critical; but high truck volumes also impact streets and neighbourhoods. Completion of the One Mile House interchange has helped this issue to some degree, offering more direct highway access to the refinery and industrial parks, thus eliminating the need for through truck traffic on inner City streets.

Neighbourhood Issues: As in most cities today, neighbourhood traffic issues include speeding, traffic intrusion, pedestrian and active transportation safety and calls for traffic calming. Aging infrastructure and poor quality of some streets and sidewalks add to the neighbourhood traffic management challenges, and this has been found to be a common concern of the public.

External Commuter Traffic: Residential growth / sprawl outside the City of Saint John limits has far outpaced growth within. Out-migration has been a significant challenge for the City on many fronts, including transportation. A high proportion of commuting traffic originates outside the City, primarily from the east but some from the west.

Auto Dependence: The combination of a spread-out low density urban form, geography and travel patterns naturally makes Saint John, like so many other smaller North American cities, auto dependent. However, a small central core with closely spaced destinations presents an opportunity to increase the use of sustainable modes. The larger number of short trips in Saint John also suggest that there is an opportunity to increase walking and cycling use.

4 Strategies for the Future

Providing safe and efficient transportation options is critical to developing a system that meets the current and future transportation needs in Saint John. This includes improving the transportation choices available, enabling access to opportunities for all residents, regardless of age, ability or income.

In the pursuit of achieving MoveSJ's aspirational goal, this Plan recommends improvements across all transportation modes. There are five action areas described in the following chapters of this Plan that include network, policy, and strategic recommendations. Together these action areas guide the development of a multimodal transportation system for the movement of people and goods in Saint John. The action areas and their relationship to each component of the plan are outlined below.

Supporting Sustainable Transportation Choice

This Plan puts forward strategies to improve alternatives to single-occupancy vehicles such as walking, transit, cycling or carpooling which contributes to a transportation system that is healthier for people and the environment (Chapter 5). These sustainable transportation options can also help reduce challenges experienced because of personal automobile use such as traffic congestion, greenhouse gas emissions and air pollution, and collisions. These strategies work together with the road and cycling network recommendations to increase sustainable mode use in Saint John.

Road Network for a Multimodal City

Adopting a multimodal approach to Saint John's road network (Chapter 6) will be fundamental to achieving MoveSJ's aspirational goal of providing people with the opportunity to use the mode of transportation of their choice and be safe while doing so. This includes improving the utilization of existing road space with a focus on moving people, not just cars. Strategies developed to support the development of a road network for a multimodal city include:

- Road Classification Strategy (Section 6.2);
- Road Safety Strategy (Section 6.3);
- Parking Strategy (Section 6.4); and,
- Roundabouts Strategy (Section 6.5).

These strategies work together with the Cycling and Pedestrian strategies to develop a more multimodal transportation system.

Trucks in a Port City

Goods Movement is vital to supporting a prosperous Saint John and surrounding area, particularly because of the multimodal goods movement connections. The MoveSJ Plan puts forward recommendations that balance the needs of the goods movement industry with those of neighbourhoods and core areas. To do this MoveSJ includes a goods movement strategy (Chapter 7).

Transforming the Walking and Cycling Experience

Expanding the City's existing walking and cycling infrastructure (Chapter 8) to improve access and connectivity will provide more transportation options in Saint John. Improvements and expansions to the existing facilities across the city will increase access and increase safety and comfort. To help transform the walking and cycling experience, MoveSJ puts forward two strategies:

- Pedestrian Strategy (Section 8.1); and,
- Cycling Strategy (Section 8.2).

Cycling network recommendations were developed together with road network recommendations to make the best use of available road space.

Refreshing the Transit Network

Public transit is an important part of the overall transportation system for Saint John. As such, MoveSJ includes a Long-Term Transit Vision (Chapter 9) that outlines a plan to stabilize core services and provide mobility and choice for residents with an efficient and cost-effective transit system. An important resource for refreshing the transit network is an Operational Audit which was conducted on Saint John's transit system in addition to the MoveSJ work. This audit considers the long-term vision for transit in Saint John and addresses more immediate financial constraints in the short term.

5 Supporting Sustainable Transportation Choice

Sustainable transportation choices include alternatives to single-occupancy vehicles such as walking, transit, cycling or carpooling. These options are healthier for people and the environment and can help reduce challenges experienced because of personal automobile use such as traffic congestion, collisions and greenhouse gas emissions and air pollution.

5.1 Managing Transportation Demand

Transportation Demand Management (TDM) initiatives are used by municipalities to influence travel behaviour. This can be used to improve transportation system efficiency and help reduce congestion on roads by decreasing the volume of single-occupancy vehicles on the network and increasing travel via transit or active transportation. As a result of decreasing single-occupancy vehicles on roads, TDM initiatives also help to manage parking demand by decreasing the number of vehicles in parking lots. TDM initiatives take many forms, including policies, programs, services, and products to influence why, when, where, and how people travel.

Collectively, the goals of TDM are to influence travel by:

- Providing travel choices and options;
- Providing active and transit-based alternatives to single-occupant car trips;
- Incentivizing sustainable travel modes such as transit, cycling, walking, or carpooling;
- Informing and educating commuters on their travel options;
- Regulating and limiting travel by single-occupant car trips (e.g., congestion pricing, parking regulations, land use policies); and
- Changing the way people work using technology (e.g., telecommuting, virtual meetings, etc.).

Implementing TDM initiatives provides various economic, social, environmental, and health benefits. By decreasing single-occupant vehicle trips, congestion can be reduced, which in turn, improves network efficiency. By shifting trips to different modes, more people can be moved through the network without needing to construct new lanes or roads. Socially, TDM initiatives support complete street designs which can help create a sense of community. The environmental benefits stem from less congestion and trips shifting to sustainable modes aiding in the reduction of greenhouse gases. Active

transportation, such as cycling and walking, provide an easy way to work towards the recommended level of physical activity per week.

Key Directions for Supporting Sustainable Transportation Choice

In Saint John, there are many opportunities to use TDM measures to reduce single-occupancy vehicle trips and manage congestion. Key directions are discussed below:

Managing Parking Fees/Supply

Saint John applies a standard parking fee for paid parking that is consistent with hourly parking rates in other municipalities of similar size. Parking fines in Saint John are also consistent with those in similar sized municipalities, with the exception of the current fine for parking in an accessible parking space, which is well below average.

Consideration should be given to increasing parking fees in areas with high demand in order to reduce demand for parking. In particular consideration should be given to adjusting fees by time of day and day of the week to account for fluctuations in parking demand. Any increase in revenue can be allocated towards TDM measures.

Carpooling and Park-and-Ride

The City of Saint John does not currently run a dedicated carpool program. However, informal carpool and parking and ride lots are located along Route 1 in Rothesay and Quispamsis.

Saint John should market and support carpooling through various events and consider further promotion through the implementation of formal carpool lots within Saint John.

Carshare

There is currently no carshare program operating in Saint John. In 2014, Enterprise Carshare launched in Sackville, the first such program in New Brunswick. This is an initiative that Saint John could consider investigating, as the City has a significant population of students who could benefit from having access to a vehicle for occasional use. Carshare can also enable households to own fewer vehicles by providing access to a vehicle for occasional use.

Public and Private Transit

Saint John is served by a combination of local and regional buses. Some TDM strategies that support transit include:

- **Transit to work awareness events** – promoting events which raise awareness of transit options and incentives for participation.

- **Student transit pass included as part of tuition** – students are typically frequent transit users and having the cost of the student transit pass included as part of tuition creates a reliable source of revenue while providing students with unlimited access to transit.
- **Transit supported by increased parking cost and additional park-and-ride locations –** higher parking fees may encourage drivers to consider transit as an alternative option. Adding park-and-ride lots in various areas of the city can improve first/last mile access to transit from areas with limited transit service. Park-and-ride can also reduce the length of car trips.

Active Transportation

Expanding the active transportation network to eliminate gaps and cross major barriers can be one of the most effective ways to provide a real alternative to the private vehicle. Travel demand forecasts for 2041 indicate 26,000 car trips in the morning peak hour, with approximately 3,900 trips (15%) that are short trips less than 2 km in length. These short trips are prime candidates for active modes. Even a 10% shift from cars to active moves on these short trips can remove 400 vehicular trips from the network.

As discussed in Chapter 7 of this report, the existing network of walking and cycling infrastructure is fragmented with limited supporting amenities. Addressing key network gaps, providing bike parking at destinations and supporting cycling programming initiatives (Section 8.2.2) are opportunities for the City to manage vehicular travel demand.

Recommended Strategies

The following are recommended strategies to manage travel demand in the City of Saint John:

- Consider increasing parking fees and parking fines to discourage driving to certain areas of the city and allocating any increase in revenue towards TDM measures;
- Continue marketing and supporting carpooling through various events;
- Consider further promotion of carpooling through the implementation of formal carpool lots;
- Investigate the possibility of a carshare program;
- Expand bike parking within the City; and
- Raise awareness of active transportation and transit through broad-reaching community events.

6 Road Network for a Multimodal City

The road network has traditionally been considered a space for cars. With so much space dedicated to roads, people are now starting to wonder how this space can be used to move people and goods, not just cars. People can move efficiently through a city by walking, rolling, cycling, taking transit, driving or many other ways. That is why it's important to provide the facilities and services that allow people to use the mode of transportation that they choose and be safe while doing so.

Saint John has an extensive and effective road network that meets or exceeds the needs of vehicle traffic in the city now and will continue to do so into the future. This provides an exceptional opportunity to reimagine this space to improve mobility by all travel modes, without negatively impacting vehicle flow. By providing a road network for a multi-modal city, the people of Saint John will have more choice and safer options to move around the city.

This chapter provides information on the following components of MoveSJ:

- Road Network Improvements;
- Road Classification Strategy;
- Road Safety Strategy;
- Parking Strategy; and,
- Roundabouts Strategy.

6.1 Road Network Improvements

The development of the proposed future road network includes constructing new road connections, repurposing existing road space, and addressing congestion hotspots. These improvements help satisfy the transportation and mobility goals in PlanSJ by maintaining and enhancing the City's roadway network while also developing a balanced transportation system that meets the needs of all community members with a variety of options including cycling and walking, public transit, private automobiles, and taxis

A long list of potential road improvements were considered based on corridors that are experiencing or anticipated to experience congestion, potential improvements recommended in previous studies, and opportunities identified in Phases 1 and 2 of MoveSJ. These network improvements were assessed using the Saint John Model in consideration of proposed active transportation improvements and transit services.

Several network alternatives were modelled to test the effectiveness of potential network expansions to address demand while also considering the vision and goals of MoveSJ.

6.1.1 Network Assessment

To assist in determining the recommended network for Saint John, alternative networks were evaluated based on a qualitative assessment of the economic, environmental, social, and cultural impact to the City. The criteria were chosen to align with the New Brunswick Department of Transportation and Infrastructure's Strategic Multi-Criteria Analysis Model for Capital Infrastructure Investments as presented in Exhibit 6.1.

Exhibit 6.1: Strategic Multi-Criteria Analysis Model for Capital Infrastructure Investments (NBDTI)

Area	Provincial Objectives	Criteria
Economic	Stronger Economy	Job Creation
		Foster Private Sector Business Growth
		Supports Economic Development Plans
	Living within Our Means	Effective Service Delivery
		Maximizes Leveraging Opportunities
Environment	Enhanced Quality of Life	Mitigate Risks of Climate Change
		Environmental Impacts
Social		Health and Safety Impacts
		Access to Services that Meet Primary Needs
		Supported by Community Plans
		First Nations
Cultural		Preserves or Enhances Heritage Resources

6.1.2 Recommended Improvements

The recommendations outlined below were evaluated based on the NBDTI index (Exhibit 6.1) and are designed to be implemented in conjunction with Transportation Demand Management (TDM) measures described in Chapter 4 and the cycling programming recommendations detailed in Section 8.2.2. The recommendations are divided into two categories: improvements designed to improve vehicular flow and improvements designed to accommodate cycling infrastructure. Exhibit 6.2 shows the road improvements on a map and the full list of projects is available in Appendix A.

Road Improvements for Vehicular Flow

Route 1/Ashburn Lake Road/Retail Drive Interchange – A new interchange that provides full access to/from Route 1 will improve access in both directions including to the Hospital and University and Rothesay Avenue areas.

Ashburn Lake Road / Retail Drive Realignment – In conjunction with the interchange improvements, the realignment of Ashburn Lake Road and Retail Drive is recommended to improve traffic operations on Rothesay Avenue due to the closely-spaced/jogged intersection configuration.

The two projects above strongly support the economic criteria from the NBDTI by increasing access to the highway, providing access across the highway, and decreasing detours in the Eastmount area. Infrastructure changes to replace/reconfigure the existing network will also result in a low impact on operation and maintenance costs. There is also a high chance of sharing the infrastructure costs with public or private sector for the interchange improvements. Route 1/Ashburn interchange helps to complete of East Point and allows for the construction of "the Crossing" neighbourhood.

While the reconfiguration will increase the roadway footprint slightly, transportation demand management (TDM) measures proposed in MoveSJ increase the utilization/capacity of existing infrastructure, supporting the environmental criteria of the NBDTI.

Finally, the upgraded interchange and Ashburn Lake/Retail Drive Realignment support the social criteria of the NBDTI by increasing safety and significantly improving emergency response time to the Eastmount area.

Somerset Street/Paradise Row Improvement – A westbound double left turn and upgraded signal infrastructure is proposed to manage a chronic congestion hotspot. A concept plan for this improvement is included in Appendix B.

Road Improvements to Accommodate Cycling Infrastructure

Main Street 'Road Diet' – Main Street currently operates with three lanes in each direction between Chelsey Drive and St. Patrick Street. Existing vehicle counts indicate that there is lane capacity not being utilized. Forecasts suggest that even by 2041, traffic along this section of Main Street will not fill three lanes in each direction. A road diet is recommended for Main Street, reconfiguring into two lanes in each direction, a centre turning lane, and bike lanes. This recommendation is in line with the Central Peninsula Plan and overarching goals of supporting multimodal travel. This recommendation will decrease vehicular capacity, but the person-carrying capacity of the corridor is expected to increase, supporting the economic, social, and environmental criteria of the NBDTI.

In the interim, a short-term alternative option for Main Street has been developed. This design is based off a previous City project which included temporary bidirectional centre bike lanes installed in this section of Main Street

in 2013 when the Harbour Passage Trail was closed due to a major rehabilitation project occurring on the Harbour Bridge. At the time, delineator posts separated bicycle traffic from vehicle lanes and bike signals were installed at Simonds Street intersection. Cyclists were expected to dismount at the intersections and use the crosswalk to access the bicycle lanes in the centre of the roadway. A similar semi-permanent option is being explored by the City that provides a more sizeable barrier such as pre-cast concrete curbs or full-size concrete barriers. After consultation with the Province and detailed design is performed, this interim option would provide cyclists a connection while the permanent recommendation is designed and undergoes approval.

Main Street West-Bridge Road-Chesley Drive Lane Reconfiguration – These road segments include shared lanes that are part of the Trans-Canada Trail that should be upgraded to cycle tracks or protected bike lanes given the traffic volumes and speeds. As the only crossing of the Saint John River for pedestrians and cyclists, retrofitting bike lanes through lane narrowing or reconfiguration, including an eastbound protected bike lane on Chesley Drive to connect to the Harbour Passage Trail, is a priority for the cycling network plan.

Station Street 'Road Diet' – This road segment includes shared lanes that are part of the Trans-Canada Trail that should be upgraded. A road diet or lane narrowing is proposed to accommodate bike lanes.

City Road 'Road Diet' – This road segment includes shared lanes that are part of the Trans-Canada Trail that should be upgraded to cycle tracks or protected bike lanes given the traffic volumes and speeds. A road diet is proposed to accommodate cycle tracks or protected bike lanes. An alternative to the road diet is to widen the existing roadway. Widening of City Road is a practical option up to where City Road meets Marsh Street. The existing geometry of the roadway significantly changes between Marsh Street and Thorne Avenue and includes a bridge structure. Further traffic analysis is recommended for the implementation of a road diet through this section.

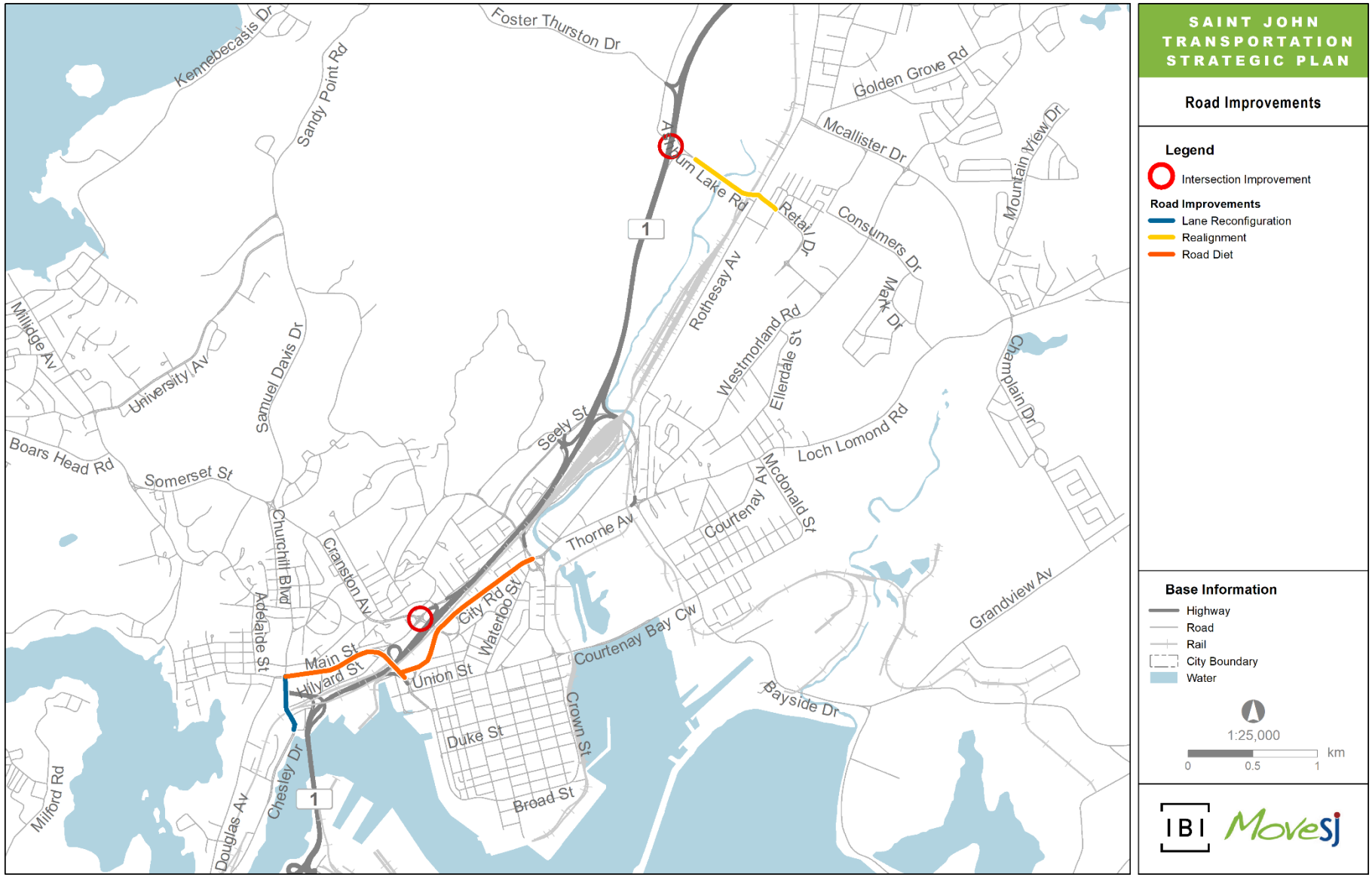
The above three recommended 'Road Diet' projects were evaluated using the cycling infill analysis tool described further in Chapter 7 and in the Cycling Strategy.

Intersection Improvements / Roundabouts – to address operational issues and/or congestion, a number of intersections were identified as candidate locations for a roundabout. Section 6.5 provide more information on the review of candidate locations and recommendations.

The above network changes should be done in conjunction with TDM measures proposed in Section 5.1.

Further cycling specific recommendations are discussed in Chapter 7.

Exhibit 6.2: Proposed Road Improvements



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6.2 Road Classification Strategy

A road classification system outlines the hierarchical structure of the road network based on a road's physical design, functional characteristics, type of function they serve, and surrounding land use. Streets have many purposes. Some are designed to move high traffic volumes, some are designed to provide access to adjacent property and accommodate active transportation facilities, while others support main street retail and community interaction, for example.

Road classification standards are useful for avoiding confusion over a road's function by consistently defining design and function during the planning of new developments, as well as in the operation of existing road systems. Road classification systems providing guidance on what type of infrastructure is needed to support the function of a given street.

To create safe neighbourhoods and accessible land use developments, it is important to have a classification system that considers the needs of all modes and not just the needs of motorists.

6.2.1 Current classification

Currently, the Saint John Municipal Plan (PlanSJ), under Section 8.5 and Schedule C, includes four basic road classifications for the City: Local Streets, Collector Streets, Arterial Streets, and Freeways.

While the current classification has worked in the past, designing a future road network that supports the goals of PlanSJ and MoveSJ will require more specific classifications to help define the purpose and functions of multimodal roads.

The existing road classification system is too broad to capture all street types in Saint John and needs to be revised to clearly define roadway standards and requirements for various roadway functions and land uses.

The Transportation Association of Canada (TAC) design standards recommend differentiating road classes between urban and rural areas and considering land use, in addition to traditional measures including speed, function, connections, and traffic volume.

6.2.2 Recommended Classification

The recommended road classification is developed with considerations of various road and land use characteristics such as speed limits, road geometry, development impacts, private street access, street connectivity, and complete street designs.

- **Speed Limits** – use of lower speed limits (40 km/h compared to existing 50 km/h and 70 km/h speed limit zones) (addressed in Move SJ Phase 1 in March 2017).

- **Road Geometry Considerations** – changes to the current cross-sections in the City's General Specifications to provide improved accommodation for pedestrians, cyclists and other vulnerable road users that incorporate design features that limit the need for reactive traffic calming measures.
- **Development Impacts** – changes to road classification over time such as the conversion of a Local street to a Collector through future street connections or new development.
- **Private Streets** – continuing to include a "Private" streets category in the classification system to identify those roadways that are not owned nor maintained by the City.
- **Street Connectivity / Future Roadway Linkages** – classifications for future road linkages based largely on the City's Future Land Use Plan and potential improvements to transit, emergency services and other City operational vehicle routings. This may involve changes in the classification of particular streets as a result of these future connections.
- **Complete Streets** – incorporating complete streets principles to consider the needs of all roadway users in the design of new roads and road retrofit projects.

Exhibit 6.3: Comparison of Rural and Urban Roadway Characteristics

Roadway Characteristic	Rural	Urban
Service Function, such as degree of mobility and land access	Relatively unlimited land access and maximum mobility	Controlled land access with associated mobility limitations
Traffic Volume and associated Level-of-Service (LOS)	Generally low traffic volumes and high LOS	Generally medium/high traffic volumes (depending on type of road) with LOS reductions during peak periods
Traffic Flow/ Composition of Traffic	Free Flow Mixed	Interrupted Flows
Running Speed of traffic during off-peak conditions	Medium to High (50-90 km/h)	Low to Medium (40-70 km/h)

Roadway Characteristic	Rural	Urban
Vehicle Types (proportion of cars, trucks, buses)	Can include high percentage of heavy vehicles. May include slow moving vehicles including heavy vehicles	May include high degree of heavy vehicles but only on designated truck routes

The benefits of the expanded classification system are:

- More detailed classification means less interpretation needed by developers on the road design standards;
- Differentiating design and functional standards for rural and urban settings;
- Better prioritization for street maintenance resulting in a more effective use of resources; and
- Increased safety through more appropriate speed limits for geometric design and intended service function.

New Classification

The follow classes are proposed:

Urban Classes

- **Major Arterial** – Primary function is to distribute large volumes of traffic at moderate to higher speeds between other Major Arterials, Minor Arterials, Collectors and to/from Freeways. Access to abutting lands is strictly regulated.

  Examples – Chesley Drive, Fairville Blvd.

- **Minor Arterial** – Generally distribute large volumes of traffic between other Major Arterials and Collector Streets. Access to abutting lands is regulated.

  Examples – King Street, Lansdowne Avenue.

- **Urban Collector-Community** – Generally, Urban Community Collectors balance the provision of mobility in the urbanized City with land access. They do this by collecting and distributing traffic between urban communities from Local Streets and other Urban Collectors to Arterial Streets (Major and Minor). Direct access to property may be permitted.

  Examples – Adelaide Street, Catherwood Street.

- **Urban Collector-Industrial** – Balance the movement of people and goods with an emphasis on commercial vehicle movement (trucks) in areas designated as Industrial (Light and Heavy) in the Municipal Plan. These roads are typically suited to Truck Route designation.

  Examples – Bayside Drive, Grandview Avenue.

- **Urban Local** – Urban Local streets generally provide access to abutting properties at low travel speeds and volumes within the designated Primary Development Area and are not intended to carry through traffic.

  Examples – Camarthen Street, Harbourview Drive.

Rural Classes

- **Rural Collector-Community** – The roads provide access to residential communities beyond the City's Primary Development Area. These rural communities are characterized by low density and low developmental activity. Features such as transit, parking, and traffic calming are typically not applicable on these roads due to the surrounding land use and intended function. Pedestrian and cyclist facilities are not generally provided, unless the roadway links two areas of development separated by reasonably short distance, or if the roadway is on the planned cycling and walking network.

  Examples – Foster Thurston Drive, Rothesay Road.

- **Rural Collector- Industrial** – Similar to Rural Collector/Community Roads but primarily serving areas designated as Light and Heavy Industrial in the Municipal Plan. As such, these roads serve higher volumes of heavy truck traffic at lower speeds compared to Rural Community Collectors.

  Examples – Bayside Drive, Red Head Road.

- **Rural Local** – Rural Local roads are similar in design to Rural Collectors, but place more importance on land access, serving lower traffic volumes at lower speeds along road sections with multiple rural access driveways. It is recommended that Rural Locals provide connections only with Rural Collectors and other Rural Locals.

  Examples – Acamac Beach Road, Fisher Lakes Drive.

- **Private Road** - Saint John has over 100 private roads, many coming into the City through previous municipal amalgamations. Since they do not form part of the City's public road infrastructure, they generally do not have access to city services like snow clearing, street maintenance, or street lights.

  Examples – Bustin Blvd., Irving Road.

6.3 Road Safety Strategy

Road safety is not an isolated subject; it is part of a system that consists of vehicle and street design, government policy, and user behaviour. Therefore, improving road safety is also not an isolated strategy, but rather safety must be embedded in all aspects of city building; and this is the approach that the City of Saint John has taken.

The MoveSJ Road Safety Strategy builds on a number of existing city policies and practices, and on the other MoveSJ strategies to put forward overall best practices for improving the safety of all road users. The strategy pulls on nationally and internationally recognized guiding principles including:

- **Integrated Road Safety Management System** – Part of the NCHRP Report 501 – Integrated Safety Management Process, this system includes a defined and iterative process that results in a detailed action plan to address identified safety issues;
- **Vision Zero** – A global movement that strives to change the perception that serious "accidents" are just one of the unavoidable costs of mobility;
- **Safe Systems Approach** – Similar to Vision Zero, the guiding principle is that it is not acceptable for mistakes on the road to result in serious injuries of loss of life. This approach takes on a holistic view of the road transportation system and the interactions of all its parts.
- **Canada's Road Safety Strategy 2025** – Provides road safety principles, strategies, countermeasures, and best practices that are standardized across the country.

The strategic documents with safety-related policies, guidelines, and/or strategies that were published by the City of Saint John between 2010 and 2018 are described in Exhibit 6.4.

Exhibit 6.4: Safety-Related Strategic Documents

Strategic Document	Description
PlanSJ – City of Saint John Municipal Plan	The City's 2011 Municipal Plan (PlanSJ) places greater emphasis on improving active transportation, and the safety of vulnerable road users, such as pedestrians and cyclists. The strategic documents also emphasize the importance of finding a balance between road users – to ensure road safety for all.
City of Saint John Trails and Bikeways Strategic Plan Summary Document	The Trails and Bikeways Strategic Plan is a comprehensive document from 2010 that outlines how to create a connected trail and bikeways network throughout the City of Saint John. The study included route identification and assessment, bottlenecks

	and conflict area identification, network development and standards, and an implementation strategy.
City of Saint John Traffic Calming Policy	In 2012, the City of Saint John released a Traffic Calming Policy to target speed reductions on neighbourhood streets. The document is a detailed action plan to re-design neighbourhood streets to encourage the desired driving behaviours, and to inspire increased active transportation.
Winter Management Plan for Streets and Sidewalks	The Winter Management Plan for Streets and Sidewalks outlines a set of standards and best practices for maintaining safe road conditions for all users year round.

MoveSJ Strategies

Safety is a key component of each of the MoveSJ Strategies. In particular, in the Pedestrian Strategy there several safety recommendations including design principles, policies and programs to improve the actual and perceived safety for people who choose to walk.

The Truck Route Strategy recognizes the need to balance the goods movement industry, with the needs of other road users, specifically vulnerable road users. Recommendations include managing which roads trucks can use and when, and increasing signage and awareness of designated truck routes.

Design principles for safe urban streets:

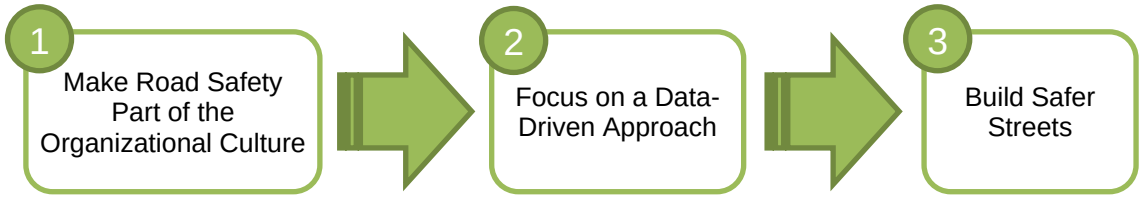
- People come first;
- Design for safety;
- Street context is crucial;
- Flexibility is an asset

Beyond the specific safety recommendations in the Pedestrian and Truck Route Strategy, MoveSJ strategies related to roadway classification, comprehensive system improvements, cyclists, modern roundabouts, and community consultation, will all have a direct or indirect impact on how road user safety is managed in City projects.

6.3.2 Proposed Road Safety Strategies

There are nine strategies proposed in MoveSJ's Road Safety Strategy and they are organized into three categories outlined in Exhibit 6.5 and expanded on below:

Exhibit 6.5: Outline of Proposed Strategies



Make Road Safety Part of the Organizational Culture

1. **Commit to a definitive vision for road user safety -** Committing to Vision Zero, or a similar safety-first vision, sets an ambitious goal that reinforces that it is not enough to just reduce traffic fatalities. Once the vision is established, a system needs to be put in place to make sure that all stakeholders understand their respective roles in achieving the goals and objectives that are set in pursuit of the vision.
2. **Embrace the Safe Systems Approach -** Embrace the philosophy that people make mistakes, but those mistakes should not cost them their lives. Physical changes in the system are important but it can be more effective to start with leadership, standards, data, research and evaluation, and legislation and policy (see Exhibit 6.6).

Exhibit 6.6: Safe Systems Approach, Canada Road Safety Strategy 2025

Source: Canada's Road Safety Strategy 2025

3. **Educate and engage partners and the public -** The value of education, in comparison with the more tangible interventions is often overlooked. However, the path to road safety requires actions from all stakeholders and

all road users, and educating and engaging them early on in the process is key. For example, designs that make perfect sense to transportation professionals can be totally unintuitive to members of the public.

Focus on a Data-Driven Approach

4. **Improve the quality and availability of relevant safety data -** A data-driven, decision-making approach is the most efficient way to invest in road safety improvements. More complete and reliable data allows for realistic goals to be set, better quality decisions to be made, and positive public support to be earned.

5. **Establish a starting point -** By using currently available data and speaking to the community a baseline of performance measures can be established to identify early improvements.

6. **Conduct a preliminary network screening –** This two-stage process uses multiple years of data to first consider all available data to identify the "long-list" of locations with high concentrations of collisions. The second screening refines that list and aligns it with the stated goals and objectives of the road safety plan to determine a prioritized list of projects.

7. **Prioritize common emphasis areas -** Road safety strategies are typically organized by emphasis areas, each with their own set of strategies and countermeasures. The emphasis areas unique to Saint John need to be established, however recommended emphasis areas are:

    - **Vulnerable road users**: This includes pedestrians, cyclists, school children, and older adults where the consequence of collisions are severe. Examples of potential counter measures include installing pedestrian crossings and sidewalks and reducing crossing distances with curb extensions.
    - **Aggressive and distracted driving:** These common and dangerous behaviours, often result in speeding, driving too fast for the current conditions, following too closely, and failing to yield the right-of-way. Examples of potential counter measures include education, enforcement and traffic calming measures such as speed bumps.
    - **Speeding**: Higher speeds carry a higher risk of serious injury or fatality occurring by reducing a drivers' field of vision, reducing driver reaction time, increasing vehicle stopping distance, and increasing the amount of force inflicted on the vulnerable road user at impact. Examples of potential counter measures include reducing speed limits, reducing lane widths and targeted enforcement.

8. **Measure Success -** Realistic and attainable goals, and key performance indicators (KPIs), are vital in measuring the success of any plan. These

KPIs can quantify how well implemented strategies are working, and can be used to identify road safety trends.

Build Safer Streets

9. **Create and update design guidelines to prioritize safety** – It is easier, and more cost effective, to incorporate safety into new projects rather than to mitigate the poor safety performance of flawed designs. The City should update, create, or reference policies and guidelines that require all redesigns to prioritize road user safety, especially for vulnerable road users so new projects are safe from the beginning.

6.3.3 Implementation Plan

Exhibit 6.7 organizes the proposed strategies into a potential timeline for action. This implementation plan will setup the framework for the City to spearhead a culture change and install some quick win countermeasures that can improve safety in the short-term.

Exhibit 6.7: 5 Year Implementation Plan

6.4 Parking Strategy

The parking strategy is an important tool used to define the urban landscape of the city through the management of its on-street and off-street parking. Parking is abundant within the City of Saint John, including in the Uptown Peninsula, where parking is in high demand by residents, commuters and visitors.

The parking strategy mainly focused on the Uptown Peninsula where parking is provided through on-street parking, municipally-owned off-street parking, and privately-owned off-street parking. Parking rates and fines are discussed separately as a Transportation Demand Management measures in Section 5.1.

6.4.1 Peer Review and Key Directions

In order to improve Saint John's existing parking practices, experiences and standards that have been successfully established in the Maritimes and Ontario were reviewed. Saint John's parking prices and fees, parking by-law regulations (vehicle and bicycle), and cash-in-lieu of parking policies were compared to those of other similarly sized municipalities to determine the areas where Saint John can improve.

On Street Parking Limit

On-street parking limits are set to facilitate turnover and maintain parking availability on the street. Saint John has a maximum on-street parking time limit of 2 hours which is within the same range of similar sized and neighboring cities.

Shared Parking Policy

Shared parking involves the use of one parking facility by more than one land use. The practice aims to reduce the overall parking requirement by taking advantage of the respective land use's different parking demand patterns by time-of-day. For example, employment land uses traditionally experience a peak parking demand during weekday business hours while residential land uses peak during weekday evenings and weekends. Currently, Saint John does not have any Shared Parking Policies in place.

Bike Parking

Saint John's bicycle parking requirements are based on the number of vehicle spaces required. While this practice is also found in Fredericton and Moncton, it limits the maximum amount of bike parking based on vehicles parking. There are other practices found in Ontario with bike parking rates based on Gross Floor Area which may be more aligned with supporting multimodal travel and the goals of Saint John.

Cash-in-lieu of Parking

Cash-in-lieu of parking is a policy used in many Canadian municipalities as a mechanism to address parking supply management. It can be used to:

- Facilitate redevelopment where providing parking on-site is either too costly or difficult due to site configuration or condition (i.e. heritage);
- Encourage shared or short-term parking strategies, discourage vehicle use, and encourage and potentially fund transit;
- Intensify and re-urbanize Downtown cores (especially former surface lots);
- Protect heritage buildings; and
- Assure property owners that sufficient parking opportunities will be available.

Cash-in-lieu of parking policies generally focus on a specific geographic area, often a Downtown core or an area that the municipality has targeted for intensification or redevelopment. These policies allow developers to pay cash as an alternative to providing the minimum number of parking spaces required by the Zoning By-law. The collected funds are placed in a parking reserve fund, and are normally used for the acquisition, improvement, and construction of municipally owned parking facilities.

The construction of municipal parking through cash-in-lieu funds allows a municipality to own parking Downtown, and therefore control the parking supply and pricing, while supporting desired land uses. Cash-in-lieu is most commonly used for office developments, but is also seen in some municipalities for retail and residential buildings. Municipalities may build additional parking in order to encourage a mix of uses in the Downtown core and support economic development policies.

The City of Saint John does not currently have a cash-in-lieu policy in place.

On-Street Parking and Street Maintenance

Saint John's existing street cleaning and winter road maintenance practices are determined to be similar to those of the reviewed comparator municipalities. Snow clearing practices slightly vary between municipalities in terms of the start and end times, and the period during which the winter restrictions are in effect. The winter parking restrictions are ideally tailored to the local climate of each municipality.

6.4.2 Recommended Actions

The following are recommended actions to address parking demand in Saint John:

- Maintain current parking supply and existing 2 hour parking limit;

- Increase the fine associated with the accessible parking violation to $300 to match the best practices established in the comparator municipalities;
- Consider adopting a cash-in-lieu rate that represents approximately 50% of the costs to provide municipal parking, either in structures or surface lots;
- Adopt bicycle parking requirements for non-residential land uses based on gross floor area rather than the number of vehicle spaces required;
- Expand residential permit parking programs;
- Consider adopting a scheduled Uptown street cleaning strategy to allow on-street parking on both sides of the Uptown streets during the majority of the year;
- Maintain existing winter parking restrictions; and,
- Improve upon existing TDM measures to promote alternative modes of transportation. Potential TDM measures include carpooling, cycling, transit, and carshare.

For more detailed recommendations, refer to the Phase 2 Parking Strategy.

6.5 Roundabouts Strategy

To modernize the road network and address traffic hotspots, Move SJ examined candidate locations for roundabouts in Saint John in the Modern Roundabout Strategy. This Strategy evaluated the feasibility of each location and recommended a prioritization plan for implementation.

When situated appropriately, roundabouts can provided several benefits over conventional intersections. These include:

- **Safety:** roundabouts offer a safer environment for motorists because vehicles travel in the same direction which reduces the number of conflict points. Vehicles also travel at lower speeds through roundabouts which, in combination with other safety measures, can benefit the safety of pedestrians and cyclists.
- **Operation:** lower operating speeds at roundabouts means that drivers entering roundabouts require smaller gaps between circulating vehicles to enter. Roundabouts also do not require vehicles to stop unnecessarily, resulting in improved traffic flow.
- **Environment:** roundabouts can reduce fuel consumption and emissions by reducing acceleration and deceleration that lead to higher fuel consumption.

- **Economic:** the long-term cost savings of a roundabout compared to a traditional intersection can be significant. Roundabouts require less maintenance than traditional intersections and contribute to reducing travel times, and collision frequency and severity, all of which have economic benefits.

6.5.1 Candidate Locations

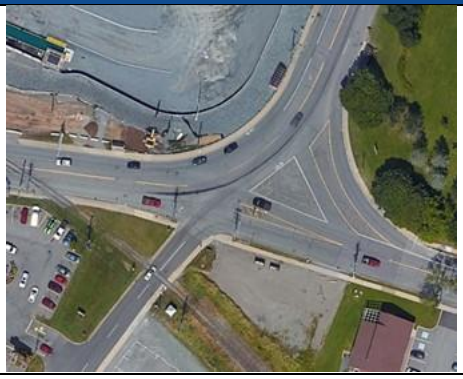
The Modern Roundabout Strategy identified six locations as potential candidates for roundabout implementation. The locations were selected because of their minimal impacts on adjacent properties and based on previously identified operational issues such as traffic congestion and safety concerns. The candidate locations were:

- Rothesay Rd at Ashburn Rd;
- Woodward Avenue at Boars Head Rd;
- Manawagonish Rd at Gault Rd;
- Main St West at Lancaster Ave (Simms Corner);
- Sandy Point Rd at Foster Thurston Dr; and
- Millidge Ave at Somerset St.

For each location background data was reviewed, potential roundabout options were developed, concept plans were created, and a traffic model analysed how traffic would flow along the roundabout corridor where traffic counts were available.

Based on this analysis, the candidate location at Woodward Avenue at Boars Head Road was removed as it did not experience operational challenges in its existing configuration. All other locations are recommended for installation in the order of priority outlined in Exhibit 6.8.

Exhibit 6.8: Recommended locations for roundabout installation in order of priority

Recommended Location	Description	Existing configuration
Main St West at Lancaster Ave (Simms Corner)	This is currently a 4-legged intersection with a unique shape that serves a high volume of traffic including trucks. Reconfiguration is critical to the long-term traffic flow and the removal of trucks from residential streets.	

Recommended Location	Description	Existing configuration
Rothesay Rd at Ashburn Rd	This is currently a 3-legged intersection with bike lanes on Rothesay Road and sharrows on Ashburn Road. These bike facilities are part of the Great TransCanada Trail. Reconfiguration is required to address the capacity issues and traffic delays experienced under the existing conditions.	
Sandy Point Rd at Foster Thurston Dr	This is currently a 3-legged intersection located on a curve making sight distance limited. Reconfiguration is required to address operational and safety concerns.	
Manawagonish Rd at Gault Rd	This intersection currently consists of 4 legs that are skewed at inconsistent angles, each with varying traffic controls. Reconfiguration is recommended to prevent operational or safety concerns as new developments are introduced.	
Millidge Ave at Somerset St.	This is currently a 3-legged intersection with a unique shape and irregular traffic controls. There is also a U-turn lane and bike lanes that are part of the Campus-Harbour Trail. Reconfiguration is recommended to address operational and safety concerns, especially for pedestrians and cyclists.	

7 Trucks in a Port City (Goods Movement Strategy)

The safe and efficient movement of goods by truck is very important to the Saint John and area economy given its industrial base and multi-modal terminals. An effective truck route system focuses truck traffic on a selected number of streets, improving safety and structural longevity of non-designated streets and minimizing impacts of heavy truck traffic on sensitive land uses. These are very important objectives for a sustainable transportation system.

In developing a goods movement strategy for Saint John, truck routes, restriction signage, oversized loads and noise were reviewed. Detailed information on the development of the strategy is provided in the *Saint John Strategic Plan Phase 2 – Goods Movement Strategy Long Term Vision (November 21, 2018).*

Truck Routes

The City's system of truck routes were reviewed. Several changes to truck routes were proposed due to the availability of parallel routes and the negative impacts on sensitive land uses along the current routes. Since the time of the review (2018), a number of these proposed changes were adopted in the City's latest Traffic By-law (January 2020).

Truck Restriction Signage

There are instances in Saint John where prohibitive truck route signage causes confusion for drivers. There are 24 intersections that include prohibitive "No Trucks" signage on road segments that are not included in Schedule I[4], meaning that the prohibition is not enforceable. The Goods Movement Strategy recommended that these signs be removed and a complete assessment of truck route signage along designated truck routes be conducted to encourage appropriately labeled truck routes. Sign placement should be based on the following criteria:

- History of complaints in the area;
- Truck volume data;
- Amendments to Traffic By-law schedule I and K; and
- Consultation with the local trucking industry to identify areas of confusion.

[4] Schedule I restricts trucks from using certain specified routes, even if they provide the shortest path between the point of delivery and the designated truck route.

Consistent signage will encourage driver compliance which in turn will maintain the integrity of the truck route system.

Truck Noise

The best way to reduce or avoid negative impacts of truck noise is to move truck traffic away from sensitive land uses, such as residential neighbourhoods. However, that is not always possible; sometimes trucks need to travel through residential areas. In cases where this happens, engine retarder brakes were identified as a significant source of truck noise. There are two basic ways for a municipality to address this issue. One is through signage discouraging the use of engine breaks at specific locations and the other is through prohibiting the use of engine brakes in certain locations.

Saint John already uses signage to discourage engine brake use. This Plan recommends simplifying the signage to maximize driver readability. Prohibiting engine breaks is a more complex issue. Engine brakes are essential safety equipment and prohibiting their use can create liability issues for the jurisdiction banning their use. In addition, enforcement can be a challenge because it involves enforcing a moving violation and a noise by-law violation. MoveSJ recommends that the City review the authority and enforceability of enacting a by-law prohibiting engine brake use within the City except in emergency situations and determine if a by-law is an appropriate approach.

7.2 Recommended Actions

7.2.1 Short Term

1. Consult with goods movement stakeholders on the impacts of a Complete Streets policy on goods movement in the Central Business District (South Central Peninsula recommended changes to truck routes
2. Manage large truck deliveries in South Central:
    a. Prohibit 53 foot or larger trucks from South Central Peninsula streets except on the designated truck route to the Port of Saint John;
    b. Alternatively, adopt a policy that significantly reduces the number of loading zones that are long enough for a truck with 53 foot trailer to discourage use of these trucks; and / or
    c. Alternatively, limit truck access by trucks with 53 foot trailers to time-of-day or day-of-week restrictions.
3. Enact amendments to the City's Traffic By-law, Schedule K, to remove recommended truck routes on sections of Churchill Blvd and Foster Thurston Drive;

4. Remove all 24 unregulated Truck Restriction signs;
5. Adequately sign designated truck routes based on signage warrants;
6. Explore policy that would mandate that trucks use highways more for intra-city trips, including:
    a. Considering an amendment to the Traffic by-law that would require trucks to use modern Provincial highways such as Highway 1 and excluding Provincial Designated (Route 100) or three Regional Highways via their interchanges if less travel on City streets between the origin and destination would be required compared to use of designated City truck route. An example of this would have trucks required to use Route 111 rather than bypass on Golden Grove Road; and,
    b. Given that intra-city Provincial and Regional Highway (PDH and RDH) systems parallel Highway 1, advocate for the Provincial DTI's support of Recommendation 6.a relating to regulating trucks on these PDH's and RDH's.
7. Improve management of noise from trucks including:
    a. Review authority and enforceability of enacting a City by-law that prohibits use of Engine Retarders (Jacob Brakes) except in emergency situations within the City implement such a by-law contingent on this review;
    b. Shorten the current engine retarder courtesy signs to "Please No Engine Retarders" to improver driver readability;
    c. Create a policy on the use of these signs with focus on residential areas, on truck routes, downhill and rapid deceleration areas; and,
    d. Use more often the City's noise by-law that prohibits excessive idling and exhaust system modifications on trucks.

7.2.2 Medium Term

1. Remove Harding Street West from Traffic By-Law Schedule K after Simms Corner is reconstructed; and
2. Remove Duke Street West, Lancaster Avenue, Prince Street and Dufferin Row from Traffic By-Law Schedule K after Simms Corner is reconstructed.

8 Transforming the Walking and Cycling Experience

Walking and cycling are important transport modes in urban areas. Active transportation has numerous benefits including reducing traffic congestion, improving public health, and encouraging a sense of community by having more people using streets and sidewalks. Saint John has many opportunities for walking and cycling. The downtown peninsula has many destinations close together, which makes active transportation an attractive and viable option for many short trips, while in suburban Saint John, destinations are farther apart and may be more challenging to access by active modes. However, in all locations, even those with many destinations close by, pedestrians and cyclists still need adequate facilities to encourage safety and comfort. When more people feel safe and comfortable walking and cycling, more people will use active modes for more trips.

8.1 Expanding the Pedestrian Network (Pedestrian Strategy)

The MoveSJ Pedestrian Strategy places an emphasis on planning and designing in a way that makes the pedestrian experience safe and comfortable with a focus on expanding the network of streets that have sidewalk facilities.

8.1.1 Pedestrian Design Strategies

A key part of improving the pedestrian experience is designing for safety, which means creating streets that reduce the risk of driver error and impose controls to protect vulnerable road users. The pillars of designing for safety include:

- **People come first.** Cities are built by and for people, and street design needs to embrace this, including supporting multi-modal travel and designing places that are attractive to be in, not only to travel through. This notion is reinforced throughout PlanSJ which includes key policy recommendations intended to:

  “encourage alternative travel by creating an urban environment that encourages walking, cycling and transit use and increases opportunities to live close to work and satisfy day-to-day needs locally without relying on the automobile.” - PlanSJ Urban Design Goal #4

- **Design for safety.** Create street designs that encourage appropriate road user behaviour. Be mindful of the potential implications of each design decision not only on drivers but also on vulnerable road users. When people make mistakes on the road, death should not be an outcome.

- **Street context is crucial.** Street design needs to respond to and influence the desired character of these public corridors. Saint John can provide direction through Municipal Plan goals and policy, and an understanding of the vision of the communities that the streets serve. Transportation objectives must be aligned in order to support overall safety objectives.
- **Flexibility is an asset.** Urban streets are continually evolving, and design needs to adapt as we learn more about accommodating different users and the value streets have as public places. Guidelines and standards are intended to support, rather than restrict, the professional judgment of planners and engineers. As demographics shift over time, and Saint John's urban form intensifies to focus development within existing urban areas, the design of streets and transportation planning must also evolve.

Planners and designers are responsible for exercising good professional judgment and experience in the best interests of public health, accessibility and safety. Any design guidelines should be applied with care and consideration for the local conditions. Effort should be made by planners and designers to strive to comply with guidelines, but guidelines are not a substitute for good professional judgment. Where a design solution is proposed that does not comply with current guidelines, a more rigorous justification of the design decisions should be provided along with incorporating appropriate mitigation measures.

8.1.2 Sidewalk Infill Strategy

A program to infill sidewalk gaps can help to gradually expand the pedestrian network throughout the city. Sidewalk infill programs usually focus on constructing new sidewalks along streets that do not have sidewalks within established neighbourhoods that do not have sidewalks. The main goal of a sidewalk infill program are to improve:

- Safety;
- Continuity of the sidewalk system;
- School connectivity;
- Recreation and park connectivity;
- Transit access; and,
- Land use connectivity.

An expanded pedestrian network makes walking safer and more inviting for residents and can in turn lead to more walking trips.

8.1.3 Harbour Passage

The centrepiece of the City's pedestrian and active transportation system is Harbour Passage, a series of inter-connected waterfront parks, recreation spaces and heritage sites. Harbour Passage features over 3 km of multi-use pathways bordering the inner harbour from Bentley Street to the south end of Prince William Street as shown in Exhibit 8.1 Harbour Passage.

Exhibit 8.1: Harbour Passage Pedestrian Route

8.2 Providing a Safe and Efficient Cycling Network (Cycling Strategy)

Similar to the Pedestrian Strategy, the MoveSJ Cycling Strategy recommends a safe and efficient cycling network that will encourage more people to cycle for their daily travel. The cycling network is just one component of this though - in addition to a cycling network, MoveSJ includes a cycling programming strategy, policy directions and other recommendations that will make cycling a more attractive and viable transportation option.

8.2.1 Network Development

Developing the Cycling Strategy involved three network updates:

- Undertaking a high-level cycling impact analysis to identify areas of highest potential across the City;
- Reviewing the previously identified priority routes and overall cycling and trails network plan to confirm priority corridors; and
- Reviewing the existing Trans-Canada Trail route to identify corridors to be upgraded, including implementation strategies to address deficiencies.

The City's current primary cycling network plan is the 2010 Trails and Bikeways Strategic Plan. The plan identifies numerous priority corridors, approaching network development from a citywide perspective. However, this approach presents some challenges to implementation as it involves numerous stretches of lengthy infrastructure spanning the full City limits.

In an effort to focus investment where it matters most, a priority review was completed as part of MoveSJ with the idea of developing a "hub and spoke" network. This type of network would be made up of a main "hub" destination (Uptown Saint John) and a series of "spokes" that are important employment and commercial centres (such as the Saint John Regional Hospital / University of New Brunswick Saint John area) or residential neighbourhoods, connected by cycling facilities that form a wide-reaching network of priority corridors. This approach to network development draws on the findings of the Cycling Impact Analysis, and also considers a core 5-km cycling distance as a target for investment.

In addition to refreshing the priorities for implementation from the 2010 Strategic Plan, this cycling plan update incorporates recent and emerging network considerations, including:

- Findings and recommendations from the Central Peninsula Neighbourhood Action Plan such as new cycling network links (e.g. Sydney Street and Charlotte Street);
- Coastal Link Trail Routing and Feasibility Study, which identifies a plan for a Regionally-significant trails facility; and
- TMP-related road and transit network considerations.

To inform network selection and provide justification for the proposed cycling network an analysis of potential cycling links was conducted using the following criteria:

- **Connectivity:** A primary goal of the network is to help to connect existing and planned pieces of cycling infrastructure in order to improve the usability of standalone links and to provide a connected network that encourages cycling for transportation purposes.

- **Population and Employment Density:** Population and employment density can support additional active transportation trips. Areas of higher population and employment density often have built form and land use patterns that support active transportation.
- **Key Destinations:** Major trip generators such as schools, and recreation/community centres should be accessible by active transportation so that residents have options when accessing essential services.

Details on the evaluation framework are provided in the Cycling Strategy.

8.2.2 Recommendations

Priority Cycling Network

The priority cycling network that resulted from the network development exercises includes many of the core links in the 2010 Plan but adds some new links that were identified to address existing gaps, improve connectivity or create a more intuitive connection between the “hub” and “spokes” of the network.

The priority cycling network and proposed Trans Canada Trail upgrades are shown in Exhibit 8.2 and Exhibit 8.3, respectively. For a full list of improvements see Appendix A.

Exhibit 8.2: Priority Cycling Network

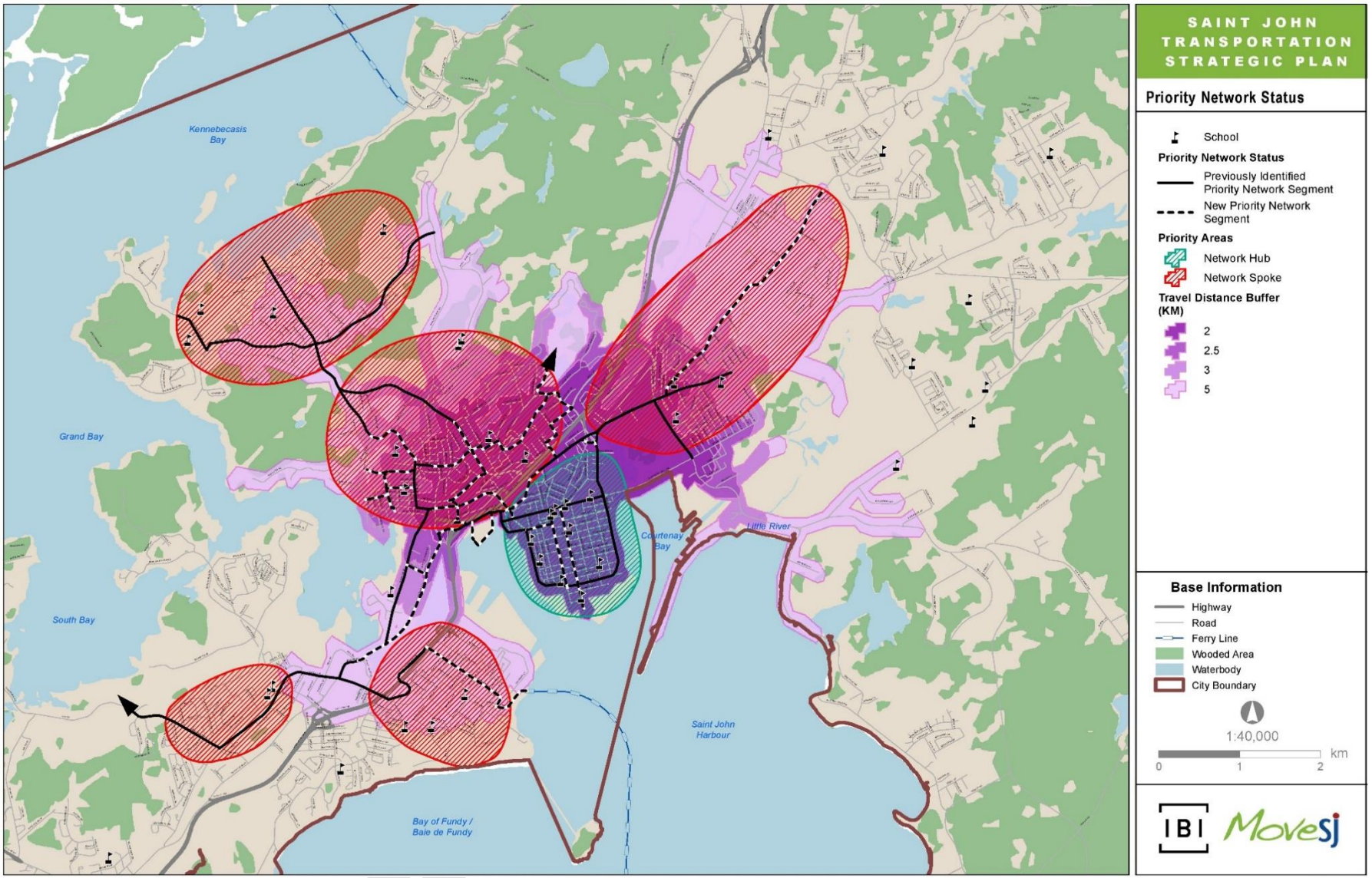


Exhibit 8.3: Trans Canada Trail - Proposed Implementation Strategy

Road Improvements

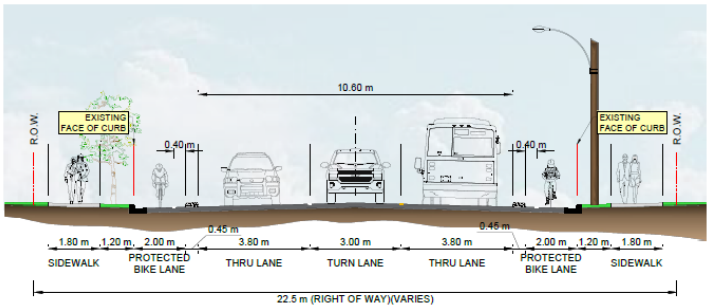
In addition to the priority cycling network, several road improvement projects described in Chapter 6 of this document (Road Network for a Multimodal City) recommend the addition of cycling facilities. These projects are listed below, and more details can be found in Section 6.1.2.

- Main Street 'Road Diet'
- Main Street West-Bridge Road-Chesley Drive Lane Reconfiguration
- Station Street 'Road Diet'
- City Road 'Road Diet'

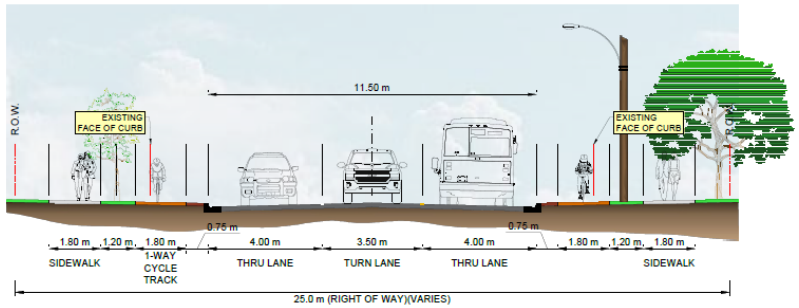
Typical cross-sections have been included in Exhibit 8.4 to illustrate how active transportation facilities can be implemented within existing corridors. These cross-sections include:

- Typical section #1: 4 vehicle lanes to 3 vehicle lanes with protected bike lanes. (Example sections: Station Street, Chesley Drive, and City Road)
- Typical section #2: 5 vehicle lanes to 3 vehicle lanes with raised cycle tracks. (Example sections: Bayside Road and sections of Crown Street)
- Typical section #3: 2-lane streets with painted bike lanes. (Example sections: Woodward Ave, Millidge Ave, Broad Street and Sydney Street)
- Typical section #4: 6 vehicle lanes to 4 vehicle lanes with a median and raised cycle tracks (specific to Main Street).

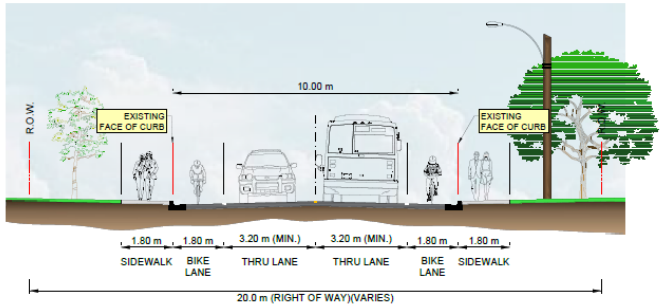
Exhibit 8.4: Proposed Typical Cross-Sections



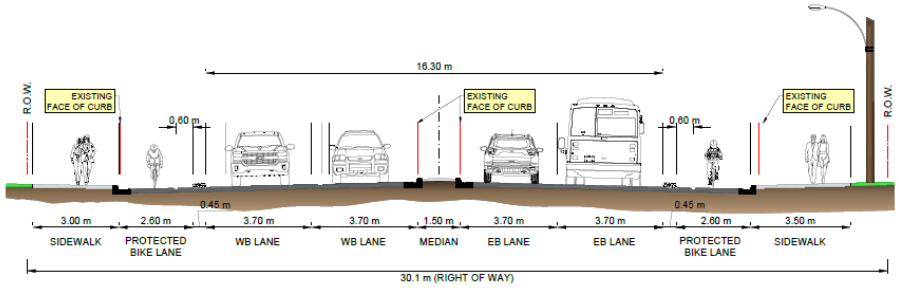
CROSS-SECTION #1
EXISTING 4 LANE / PROPOSED 3 LANE TWO-WAY STREET
WITH BARRIER-PROTECTED BIKE LANES



CROSS-SECTION #2
EXISTING 5 LANE / PROPOSED 3 LANE TWO-WAY STREET
WITH RAISED CYCLE TRACKS



CROSS-SECTION #3
EXISTING 2 LANE / PROPOSED 2 LANE TWO-WAY STREET
WITH PAINTED BIKE LANES



CROSS-SECTION #4
EXISTING 6 LANE / PROPOSED 4 LANE WITH MEDIAN
(MAIN ST.: METCALFE ST. TO LANSDOWNE AVE.)
WITH BARRIER-PROTECTED BIKE LANES

Policy Directions

Developing and integrating key policies in the City's regulatory framework is an important part of the overall cycling strategy. Two policy directions are recommended to support the continued integration of cycling infrastructure into Saint John's transportation network:

- **Complete Streets:** "Complete Streets" are designed, operated and maintained to enable safe access for all users. Pedestrians, cyclists, transit riders and motorists of all ages and abilities must be able to safely move along and across a complete street. As part of Phase 2, recommendations were made to adopt a Complete Streets policy to improve the consideration of pedestrians in the road design process. A Complete Streets policy can help support improved cycling infrastructure through:
    - Integrating complete streets principals into all applicable transportation projects;
    - Applying a network approach to build a cohesive and connected network of safe facilities; and,
    - Improving cyclist and pedestrian considerations during the planning, design, operation and maintenance of roadways.
- **End of Trip Facilities:** The provision of adequate, safe, and convenient bike parking and supporting facilities are important to encourage cycling as a regular mode of transportation for residents and visitors. Like automobile parking, there is a need for both short-term bike parking for visitors and long-term bike parking for residents. The City should consider:
    - Adding bike parking facilities near major destinations throughout the City;
    - Adding long-term bike parking requirements to the Zoning By-Law for land uses such as Offices, Apartment Buildings, and Hospitals; and,
    - Offering incentives to businesses that provide dedicated showers and changing facilities for their employees.

Programming

A cycling programming strategy can provide the support, education, promotion and capacity building to help build and sustain a biking culture. The programming strategy includes the following:

- **Community-based initiatives** are aimed at residents living within Saint John. These can target trips related to work, school, recreation, or errands.

- **Workplace-based initiatives** are aimed at larger employers in Saint John and target trips to and from work. Work trips are optimal candidates for conversion to active modes because they are made regularly between the same origin and destination.
- **School-based initiatives** are aimed at students of all ages. School trips have many of the same characteristics as work trips, but can vary daily in the case of post-secondary students, and come with increased safety concerns in the case of younger students.

These initiatives fall under the following four categories:

- **Encouragement and Outreach** initiatives aim to inspire individuals who are interested in starting to cycle and helping encourage those that want to continue. Examples include hosting promotional pop-up events in locations with large amounts of pedestrian traffic and hosting community bike rides.
- **Educating Road Users** focuses on initiatives that promote safe cycling practices through public and targeted education activities for motorists, cyclists and other road users. Examples include supporting cycling education programs and implementing a positive enforcement campaign.
- **Promoting the Network** involves providing information on how to navigate the cycling network, which is an important part of encouraging people to use it. Examples include developing print and digital cycling maps and an active transportation wayfinding and signage strategy.
- **Capacity Building** can be defined as enhancing the potential of stakeholders to accomplish collective goals related to active transportation. Examples include school travel planning programs and implementing a municipal cycling advisory committee.

Bike Sharing

Bike sharing is ideal for short distance point-to-point trips within a city and provides the ability for members to pick up a bicycle at any station and return it to any other bike station within the covered area. Bike share can provide the convenience of a bike without having to own a bike and also comes with the convenience of being able to use a bike for select trips during the day.

The City of Saint John does not operate a commercial bike sharing program, however, there has been a successful bike sharing program operating out of the Crescent Valley neighbourhood since 2014, which shares donated bikes with residents who do not own a bike. It would be beneficial for the City to build on this success with expansion and support of a city-wide bike sharing program.

9 Refreshing the Transit Network (Long Term Transit Vision)

Public transit is an important part of the overall transportation system for Saint John. The Long-Term Transit Vision outlines key directions to provide mobility and choice for residents with an efficient and cost-effective transit system. More information on the strategy is provided in the *Saint John Strategic Plan Phase 2 – Transit Long Term Vision (February 8, 2018)*.

Notably, an Operational Audit is being conducted on the Saint John's transit system in addition to the MoveSJ work. This audit considers MoveSJ's long-term vision for transit in Saint John and will guide future transit decisions while addressing more immediate financial constraints.

9.1 Transit Vision and Directions

The long-term vision for transit in Saint John is to stabilize core services and provide mobility and choice for residents with an efficient and cost-effective transit system.

To achieve the vision, four key directions have been identified. These key directions can guide the development of a service strategy and inform future performance monitoring. The key directions are:

- **Stabilize Core Services:** Given the uncertainty in short term funding, stabilizing core services can lead to effective levels of service that form a foundation for the system's expansion efforts in the long term.
- **Mobility and Choice:** Providing access to opportunities for residents who choose not to drive or are unable to drive is important. When transit is an effective alternative to driving for residents of the city it can lead to an improved quality of life and encourage a shift towards more sustainable modes of transportation.
- **Efficient:** Creating a hierarchy of services allows for performance standards and targets that are suited to specific locations and conditions. For example, this approach can provide more direct services to connect major trip generators while exploring innovative options to provide a base level of mobility connecting neighbourhoods to services.
- **Cost-Effective:** By monitoring the performance of existing services, guidelines can be established to inform future investment into the system.

The work of the Long-Term Transit Vision completed in Phase 2 has been incorporated into an Operational Audit of the Transit Service that will guide transit service in Saint John in the future.

10 Implementation

Following a thorough review of Saint John's transportation network requirements, a complete summary of recommended improvements has been prepared and is provided in Appendix A. Appendix A outlines what improvements are recommended and a high-level cost estimate. Potential prioritization methodologies are discussed in this chapter to assist in phasing the projects during implementation as funding becomes available.

The final network improvements include active transportation improvements and road network improvements, including roundabout installations as a part of this implementation strategy.

10.1 Potential Prioritization Methodologies

As part of the MoveSJ Implementation Strategy, a potential prioritization framework has been developed to assist in the ranking of priorities for each improvement project for the City of Saint John. For MoveSJ, a good project prioritization strategy takes into consideration:

- Current and anticipated capacity limitations along the roadway network;
- Areas identified through previous public input and/or transportation plans;
- Missing links within the network to address active transportation safety and connectivity;
- Level of service improvements for movement within City limits (compared to regional traffic movement); and,
- Sections historically identified for improvement as shown within previous transportation plans for the City.

A scale system is commonly used to prioritize projects into phases. A phase can be defined as a category of improvement projects that are meant to be implemented in the designated time period according to their urgency for improvement to the network. Phased prioritization allows for the implementation of projects over the long term which also permits planning for funding allocation.

The MoveSJ project phasing priority is proposed to use a 1-5 prioritization scale, with 1 being the highest priority and 5 being the lowest priority. Projects which qualify for Phases 1 & 2 would be on a 0 to 5-year anticipated completion timeline and are key to fulfilling the objectives of the plan. Phases 3, 4, & 5 would be on a 10 to 20-year timeline and though important, are not immediately crucial to the network. Some projects could be ranked 0, indicating projects that

are important to the network but may be completed at any time as they are not a key link.

Exhibit 10.1 exemplifies the priority phasing scale and timeline for improvement projects.

Exhibit 10.1: Priority Phasing Example

Phase	Priority (Project Features)	Implementation Timeframe
Phase 1	High (These projects address safety concerns for pedestrians and cyclists, multi-modal traffic capacity issues, and key missing links in the cycling network. They prioritize economic growth for the City as well as regional growth.)	0-2 Years
Phase 2	High-Medium (These projects address safety concerns for pedestrians and cyclists, multi-modal traffic capacity issues, and important, but less critical, missing links in the cycling network. They promote economic growth for the City as well as regional growth.)	0-5 Years
Phase 3	Medium (These projects usually address safety concerns for all modes. They can assist with traffic capacity issues and missing links in the cycling network. They can promote economic growth for the City as well as regional growth.)	5-10 Years
Phase 4	Medium-Low (These projects could address safety for all modes. They tend to provide connections for missing links in the cycling network. In the long term, they are economically beneficial to the City.)	10-15 Years
Phase 5	Low (These projects connect or extend the cycling network. In the long term, they are economically beneficial to the City.)	15-20 Years
Phase 0	Nonessential (These projects are beneficial to the overall network and would be convenient to users. These may be implemented when resources are available.)	Anytime

10.2 Costs

Planning level cost estimates are provided in Appendix A for each project recommended. These estimates are conservative and meant to provide guidance to the City during this planning stage.

Cost estimates are summarized by improvement type in Exhibit 10.2. The road network improvements exclude the estimate for the Ashburn Interchange which is a project estimated at $30 million that is being led and funded by the provincial government. Note that the realignment of Retail Drive with Ashburn Lake Road, which is an early phase of the interchange project, may be undertaken as a separate project from this study. This would address short term congestion issues at the Rothesay Avenue/Retail Drive/Ashburn Lake Road intersection, which has been a priority location for traffic capacity improvements.

Exhibit 10.2: Implementation Phase Cost Estimate

Improvement Type	Cost Estimate
Road Network Improvements	$300,000
Roundabout Improvements	$5,430,000
Cycling Improvements	$15,791,500
Total*	**$21,521,500**

*Note: Improvements to the Ashburn Interchange, a $30 million project, is excluded from these estimates.

The project list is meant to be implemented as part of a long-term plan with a 20 to 30-year build out period for some improvements. Future City planning and project prioritization can help the City budget to meet these estimates.

Some improvements may generate additional costs before and after implementation by requiring work outside of construction. These are not reflected in the cost estimates. Additional work that is required with the recommended improvements is provided below:

- A traffic impact analysis should be performed for recommendations that include road diets along a corridor before the design phase. The 2041 forecasted volumes were reviewed for road diet capabilities along the selected corridors as part of the work performed in Chapter 6 of this report. Though the volumes imply a road diet would work well on those corridors recommended in Appendix A, a more detailed analysis on the network and connecting links should be completed as part of the project planning process.
- Implications to on-street parking are expected for some recommendations. On-street parking analysis should be performed in such cases. Resolutions may require additional network changes and costs.

Costs for cycling improvements were estimated using typical unit costs based on The Centre for Active Transportation's Costing of Bicycle Infrastructure and Programs in Canada report. The report summarizes a series of short case studies in 15 cities to provide general cost estimates for typical bicycle infrastructure types. The report was used as a guide in combination with recent

project experience within New Brunswick and similar facility improvements within Atlantic Canada.

Operations and Maintenance (O&M) costs were also estimated for the proposed cycling facilities and are provided in Appendix A. O&M cost estimates for the cycling improvements are based on protected bike lane projects installed in Halifax, Nova Scotia in 2018. The estimates include costs for temporary pavement marking replacement, snow removal for constrained facilities and miscellaneous items such as bollard replacement (for bike lane barriers). Items not considered in the O&M estimates were machinery operation costs and replacement, sign and sign-post replacement, and annual leaf removal/sweeping. Additionally, it was assumed O&M estimates for non-barriered cycling facilities where widening is not required (i.e. shared lanes, bike lanes, shoulder facilities) would be built-in to general snow removal maintenance costs and are therefore not included in this estimate. Bike symbol marking replacement costs for these facilities were not estimated.

10.3 Funding the Plan

The main funding sources for Saint John's capital program, services and programs are municipal property taxes and, provincial and federal grants and transfers.

10.3.1 Federal and Provincial Funding Sources

The federal government distributes funds through a Gas Tax Fund that can be used by municipalities to fund 18 categories of infrastructure projects including: public transit, local roads and bridges (including active transportation infrastructure), and highways. The federal government also has an Investing in Canada Infrastructure Program that provides funding to communities to construct, expand and improve public transit infrastructure. Under this program, the projects are cost-shared between the federal government, New Brunswick government, municipalities and other partners.

These two federal funding programs are distributed through the provincial government. The province also distributes a portion of the provincial Gasoline, Motive Fuel and Carbon Emitting Product Tax revenue to municipalities to support infrastructure investments. Other opportunities for provincial funding should be continually explored.

10.3.2 Municipal Funding Sources

Property Taxes are Saint John's main source of revenue to fund day-to-day services, and programs such as fire services, recreation programs, parks, libraries, road maintenance, and stormwater management.

In January 2018, the province of New Brunswick adopted the new Community Planning Act that allows municipalities to enact Development Charges, a

financing tool for growth related infrastructure generally located in greenfields. Development Charges help generate revenue to pay for all or part of new public infrastructure associated with the new development by adding a fee. This revenue could fund new or expanded roads, streets, transit facilities, sidewalks and trails, new traffic signs and signals, and land required for any eligible public infrastructure.

If Saint John adopts Development Charges, this would be an added revenue stream to fund growth related transportation infrastructure mainly in greenfields. Saint John can also obtain developer funded improvements through Section 59 of the Community Planning Act when new developments require a rezoning.

10.4 Monitoring Progress and Plan Updates

Monitoring the progress of MoveSJ is essential for tracking what has been done, and the impact that infrastructure investments and policy changes have had on travel behaviour and development patterns. Along with general information on how the city has changed, monitoring progress will provide an understanding of Saint John's unique circumstances and will help guide the effective planning and implementation of future actions.

While MoveSJ is a long-term plan to 2041, it is a living document that must be regularly reviewed to continue to meet the transportation needs of Saint John. Many changes can occur in the timeframe of this plan including community expectations, growth patterns, transportation technologies and local or regional development plans. It is recommended to review MoveSJ approximately every five years with a formal update taking place every 10 years, in line with the municipal development plan. The monitoring program will be a key input to the reviews and updates. Exhibit 10.3 presents a range of indicators to measure the effectiveness of MoveSJ.

Exhibit 10.3: MoveSJ Monitoring Indicators

Chapter	Indicator	Data Source	Schedule
Chapter 5 – Supporting Sustainable Transportation Choice	Sustainable mode share for trips to work	Census Journey to Work data	Every 5 years
	Trip distance for trips to work	Statistics Canada	Every 5 years

Chapter 6 – Road Network for a Multimodal City	Road network improvements – percent complete	Capital program	Annually
	Number of reported collisions per capita	Saint John Police/ the Province of New Brunswick	Annually
	Roundabout implementation – percent complete	Capital Program	Annually
Chapter 7 – Trucks in a Post City	Truck network improvements – percent complete	Capital Program	Annually
Chapter 8 – Transforming the Cycling and Walking Experience	Cycling network improvements – percent complete	Capital Program	Annually
	Kilometres of infill sidewalk installed	Capital Program	Annually
	Cyclist and pedestrian volumes at key network locations	Count program	Annually
Chapter 9 – Refreshing the Transit Network	Transit ridership	Saint John Transit	Annually
	On-budget transit operations	Saint John Transit	Annually
	Number of service kilometres that provide 15-minute service frequency on weekdays	Saint John Transit	Annually

10.5 Summary of Recommended Actions

Exhibit 10.4 includes a summary of the actions recommended in the five action areas covered in MoveSJ and is followed by a summary of the recommended Provincial advocacy efforts.

Exhibit 10.4: Summary Table of Actions Recommedned in MoveSJ

Recommended actions
Supporting Sustainable Transportation Choice
Investigate parking fees and parking fines to discourage driving to certain areas of the city and allocating any increase in revenue towards TDM measures
Continue marketing and supporting carpooling through various events
Investigate further promotion of carpooling through the implementation of formal carpool lots
Investigate the possibility of a carshare program
Expand bike parking within the City
Raise awareness of active transportation and transit through broad-reaching community events
Road Network for a Multimodal City
Road Network Improvements
Conduct planning and detailed design studies of the road improvements outlined in MoveSJ for vehicular flow and to accommodate cycling infrastructure
Road Classification Strategy
Adopt the new urban and rural road classifications as the recognized municipal road classification system
Road Safety Strategy
Commit to a definitive vision for road user safety that aligns with the guiding principles outlined in MoveSJ
Embrace the Safe Systems Approach
Educate and engage partners and the public on road safety
Improve the quality and availability of relevant road safety data
Establish baseline safety performance measures to identify early improvements
Conduct a preliminary network screening to first identify the long-list of locations with high concentrations of collisions and then refine to determine a prioritized list of projects

Recommended actions
Establish and prioritize common road safety emphasis areas unique to Saint John to help prioritize projects
Develop goals and key performance indicators to measure the success of road safety projects
Create and update design guidelines to prioritize road safety
Parking Strategy
Maintain current parking supply and existing 2 hour parking limit
Increase the fine associated with the accessible parking violation to $300 to match the best practices established in the comparator municipalities
Consider adopting a cash-in-lieu rate that represents approximately 50% of the costs to provide municipal parking, either in structures or surface lots
Adopt bicycle parking requirements for non-residential land uses based on gross floor area rather than the number of vehicle spaces required
Expand residential permit parking programs
Consider adopting a scheduled Uptown street cleaning strategy to allow on-street parking on both sides of the Uptown streets during the majority of the year
Maintain existing parking restrictions in winter
Improve upon existing TDM measures to promote alternative modes of transportation. Potential TDM measures include carpooling, cycling, transit, and carshare
Roundabout Strategy
Conduct planning and detailed design studies for roundabout locations recommended in MoveSJ
Trucks in a Port City (Goods Movement Strategy)
Consult with goods movement stakeholders on the impacts of a Complete Streets policy on goods movement in the Central Business District
Implement recommendations to manage large truck deliveries in South Central Peninsula
Enact amendments to the City's Traffic By-law, Schedule K, to remove recommended truck routes (report Section 5.1) on sections of Churchill Blvd and Foster Thurston Drive

Recommended actions
Remove all 24 unregulated Truck Restriction signs
Adequately sign designated truck routes based on signage warrants
Investigate policies that would mandate that trucks use highways more for intra-city trips including options described in MoveSJ
Improve management of noise from trucks including options described in MoveSJ
Remove Harding Street West from Traffic By-Law Schedule K after Simms Corner is reconstructed
Remove Duke Street West, Lancaster Avenue, Prince Street and Dufferin Row from Traffic By-Law Schedule K after Simms Corner is reconstructed
Transforming the Walking and Cycling Experience
Adopt the pedestrian design strategies outlined in MoveSJ
Develop a sidewalk infill program in line with the sidewalk infill strategies outlined in MoveSJ
Adopt the priority cycling network as outlined in MoveSJ
Conduct planning and detailed design studies for road improvements for cycling
Develop policies for Complete Streets and the provision of End-of-Trip Facilities in line with policy directions outlined in MoveSJ
Develop a cycling programming strategy that includes the components outlined in MoveSJ
Refreshing the Transit Network (Long Term Transit Vision)
Adopt the proposed service strategy and supporting strategies outlined in MoveSJ
Maintain and implement transit service according to the service directions and resource requirements

There are two recommendations that require the City of Saint John to advocate for changes at the Provincial level. Those recommendations include:

1. Seeking changes to the Provincial Motor Vehicle Act to improve access and safety for cyclists; and,

2. Advocating for trucks to use modern Provincial highways instead of designated City truck routes if it leads to less travel on City streets between the origin and destination. This would include Provincial highways such as Highway 1 and exclude Provincial Designated (Route 100) or three Regional Highways via their interchanges.

Appendix A: Recommended Network Improvements and Cost Estimates

Implementation Strategy - Facility Cost Estimates

Facility Name	From	To	Existing Facility Type	Proposed Facility Type	Length (km)	Unit Cost	Total Cost	Annual O&M Cost
Road Network Improvements								
Route 1/Ashburn Lake Rd/Retail Dr			Highway Interchange with restricted access.	Upgrade interchange and remove barriers that restrict access to Route 1.	NA		**$30,000,000.00**	-
Ashburn Lake Rd/Retail Dr	Ashburn Lake Rd	Retail Dr	Staggered signalized intersections with rail and creek crossing.	interchange improvements and realign Ashburn Lake Rd and Retail Dr so as to not impact Rothesay Ave.	NA		**Included in the above**	-
Main Street	Chesley Drive	St Patrick St	Six Lane Curbed Road with Boulevard	Main St Road Diet to 2 travel lanes per direction with cycle tracks	1.15		*This is included with the AT improvements*	-
Bridge Road/Chesley Drive	Main St W	Harbour Passage	TCT Shared varying traffic lanes at capacity.	Traffic lanes are shared lanes with Trans-Canada trail. Reconfigure to cycle tracks or protected bike lanes.	1.58		*This is included with the AT improvements*	-
Station Street	Long Wharf	City Rd	TCT Shared lanes.	Traffic lanes are shared lanes with Trans-Canada trail. Road diet - reconfigure to cycle tracks or protected bike lanes by narrowing traffic lanes.	0.7		*This is included with the AT improvements*	-
City Rd Road Diet	(entire)	(entire)	TCT Shared lanes.	Traffic lanes are shared lanes with Trans-Canada trail. Reconfigure to cycle tracks or protected bike lanes by narrowing traffic lanes.	1.03		*This is included with the AT improvements*	-
Somerset Street/Paradise Row Improvement			Signalized intersection	Add westbound double left turn and upgrade signal infrastructure	NA		**$300,000.00**	-
Roundabout Improvements								
Main St W/Lancaster Ave (Simms Corner)			Two-way Stop Controlled Intersection	Provide further studies of the implementation of a multi-lane roundabout with double lanes entering all approaches. Install a multi-lane roundabout.			**$ 2,470,000.00**	-
Rothesay Road/Ashburn Rd			Stop Controlled T-Intersection	Install a 35m single lane roundabout.			**$ 430,000.00**	-
Sandy Point Rd and Foster Thurston Dr			Stop Controlled T-Intersection	Install a 35m single lane roundabout.			**$ 490,000.00**	-
Manawagonish Rd/Gault Rd			Two-way Stop Controlled Traffic Circle	Install a 40m single lane roundabout.			**$ 1,170,000.00**	-
Millidge Ave/Somerset St			Stop Controlled T-Intersection	Install a 45m single lane roundabout.			**$ 870,000.00**	-
Cycling Improvements								
Ragged Point Road	Woodward Avenue	Ragged Point Road	Wide Road	Bike Lanes	0.58	$ 50,000.00	**$ 29,000.00**	$ 5,665.00
Woodward Avenue	Ragged Point Road	Millidge Avenue	Wide Curbed Road	Bike Lanes	1.42	$ 50,000.00	**$ 71,000.00**	$ 13,870.00
University Avenue	Woodward Avenue	Sandy Point Road	Four Lane Curbed Road with Boulevard	Buffered Bike Lanes with Road Diet	2.13	$ 60,000.00	**$ 127,800.00**	$ 21,587.00
Westmorland Road	Loch Lomond Road	St Joseph Road	Wide Curbed Road	Bike Lanes	1.88	$ 50,000.00	**$ 94,000.00**	$ 18,362.00
Millidge Avenue	Spar Cove Road	Visart Street	Wide Curbed Road	Bike Lanes	0.83	$ 50,000.00	**$ 41,500.00**	$ 8,107.00
Millidge Avenue	Somerset Street	Spar Cove Road	Wide Curbed Road	Bike Lanes	0.75	$ 50,000.00	**$ 37,500.00**	$ 7,326.00
Adelaide Street	Main Street	Millidge Avenue	Shared Lanes	Bike Lanes	0.62	$ 50,000.00	**$ 31,000.00**	$ 6,056.00
Watson Street, Suffolk Street, Digby Ferry Road	Riverview Drive	End of Digby Ferry Road	Wide Curbed Road	Bike Lanes	1.72	$ 50,000.00	**$ 86,000.00**	$ 16,800.00
Magazine Street	Somerset Street	Metcalf Street	Wide Road	Bike Lanes	0.59	$ 50,000.00	**$ 29,500.00**	$ 5,763.00
Charlotte Street	Broad Street	Union Street	Wide Road	Bike Lanes	0.99	$ 50,000.00	**$ 49,500.00**	$ 9,670.00

Facility Name	From	To	Existing Facility Type	Proposed Facility Type	Length (km)	Unit Cost	Total Cost	Annual O&M Cost
Union Street	Crown St	Harbour Passage Trail	Wide Curbed Road	Bike Lanes	1.31	$ 50,000.00	$ **65,500.00**	$ 12,795.00
Sydney Street	Union Street	South of Vulcan Street	Wide Curbed Road	Bike Lanes	1.29	$ 50,000.00	$ **64,500.00**	$ 12,600.00
Albert Street, Main Street, Trail	Newman Street	South of Main Street	Wide Curbed Road	Bike Lanes	0.33	$ 50,000.00	$ **16,500.00**	$ 3,224.00
Newman Street	Albert Street	Adelaide Street	Wide Curbed Road	Bike Lanes	0.35	$ 50,000.00	$ **17,500.00**	$ 3,419.00
Wellesley Avenue	Somerset Street	Gorman Avenue	Wide Road	Bike Lanes	0.18	$ 50,000.00	$ **9,000.00**	$ 1,759.00
Visart Street	Churchill Boulevard	Beaverbrook Avenue	Wide Curbed Road	Bike Lanes	0.29	$ 50,000.00	$ **14,500.00**	$ 2,833.00
Crown Street	Broad Street	Union Street	Wide Curbed Road	Bike Lanes	1	$ 50,000.00	$ **50,000.00**	$ 9,767.00
Broad Street	Crown St	Water St	Wide Curbed Road	Bike Lanes	0.85	$ 50,000.00	$ **42,500.00**	$ 8,302.00
Water Street	Broad Street	King St	Wide Curbed Road	Bike Lanes	0.75	$ 50,000.00	$ **37,500.00**	$ 7,326.00
Westmorland Road	St Joseph Road	Mcallister Drive	Four Lane Curbed Road	Cycle-Track with widening	1.38	$ 1,500,000.00	$ **2,070,000.00**	$ 53,119.00
Loch Lomond Road	Thorne Avenue	McDonald Street	Wide Curbed Road and Striped Shoulders	Buffered Bike Lanes	0.85	$ 60,000.00	$ **51,000.00**	$ 9,085.00
Bayside Drive	Loch Lomond Road	Courtney Bay Causeway	Four Lane Curbed Road with Center Turn	Buffered Bike Lanes with Road Diet	0.85	$ 60,000.00	$ **51,000.00**	$ 9,085.00
Somerset Street	Churchill Boulevard	Thornbrough Street	Wide Curbed Road	Cycle-Track with widening	0.44	$ 1,500,000.00	$ **660,000.00**	$ 17,470.00
Somerset Street	Magazine Street	Thornborough Street	Wide Curbed Road	Cycle-Track with widening	0.74	$ 1,500,000.00	$ **1,110,000.00**	$ 28,847.00
Thorne Avenue	Seaton Street	Westmorland Road	Four Lane Curbed Road	Cycle-Track with road diet	0.83	$ 1,000,000.00	$ **830,000.00**	$ 32,260.00
City Road	Stanley Street	Brinley Street	Shared Lanes	Cycle-Track with road diet	0.62	$ 1,000,000.00	$ **620,000.00**	$ 15,195.00
City Road	Brinley Street	Thorne Avenue	Four Lane Curbed Road	Cycle-Track with road diet	0.36	$ 1,000,000.00	$ **360,000.00**	$ 14,436.00
Main Street (Interim)	Chesley Drive	Union Street	Six to Seven Lane Curbed Road with Boulevard	Main St Road Diet to 2 travel lanes per direction with cycle tracks in the center lanes and bike signal at Metclaf.	1.24	$ 150,000.00	$ **196,000.00**	$ 10,912.00
Main Street	Chesley Drive	Union Street	Six to Seven Lane Curbed Road with Boulevard	Main St Road Diet to 2 travel lanes per direction with cycle tracks	1.24	$ 1,500,000.00	$ **1,860,000.00**	$ 22,021.00
Trail	Trans-Canada Trail	Hilyard Street	Existing Separated Facility	Existing Separated Facility-Delineation Upgrades	0.24	$ 10,000.00	$ **2,400.00**	$ 1,752.00
Trail	Albert Street	Trail	Existing Separated Facility	Existing Separated Facility-Delineation Upgrades	0.08	$ 10,000.00	$ **800.00**	$ 584.00
Trail	Trans-Canada Trail	Trans-Canada Trail		Proposed Separated Facility	0.83	$ 500,000.00	$ **415,000.00**	$ 6,059.00
Trail	Spar Cove Road	Adelaide Street	Undeveloped	Proposed Separated Facility	0.6	$ 500,000.00	$ **300,000.00**	$ 4,380.00
Hawthorne Avenue Extension	Seely Street	Trail	Partial Existing Separated Facility	Proposed Separated Facility	1	$ 500,000.00	$ **500,000.00**	$ 7,300.00
Crown Street	Union Street	Thorne Avenue	Four Lane Curbed Road with Center Turn	Protected Bike Lanes with Road Diet to 3 lanes	0.86	$ 200,000.00	$ **172,000.00**	$ 33,398.00
Somerset Street	Millidge Avenue	Samuel Davis Drive	Existing Striped Bike Lanes	Protected Bike Lanes	1.15	$ 200,000.00	$ **120,000.00**	$ 44,396.00
Victoria Street	Bridge Street	Albert Street	Wide Curbed Road	Shared Facility	0.29	$ 10,000.00	$ **2,900.00**	$ -
Wellesley Avenue, Cranston Avenue, Fifth Street, Parks Street, Mount Pleasant Avenue	Somerset Street	Arrow Walk Road	Wide Curbed Road	Shared Facility	1.44	$ 10,000.00	$ **14,400.00**	$ -

Facility Name	From	To	Existing Facility Type	Proposed Facility Type	Length (km)	Unit Cost	Total Cost	Annual O&M Cost
Albert Street	Newman Street	Trail	Partial Existing Separated Facility	Shared Facility	0.13	$ 10,000.00	**$ 1,300.00**	$ -
Wellesley Terrace	Beaverbrook Avenue	Gorman Avenue	Wide Road	Shared Facility	0.14	$ 10,000.00	**$ 1,400.00**	$ -
TCT Bentley Street (entire)	(entire)	(entire)	Bike Lane (northbound)	Facility Adequate	0.3	$ -	**$ -**	$ 1,858.00
TCT Douglas Avenue	Chesley Drive	Bentley Street	Bike Lane (westbound)	Facility Adequate	1.1	$ -	**$ -**	$ 5,765.00
TCT Westfield Road	Ketepec Road	Dalton Lane	Bike Lanes	Facility Adequate	1.1	$ -	**$ -**	$ 10,744.00
TCT Douglas Avenue	Bentley Street	Main Street	Wide Curbed Road	Bike Lanes	0.74	$ 50,000.00	**$ 37,000.00**	$ 7,228.00
TCT Lancaster Avenue	Bridge Road	Prince Street	Wide Curbed Road	Bike Lanes	0.69	$ 50,000.00	**$ 34,500.00**	$ 6,740.00
TCT Prince Street	Lancaster Avenue	Riverview Drive	Wide Curbed Road	Bike Lanes	0.33	$ 50,000.00	**$ 16,500.00**	$ 3,224.00
TCT Riverview Drive	Prince Street	Pedestrian bridge	Wide Curbed Road	Bike Lanes	0.73	$ 50,000.00	**$ 36,500.00**	$ 7,130.00
TCT Manchester Avenue	Bay Street	Dever Road	Shared Lanes	Bike Lanes	0.4	$ 50,000.00	**$ 20,000.00**	$ 3,907.00
TCT Manchester Avenue	Dever Road	Manawagonish Road	Shared Lanes	Bike Lanes	0.8	$ 50,000.00	**$ 40,000.00**	$ 7,814.00
TCT Manawagonish Road	Manchester Avenue	Main Street West	Shared Lane EB, Bike Lane WB	Bike Lanes	1.3	$ 50,000.00	**$ 65,000.00**	$ 12,698.00
TCT Station Street (entire)	(entire)	(entire)	Shared Lanes	Protected Bike Lanes with Road Diet to 3 lanes	0.7	$ 200,000.00	**$ 140,000.00**	*$ 6,837.00*
TCT Main Street West (entire)	(entire)	(entire)	Shared Lanes	Cycle Track / Protected Bike Lane	0.6	$ 200,000.00	**$ 120,000.00**	$ 23,538.00
TCT Bridge Road (entire)	(entire)	(entire)	Shared Lanes	Cycle Track	0.7	$ 1,000,000.00	**$ 700,000.00**	$ 27,330.00
TCT Chesley Drive	Bridge Road	Bentley Street	Shared Lane (eastbound)	Cycle Track with road diet	1.1	$ 1,000,000.00	**$ 1,100,000.00**	$ 21,642.00
TCT Rothesay Road	Brookville entrance	west entrance to K-Park	Bike Lanes	Cycle Track / Protected Bike Lane	1	$ 500,000.00	**$ 500,000.00**	$ 38,707.00
TCT Rothesay Road	west to east entrance to K-Park	west to east entrance to K-Park	Shared Lanes	Cycle Track / Protected Bike Lane	0.2	$ 500,000.00	**$ 100,000.00**	$ 8,368.00
TCT Rothesay Road	east entrance to K-Park	City Limit	Bike Lanes	Cycle Track / Protected Bike Lane	0.2	$ 500,000.00	**$ 100,000.00**	$ 8,368.00
TCT Harbour Passage	Bentley Street	Station Street	Existing Separated Facility	Existing Separated Facility-Delineation Upgrades	1.4	$ 10,000.00	**$ 14,000.00**	$ 10,220.00
TCT Highway 1 Pedestrian Bridge	Stanley Street	Stanley Street	Existing Separated Facility	Existing Separated Facility-Delineation Upgrades	0.2	$ 10,000.00	**$ 2,000.00**	$ 1,460.00
TCT Gooderich Street	Wright Street	Mount Pleasant Avenue	Shared Lanes	Existing Separated Facility-Delineation Upgrades	0.2	$ 10,000.00	**$ 2,000.00**	$ 1,460.00
TCT Mount Pleasant Avenue	Gooderich Street	ArrowWalk Road	Existing Separated Facility	Existing Separated Facility-Delineation Upgrades	0.2	$ 10,000.00	**$ 2,000.00**	$ 1,460.00
TCT Rockwood Park	Rockwood Park	Rockwood Park	Existing Separated Facility	Existing Separated Facility-Delineation Upgrades	4.3	$ 10,000.00	**$ 43,000.00**	$ 31,390.00
TCT Westfield Road	City Limit	Ketepec Road	Shared Lanes	Paved Shoulders	4.7	$ 200,000.00	**$ 940,000.00**	$ -
TCT Westfield Road	Dalton Lane	Bay Street	Shared Lanes	Paved Shoulders	3	$ 200,000.00	**$ 600,000.00**	$ -
TCT Bay Street (entire)	(entire)	(entire)	Shared Lanes	Paved Shoulders	1.3	$ 200,000.00	**$ 260,000.00**	$ -
TCT Ashburn Road (entire)	(entire)	(entire)	Shared Lanes	Paved Shoulders	2.2	$ 200,000.00	**$ 440,000.00**	$ -
TCT Rothesay Road	Ashburn Road	Brookville entrance	Shared Lanes	Paved Shoulders	1.1	$ 200,000.00	**$ 220,000.00**	$ -
TCT Stanley Street	City Road	pedestrian bridge	Shared Lanes	Shared Lanes	0	$ 5,000.00	**$ 5,000.00**	$ -

Facility Name	From	To	Existing Facility Type	Proposed Facility Type	Length (km)	Unit Cost	Total Cost	Annual O&M Cost
TCT Stanley Street	pedestrian bridge	Wright Street	Shared Lanes	Shared Lanes	0.1	$ 5,000.00	**$ 500.00**	$ -
TCT Wright Street	Stanley Street	Gooderich Street	Shared Lanes	Shared Lanes	0.2	$ 5,000.00	**$ 1,000.00**	$ -

Note 1: TCT= TransCanada Trail.

Note 2: Shaded projects are awaiting public response to on-street parking impacts.

Appendix B: Somerset Street and Paradise Row Concept Plan

PARADISE ROW

NEW 60m LEFT TURN LANE

WINTER STREET

NEW SIGNAL POLE

SOMERSET STREET

NEW SIGNAL POLE

TP7

6.1m

6.1m

8

REMOVE EXISTING MEDIAN AND SIGNAL POLE
TO ADD A SECOND LEFT TURN LANE

6

TP6

6.1m

TP1

NEW SIGNAL POLE

NEW SIGNAL POLE

5

TP5

6.7m

TP2

SHORTEN EXISTING MEDIAN
AND LEFT TURN LANE

4

6.1m

4.6m

TP4

TP3

3

NEW SIGNAL POLE

ROUTE 1 - SAINT JOHN THROUGHWAY

PARADISE ROW

SOMERSET STREET

ADJUST EXISTING ISLAND

NEW SIGNAL POLE

NEW HATCHING

NOTES

NO.	DATE	REVISIONS	BY	APPR.
A.0	OCT 30/20	ISSUED FOR REVIEW	JTGB	PA

SAINT JOHN

crandall
A DIVISION OF ENGLOBE

PRELIMINARY ONLY
DATE PRINTED: Oct 30, 2020
NOT TO BE USED FOR CONSTRUCTION

PROJECT TITLE

MOVE SAINT JOHN
PHASE 3

SAINT JOHN N.B.

DRAWING TITLE

SOMERSET STREET /
PARADISE ROW /
WINTER STREET
CONCEPT

Scale
2.5m 0 5m
(1:250 FULL SCALE)

Drawn By	Design By
JTGB	JTGB
Checked By	Cadd Check
JTGB	JTGB

Sheet 01 of 01

File Name
1900497-1 SOMERSET CONCEPT 1.DWG

Drawing No.
C01

Q:\2019\1900497-00\C - MOVESJ PHASE 3\CADD\DESIGN\DESIGN DRAWINGS\SOMERSET-PARADISE ROW\1900497-1 SOMERSET CONCEPT 1.DWG, 30/10/2020 11:44 AM