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# TOWN OF SAINT ANDREWS

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## TRANSPORTATION MASTER PLAN

### PROLOGUE

The Council of the Town of Saint Andrews motioned to accept the Transportation Master Plan, developed by CBCL Ltd., on February 1, 2021.

The Plan provides the Town with suggested options to address the increase in seasonal traffic, traffic safety and calming measures, maintaining visitor enjoyment, parking, deliveries, pedestrian crossings, and active transportation. An important goal of the Plan is to manage motor vehicle traffic while providing for population growth and high quality of life. Additionally, the Plan has an effort to reduce community greenhouse gas emissions and move the Town towards sustainability in accordance with the Municipal Plan MP 20-01.

#### **Municipal Plan MP 20-01**

#### **Part 2: Objectives, Policies, and Proposals**

##### 2.0 Overall Plan Goals

*"Offer sustainable municipal services, **safe and effective transportation routes for all users, including active transportation**, and protection of residents from emergency events".*

Refer to Section 2.7.2 for additional details on Transportation objectives.

The acceptance of the Transportation Master Plan does not mandate that all options and recommendations provided in the plan need to be implemented. The Plan provides a guiding framework for the Council of the day and Staff to review, debate, discuss, select, publicly consult, and implement options for transportation measures in Saint Andrews. All recommendations will be balanced against other infrastructure costs and available funds. Council shall have regard for the recommendations outlined in the Plan.

Mayor Doug Naish

Paul Nopper, Clerk – Senior Administrative



# Transportation Master Plan

Final



Prepared for



Town of  
**Saint Andrews**  
New Brunswick, Canada

Issued as Final	<i>Audrey Muir</i>	20/10/2020	<i>E. Nal</i>
Issued for Draft	Audrey Muir	12/20/2019	Emanuel Nicolescu
<b><i>Issue or Revision</i></b>	<b><i>Reviewed By:</i></b>	<b><i>Date</i></b>	<b><i>Issued By:</i></b>
 <p><b>CBCL LIMITED</b> Consulting Engineers</p>		<p>This document was prepared for the party indicated herein. The material and information in the document reflects CBCL Limited's opinion and best judgment based on the information available at the time of preparation. Any use of this document or reliance on its content by third parties is the responsibility of the third party. CBCL Limited accepts no responsibility for any damages suffered as a result of third party use of this document.</p>	



**CBCL LIMITED**

Consulting Engineers

October 20, 2020

Chris Spear, CAO  
212 Water Street  
Saint Andrews, NB  
E5B 1B4

Dear Mr. Spear,

*RE: Town of Saint Andrews - Final Transportation Master Plan*

We are pleased to submit this Final Transportation Master Plan (TMP) for your records. It is based on two rounds of public consultation meetings, an online participatory mapping exercise, and a comprehensive assessment of transportation conditions within Town boundaries. This Final TMP document formalizes the ideas developed as part of the Conceptual Framework Plan and the Draft Report.

Through the TMP process, an understanding was developed of the transportation needs facing the Town today and into the foreseeable future. Improvement concepts have been developed, targeting interventions to the Town's transportation network to support the Town's mobility goals.

We trust that this document reflects the comments received and that it provides you with a Plan for the Town moving forward. We are pleased to have worked with you on this important project, and hope that we can be of assistance to you again in the future.

Yours truly,

CBCL Limited

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**Solving  
today's  
problems  
with  
tomorrow  
in mind**



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# Chapter 1 Background

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## 1.1 Description of Project

The Town of Saint Andrews (or Saint Andrews by-the-Sea) is known as being one of New Brunswick's most popular tourist destinations. The Town was also voted "Best Destination in Canada" by USA Today 10 Best Readers' Choice 2017. It is easy to see why it earned this title when you spend time walking along the quaint and historic main street, Water Street, enjoy the shops and restaurants the Town has to offer, and admire its location at the tip of a peninsula on the beautiful Passamaquoddy Bay. Saint Andrews has two islands just off shore, Ministers Island to the east of Town, and Navy Island to the south, and it is also a stone's throw from the Canada/United States border.

The Town is well known for its golf course and the many outdoor activities that visitors can enjoy. The Algonquin Resort, north of the Town centre, is a historic location where thousands of guests flock every year. Recently restored and reopened under new management in 2014, the luxury hotel is open year round and attracts visitors staying for an overnight or for much longer stays. With the influx of visitors to the Town, especially during the summer months, the local and permanent population of 1,800 is joined by an estimated 80,000 visitors every year. This phenomenal increase in the number of people staying in and visiting the Town puts a significant strain on the local streets and infrastructure, hence the need for a Transportation Master Plan (TMP) to allow the Town to adapt to its seasonal increase, and to maintain visitor enjoyment, safety, and the desire to return to Saint Andrews for another visit. In addition, the TMP must address the needs of the permanent resident population as issues such as parking, large trucks making deliveries, and pedestrians crossing the streets are year round concerns for the Town.

An important goal of the TMP is to outline the options for managing motor vehicle traffic while providing for population growth and a high quality of life, along with an effort to reduce community greenhouse gas emissions and move the Town towards sustainability in accordance with the goals of the recently-updated Municipal Plan. The primary objective of the Transportation Master Plan is to provide a Master Multi-Modal Transportation Plan to allow the Town to achieve its development goals as outlined in the Municipal Plan and to support sustainable Economic and Community Development.

## 1.2 Study Process and Methodology

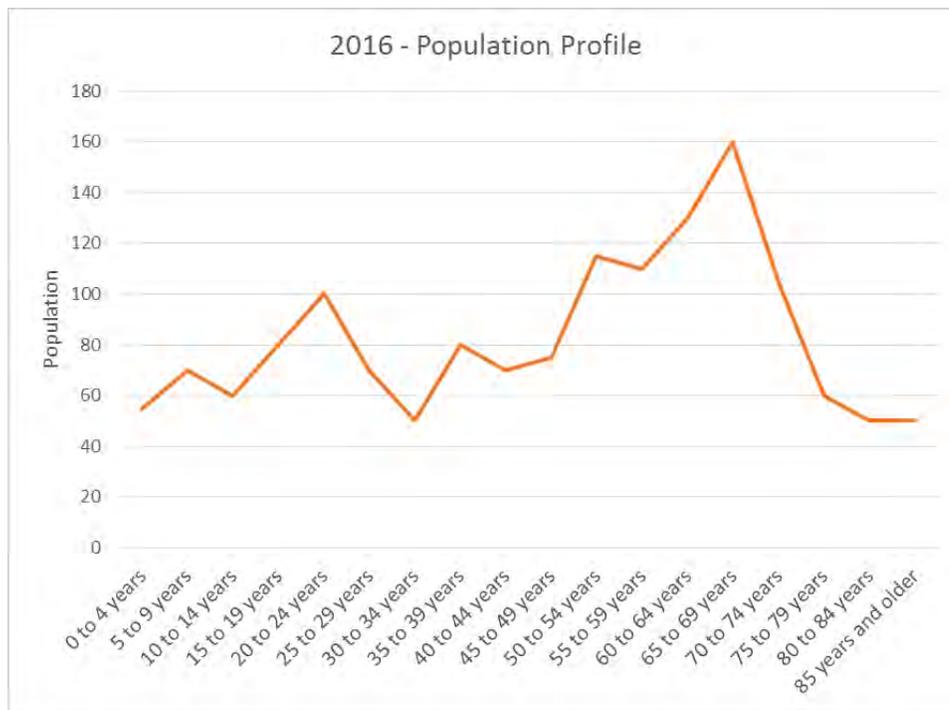
The TMP was conducted through five project phases, culminating in the present Transportation Plan:

1. Review of Existing Conditions.
2. Identification of Needs and Opportunities.
3. Identification of Options.
4. Conceptual Framework Plan.
5. Detailed Transportation Plan.

### 1.3 Planning Context

The Town of Saint Andrews is in the process of updating its Municipal Plan. The Draft Municipal Plan 2020 Draft 16 notes a number of trends affecting the Town’s future prosperity and proposes a number of policies and action items.

First and foremost is the ability to attract and maintain a young population while remaining a safe and comfortable community for an aging population. The Town is experiencing a marked aging trend that will have repercussions on mobility – focus on promoting a feeling of safety, and ease of movement – encourage active life styles to combat isolation and deterioration of health. The overall population (1,786 in 2016) has seen little change over the last 15 years, although it has decreased in the last 5 years, with a clear aging trend; since 1996 those aged 55-74 have increased, while those aged 10-49 have decreased. The median age in 2016 was close to 53 years old, higher than the overall median age of the entire county and the province. As of 2016, the segment of the population over 64 years of age stands at 29% (see Figure 1).



**Figure 1: Population Profile – 2016**

At the same time, while developable space is limited in the Town Plat, there are significant opportunities to increase the residential supply and to attract more diverse economic activity outside of the Town Plat.

Recognizing that, as a coastal community, it will be increasingly affected by climate change and worsening impacts of rising sea levels and increasing precipitations, the Town has also developed a Climate Change Adaptation Plan. Saint Andrews consequently proposes to promote public transit services and to develop an extensive active transportation network to reduce greenhouse gas emissions and mitigate climate change impacts.

All proposed and envisaged actions must always be mindful of the Town's Historic District being designated as a National Historic Site of Canada, based on its built form, road and block layout, and 18<sup>th</sup> century British architecture. The improvement of the Town's transportation systems and road network with additional facilities should not jeopardize the Historic District designation.

The Transportation Master Plan is produced in support of the Municipal Plan's vision and aspirations. It is therefore consistent with and subordinate to the policy directions of the Municipal Plan.

## Chapter 2 Stakeholder Consultation

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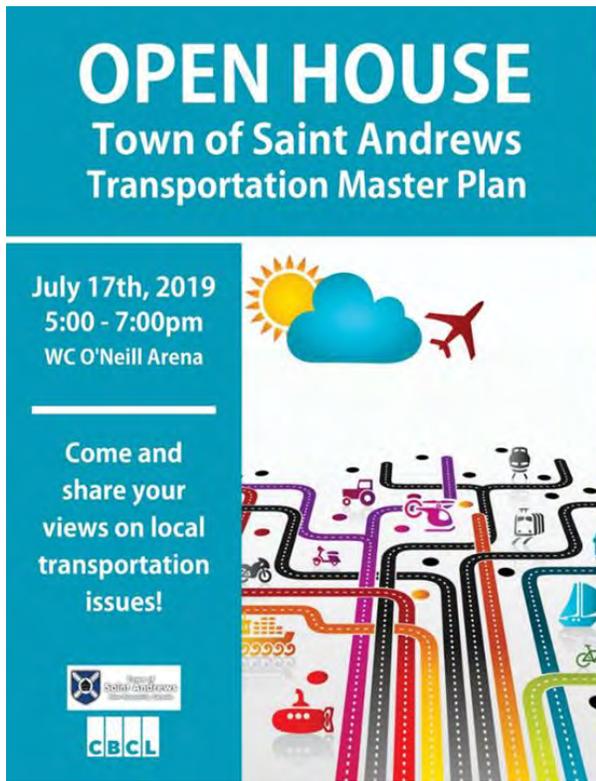
To better understand the needs of the residents of and visitors to the Town of Saint Andrews, we undertook an extensive public consultation process. The process consisted of two public meetings, and an online participatory mapping exercise. The Meeting Invitation and Materials, Photos, and Responses are contained in **Appendix A**. The survey questionnaire is included in **Appendix B**.

### 2.1 Public Meeting #1

Two public meetings were held in the Town over the summer 2019. The meetings took place in the WC O'Neill Arena on the following days:

- ▶ Wednesday, July 17<sup>th</sup>, 2019.
- ▶ Thursday, September 12<sup>th</sup>, 2019.

The first event introduced the project to the attendees via a slide presentation, and presented the information gathered to establish existing conditions within the Town. During this event, attendees were asked to discuss in groups (workshop format) a number of key questions around what they considered to be the transportation priorities for the Town, how they travelled around and in and out of the Town, and the guiding principles that they felt should apply to transportation. Also, each group was given maps on which we asked them to identify where they believed the issues, barriers and constraints or opportunities relating to transportation were. To end the evening, the groups were asked to develop a “vision statement” for the Town’s Transportation Master Plan.



Attendees were also asked to complete the survey form which was designed to complement the public meetings and the participatory mapping (explained later in this chapter). Approximately 44 people attended the first event, including the Town Mayor, Councillors and Staff, and members of the Steering Committee.

## 2.2 Public Meeting #2

The second public event in September 2019 was undertaken using a different format. This event was a drop-in session where people were invited to drop in any time between 5:00pm and 7:00pm and review the transportation concepts and options that we had developed for the Town. There were a number of presentation boards on easels around the room which showed updated information on existing conditions including land use and zoning, active transportation facilities, public right-of-way, and problems and opportunities identified at the first public meeting. On the tables were large format maps showing activity districts, and conceptual improvement themes for future active transportation, public transit, traffic circulation, intersection operation and safety, and curbside management including parking. Attendees were asked to provide comments and feedback on all of the presented material, which was collated at the end of the meeting and reviewed for inclusion in the overall transportation master plan.

Approximately 28 people dropped in to attend the second event, including Town Councillors, and Staff, and members of the Steering Committee.



As a result of the two public events, we were able to develop a clearer understanding of the existing conditions within the Town, as well as the challenges experienced by those living in the Town, or visiting. We also became aware of some opportunities that exist in the Town where we can make use of existing resources as well as planning for future transportation demands.

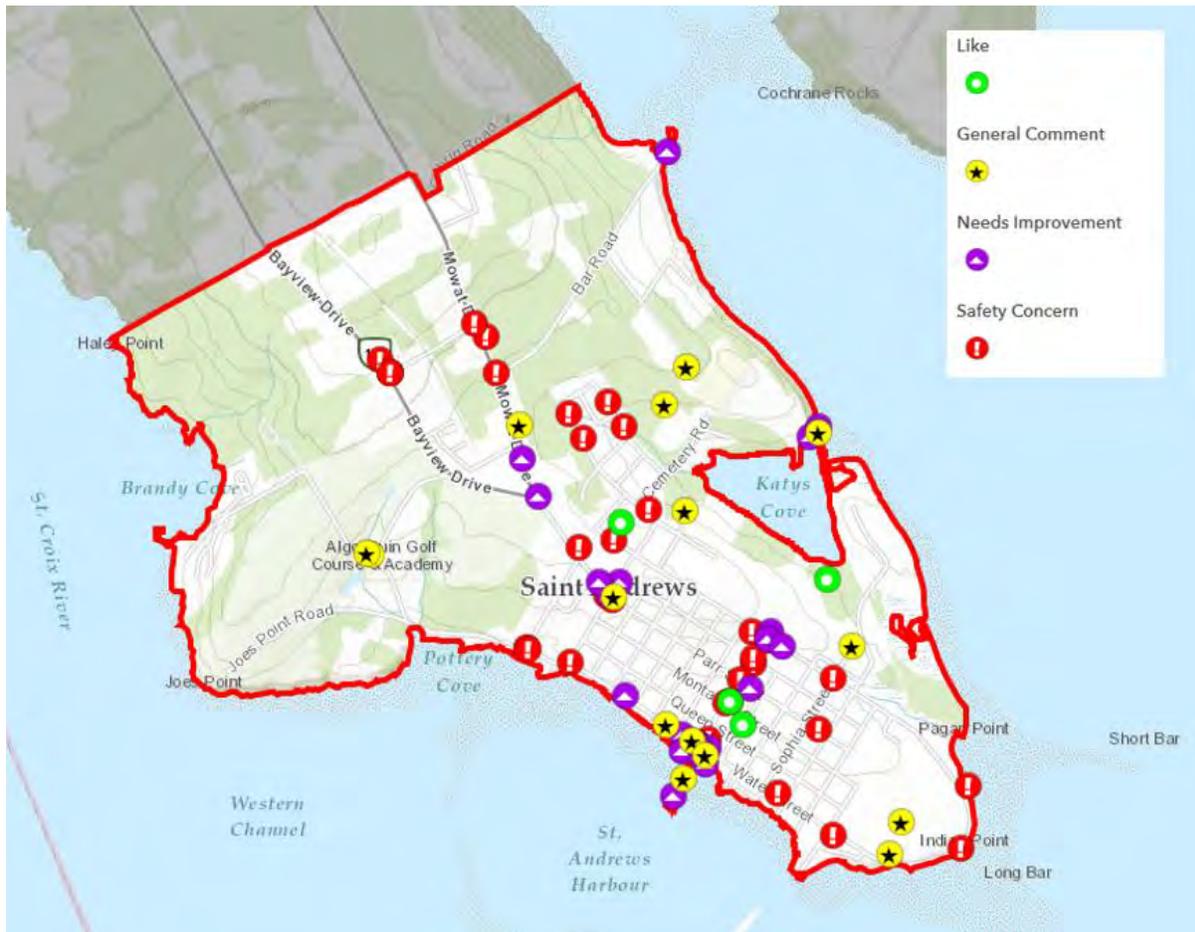
### 2.3 Participatory Mapping

Concurrent with the public meetings, we also launched an online participatory website and map, and a survey available both in print and online formats (see Figure 2). The participatory map explored participants' places of residence (asking whether they were a local resident, or a visitor, their transportation priorities ranked by level of importance for a number of aspects including:

- ▶ Congestion management.
- ▶ Walking and Cycling.
- ▶ Public Parking.
- ▶ Complete Streets.
- ▶ Goods Movement.
- ▶ Public Transit.
- ▶ Accessibility.

In addition, participants were asked what mode of travel they typically use for various activities, such as work, school, shopping, entertainment, social and recreational activity, personal errands, or other types of trips. Similar to the first public meeting, participants were asked what they think the

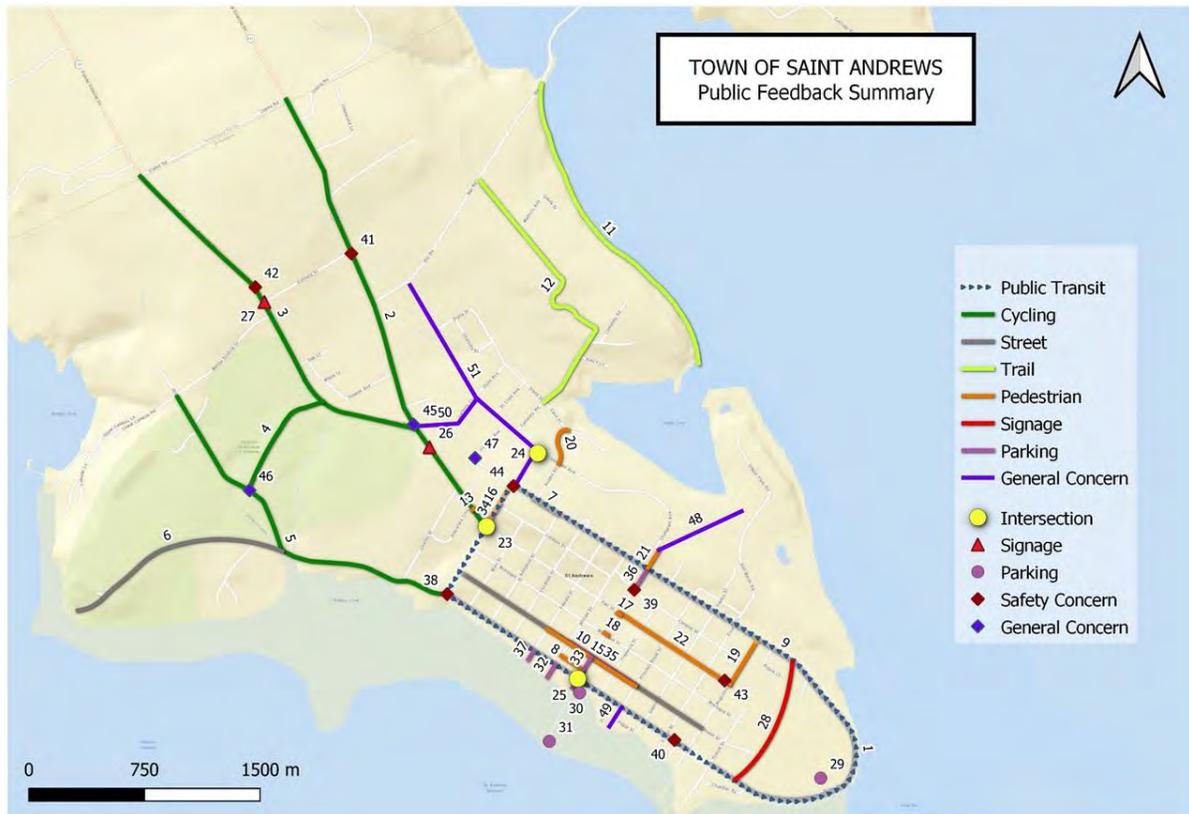
guiding principles of a successful Transportation Master Plan should be, and also to comment on their suggested “vision statement” for the Town’s transportation.



**Figure 2: Online Map Participation**

## 2.4 Major Findings

The consultation program provided a very good range of information in both breadth and scope. Comments received covered everything from the Town’s road network, to intersection improvements, circulation management, active transportation and parking issues. These are addressed in detail below. The comments and input received are summarized in aggregate on Figure 3 and in Table 1.



**Figure 3: Summary of Public Consultation Feedback**

**Table 1: Aggregated Feedback Comments**

#	Theme	Description
1	Public Transit	Proposed public transit route along the Town perimeter
2	Cycling	Mowat Drive, more cyclist friendly
3	Cycling	Bayview Drive, more cyclist friendly
4	Cycling	Cedar Lane, more cyclist friendly
5	Cycling	Brandy Cove Road, more cyclist friendly
6	Street	A request to pave the road
7	Street	Stopped cars and pedestrian crossing at Algonquin Resort causes congestion and accidents
8	Street	Congestion on Water St caused by delivery trucks and parking
9	Street	Pavement is too narrow for shared use (autos, cyclists and pedestrians)
10	Street	Requests to turn the street to one-way to reduce the congestion on Water St
11	Trail	A connection for Van Horne Trail to Ministers Island is needed
12	Trail	A request for finishing the "already designed" connection between Bar Road and Cemetery Road
13	Pedestrian	A crosswalk is needed for the pedestrians crossing Reed Ave from/to the Youth Centre
14	Pedestrian	A request to add a sidewalk at this location

#	Theme	Description
15	Pedestrian	No Sidewalks
16	Pedestrian	No Sidewalks
17	Pedestrian	Need for Crosswalks
18	Pedestrian	Need for Crosswalks
19	Pedestrian	No Sidewalks on Augustus to Prince of Wales St after the community college
20	Pedestrian	Very rough. Walkers don't have safe way to Katy's.
21	Pedestrian	A connection is needed to facilitate the pedestrian movement to Kingsbrae entrance
22	Pedestrian	A sidewalk is needed to facilitate the pedestrian movement on Par St to NBCC
23	Intersection	Public safety concerns regarding the lack of safety and clarity of the intersection
24	Intersection	Poor visibility on the southeast corner
25	Intersection	Congestion
26	Signage	Better signage directing RV's directly to campground, keeping them off Water Street.
27	Signage	Traffic coming into town around bend too fast to safely turn onto Bayview Drive from Cornelia Street and Marine Science Drive. Speed limit should be reduced to 50 Km/hr at town limit.
28	Signage	Better trail signage needed
29	Parking	Off-street parking needs to be developed
30	Parking	Need for a parking plan for Market Square
31	Parking	Seasonal parking problems in comparison with typical parking demand
32	Parking	A request to provide more parking spaces at this location
33	Parking	A request to provide more parking spaces at this location
34	Parking	Parking during council meetings and community movie nights causes congestion
35	Parking	A request to provide more parking spaces at this location
36	Parking	Staff parking causes congestion
37	Parking	A request to provide more parking spaces at this location
38	Safety Concern	Should be a 3-way stop
39	Safety Concern	Need for flashing crosswalk lights
40	Safety Concern	Speed at night on Water St
41	Safety Concern	Need for Crosswalks
42	Safety Concern	Trees and Brush need to be trimmed to provide sightlines for traffic turning on to Bayview Drive from Cornelia Street and Marine Science Drive
43	Safety Concern	Speeding by NBCC students must be monitored
44	Safety Concern	Pedestrian walk across without looking
45	General Concern	Intersection needs improvements
46	General Concern	Re-evaluate intersection control
47	General Concern	Curve is too narrow for the movement of two vehicles
48	General Concern	A request for an access road
49	General Concern	A request to add a sidewalk at this location

#	Theme	Description
50	General Concern	Requests for an access road to connect Champlain Ave to Reed Ave
51	General Concern	A request to turn Champlain Ave to one-way

## 2.5 Transportation Vision for the Town of Saint Andrews

The Town’s planning efforts and the stakeholder consultation feedback are summarized by the desire for a **healthy community** emphasizing an **easily-accessible experience of art and nature**. People in this healthy community are able to live close to the forest and the ocean, without the need for a car since everything is within walking or biking distance, including: the grocery store, the schools, the banks, the doctor’s office, the dentists, the pharmacy, the post office, the hair dresser and barber, the coffee shop, restaurants, the liquor store and the pub. This is a pretty magical place to live.

The Town of Saint Andrews envisions a transportation network that will efficiently handle a growing healthy community and an increasing number of tourists and will encourage walking, cycling, and transit use for access to schools, local businesses, recreation facilities whilst also providing for growth in vehicle traffic as required for the envisaged economic growth and community growth patterns. A robust, safe pedestrian and cycling network is required, including sidewalks of sufficient width, and effective connectivity to the Town’s trail system. The road network design will contribute to the safe, calm and efficient flow of transit, commercial, automobile and motorcycle traffic.

The over-arching goals of the TMP are to:

- ▶ Foster a linked community, walkable and connected through on- and off-road routes between residential and employment clusters.
- ▶ Improve mobility through alternative modes of transportation that reduce auto dependence  
Improve circulation through the Town, during both typical and tourist season conditions.
- ▶ Plan safer, quieter, more comfortable and friendlier pedestrian streets and streetscapes.
- ▶ Encourage walking, cycling and transit supportive communities, improving air quality and helping reduce Green House Gas emissions.
- ▶ Improve parking availability, goods delivery and loading activity on Town roads.
- ▶ Manage the impacts of tourism and visitor traffic on Town roads.
- ▶ Protect the Town’s Historic District designation.

This goals define how the Town wants to shape its future. This Plan sets out the things that must be in place to succeed.

## Chapter 3 Existing Conditions

### 3.1 Land Use

While the community was at one time a mix of retired people and families, the increasing cost of real estate has been making it harder for young families to own property near the vibrant downtown.

#### 3.1.1 Existing Land Uses

Review of the Town's transportation needs starts with an understanding of its land uses. As per the updated Town Zoning Map (see Figure 4), the Town's character is decidedly residential, with a core residential Town Plat, bordered by a commercial district to the west and institutional corridors to the north and east. The core area is designated as the Saint Andrews Historic District, a National Historic Site of Canada. The northern edge of the Town is characterized by relatively large property lots zoned for estate residential uses; two very large parcels along Champlain Avenue and Bar Road are zoned for high-density residential uses. This area represents much of the Town's future growth potential, as it falls outside of the Historic District designation.

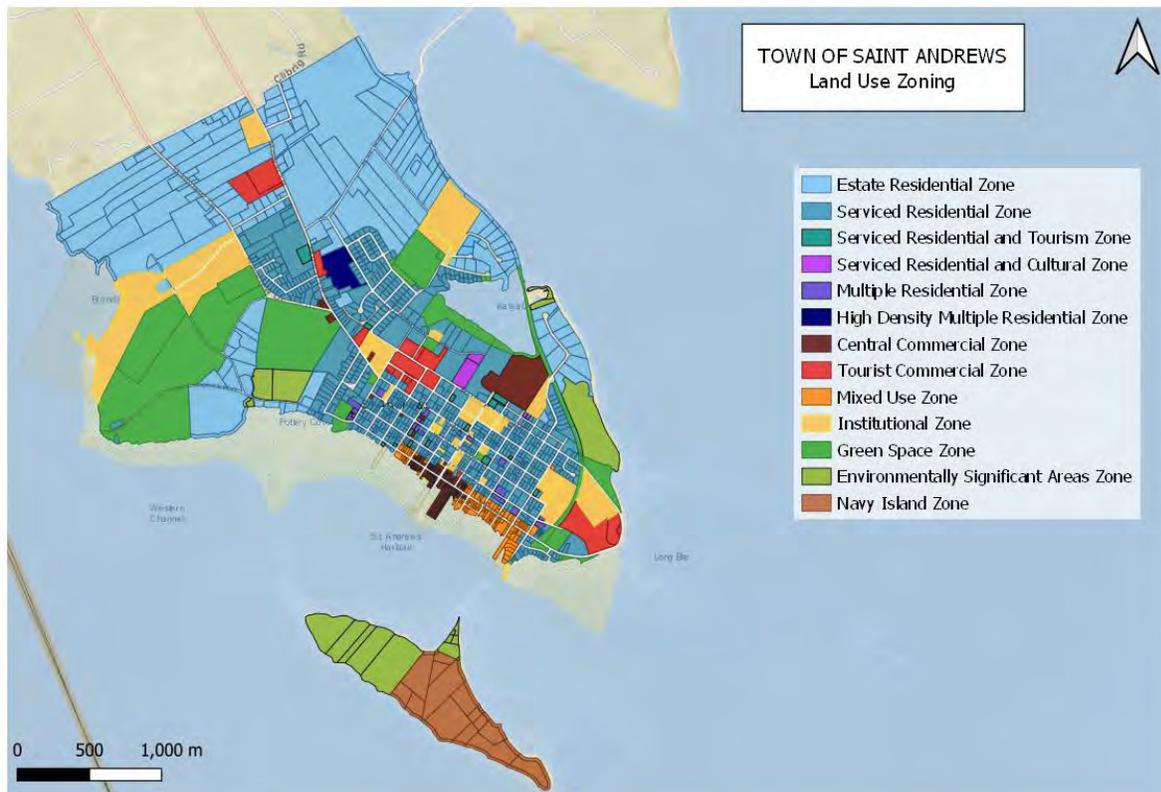
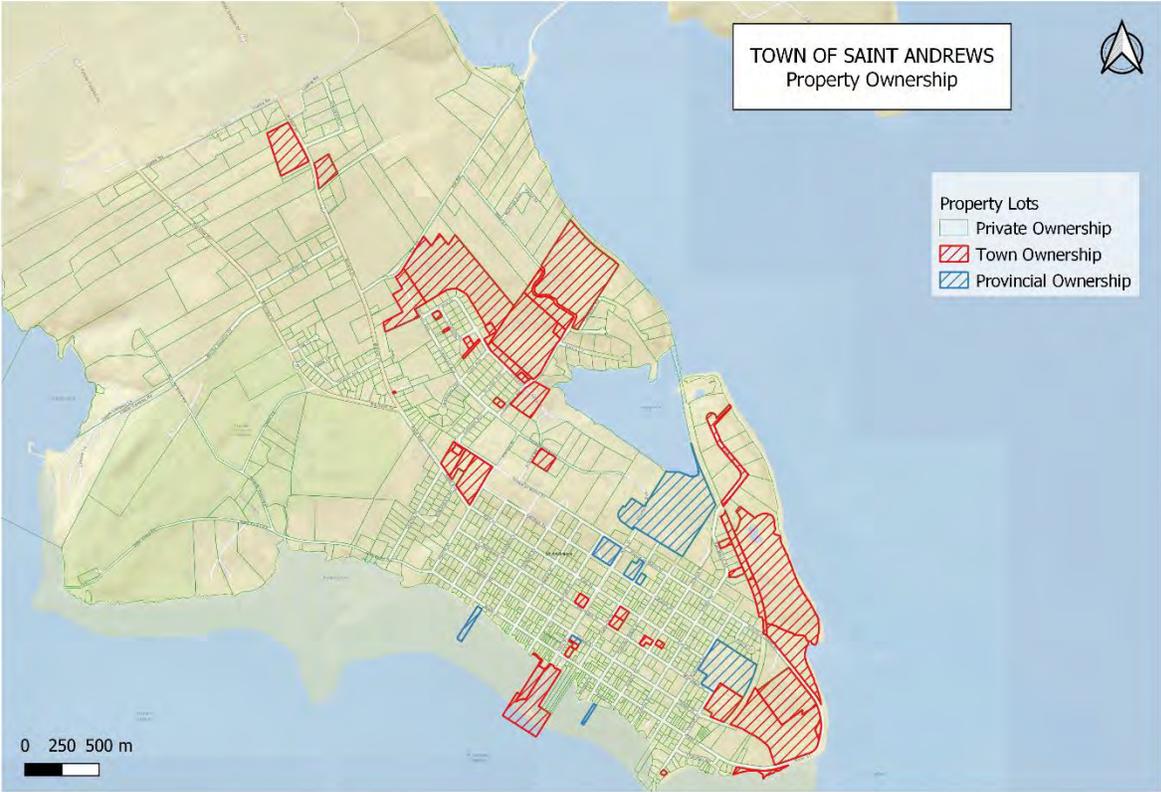


Figure 4: Town Zoning Map

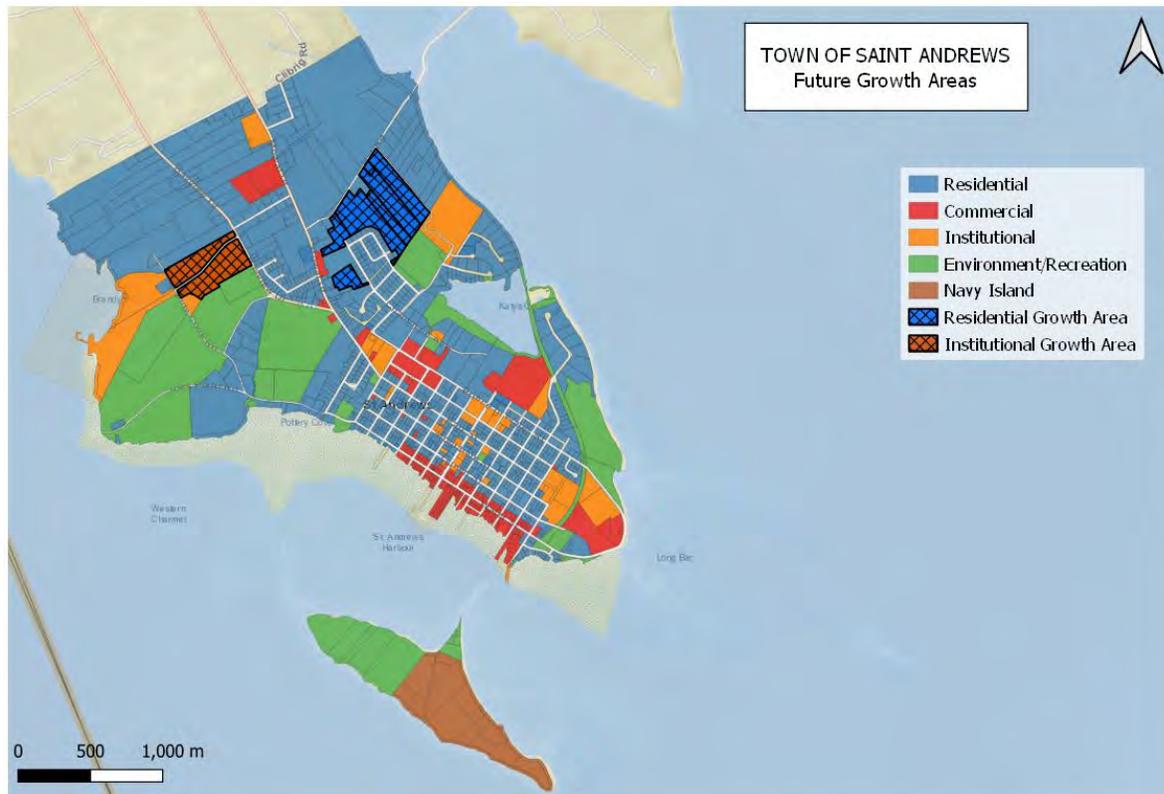
Review of property ownership reveals significant public-sector holdings by both the Town and the Province, along the eastern side of the Town (see Figure 5). While the majority of these properties are occupied by institutional uses and services (water, wastewater and public works), a number of properties are zoned as green space or residential use.



**Figure 5: Property Ownership**

### 3.1.2 Future Growth

Review of the updated Municipal Plan reveals planned growth areas on the northern outskirts of the Town. On the west side of Highway 127, lands zoned for Institutional uses along Marine Science Drive are expected to host additional institutional uses. On the east side of Highway 127, the large property parcels zoned for high density residential uses are expected to absorb most of the Town’s residential growth over the near to medium future (see Figure 6).

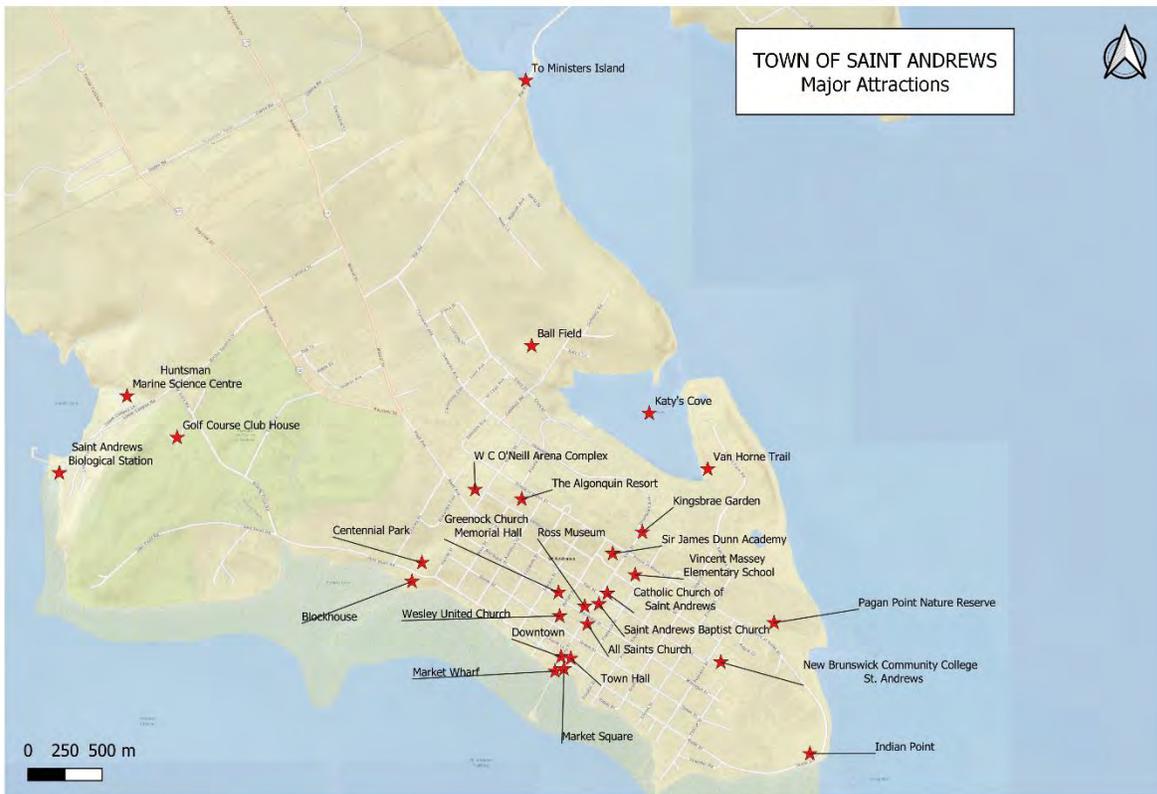


**Figure 6: Planned Future Growth Areas – Source: Saint Andrews Draft Municipal Plan 2020**

### 3.2 Activity Generators

Travel within the Town is characterized by a principle long north-south axis that includes travel to and from the Town Plat, and a secondary east-west axis within the Town Plat between the residential core and the Water Street commercial street, the Huntsman Aquarium and Marine Sciences Centre, and Minister’s Island.

Major destination of daily interest and attractions are concentrated along the King Street, Water Street, and Prince of Wales Street corridors (see Figure 7).



**Figure 7: Major Attractions**

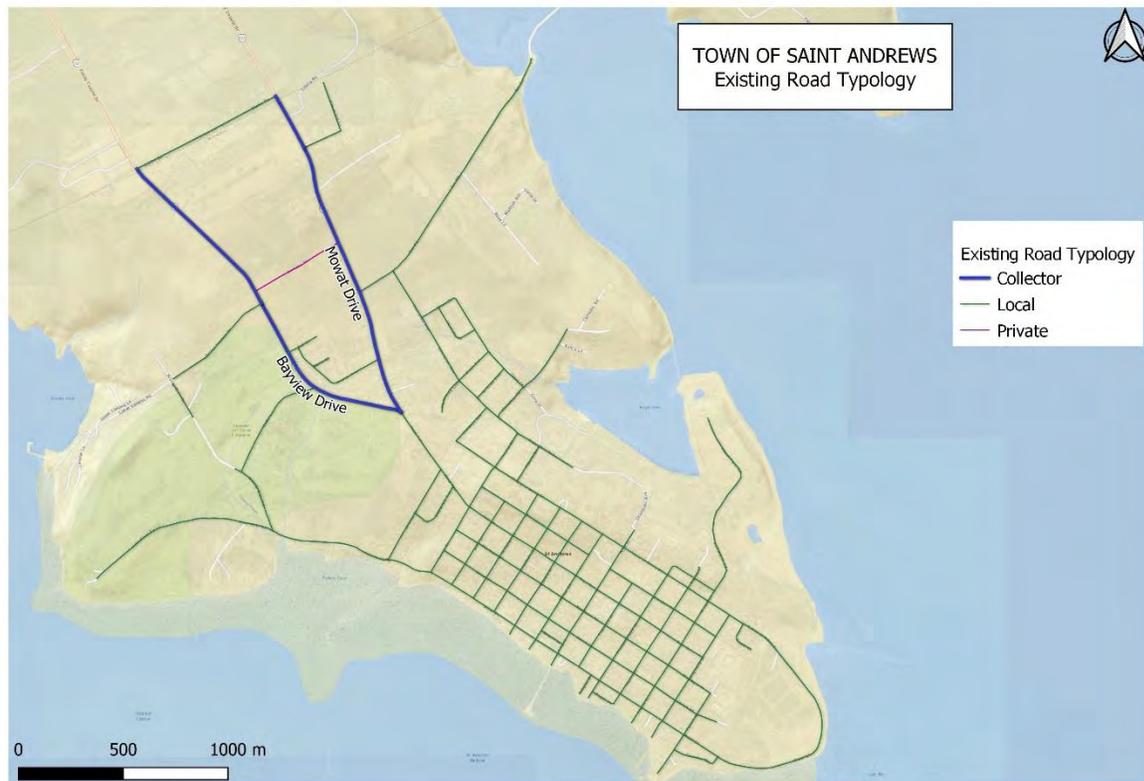
### 3.3 Road Network

The Town's road network is homogeneous, featuring primarily local streets, accessed through Highway 127, classified as a Collector Road (see Figure 8).

Outside of Town limits, Highway 127, currently operates with a posted speed limit of 80km/hr on Mowat Drive, and 70km/hr on Bayview Drive. Within Town limits, vehicular speed is restricted to 50km/hr on most streets, Water Street being restricted to 40km/hr around Indian Point, and Prince of Wales Street restricted to 30 km/hr in the vicinity of Passamaquoddy Lodge.

The road network, although designed on a grid plan, was operationally designed to facilitate north-south vehicular circulation; most of the north-south streets operate with no stop signs, while the majority of the east-west streets operate with two-way stops. North of Town limits, Mowat Drive is in poor condition, with degraded road surfacing. As a result, emergency ambulance access is constrained to lower speeds and longer access time to Highway 1 to reach hospital services in St. Stephen. Considering its importance as the Town's evacuation route, Highway 127 requires close attention to ongoing maintenance and repair.

The road network is interrupted through the Algonquin Golf Course, as Brandy Cove Road is closed over a short portion between the Clubhouse Entrance and Cedar Lane. The Right-of-way, as shown in Figure 9, remains in the Town's ownership.



**Figure 8: Existing Road Network**

Overall, the TMP process suggests that Town residents are satisfied with the extent of the road network. Opportunities were flagged for completion of gaps in the grid network, and for the provision of alternative connections to Reed Avenue, currently the main road in and out of Town.

Notable suggestions include the connection of Cemetery Road to Bar Road via Rose Lane, and the connection of Prince of Wales Street directly to Mowat Drive / Bayview Drive. Additionally, the opportunity may exist to extend Montague Street and Queen Street across the Van Horne Trail into the Kiwanis RV grounds.

The streets of Saint Andrews have historically been characterized by low vehicular volumes travelling at low speeds. As vehicular volumes and speeds have increased over time, residents are increasingly reporting some feelings of unease at walking or cycling on those Town streets with limited active transportation infrastructure. Numerous comments point to speeding, congestion, and the need for additional crosswalks and sidewalks throughout the Town, especially within the activity districts.

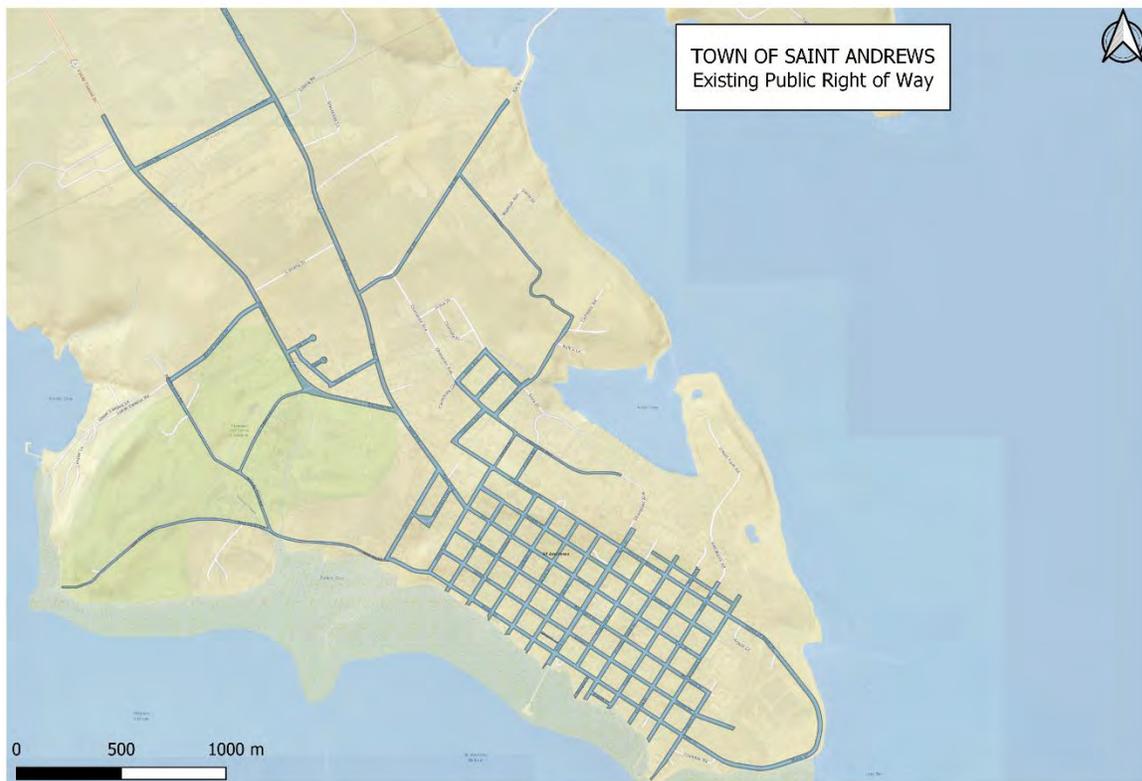
To be successful, the TMP must improve the road network connectivity and re-balance the roads towards inclusion of non-motorized users.

### 3.4 Right of Way (ROW)

The Town's road network exhibits a fairly consistent public right-of-way, especially within the historic Town Plat. Most streets are approximately 18m wide, with the exception of King Street, which allows for a 23m ROW. Cedar Lane and Joes Point Road also stand out as being particularly narrow at approximately 10m. The public ROW is illustrated in Figure 9, and ROW and pavement widths are summarized for major roads in Table 2.

On most roads, only 50% of the ROW is paved and dedicated to road usage; the remainder is either unpaved, grassed, or consists of a ditch. There is most often no physical separation between private properties and the public ROW; indeed adjacent private landscaping often encroaches into the public ROW.

Noteworthy is that, while the pavement is generally limited to allowing only two drive lanes, the ROW would allow for accommodation of additional transportation facilities, should the Town wish to do so.



**Figure 9: Existing Public Right-of-Way**

**Table 2: Existing Road Right-of-Way and Pavement Width**

Road	ROW	Pavement Width	Notes
Water St.	≈16m	≈9.7m (North of Elizabeth St)	Curbed with a sidewalk on the east side
	≈18.5m	≈10.5m (South of Elizabeth St)	Curbed with sidewalks on both sides in most parts
	≈18-20m	≈6-8m (around point)	Uncurbed with riprap along sea side; The width available for development is limited to 13 meters in some parts due to sea side riprap and other constructions.
Water St. (around point)	≈18-20m	≈6-8m	Uncurbed with riprap along sea side; The width available for development is limited to 13 meters in some parts due to sea side riprap and other constructions.
Queen St	≈18m	≈7m	Ditch on both sides for most of the length
Augustus St	≈18m	≈6.5m	Curb with sidewalk on south side. Uncurbed east of Carleton St. Ditch on south side
Prince of Wales St.	≈18m	≈7.2-8m (North of King St.)	Curbed on the west side Ditch on the east side
		≈7m (South of King St.)	Uncurbed Ditch on both sides for most of the length.
Parr St.	≈18m	≈7.2m (North of Sophia St.)	Curbed on the west side (Only north of King St) Ditch on both sides for most of the length.
		≈6.3m (South of Sophia St.)	
King St.	≈23m	≈10.7m-11m	Curbed with sidewalks on both sides in most parts
Harriet St.	≈18m	≈7.6m (East of Reed Ave.)	Curbed with sidewalks on south side to Prince of Wales St.
		≈9.5m (West of Reed Ave.)	The east side is curbed with a sidewalk
Joes Point Rd.	≈9-11m	≈7m	Ditch on the east side
Cedar Lane	≈10.5m	≈6m	Partial ditch on the north side

### 3.5 Intersections

The majority of the Town’s intersections function well, due to the typically-low vehicular volumes experienced. Stakeholders have confirmed a noted lack of formal pedestrian crossing facilities, and three major intersections were specifically pointed out for improvement:

The **Parr Street / Reed Avenue & Harriet Street** intersection was pointed out as being particularly confusing and somewhat difficult to navigate. Its operation as a two-way stop with pedestrian crosswalks on 2 of 4 legs makes it confusing for drivers and gives pedestrians a sense of exposure and indirect crossing opportunities. Very large radii on channelized right turns from the north and the east further confuse drivers. Signage at this intersection was also reported as being confusing and unhelpful. It is located on the far side of the intersection, and is illegible to visitors entering the

Town, who must decide on a lane change between the right-turning channelized lane, or the through lane.

The **Water Street & King Street** intersection was repeatedly flagged as suffering from congestion. It is felt that, with many pedestrians crossing the intersection, particularly during summer months, vehicle movement is chaotic.

The **Harriet Street & Champlain Street** intersection was indicated to pose some concern, with foliage obstructing visibility between intersection approaches.

Lastly, the intersection of **Marine Science Drive & Bayview Drive** has been flagged as being challenging and presenting potential safety concerns. While the review of historical collision records in Saint Andrews does not reveal any propensity for collisions, the southbound approach is reported to experience significant speeding from inbound vehicular traffic, making turning movements onto Bayview Drive from Cornelia Street and Marine Science Drive difficult.

The TMP considers paramount the improvement of conditions at the major intersections, as they can act as bottlenecks and impede Town-wide circulation, while also being impediments to active transportation initiatives.

### 3.6 Active Transportation Network

The Town of Saint Andrews is located within a rich regional trail system that ties the Southwestern New Brunswick coastal area and the Bay of Fundy. The Town is connected to this important and increasingly well-developed trail network through the Van Horne Trail and Highway 127.

Within its boundaries, the Town complements this system with a number of very attractive and well-used off-road trails. While this effort is very well received, the Town's overall active transportation network is disjointed, and features a number of prominent gaps. As illustrated on Figure 10, several trails extend into green areas and along the region's old rail corridor, however, they are disconnected by areas lacking dedicated facilities. While the majority of these trails connect to the Town's road infrastructure, there is currently no infrastructure on these roads to continue the trail.



**Figure 10: Existing Active Transportation Network**

The Town features a limited pedestrian network; only a relatively small portion of the road network features sidewalks, and road crossing points are limited (see Figure 11). Not surprisingly, Water Street and King Street are reasonably well served by sidewalks on both sides of the street for most of their length, as they concentrate the Town’s commercial and service uses.

While there are few dedicated pedestrian sidewalks and crossings in general due to the historically-low vehicular volumes, the prioritization of north-south vehicular movement also means there are few crossing points of the more major roads. King Street, for example, features north-south crosswalks at Water Street and Carleton Street, but not in between. With 10-11m of pavement, it increases the exposure of crossing pedestrians to potential conflict with vehicles.



**Figure 11: Existing Active Transportation Network – Town Plat**

There is a general desire for improved active transportation facilities. Most importantly, there is a clear call for greater sidewalk coverage, an issue previously raised by Town Council. The population faces changing demographic patterns, as the population ages in place. Relatively high property values are noted as an impediment for the attraction of young families with children. At the same time, new residential subdivisions that do welcome new families are built without dedicated pedestrian or cycling infrastructure. Both of these demographic needs lead to significant trips for leisure, school, or services being made by car, instead of on foot or bicycle.

An additional, and related, concern is the limited number of crosswalks in the Town. The Town has close to 100 intersections; less than a third of these have crosswalks, and typically only on 2 approaches. While even the Town’s larger roads like King Street experience relatively low vehicular volumes, the limited number of north-south crosswalks caused the perception of vehicles having automatic priority, and of pedestrian crossing being prohibited. This perception further reduces the comfort and attraction of active transportation.

Related to the limited crossing connectivity of Town streets, is the need for improved access to the Town’s many off-road trails. Attractive and highly visible signage and routing have been called for to ensure easy and efficient wayfinding for residents and visitors alike.

### 3.7 Public Transit Service

Considering the relatively-low population densities of communities in south-western New Brunswick, there is currently no dedicated public transit system in place serving the Town of Saint Andrews.

Until recently, two quasi-transit services operated in Charlotte County; Rural Lynx and Charlotte Dial-a-Ride.

In 2015, a transportation committee, formed by a group of community representatives in Charlotte County, incorporated as Southwest New Brunswick Transit Authority Inc. (SWNBTAI). In partnership with the Maritime Bus regional bus carrier, SWNBTAI entered into a pilot project agreement with the government of New Brunswick, to provide the Rural Lynx service. This pilot project re-established the bus service between Charlotte County localities and Saint John with stops at both Saint John hospitals, the provincial courts, the Maritime Bus terminal, UNBSJ and McAllister Mall. The pilot project was discontinued in May of 2019, as it provided only partial solutions to Charlotte County transportation needs and did not reach a balance between a broad service coverage, and a sustainable business plan.

In parallel, the St. Stephen based Dial-a-Ride service provides pre-scheduled transportation throughout Charlotte County. The service connects a roster of volunteer drivers with potential riders for next-day trips. While this system has broad coverage throughout the County, it does not provide a fixed schedule, fixed route service, nor can it ensure reliability as its drivers operate on a volunteer basis.

Recently, Kingsbrae Gardens has also indicated an interest in operating a small bus shuttle through the Town of Saint Andrews, primarily in summer months, conveying visitors, employees and residents between various points of interest in the Town, residential areas, and the Kingsbrae Garden site.

Considering the lessons learned from the initial efforts, and given new impetus from transportation initiatives in St. Stephen and the Town of Saint Andrews, SWNBTAI has commenced a study into integrating private operators on a single platform. The intent is to provide end-users with a common trip booking interface and system, and to ensure that there are sufficient distributed service providers to ensure sufficiently broad coverage and frequent service.

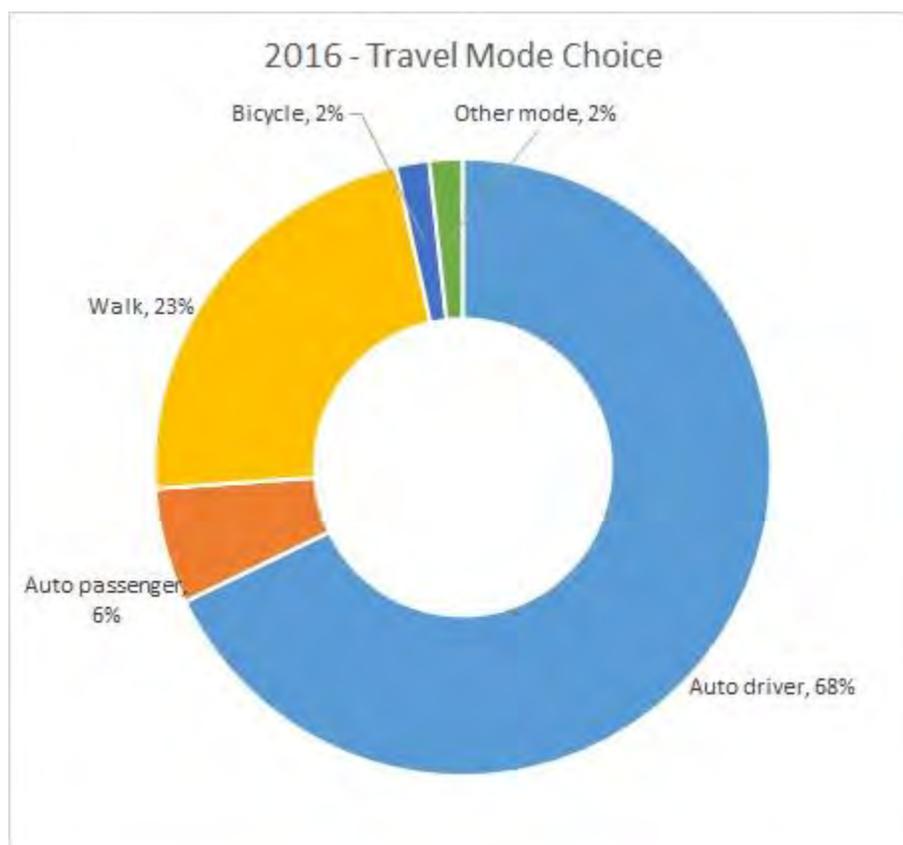
### 3.8 Travel Demand

Review of 2016 Census data for the Town of Saint Andrews reveals a number of noteworthy trends with regards to transportation. The Census probes work commuting behaviour and reports the place of work, mode of travel and trip duration, for trips made by persons of working age, 15 years and over. While this does not cover leisure or education trips, it provides a very good indication of the primary trip patterns in the in Town and within Charlotte County.

This transportation behavioural profile of the Town of Saint Andrews suggests that, while the vast majority of trips are made by car, with some noteworthy exceptions, travel patterns are dominated by short, local trips. The opportunity therefore exists to focus the Town’s transportation and mobility networks to prioritize non-motorized local movement and reduce auto dependence and its associated impacts.

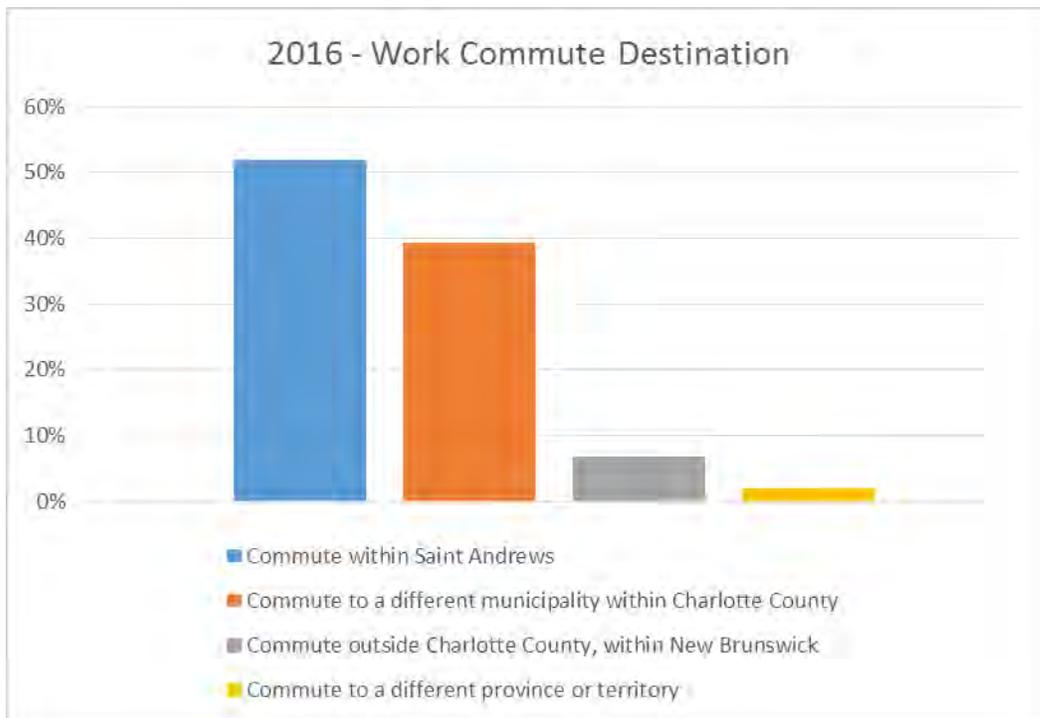
### 3.8.1 Mode Split

First of all, review of the mode of travel for commuting to work, as reported in the 2016 Census, indicates that in 2016, 74% of work trips were made by car drivers (primarily as drivers), while 23% of trips were made by walking. Some residual trips were reported as being made by cycling and other modes (see Figure 12).



**Figure 12: Study Area Mode Split**

Review of work commute destinations in 2016 (see Figure 13) shows that over 50% of all work trips were made within the Town of Saint Andrews, and another 40% of trips remained within Charlotte County. This suggests very high internal capture of work trips destined within the Town of Saint Andrews or to neighbouring St. Stephen.



**Figure 13: Work Commute Destinations – 2016**

The local character of work trips, is further suggested by the very short length of work trips; in 2016, over 60% of all work trips made by residents of the Town of Saint Andrews were less than 15 minutes long, while 20% of trips were 15-29 minutes long (see Figure 14). Aside from the Bayside Port Industrial Park on Highway 127, 15-minute work trip is limited to the Town of Saint Andrews in terms of employment opportunities.



**Figure 14: Work Commute Duration – 2016**

Overall, this review indicates that, while the majority of work trips are made within or just outside of Town in 15 minutes, they are mostly made by car. Opportunities may therefore exist to shift a significant portion of these trips from personal auto to other modes of transportation more consistent with the Town’s vision and development goals.

### 3.8.2 Personal Vehicle Travel Demand Profiles

While Highway 127 is primarily intended to facilitate fast and unimpeded vehicular movement, the Town’s local streets have been more accommodating of active or non-motorized movement. Streets were historically characterized by low vehicular volumes, moving at low speeds. This inherently kept circulation relatively safe as it provided drivers good reaction times and reduced the severity of collisions. Most of the Town’s streets therefore functioned reasonably well with their narrow pavement and lack of sidewalk, and did not require formal separation of motorized and non-motorized users.

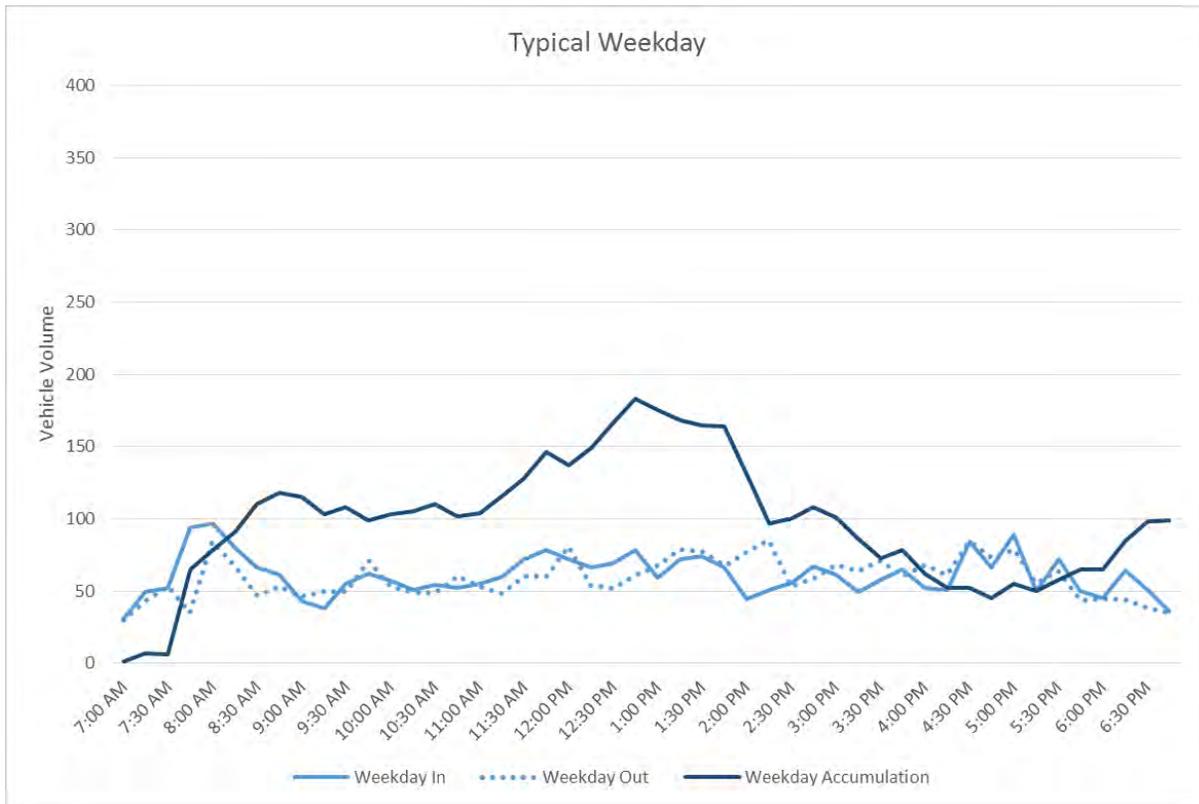
This pattern changes on Water Street, where the focus on commercial, retail and service uses generates multi-modal activity and significant friction. The road, currently operating with two bi-directional lanes of travel and on-street parking, experiences travel, parking and loading activities that often conflict.

Additionally, the Town experiences an additional dynamic during the summer months as it welcomes large number of tourist and leisure visitors. The friction observed in typical months is therefore exacerbated by the addition of leisure vehicles and high vehicular, pedestrian and cycling volumes.

Traffic counts were undertaken within the Town at 15 major intersections, identified by Town staff as meriting special focus. To develop an understanding of the daily flux in travel demand entering and leaving the Town, we reviewed temporal vehicle volume profiles at the Reed Avenue / Mowat Drive / Bayview Drive intersection, which is the Town's primary access point. The profile illustrates vehicles entering, vehicles leaving, and the resulting accumulation of vehicles in the Town, taken as the addition of vehicles entering and subtraction of vehicles exiting. An initial 100 vehicles were considered to occupy Town streets at the start of the traffic counts during weekends, based on the assumption that visitors would remain overnight. The temporal vehicle volume analysis confirm the existence of two travel demand profiles; a typical year-round demand, and a seasonal summer demand.

### **Typical Conditions**

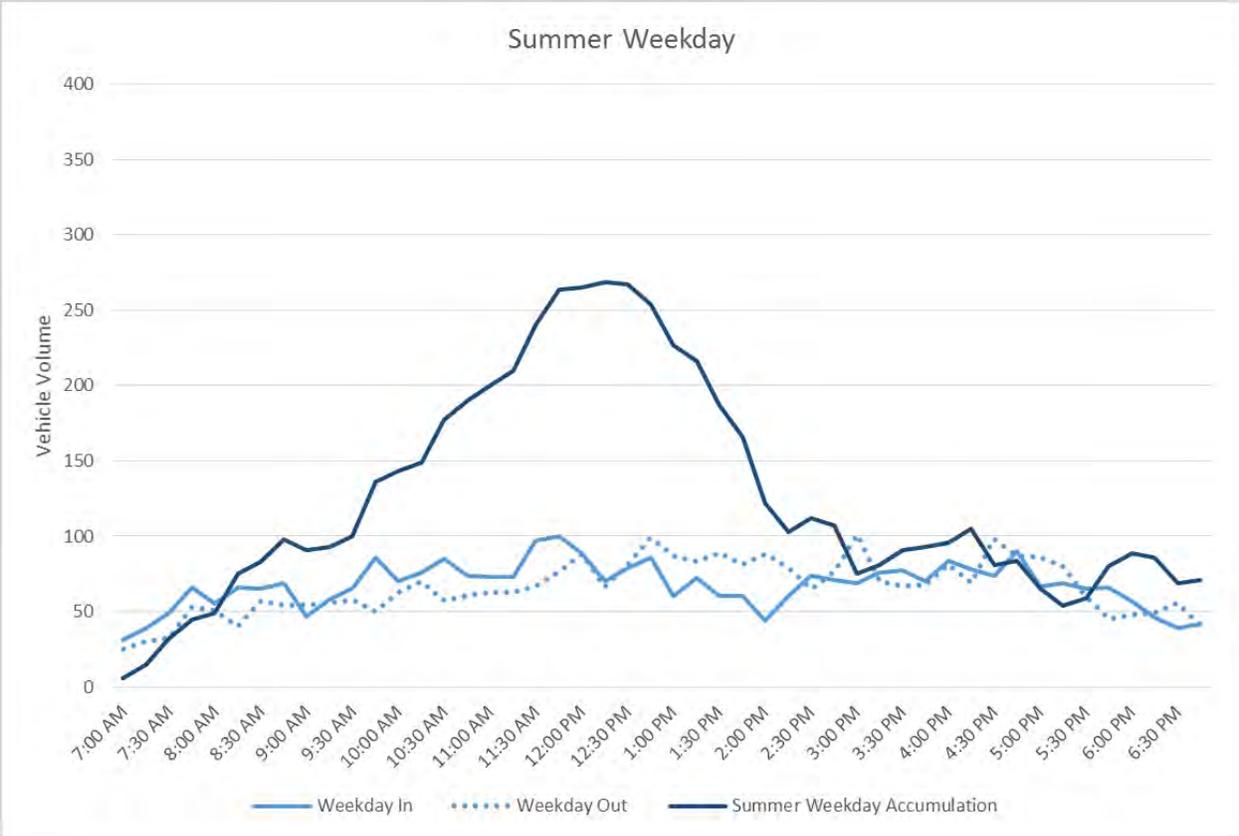
Under typical travel conditions during the off-summer months, review of the weekday vehicular volume profile suggest an inbound/outbound profile consistent with typical commuting patterns in terms of a noted peak in the influx of vehicles coming to Saint Andrews in the morning and leaving the Town in the afternoon (see Figure 15). Noteworthy, however, is the constant back and forth throughout the day, with a clear bias towards vehicles entering the Town before noon. When looking at the accumulation of vehicles in the Town, the addition of entering vehicles and subtraction of vehicles leaving, we see an accumulation of approximately 100 vehicles on Town roads from 8:00 AM to 11:00 AM, growing to ~175 vehicles between 11:00 AM and 2:00 PM, before decreasing to less than 100 vehicles in the afternoon. An uptick is observed again in the evening, possibly coinciding with commuters returning home or out-of-towners coming for leisure uses.



**Figure 15: Travel Demand Profile – Typical Weekday**

### Summer Conditions

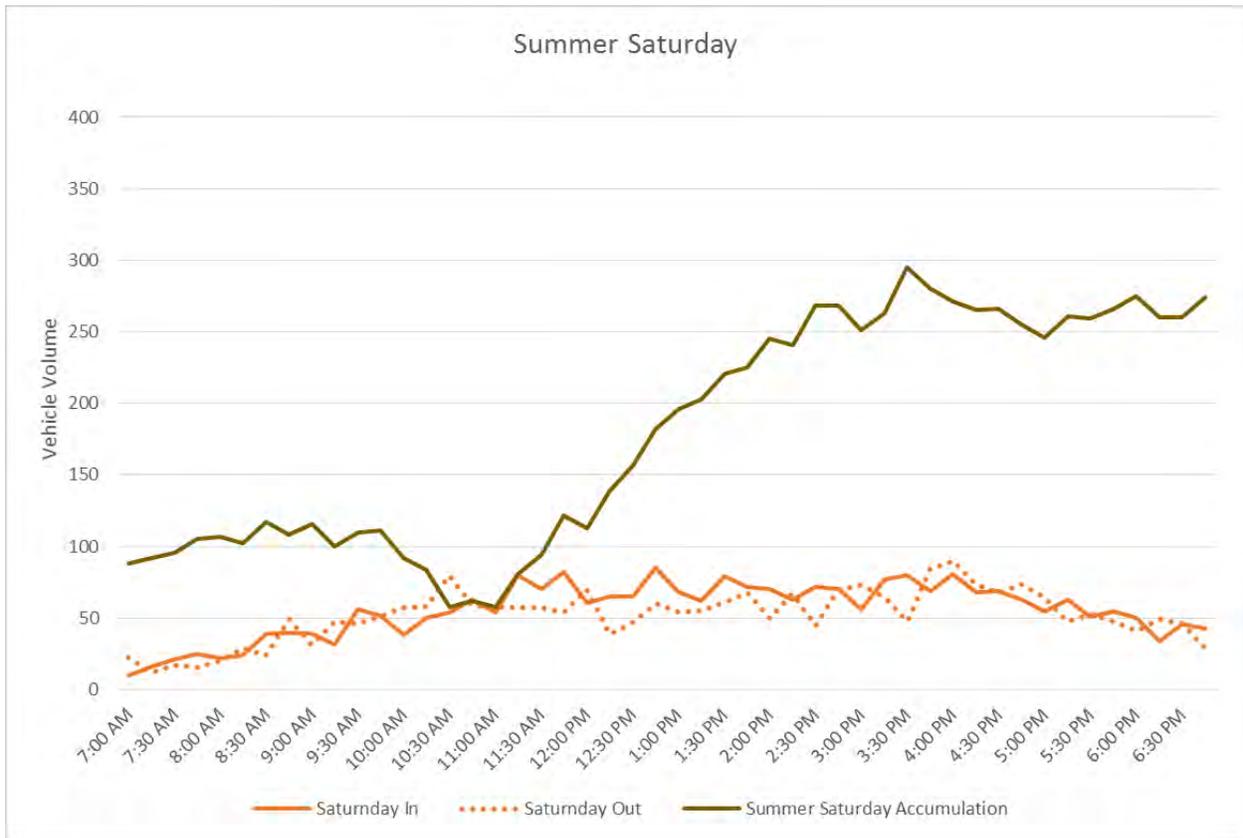
During summer month weekdays, we observe a very well-defined peak visitor time during the midday, roughly starting at 10:00 AM, until 2:00 PM, during which accumulation steadily increases to over 250 vehicles at noon before falling back to 75-100 vehicles in the afternoon and evening (see Figure 16). This profile suggests an additional 100 vehicles in Town streets, when compared to typical travel demands off-summer.



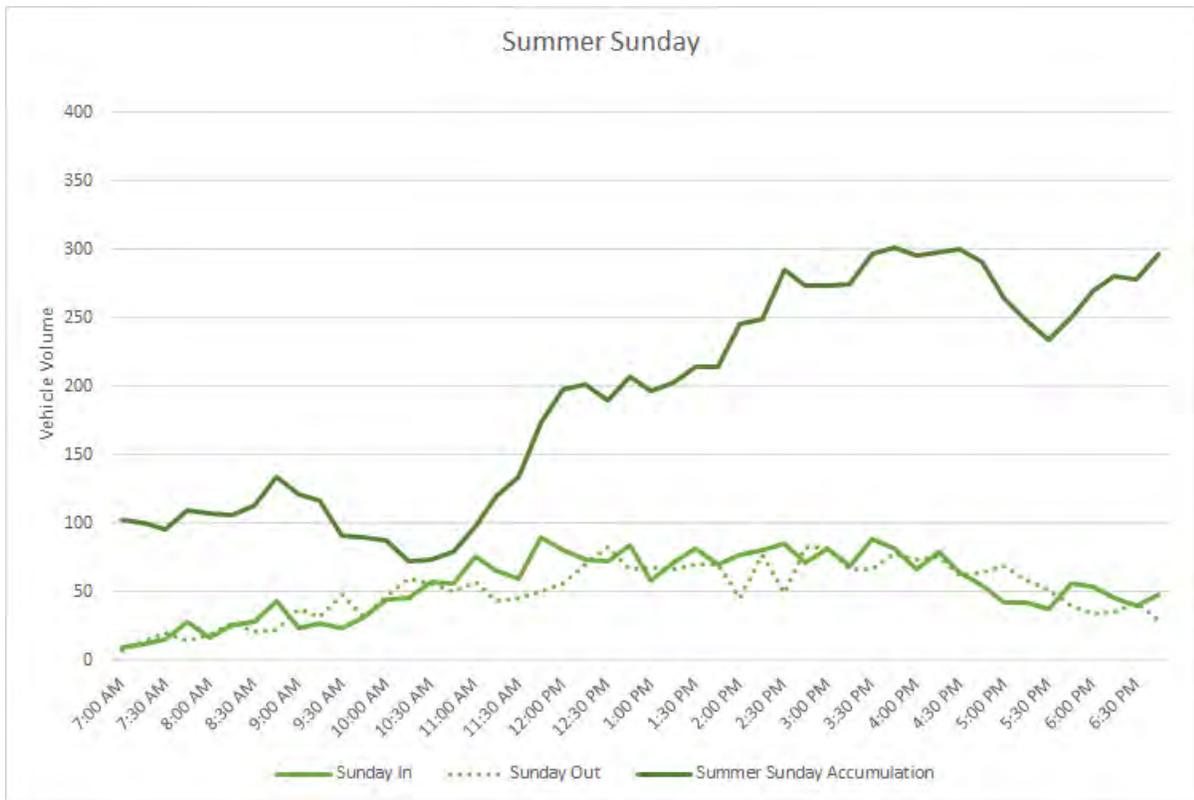
**Figure 16: Travel Demand Profile – Summer Weekday**

Review of travel profiles during summer weekends reveals very similar demands between Saturday (see Figure 17) and Sunday (see Figure 18), characterised by a slight dip in the morning, suggesting movement outside of Town, followed by significant influx of people in the afternoon.

Accummulations remain consistent in the afternoon at 250-275 vehicles, comparable to the summer weekday noon period. This profile suggests significant movement into the Town for evening leisure purposes during the summer months, consistent with the Town’s attraction as a tourist destination.



**Figure 17: Travel Demand Profile – Summer Saturday**



**Figure 18: Travel Demand Profile – Summer Sunday**

## Canada Day

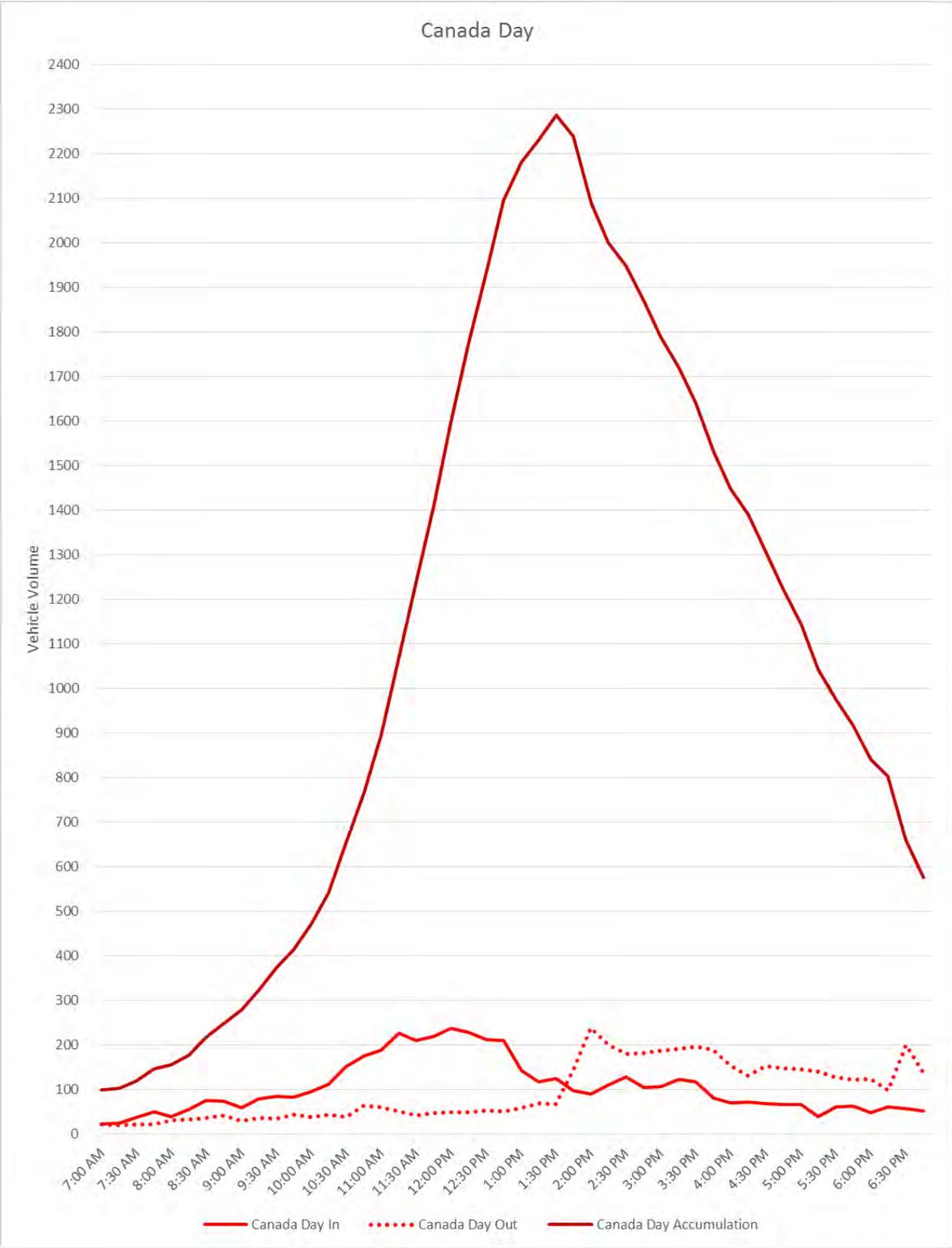
From discussion with Town staff and our own experience in the Town, it was understood that during atypical summer events like Canada Day, the Town experiences a travel demand far beyond both typical and seasonal summer demands. At the Town's request, Traffic counts were also conducted during the Canada Day weekend to derive a comparative measure of the congestion associated with this event. Review of vehicular volumes entering and leaving the Town on this occasion reveals a very significant influx of visitors before noon, followed by an equal exodus out of Town (see Figure 20).

The resulting accumulation reaches a peak of ~2,300 vehicles until 1:30 PM, falling quickly following the Canada Day Parade. This represents a 10-fold increase in the number of out-of-Town vehicles on Town roads, compared to typical or even summer weekend demand.

Video footage further confirms that many of the Town roads are clogged with vehicles parking where they can, at times blocking intersections, impeding both vehicular and active circulation, and potentially causing unsafe conditions (see Figure 19).



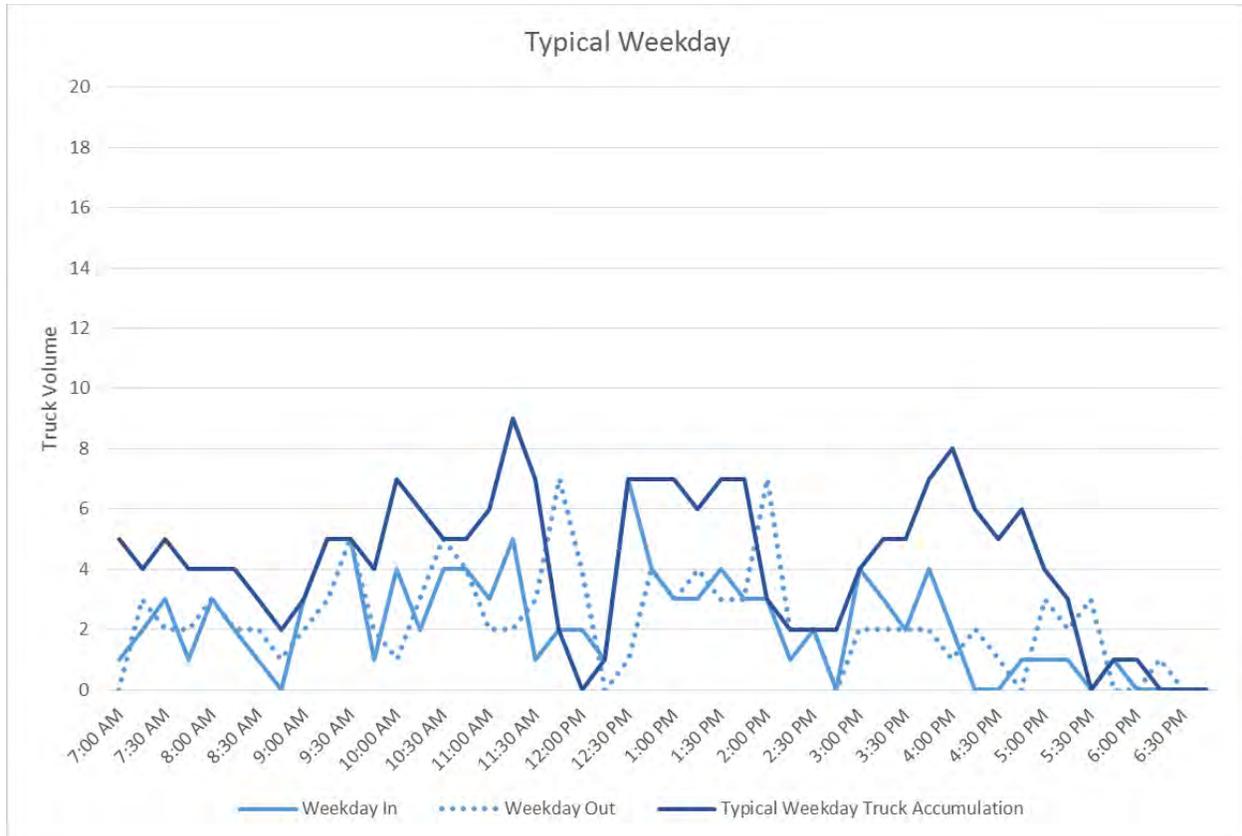
**Figure 19: Vehicular Congestion during Canada Day**



**Figure 20: Travel Demand Profile – Canada Day**

### 3.8.3 Goods Movement Profiles

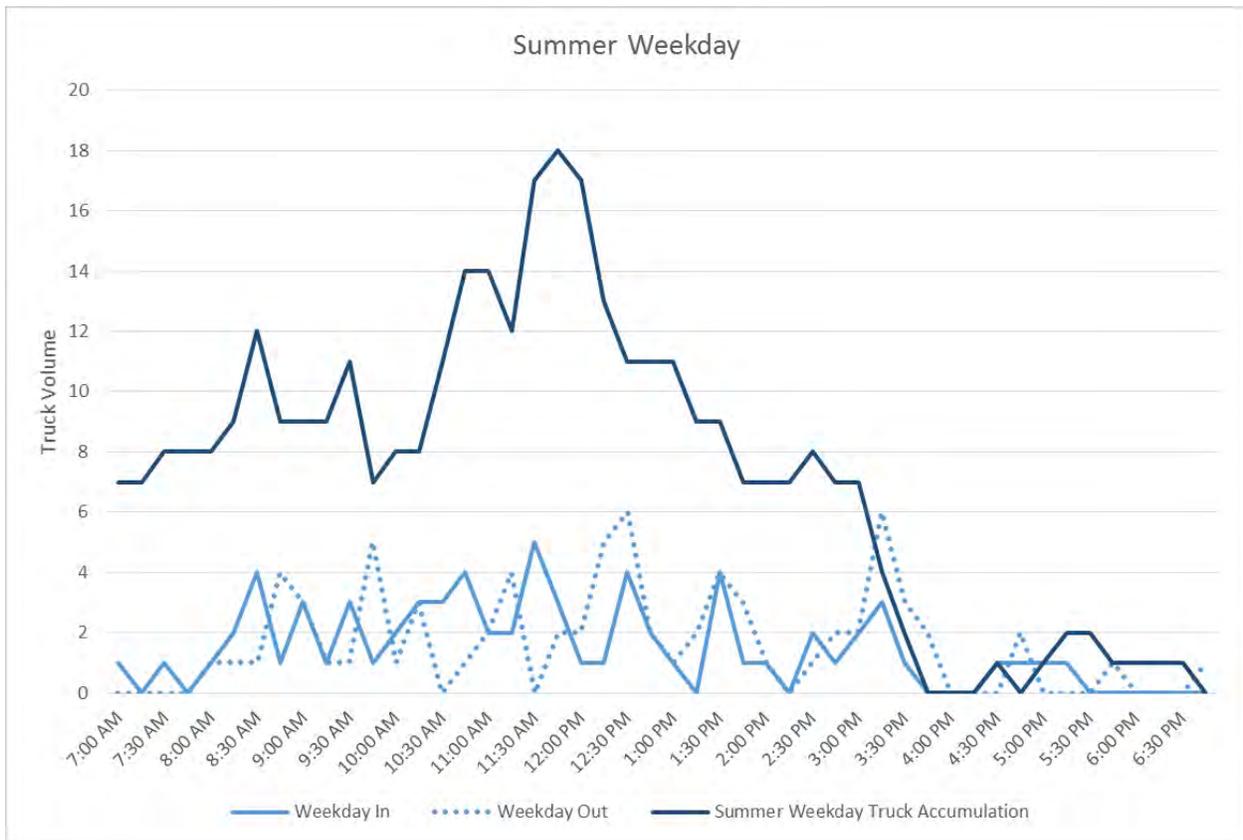
Under typical off-summer weekday conditions, the Town experiences a fairly constant in and out of delivery trucks (see Figure 21). No clear peaks are discerned, and the volume of trucks accumulating on Town streets rarely exceeds 4-7 trucks.



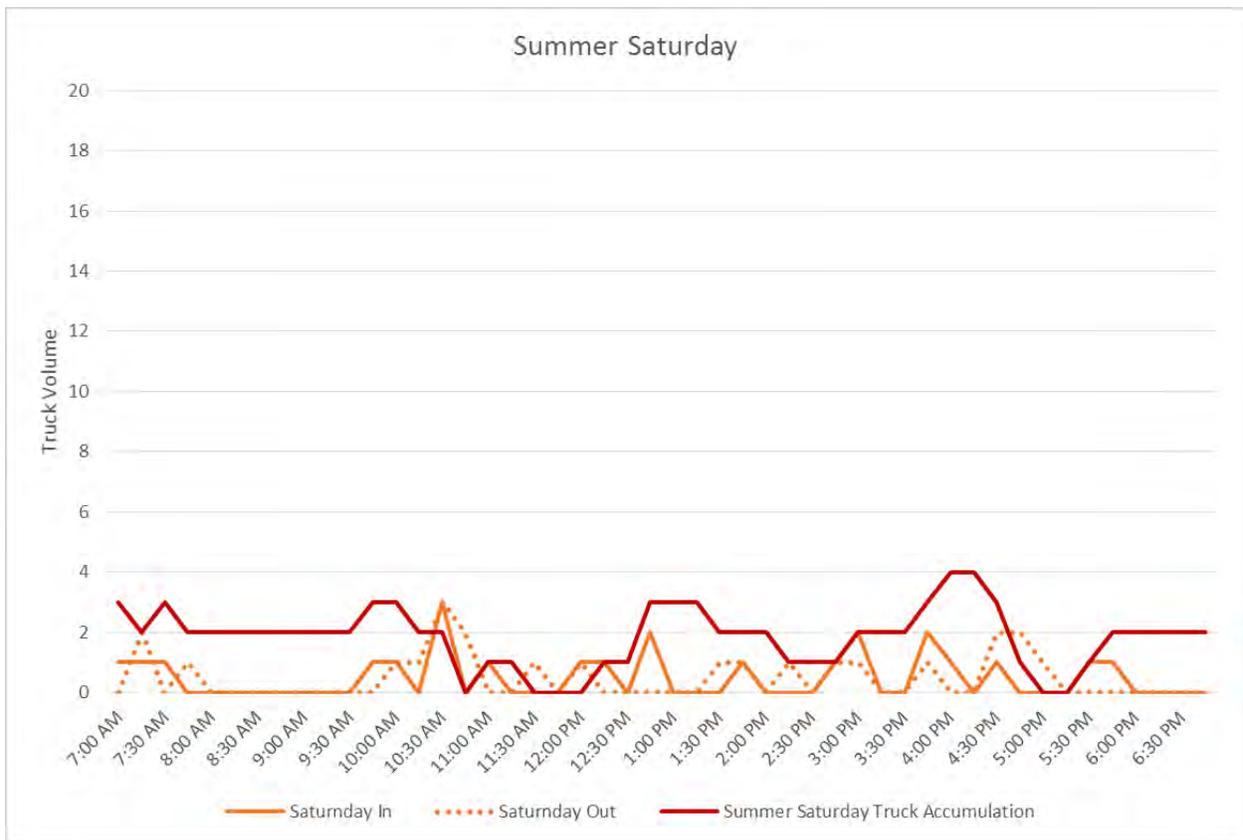
**Figure 21: Truck Travel Demand Profile – Typical Weekday**

During summer months, we observe a very clear increase in goods movement, coinciding with increased commercial activity in the Town. As shops and restaurants experience more tourism-related business, they also need more frequent deliveries. Truck counts show a steady influx of trucks in the morning, with a clear peak in accumulation around the noon hour, followed by a clear drop in the afternoon (see Figure 22). We note that during summer weekdays construction at the NBCC campus, and the Town’s own water, sewer and road paving work induced a spike in construction-related truck movements. This activity results in a peak accumulation of approximately 18 trucks.

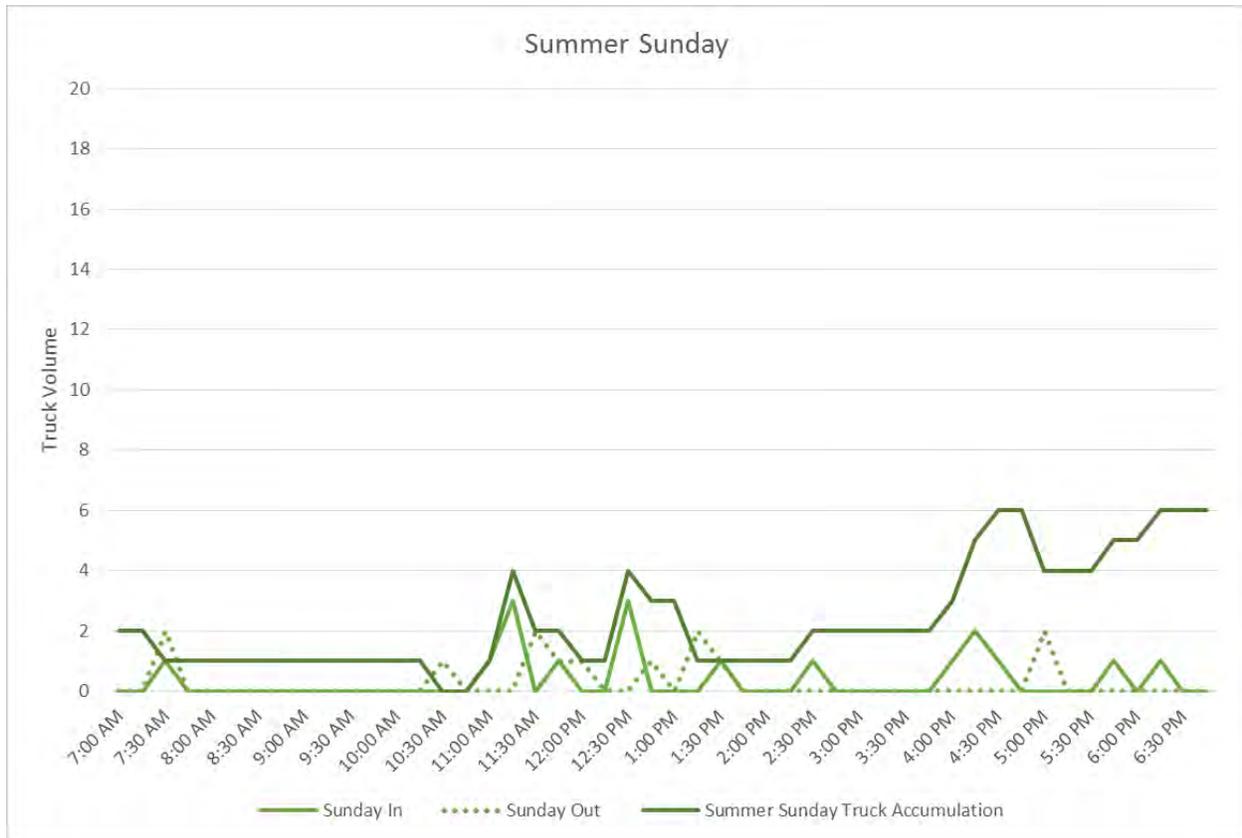
In comparison, truck profiles during summer Saturdays (see Figure 23) and Sundays (see Figure 24) are more similar to the typical weekday profile, with peak accumulation around 2-4 trucks, as they are associated more with delivery activities and less with construction.



**Figure 22: Truck Travel Demand Profile – Summer Weekday**



**Figure 23: Truck Travel Demand Profile – Summer Saturday**



**Figure 24: Truck Travel Demand Profile – Summer Sunday**

### 3.8.4 Total Vehicular Traffic Flows

To develop an understanding of the distribution of the travel demand through the Town, the counts undertaken at the 15 major intersections were summarized geographically. Vehicular volumes were compared across off-peak typical months, the summer period, and on Canada Day to identify changing patterns or localized demands.

#### Typical Conditions

During the off-summer typical period, relatively heavy bi-directional flows observed at the approach to the Town (500-600 vehicles) tend to disperse fairly evenly across Town roads. Some concentrations are observed along Water Street, coinciding with the Town’s major employment area. Traffic flows for the AM and PM peak hours are illustrated in Figure 25 and Figure 26, respectively.



**Figure 25: Traffic Flows – Typical Weekday AM Peak Hour**



**Figure 26: Traffic Flows – Typical Weekday PM Peak Hour**

## Summer Conditions

During summer months, we observe a redistribution of travel associated with the seasonal change in activities. Most noteworthy, during the weekday AM peak hour, summer traffic exhibits a reduction in vehicular volumes on Parr Street of approximately 40 vehicles southbound, associated with the NBCC campus student movements, and a matching increase in southbound vehicular volumes on Water Street, associated with more leisure retail and commercial activity (see Figure 27).

During the summer noon and PM (see Figure 28) peak hours, Water Street and Prince of Wales Street both experience an increase of 40-60 vehicles in both inbound and outbound directions.



**Figure 27: Traffic Flows – Summer Weekday AM Peak Hour**

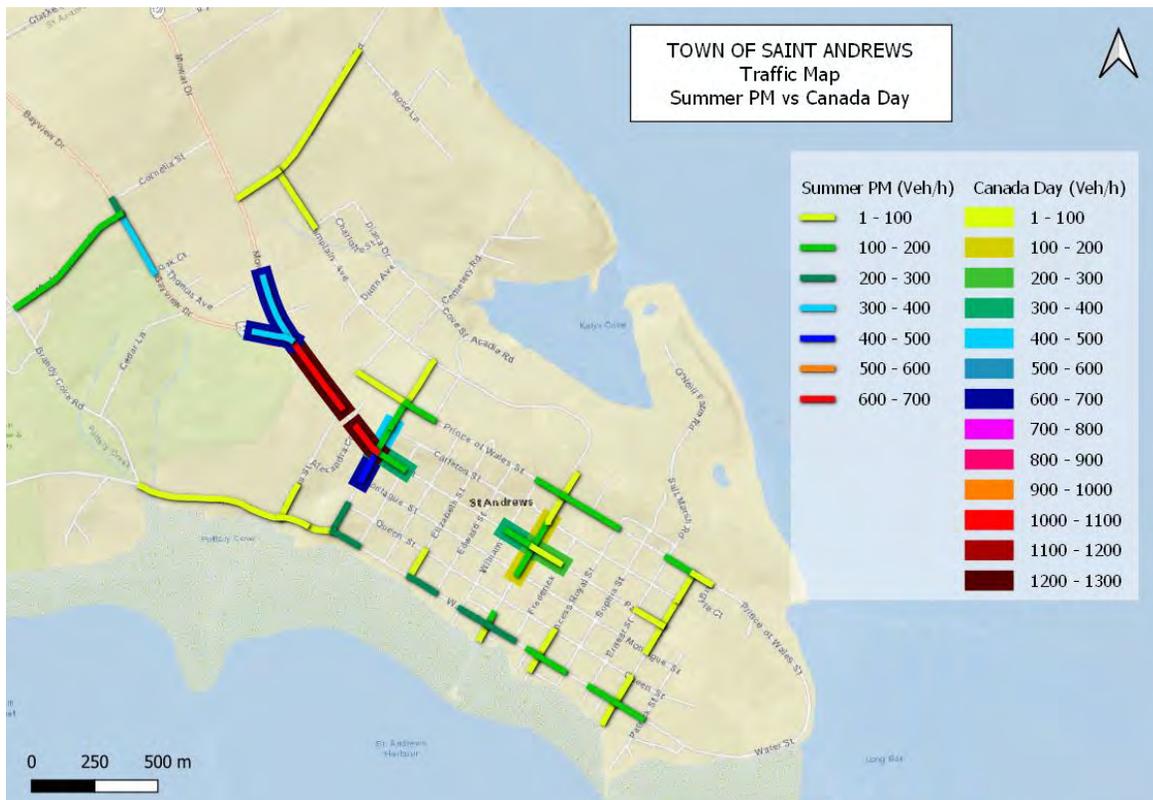


**Figure 28: Traffic Flows – Summer Weekday PM Peak Hour**

### Canada Day

During Canada Day, vehicular volumes were observed to more than double, with Reed Avenue experiencing 500-800 vehicles per direction during the PM peak hour, double the peak volume experienced during summer weekend afternoons (see Figure 29). On this day, Water Street was closed for the festivities, which included a parade. Not surprisingly, all inbound vehicles routes primarily on Parr Street and adjacent streets.

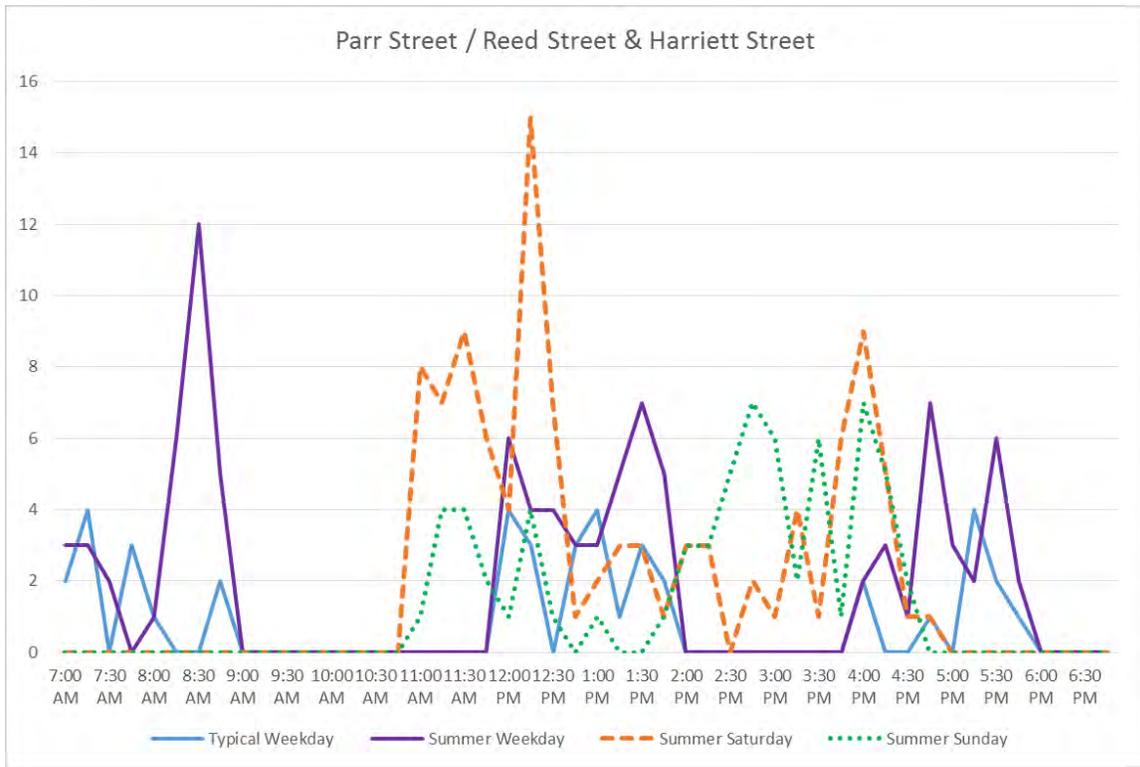
In spite of this growth in visitor traffic, however, volumes remain well within the roads’ theoretical hourly capacities.



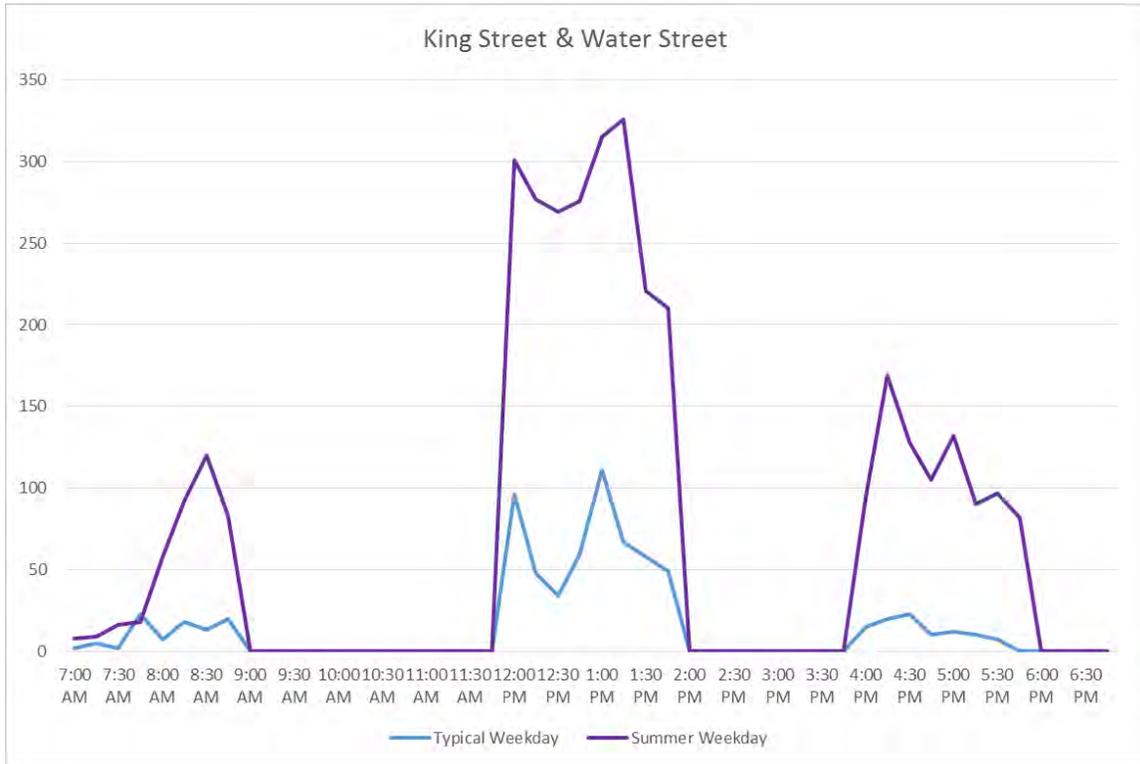
**Figure 29: Traffic Flows – Canada Day vs. Summer Weekday PM Peak Hour**

### 3.8.5 Pedestrian Travel

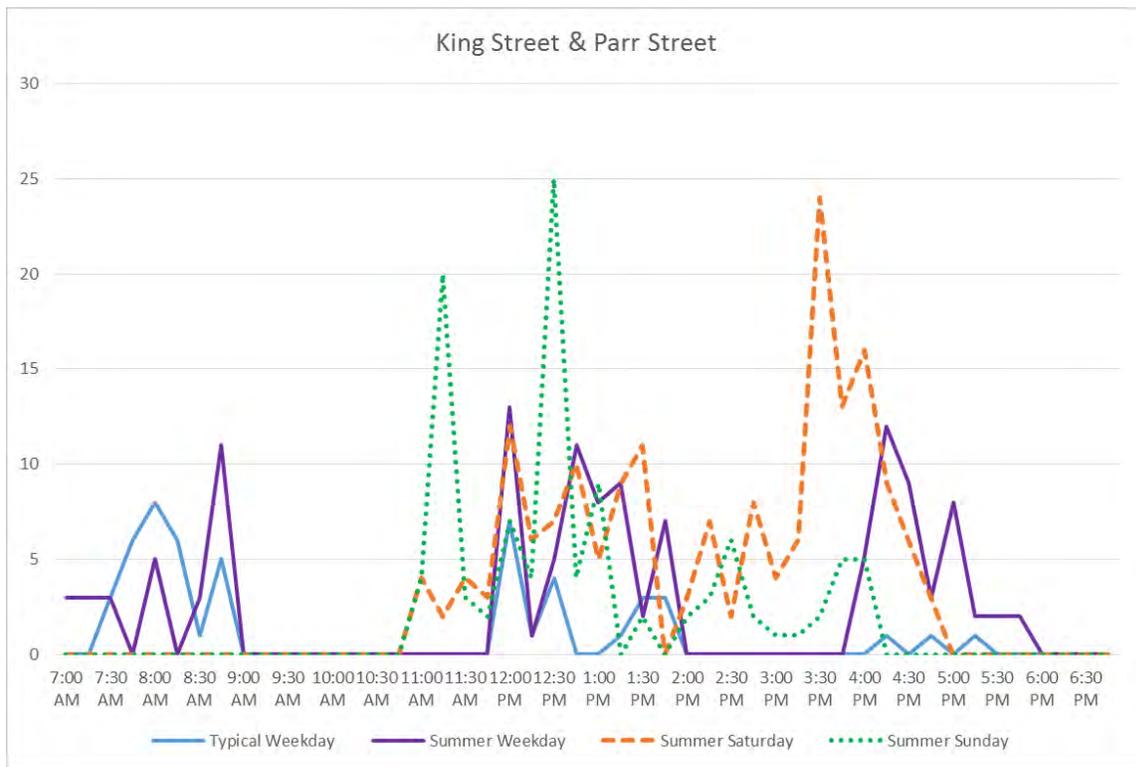
Review of non-motorized travel at major intersections within the Town suggest typical pedestrian demand of 10 – 20 crossings per hour, fairly consistently throughout the day (see Figure 30 to Figure 33). Of note, Water Street experiences very high pedestrian volumes at the King Street intersection. This is unsurprising as this intersection offers access to the Town’s primary services. During the summer period, weekday tend to be higher, especially on Water Street, where the King Street intersection could experience up to 1200 crossings per hour.



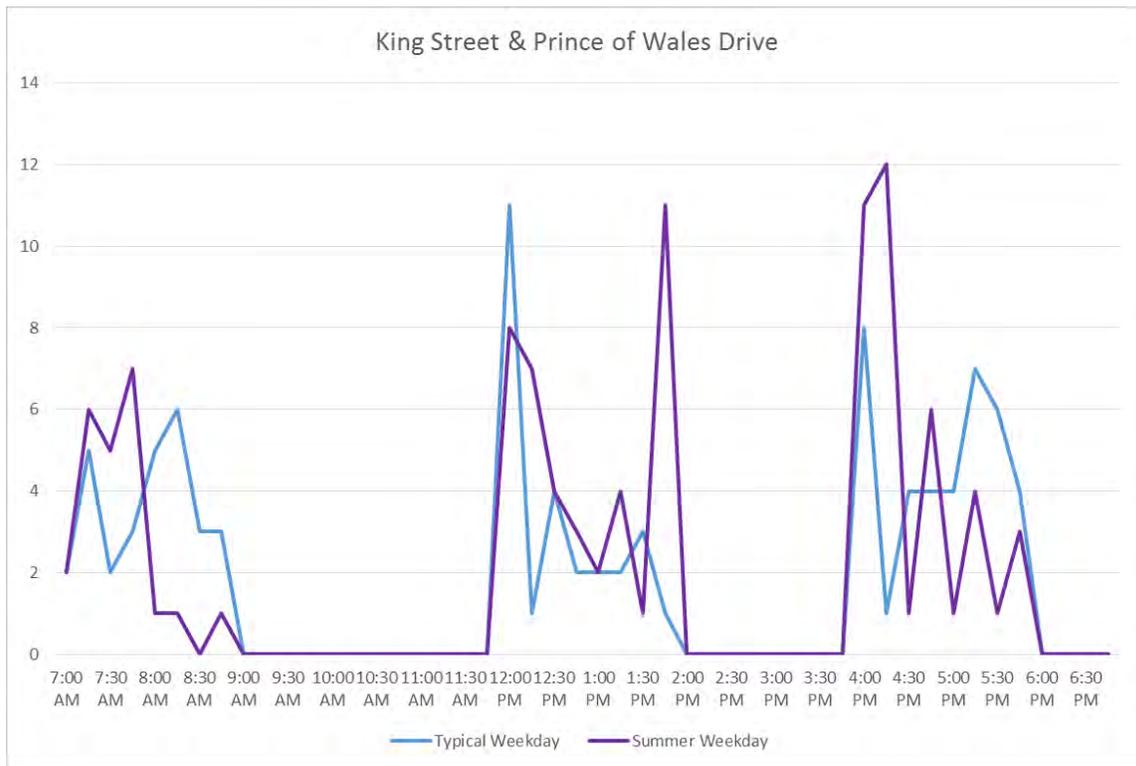
**Figure 30: Pedestrian Travel Profile – Parr Street / Reed Avenue & Harriet Street**



**Figure 31: Pedestrian Travel Profile – King Street & Water Street**



**Figure 32: Pedestrian Travel Profile – King Street & Parr Street**



**Figure 33: Pedestrian Travel Profile – King Street & Prince of Wales Drive**

### 3.8.6 Cycling

Surveys of cycling usage on Town streets indicates that cycling is most concentrated along Water Street, especially over the summer period and on weekends. We note that on-street cycling volumes are relatively low, with typically fewer than 10 vehicles per hour observed at major intersections.

### 3.9 Circulation

The majority of consultation respondents reported significant circulation issues on the approaches to the Town, and along Water Street.

It has been reported that inbound vehicles routinely exceed speed limits and drive too fast in the Town, particularly on Mowat Drive, Water Street, south of King Street, and on Parr Street.

Circulation on Water Street is a persistent issue in the Town of Saint Andrews, as attested by both the comments received, and its mention in the Town's previous Municipal Plans. At issue is the friction between through movement, the competition for on-street parking, and goods delivery and loading operations that occur on the carriageway and invariably impede or outright block both vehicular and non-motorized circulation (see Figure 34 and Figure 35).

The limited parking availability, low turnover of parking spaces, and lack of dedicated loading areas have been identified as principal causes.



**Figure 34: Delivery Activity Blocking the Street**



**Figure 35: Delivery Activity Blocking Crosswalks**

The TMP seeks to re-balance the Town’s transportation and mobility networks towards a Complete Streets approach that emphasizes multi-modal, and especially active, circulation instead of the traditional focus on vehicular movement.

### 3.10 Parking

The Town currently permits parking on most streets, with few restrictions. In spite of this, it has consistently been reported that there is insufficient parking on Water Street, the Town’s main street and commercial high street. Other areas such as Indian Point, the Market Square, and the WC O’Neil Arena Complex, have also been flagged for parking, as they attract significant numbers of visitors at all times of the year.

During festive events like Canada Day, all of the Town’s local streets become clogged with visitors parking their cars haphazardly, leading to conflicts with residents, and unsafe conditions for drivers and pedestrians alike.

The TMP therefore considers the provision of formalized parking areas, and the introduction of parking policies to manage and distribute typical and season circulation through Town streets, while minimizing friction and adverse impacts on residents and businesses.

Saint Andrews also has a number of off-street parking lots (see Figure 36 and Table 3). While a few of these lots service institutional or public properties such as churches and schools, and are sometimes used as public parking lots, the majority are privately owned and operated, servicing hotels and private businesses.



**Figure 36: Existing Off-Street Parking Provision**

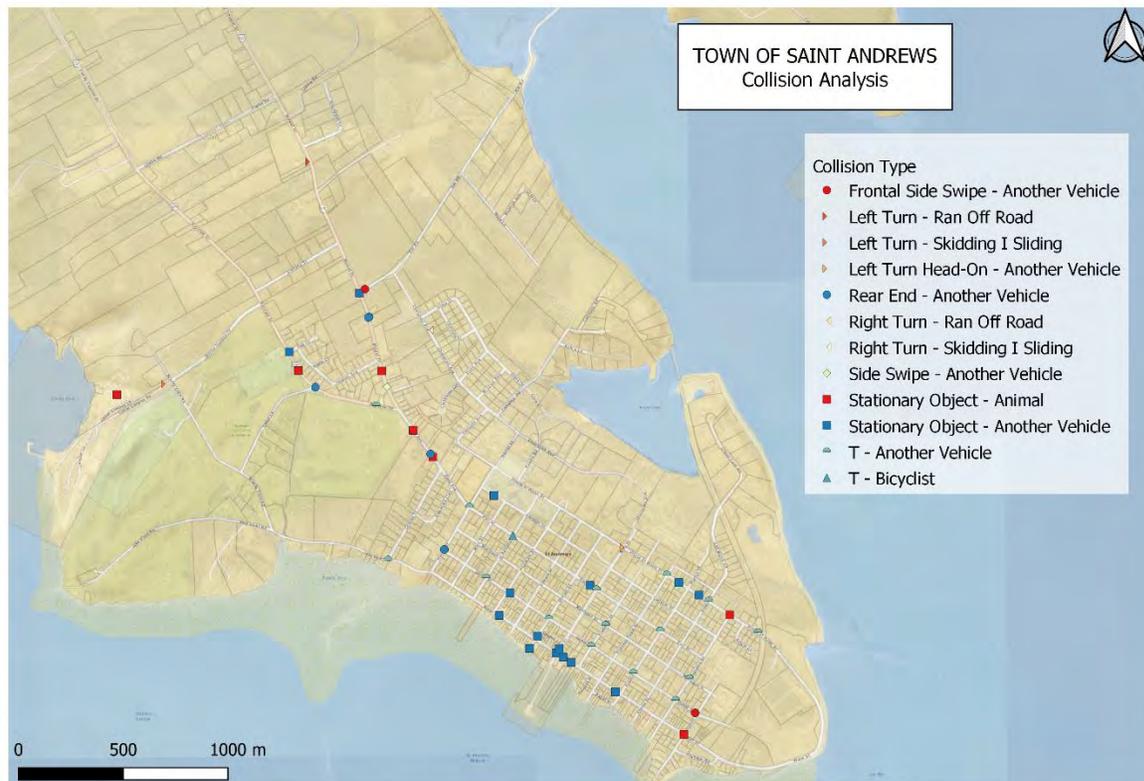
**Table 3: Existing Off-Street Parking Provision**

Location	Available Spaces (Approx.)
Downtown (1)	7
Downtown (2)	24
Downtown (3)	16
Downtown (4)	20
Huntsman Marine Science Centre	65
Kingsbrae Gardens	100
Market Wharf	34
NBCC – St. Andrews Campus	150
Passamaquoddy Lodge	61
Saint Andrews Community Adventure	15
Sir James Dunn Academy	35
St. Andrews Chamber of Commerce	40
The Algonquin Golf Course	89
The Algonquin Resort	190
Tim Hortons	16
Vincent Massey Elementary School	19
W C O'Neill Arena Complex	105

### 3.11 Safety

A review of recent collision records provided by DTI reveals a total of 92 collisions between 2012 and 2016, with 20-25 collisions reported per annum. As illustrated on Figure 37, the majority of collisions involve striking a stationary vehicle or animal, and T-boning between vehicles. The distribution of these collisions suggests a propensity for colliding with stationary objects along Highway 127 and at the Water Street and King Street intersection. The majority of collisions occurred in daylight during dry and favourable conditions. The main factors appear to be speeding on Highway 127, and high level of friction along Water Street. Within the Town Plat, we also note a relatively high number of T-bone collisions at intersections within the residential areas, which appear to be related to free-flow movements in the north-south direction versus stop-controlled east-west approaches.

Also noteworthy is that, while collisions with stationary objects typically incur damage to property, the T-bone collisions are classified as personal injury.



**Figure 37: Collision Analysis**

This analysis suggests 3 broad interventions to reduce the number of collisions on Town streets:

- ▶ Control speeds at the Highway 127 approaches to Saint Andrews.
- ▶ Improve signage and introduce traffic calming measures within the Town Plat.
- ▶ Improve signage and reduce friction around the Market Square and Water Street.

## Chapter 4 The Plan

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### 4.1 Problem/Opportunity Statement

*Combined, the findings of the stakeholder consultation process and the existing conditions review suggest that the Town of Saint Andrews is characterized by three main activity districts, bound together by an established residential fabric within a low-volume, low-speed environment. The physical and functional characteristics of Gateway, Institutional Corridors, and Mixed-Use Main Street districts vary in terms of primary purpose, intensity of activity, and urban design. The residential fabric is faced with significant friction on Water Street, limited parking opportunities, particularly during summer tourist season, confusing or unsafe intersections, and a disjointed active transportation network. Key residential and employment growth nodes are inadequately serviced by existing transportation networks.*

*The opportunity exists to improve conditions within each activity district according to its dominant character, fostering economic development and supporting population growth, while reinforcing the calm heritage feel of the residential fabric.*

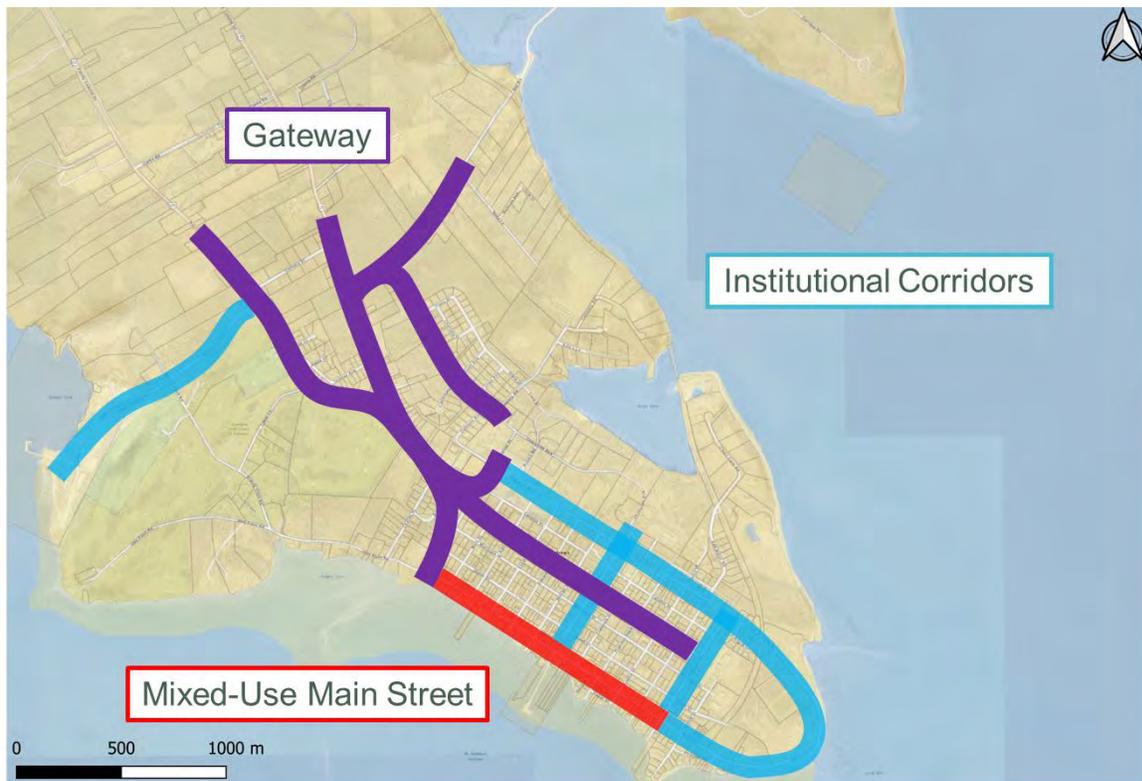
The Activity Districts, described below and illustrated on Figure 38, surround core residential areas that prioritize living space. They allow the targeting of interventions to specifically address the goals and vision of this TMP, as articulated in Chapter 1.

The **Gateway** is the entry point to the town; it distributes travel between the institutional and commercial corridors, and the residential centre. It prioritizes vehicular movement, handling 500-700 vehicles in typical and summer conditions, but remains attentive to non-motorized modes of transportation.

The **Institutional Corridors** are the Town's promenade spaces; they prioritize active transportation and provide access to the Town's major institutional destinations.

The **Mixed-Use Main Street** is the Town's core and main destination; it features the most intense activities, and prioritizes multi-modal interaction, balancing the needs of pedestrians, cyclists, goods movement, and personal vehicles.

This TMP proposes interventions within these Activity Districts that address the road network, active transportation, public transportation, intersections, and curb-side management.



**Figure 38: Activity Districts**

## 4.2 Road Network

When overlaid on the road network, the Activity Districts describe a new road typology. Whereas all of the Town’s roads, with the exception of Mowat Drive and Bayview Drive, are classified as local streets, the roads covered by the activity districts function in a manner distinctly different than the rest of the local roads within the residential fabric. These streets have a more dominant conveyance purpose than other roads, as they provide direct access to the Town’s primary activity generators and attractions.

In comparison, all other streets have the primary purpose as local residential fabric that prioritizes non-motorised movement over vehicular movement. Added to this are the new residential subdivisions on Champlain Avenue, and the Huntsman Marine Science Centre, which require a level of conveyance that is above that permitted by a local road. The reported needs and identified opportunities outlined in preceding chapters should therefore be viewed through the lens of these activity districts and organized according to a revised road classification.

Beginning with the Gateway area, Highway 127 functions primarily as a vehicular highway, connecting the Town of Saint Andrews to the rest of Charlotte County. It features few driveways and low-intensity activity, of a residential rural character. On both Mowat Drive and Bayview Drive branches, it experiences relatively high vehicular volumes, typically 600 vehicles per peak hour, that may reach as high as 1200 vehicles per hour during peak summer season. As such, the classification

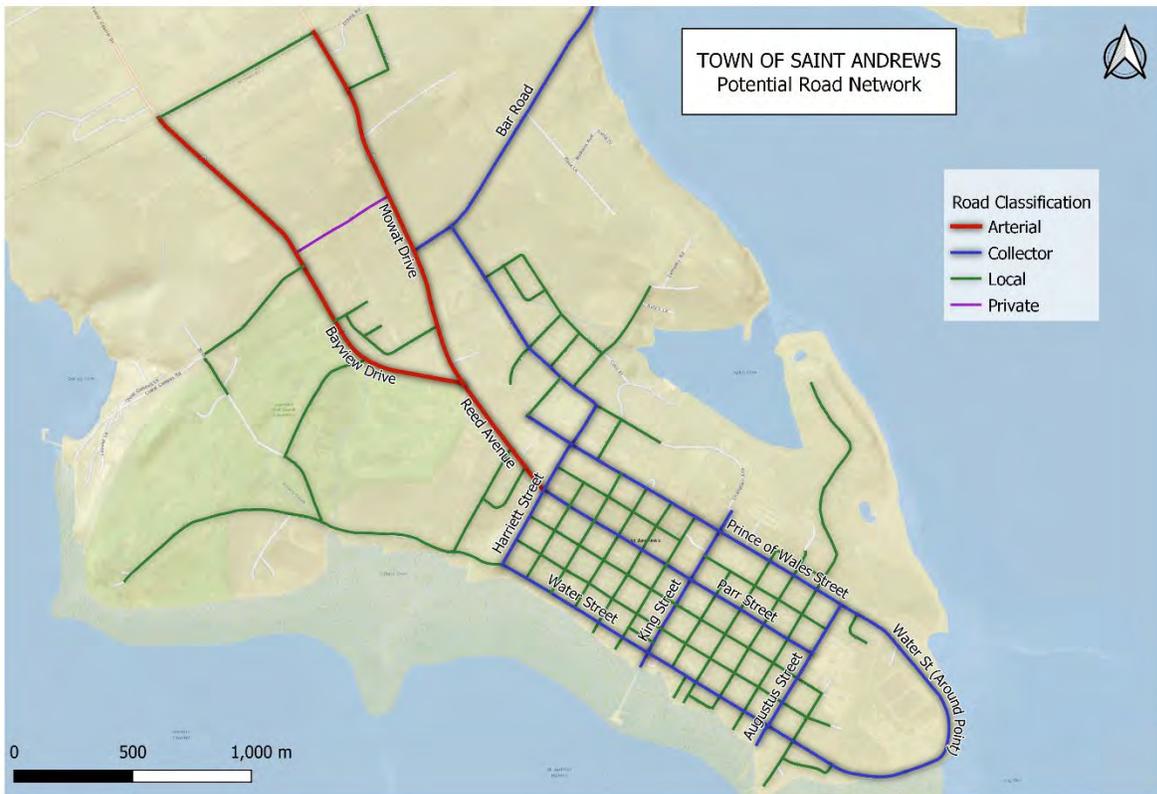
of Mowat Drive and Bayview Drive should be upgraded to that of an Arterial Road. The implications of this classification are that the entry into Saint Andrews should be expected to offer the highest level of access and mobility for all users. Personal vehicular movement, while dominant, should be serviced alongside other modes of transportation, including pedestrian, cyclist and public transit.

The classification of the streets within the activity districts should be elevated to that of a Collector Road. Such roads serve to converge movement from local roads to farther destinations and to higher-order roads. In the case of Saint Andrews, these roads would have the primary purpose of collecting circulation from local roads and conveying them to the higher arterial road network, and conversely, distributing incoming circulation from the arterial roads to local destinations within the Town.

It is therefore proposed that the following streets be classified as collector roads:

- ▶ Harriet Street.
- ▶ Water Street.
- ▶ Prince of Wales Street.
- ▶ King Street.
- ▶ Parr Street.
- ▶ Augustus Street.
- ▶ Champlain Avenue.
- ▶ Bar Road.

Furthermore, the Town's current and historical layout was predicated on a primary rail connection (the current Van Horne Trail) and a secondary road access (Reed Avenue). While the rail connection historically handled the majority of regional visitors to Saint Andrews, its decommissioning has resulted in the Town's dependence on a single major road connection. This creates a functional bottleneck as all vehicular traffic in and out of Town is routed via Harriet Street to Reed Avenue and on to Highway 127. From a broader network operational standpoint, it would therefore be desirable to add some redundancies by increasing network connectivity (see Figure 39).



**Figure 39: Proposed Road Network and Classification**

#### 4.2.1 Traffic Calming

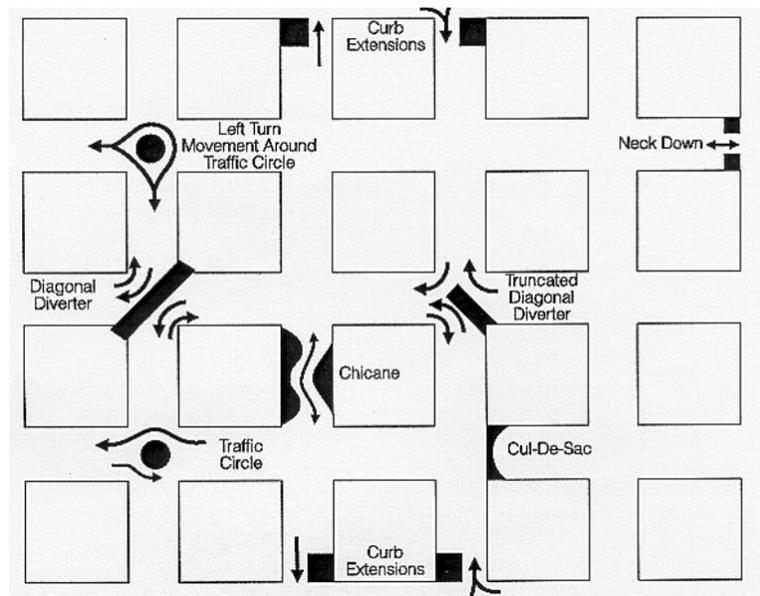
To achieve the objectives of improving pedestrian and cyclist safety, while also calming the access to the local streets by reducing vehicular volumes passing through, and reducing their speeds upon entry onto the local street, a Town-wide traffic calming plan should be implemented.

A wide range of interventions are available, ranging from outright exclusion of vehicular through passage, to diversions away from the local street. As illustrated in Figure 40 and Figure 41, while the intent is to reduce the width of the carriageway at selected location to force a reduction in vehicular speed, permeability is maintained at all times for pedestrians and cyclists.

Geometric interventions are assisted in parallel with signage and visual cues that vehicles have secondary priority and that drivers should be aware of non-motorized users of the road at all times.



**Figure 40: Example of Intersection Calming Features**



**Figure 41: Example Traffic Calming Features – Source: FHWA**

As a comprehensive plan, these measures will keep visitor traffic on the collector road network, and reduce incursions into the calmed zones (see Figure 42). Mindful of the Town’s Historic District designation, traffic calming measures may be designed in a manner consistent with the Town’s 18<sup>th</sup> century British heritage.



**Figure 42: Traffic Calming Plan**

## 4.2.2 Intersection Improvements

The TMP process revealed that two major intersections in the Town are consistently flagged as needing improvement: the Reed Avenue / Parr Street & Harriet Street intersection, and the Water Street & King Street intersection.

### 4.2.2.1 Reed / Harriet / Parr Street

The Reed Avenue / Parr Street & Harriet Street intersection is the entrance to the Town. It accommodates the highest number of vehicles during both typical and seasonal periods. It currently operates with a 3-way stop control, with free-flow movement on the westbound direction, and channelization of the southbound-right and westbound-right movements (see Figure 43). Consulted stakeholders have identified the intersection as being confusing to visitors, and as providing inadequate protection to pedestrians.

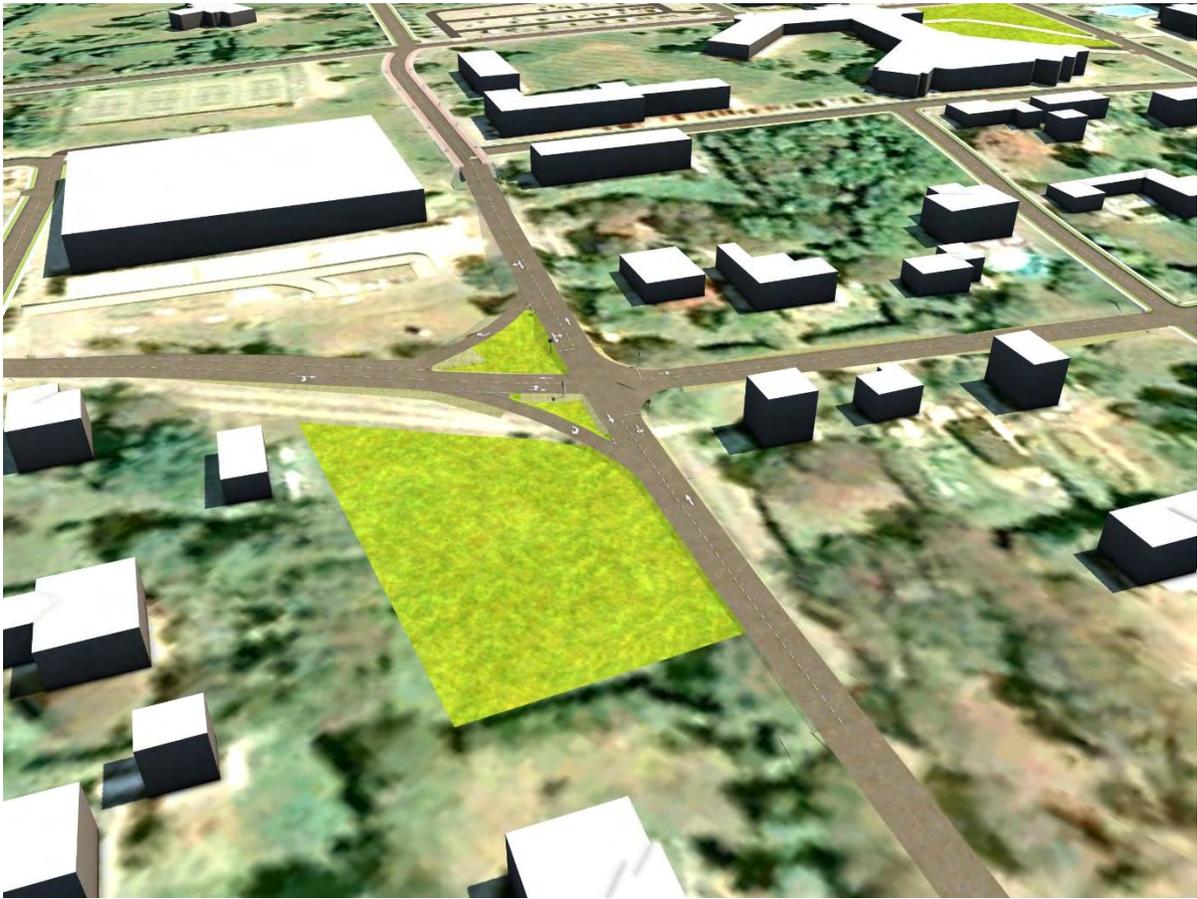
The following interventions are considered:

1. Convert the intersection to an all-way stop (see Figure 44).
2. Convert the intersection to a single-lane roundabout (see Figure 45).

This option was well liked by the Steering Committee and the public. Considering the relatively high cost of such an intervention, it may be planned for future consideration.



**Figure 43: Reed Avenue / Parr Street & Harriet Street – Existing Geometry**



**Figure 44: Reed Avenue / Parr Street & Harriet Street – Potential All-Way Stop**



**Figure 45: Reed Avenue / Parr Street & Harriet Street – Potential Roundabout**

#### 4.2.2.2 Water Street & King Street

The Water Street & King Street intersection is the main intersection within the Town Plat. It experiences relatively-high vehicular volumes, and very high pedestrian volumes, particularly during summer months and on market days. It operates with stop control on the King Street approaches and free flow along Water Street.

While the intersection has crosswalks on all approaches, the public consultation outreach program has indicated that many Town residents consider the intersection congested, reporting feelings of being unsafe. The overall pedestrian-vehicular ratios are not considered sufficiently high to justify signalization of the intersection. However, the Town may consider converting the intersection to an all-way stop, and curb extensions to reduce the length of the crosswalks (see Figure 46). Additional surface treatment and signage may be incorporated into the design of the intersection to elevate the priority of pedestrians. The potential exists to test this change with temporary curbs, striping and bollards before committing to permanent change.



**Figure 46: Example Intersection Bump-Out**

#### 4.2.2.3 Marine Science Drive and Bayview Drive

Through correspondence with NBDTI, we are aware that a left turn lane on Route 127 at the intersection of Marine Science Drive is supported and has since been added to the Town’s Municipal Designated Highway (MDH) 5-year Plan. This need has arisen as a result of an evaluation being undertaken by the provincial Traffic and Safety unit of the Operations Branch. This initiative is eligible for funding under the MDH Program.

### 4.3 Active Transportation

Over the last few years, the Town has increasingly recognized the importance of accommodating active transportation modes of travel in a robust and complete transportation and mobility network. The status quo prioritization of personal vehicle travel is recognized as no longer viable, or sustainable, equally in terms of environmental and financial burdens, as in and physiological impacts. The importance of fostering an active lifestyle and of promoting active movement to both the younger and older segments of the population make it imperative that the Town’s transportation systems and network be addressed in terms of their ability to support active transportation.

This TMP addresses the specific needs of pedestrian and cyclist travel, both as separate and combined facilities.

### 4.3.1 Pedestrian Network

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As identified in the existing active transportation map, the existing pedestrian network is only partially built, primarily on Water Street and King Street, the most heavily used roads. It has been identified, both in Town Council deliberations and through public consultation, that a Town-wide pedestrian network is needed as a matter of basic policy. Three policy directions are available towards achieving this.

The first is that the Town adopt and enact a policy that all new Town roads will henceforth be built with sidewalk on at least one side, where feasible and appropriate. This would ensure that new subdivisions, particularly the lots along Bar Road and Champlain Avenue, zoned for high-density residential uses, are built with an up-front pedestrian network that would directly induce new residents to walk.

A second policy calls for the long-term conversion of all Town streets to include sidewalks on both sides. In almost all cases, the public right-of-way is sufficiently wide to permit widening of the pavement and construction of curbed sidewalks, without undue impacts on private property. It is recognized that such conversions will carry a cost, both financial in terms of construction, and social in terms of the perceived loss of space by adjacent properties, many of which presently extend landscaping features into the public right-of-way. This process should be undertaken on a permanent basis, as streets approach the end of their lifecycle and come up for recapitalization.

A short-term policy proposes the targeting of the proposed collector road network, as illustrated on Figure 39, for addition of sidewalks where currently lacking. At the same time, this policy would recognize the historical nature of the Town's local streets as shared spaces lacking formal delineation between vehicular and non-vehicular space. As previously indicated, the Town grew within an environment with low vehicular volumes travelling at low speeds, thereby reducing the propensity for and severity of conflicts. Policy should continue or return to this historical trend by keeping vehicular volumes and speeds low on local streets, while prioritizing pedestrian movement through signage and the introduction of traffic calming urban design features. The ideal speed limit on local streets would be 30km/h.

With all of the above potential policies there would also be added costs associated with maintenance on the new sidewalks, such as snow removal costs. Discussion with Town staff indicates that they have a difficult time keeping ahead of the snow removal requirements under current sidewalk conditions. There would also be future capital costs associated to the replacement of the sidewalks when the infrastructure reaches the end of its intended life. All of the above factors associated to adding more sidewalks would need to be accounted for and carefully reviewed by Town Staff and Council before any of the above policies are adopted.

### 4.3.2 Cycling Network

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In terms of cycling needs and opportunities, the Town of Saint Andrews has previously identified the need to complete a signed Town perimeter cycling route, connecting to a cycling network within the Town Plat. This would roughly correspond to a popular cycling circuit currently followed by Town residents, illustrated in Figure 47.



**Figure 47: Perimeter Town Cycling Loop – Source: Bike Saint Andrews**

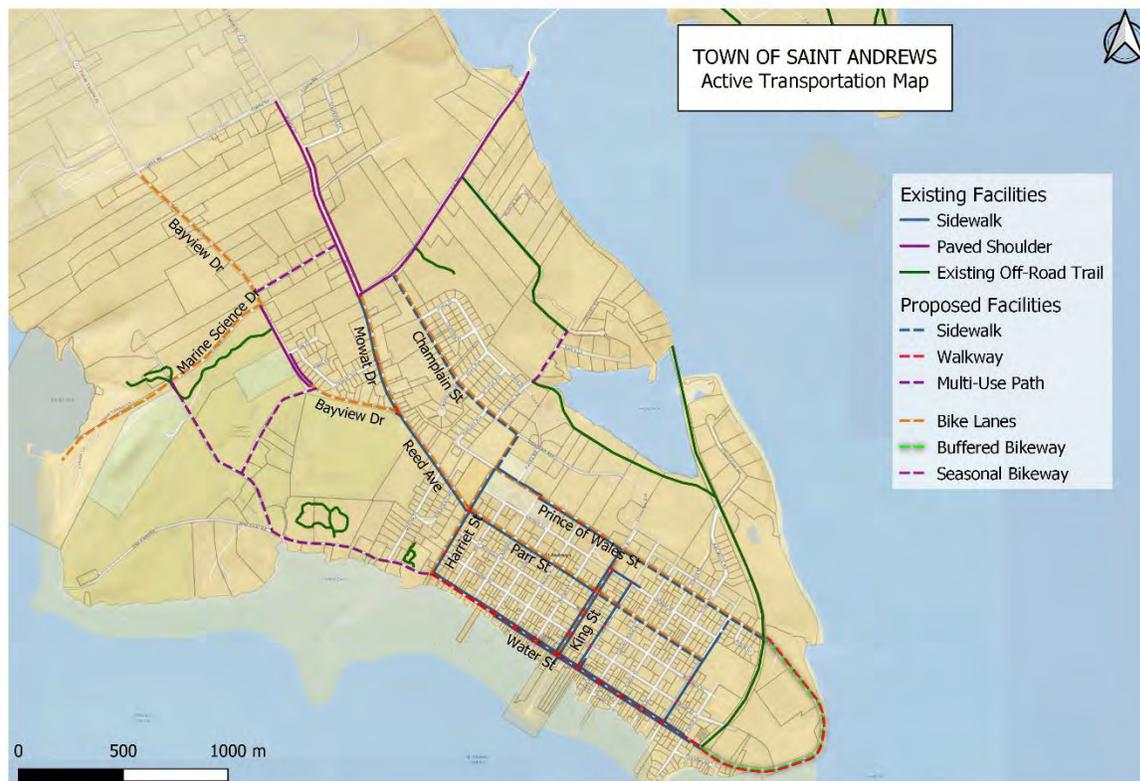
With these routes identified, the choice turns to the introduction of permanent or temporary seasonal cycling facilities. According to CROW, ASHTOO, and TAC guidelines, a road operating with a speed limit of 50km/h may be considered for separate protected cycling facilities **when vehicular volumes reach over 3,000 vehicles per day**. While vehicular travel in the Town does not typically reach such levels, it does push this threshold on Water Street during peak summer months.

If permanent facilities are not warranted, temporary interventions may be brought to bear during peak summer months, consisting of removable pavement striping, or the installation of movable bollards and separators to delineate dedicated cycling. These can be introduced as pilot projects at first, with the use of simple planters or construction pylons. As the use of these facilities increases, more longer-lasting materials or barriers may be used. If the demand and usage of such temporary facilities increases appreciably, facilities may include potential pavement widening to accommodate additional road space allocation to cycling, permanent paint striping of bike lane or sharrows, or the construction of curb-separated bikeways. The type of facility generally depends on expected cyclist volumes, and the level of friction with adjacent vehicular circulation. The higher the vehicular and cyclist volumes, the more extensive the facility, and the higher the level of protection and comfort needed. The perceived comfort may also attract increased usage, regardless of adjacent vehicular friction.

Furthermore, once traffic calming measures are introduced, both pedestrian and cycling movement is rendered safer by virtue of reduced vehicular friction and lower speeds.

### 4.3.3 Proposed Active Transportation Network

With the above considerations in mind, and based on the public consultation process, a comprehensive Active Transportation Network is proposed in Figure 48.



**Figure 48: Proposed Active Transportation Network**

Since pedestrian and cycling network invariably overlap, shared facilities are possible. The rationale for this network is to target the installation of dedicated pedestrian and cyclist facilities along the Arterial and Collector road network, while calming the local road network to a point where the resulting slow and low vehicular volume poses less of a safety or discomfort to pedestrians and cyclists. The proposed active transportation facilities are defined as follows:

- ▶ **Sidewalks** are curb-separated and elevated from the driving lanes. They provide a high level of comfort and security.
- ▶ **Walkways** are pedestrian facilities located off the paved portion of the right-of-way and often completely outside of the road right-of-way, on adjacent property.
- ▶ **Multi-Use Paths expand Walkways by permitting cyclists and other non-motorized modes of transportation.** While they allow complete mixing of the modes, the adjacent pedestrian and cyclist portion are often delineated.
- ▶ **Bikeways** are dedicated cycling facilities located within the right-of-way. They may be located within the paved portion of the road, or alongside the sidewalk within the boulevard off-road

portion of the road. When on-street, they can be fully curb-separated from driving lanes, or separated by a painted wide buffer area.

- ▶ **Paved Shoulders** function in a manner similar to dedicated **Bike Lanes**, as on-street cycling facilities delineated from the driving lanes by solid paint markings. While Bike Lanes tend to be wide and carry their own dedicated markings, paved shoulders do not.
- ▶ **Sharrows** are painted indicators on the road that alert drivers to the presence of cyclists. They are meant to provide a slightly higher level of comfort to cyclists, while not outright allocating dedicated road space.
- ▶ **Off-Road Trails** are dedicated active transportation facilities, typically away from roads, cross-country. They are most often gravel surfaced, but can also be paved to a high standard.

Over the longer term, special road treatment may be introduced to formally mark specific local roads as **Shared Roads**, where drivers are expected to accord higher priority to non-motorized users (see Figure 49). Such facilities incorporate visual and tactile features to ensure that all users of all mobility levels can safely use the road.



**Figure 49: Example of a Shared Road**

## 4.4 Public Transit

The provision of a public transit system in the Town of Saint Andrews brings the possibility of significantly improving mobility for residents and visitors of all ages and abilities, both within the Town, and through connectivity to essential services outside Saint Andrews.

Two service models are considered for Saint Andrews. As many essential services like health care, government, shopping and social services are now located outside of Town in neighbouring St. Stephen and closer to St. John, an on-call door-to-door service would be most effective in connecting Town residents with regional services. Special booking could be arranged on designated days to provide a trip from home to destination and back, as single, shared or group travel. An on-demand booking system would allow service provision outside of typical 9:00-5:00 operating hours. The SWNBTAI is developing an online application-based service that would provide connectivity between Saint Andrews, St. Stephen, other locations in Charlotte County, and within the St. John Rothesay and Quispamsis areas.

The public consultation process revealed that a significant number of employees working in the Town of Saint Andrews reside outside of Town limits. This loop may therefore be extended along Highway 127 outside of Town, perhaps providing connections to other regional transit services such as Charlotte Dial-a-Ride or Maritime Bus at a convenient location close to the Highway 1 interchange. Such connectivity would provide the option for out-of-Towners to reach the Town without resorting to a personal auto, and thereby reduce demand for local parking.

During peak tourist season, the on-demand service may be expanded with a fixed route loop providing access to all major activity generators with a half-hour service (see Figure 50). This perimeter loop, operating along the Town's proposed collector roads, would capture almost the entirety of the Town, with most destinations roughly located within 300m, or a 5-minute walk of the service route. The loop route could also operate on festival days, music concerts at KIRA, Canada Day and other special events that welcome a significant increase in population.



**Figure 50: Proposed Summer Month Transit Loop**

The implementation of a public transit system as proposed above would carry a certain cost, covering the acquisition of vehicles and equipment, and the operation and maintenance of the system. A preliminary financial analysis was conducted of the proposed system to identify high level capital and operating costs. A system operating with one van and driver could carry an operating cost of approximately \$100,000 per year, with an additional \$50,000 in capital costs for the procurement of a large van in the first year. We note that, as a public service, a transit system may be eligible to tap into the Province’s bulk diesel fuel rate of 85 cents per litre.

The opportunity exists to operate a Town-wide transit service as an extension of the shuttle service currently proposed by Kingsbrae Gardens, before longer term formalization and adoption as a core Town service. SWNBTAI and the Town are also considering collaboration with other towns (St. Stephen and Grand Manan/Blacks Harbour) as well as discussions with the Regional Service Commission concerning fleet ownership, fuel supply, and service to residents in the Local Service Districts.

#### 4.5 Curbside Management

The TMP process revealed that the Town’s road network does not, strictly speaking, have capacity constraints. Much of the perceived congestion and impediment to mobility and circulation are in fact due to curbside friction between moving, parking, and loading road users.

The impacts of this friction are worsened by the lack of active management of limited usable curb space, particularly on Water Street. All road users have the expectation of being able to use the curb space at all times. While some geometric interventions are available to lighten conflicts, a more effective and less disruptive solution is the development of a Curbside Management Plan. Curbside Management recognizes the often conflicting user needs and implements measures to formalize and manage the use of curb space.

Curbside Management requires a prioritization of identified user needs, with particular consideration to the needs that are least flexible and most sensitive to location. In the case of Saint Andrews, this consists first and foremost of non-motorized active transportation, followed by deliveries and loading activities. While pedestrians and cyclists need safe space along the road shoulders, deliveries they typically need to occur as close as possible to their clients, especially when considering bulky goods. If delivery activities are not allocated dedicated space, they tend to occur where most convenient for them. Pedestrians need safe space on shoulders or sidewalks, or they are forced to walk in the carriageway, exposing them to conflicts with vehicles.

On-street parking represents a more flexible user group that has a broader range of acceptable options. Typically parking is considered close and convenient if it is located within a 5-minute walk of the destination. This covers a fairly large area in the Town of Saint Andrews.

Once the major user needs for curb space have been identified, Curbside Management first of all identifies all curb space eligible for management. Areas with physical, operational or thematic constraints are avoided, and residual space is allocated to satisfy prioritized needs. The TMP process suggests that the Town's core residential fabric and local streets should prioritize pedestrian needs, and that curbside loading and parking activity should be focused on the activity districts.

#### 4.5.1 Pedestrian Movement

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As discussed in Chapter 3.3, because the majority of the Town's local streets are built and operate as shared spaces, policies should be implemented to manage vehicular usage on those streets, until such a time as they are rebuilt with dedicated pedestrian and cyclist infrastructure. It is therefore recommended that Curbside Management policies restrict parking and loading activities on local streets, particularly by non-residents and during the summer tourist season. Several temporary and permanent measures are available to achieve this on roads classified as local.

At a high level, the Town must implement parking restrictions on all local streets in the Town Plat. Restrictions may be in force at all times, during daytime, weekdays, or seasonal only. Permits may be provided to local residents, exempting their vehicles from the restrictions (see Figure 51).



**Figure 51: Potential Curbside Restriction Areas**

#### 4.5.2 Goods Movement and Loading

Much of the friction experienced on Water Street is due to goods deliveries. Since the majority of businesses on Water Street do not have access to a rear laneway or side street, deliveries are made via the front door. The almost full and long-term utilization of on-street parking spaces on Water Street forces delivery trucks to stop in the drive lane to conduct their business. This results in delivery vehicles stopping at almost every block to access the immediate businesses.

Resolving this problem will require the provision of dedicated loading areas on Water Street. The TMP proposes the allocation of one loading space per block, sized to accommodate a standard single-unit truck, the most typical delivery vehicles observed on Town roads. The occasional articulated truck may be accommodated with special reservation of additional on-street space (see Figure 52).



**Figure 52: Potential Loading Areas**

### 4.5.3 On-Street Parking

Most Town streets have not been designed for high levels of parking activity, and parking areas are not well defined, leading to unsafe parking, particularly during the high tourist season and during events like Canada Day. The perceived parking shortage reported through the consultation process manifests itself in three ways: typical demand, seasonal demand, and during atypical events.

Under typical conditions, on-street parking is observed primarily in the activity districts, particularly on Water Street and King Street. Based on the census data and public feedback, this parking utilization is primarily associated with employment uses. The TMP seeks to reduce the demand for parking from users that have a choice, namely Town residents. The improvement of local streets through traffic calming measures, along with the improvement of crossing facilities at intersections is expected to reduce residents' use of the personal auto to access services on Water Street. The additional implementation of a public transit service would reduce this need further, if a service was to be re-introduced, while also providing an alternative mode of transportation for out-of-Town residents and employees destined to places on Water Street. The parking demand associated with the main street activity is proposed to be satisfied primarily within the Water Street and King Street axes, and along the immediate side streets (see Figure 53). As a special case, tour and chartered buses are currently permitted to park on King Street, between Queen Street and Parr Street.



**Figure 53 Proposed On-Street Metered Parking Plan**

A major dynamic of on-street parking is the dwell time and turnover rate. Currently, vehicles tend to park at one location and remain there for extended periods, sometimes occupying the same space all day or even over multiple days. This effectively removes the parking space from the inventory and maintains the perception of no parking availability. An effective on-street parking policy would therefore limit the dwell time in the most heavily used areas. A two-hour limit is typical for a high-activity mixed use commercial area like Water Street. Limiting parking utilization in this manner ensures higher turnover and guarantees that a parking space will free up within a reasonable amount of time. This reduces the phenomenon of visitors circling for extended periods of time looking for a parking space, reducing the potential for conflicts.

Management of on-street parking would require the designation of dedicated areas as per the proposed Metered Parking Plan. The Town has the option of installing individual parking meters, typically in dual configuration, or installing one multi-space parking machine at each intersection.

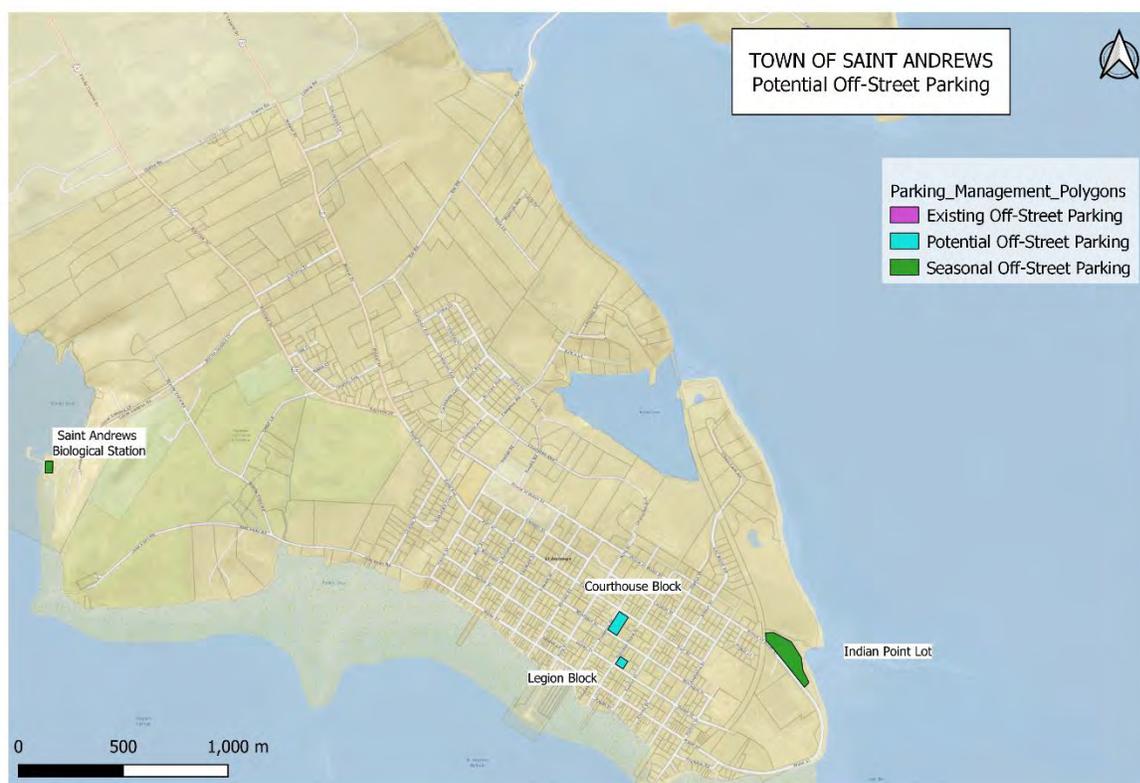
#### 4.5.4 Off-Street Parking

During the summer months, as the Town experiences an influx of visitors and tourists, the demand for parking grows. While the longer term parking demand is satisfied by dedicated hotel parking lots like those maintained by the Algonquin Resort and other hospitality establishments, the shorter term parking is left to the street. Since parking is not prohibited anywhere, visitors tend to park wherever convenient. This causes an associated inconvenience to typical users, Town residents and

employees. It is therefore proposed that during the summer months, visitors be directed to dedicated parking areas in the Town, and that on-street parking restrictions be enacted on the majority of un-metered local Town streets.

During special events like Canada Day festivities, special provisions are needed to effectively manage the very high volume of people and vehicles coming to Saint Andrews for the festivities. For such events, it is proposed that temporary signage be put in place, and that all available off-street parking lots be utilized. The Town may investigate the opportunity to temporarily close some access points to local streets with large planters, thereby directing the flow of vehicles, while remaining permeable to pedestrians and cyclists.

Review of property lots in the Town of Saint Andrews reveals a number of locations that could accommodate parking lots of different sizes (see Figure 54).



**Figure 54: Potential Off-Street Parking Lots**

The **Legion building** has recently been decommissioned, allowing the half-acre lot to accommodate ~60 spaces.

The **Courthouse block** could also hold close to 100 parking spaces on the existing lawn, without direct impact to the Courthouse buildings.

The **Pagan/Indian Point Park**, located at the southern end of Prince of Wales Street covers an area of approximately 29,000 m<sup>2</sup> (~315,000 ft<sup>2</sup>). Half of this site could accommodate over 530 spaces

(see Figure 55). Recognizing the importance of maintaining park space in the Town, the use of this site for parking could be restricted to high-attendance events and festivities like Canada Day. The site is subject to claims by the Passamaquoddy First Nation. Consistent with the Draft Municipal Plan policy to value the ongoing cultural expression of the indigenous Peskotomuhkati people, consultation should be undertaken regarding the temporary use of the site during major Town events.



**Figure 55: Pagan/Indian Point Parking**

These potential parking lots are located along the seasonal transit loop proposed in Chapter 4.6, the intent being that visitors coming to Saint Andrews by personal vehicle would park at these lots, and be shuttled to the major points of interest via the transit system, or by active modes of transportation.

#### 4.5.5 Enforcement

Curbside Management will not be effective without active enforcement. Following an education campaign regarding the proposed management areas, the Town will have to adopt curbside management policies and enact enforcing by-laws. The Town's by-law enforcement is currently provided on a temporary basis by the Town's wharfinger, who is particularly occupied with primary wharf duties during the summer months. The Town will investigate employing additional of by-law enforcement staff to ensure active compliance at all times of day.

Metered and paid parking lots will require payment mechanisms such as stand-alone parking meters and pay-and-display parking machines. Modern parking meters and local parking machines will require the installation of electrical and communication infrastructure.

Alternatives include newer solar-powered machines with cellular phone communication. Furthermore, services like Hot Spot provide parking payment services with no cost to municipalities (see Figure 56).



**Figure 56: Parking Enforcement Options**

#### 4.6 Signage

Throughout the Public Consultation process, it was pointed out that a number of intersection are confusing to way-finding, causing unnecessary looping around Town. Where signage is in place, as at the Harriet St / Parr St and Reed Ave intersection, it is considered sub-standard. Furthermore, ensuring appropriate understanding and usage of curbside space will require new signage, particularly within traffic calmed areas and along collector streets with parking metering. Upon Council approval of this Plan, a Signage Plan will be drafted illustrating the location of existing and proposed signs.

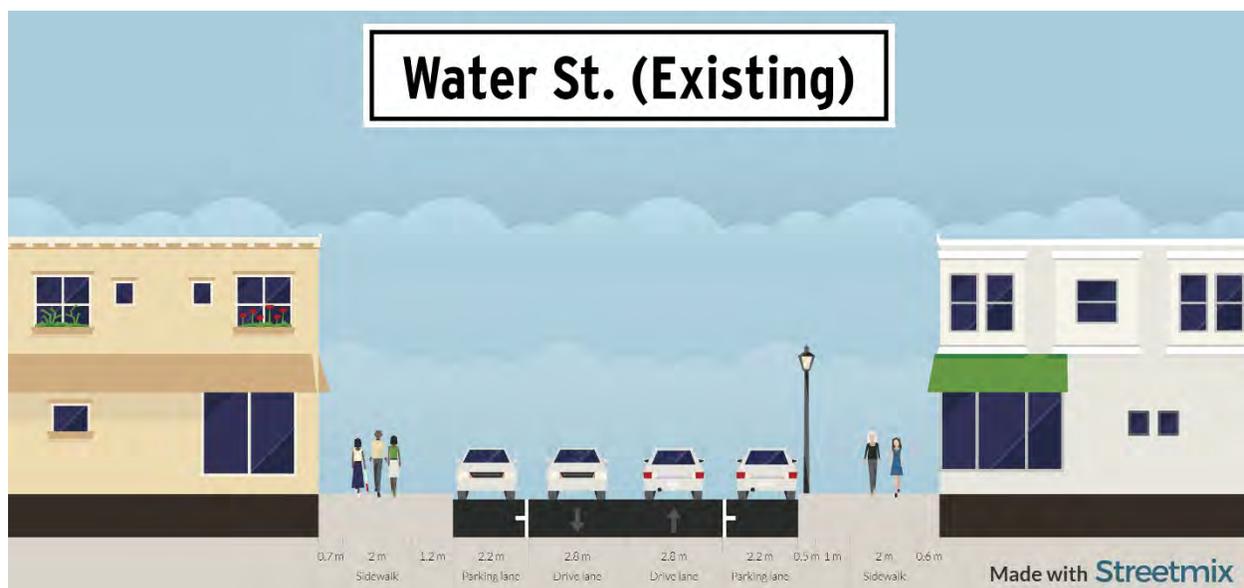
Signs pertaining to cycling traffic control will conform to the *TAC Bikeway Traffic Control Guidelines for Canada*. New road and attraction signs will conform to the *FHWA Manual on Uniform Traffic Control Devices*.

## 4.7 Proposed Road Cross-sections and Estimated Costs

The Plan components discussed above will require modification of the existing streetscape to accommodate new facilities and infrastructure. The following conceptual cross-sections were developed to illustrate the changes involved for key projects at the most critical locations. Wherever possible, an initial intervention is proposed within the existing pavement. Longer-term reconstruction may seek widening of the pavement width and construction of curbed boulevards.

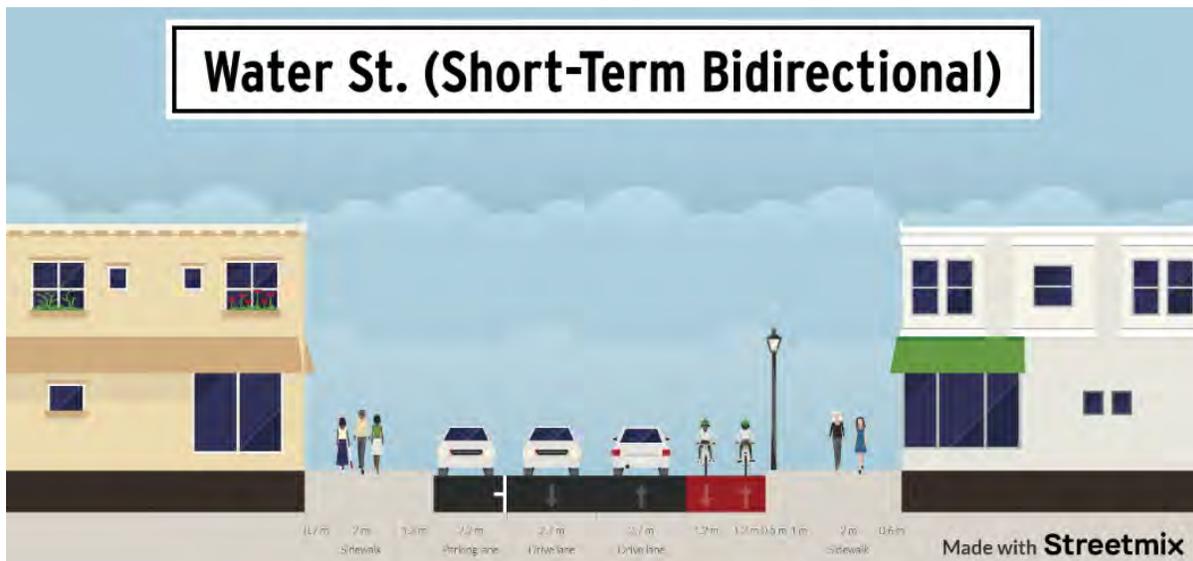
### 4.7.1 Water Street

Water Street currently operates with a two bi-directional lanes, and with on-street parking permitted on both sides of the street. Approximately 10m of the ROW is paved, with the other 8m occupied by sidewalk and boulevard on both sides (see Figure 57).



**Figure 57: Water Street – Existing Cross-Section**

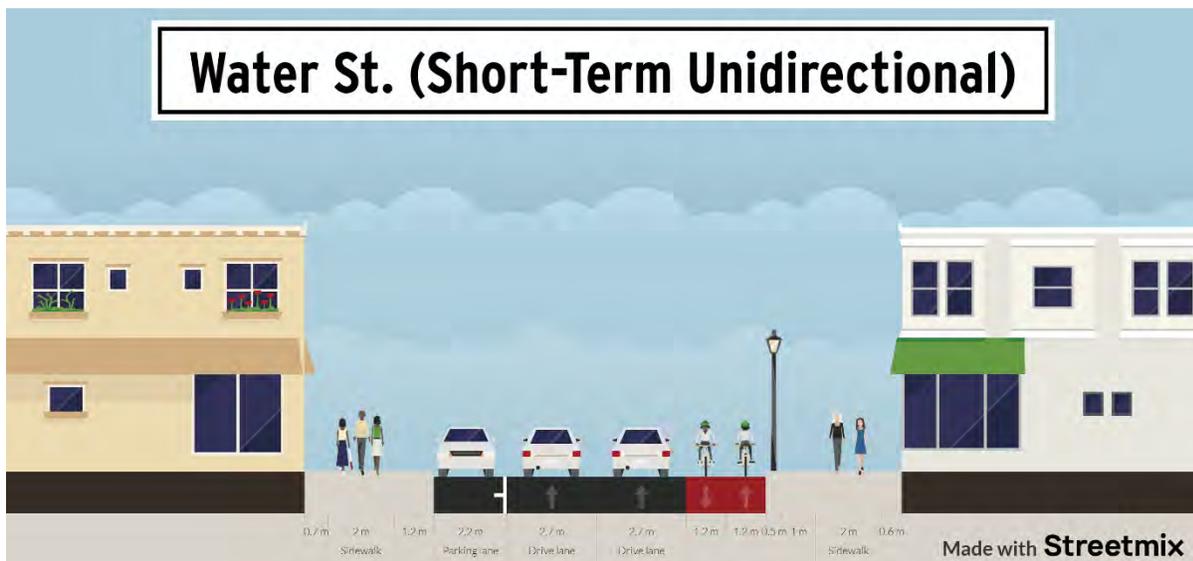
As per the proposed Active Transportation Plan, there is a desire to introduce cycling infrastructure on Water Street with dedicated cycling facilities during the peak tourist summer months. Such effort would consider the temporary re-allocation of approximately 2.4m of pavement from the waterside curbside parking lane to a bi-directional on-road bikeway, through the installation of removable bollards, curb separators, or planters (see Figure 58). This would require relocation of on-street parking space from the waterside, possibly to the side streets, between Water Street and Queen Street.



**Figure 58: Water Street – Proposed Cross-Section (Seasonal Bidirectional)**

Should friction be found to remain significant, the opportunity exists to turn Water Street into a one-way street, with two lanes southbound (**Error! Reference source not found.**see Figure 59). This would permit curbside parking and manoeuvring for loading activities, while allowing through movement to pass temporary obstructing vehicles. Considering the vehicular volumes experienced on Town roads, it is expected that both typical and seasonal vehicular volumes in the opposing direction can be adequately accommodated on the rest of the collector road network.

- ▶ The limits of the Water Street Upgrade are from Harriet Street to the Van Horne Trail.
- ▶ The estimated cost for the Water Street Upgrade (Option 1 – Bidirectional) is \$159,000.

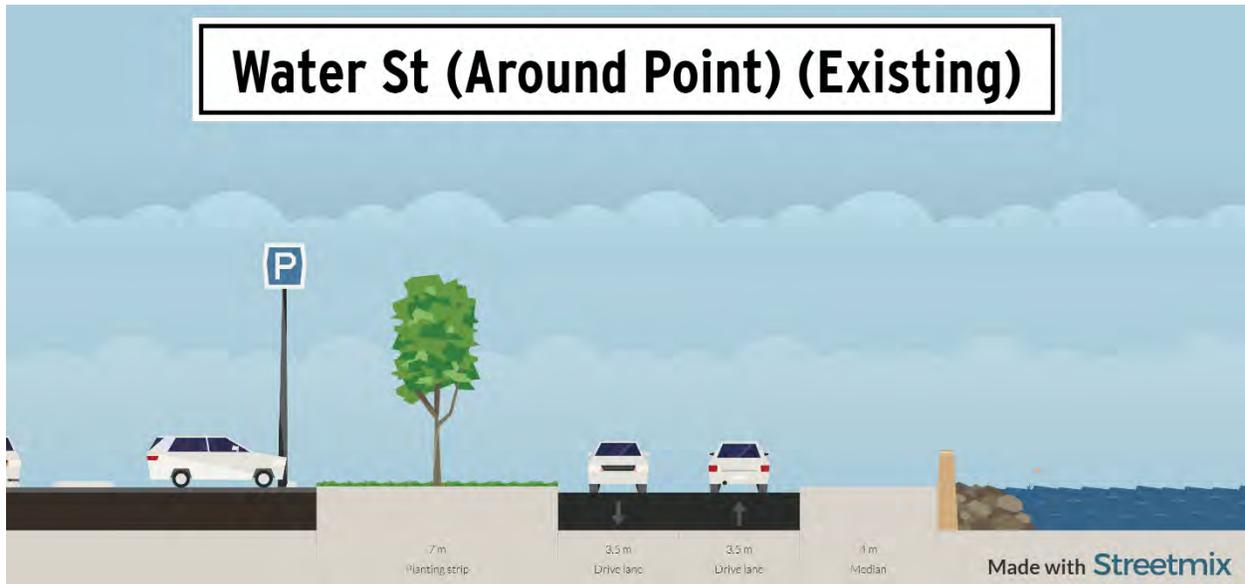


**Figure 59: Water Street – Potential Cross-Section (Seasonal Unidirectional)**

- ▶ The limits of the Water Street Upgrade are from Harriet Street to the Van Horne Trail.
- ▶ The estimated cost for the Water Street Upgrade (Option 2 – Unidirectional) is \$159,000.

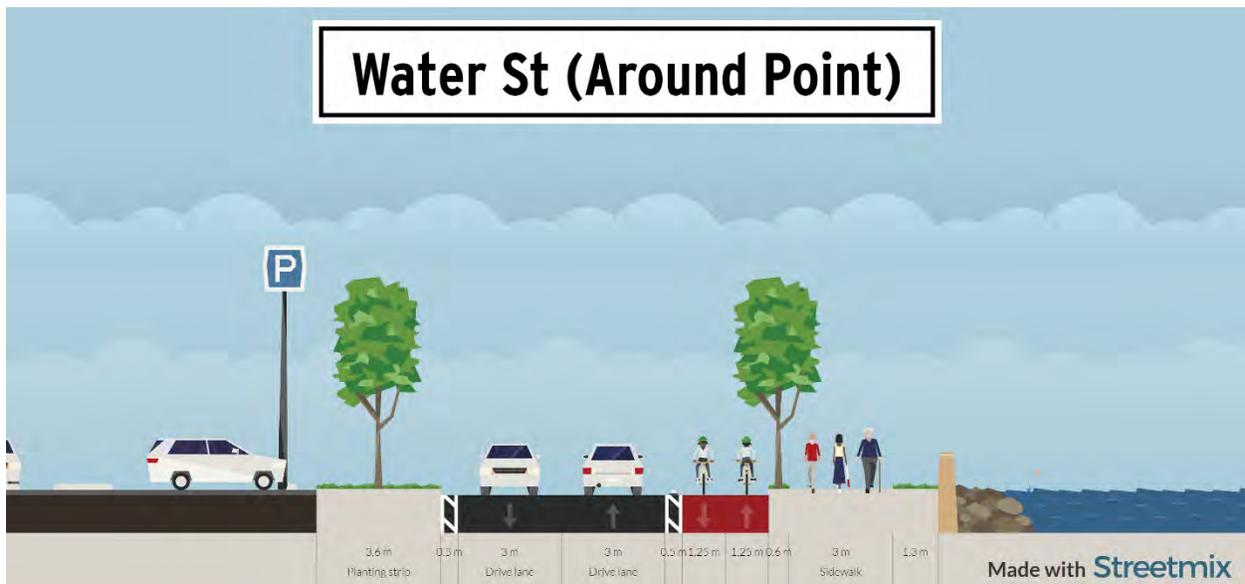
#### 4.7.2 Water Street (Around the Point)

The overarching need on Water Street around Indian Point is to formalize pedestrian and cycling facilities; both pedestrians and cyclists are currently accommodated on the inadequate gravel shoulder, with the 7m pavement entirely dedicated to vehicles (see Figure 60).



**Figure 60: Water Street (Around Indian Point) – Existing Cross-Section**

Widening of the pavement area would be required to accommodate a 3m sidewalk and a 2.5m bidirectional on-street bikeway on the water side (see Figure 61). The Climate Change Adaptation Plan has recommended that this section of Water Street be elevated to relative elevation of 5.8m above sea level. This will require utility relocation and sloped sides, as well as modification to the proposed cross-section, to include a 1.5m sidewalk, a 1.8m bikeway.

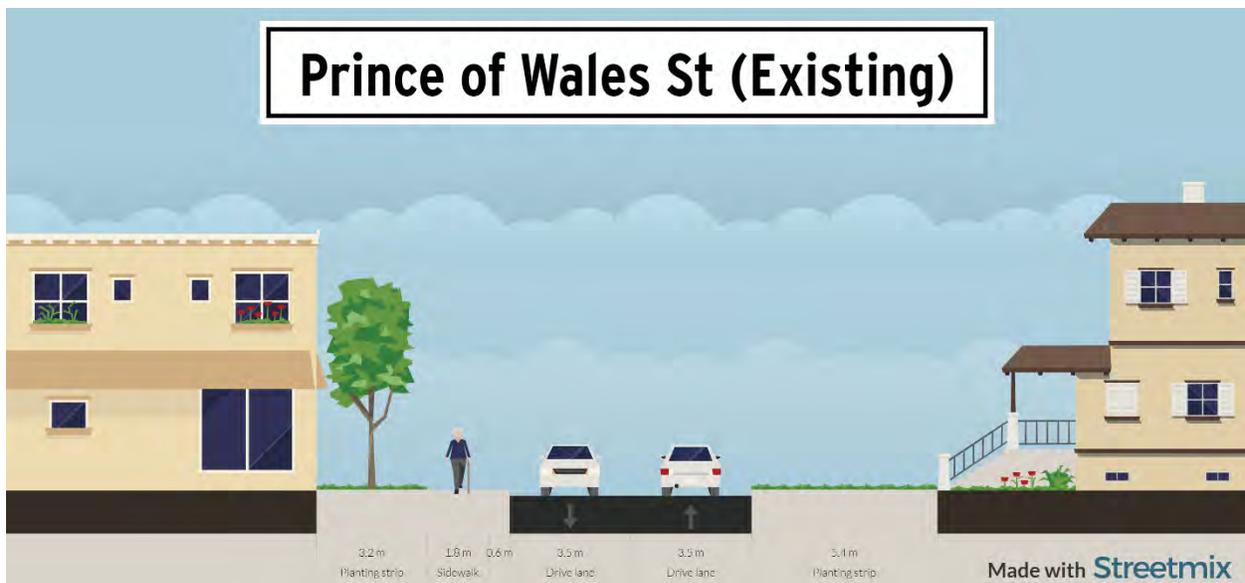


**Figure 61: Water Street (Around Indian Point) – Proposed Cross-Section**

- ▶ The limits of the Water Street (Around the Point) Upgrade are from the Van Horne Trail to Prince of Wales Street.
- ▶ The estimated cost for the Water Street Upgrade (Around the Point) is \$1,588,000 including the raising of the road and utility relocations.

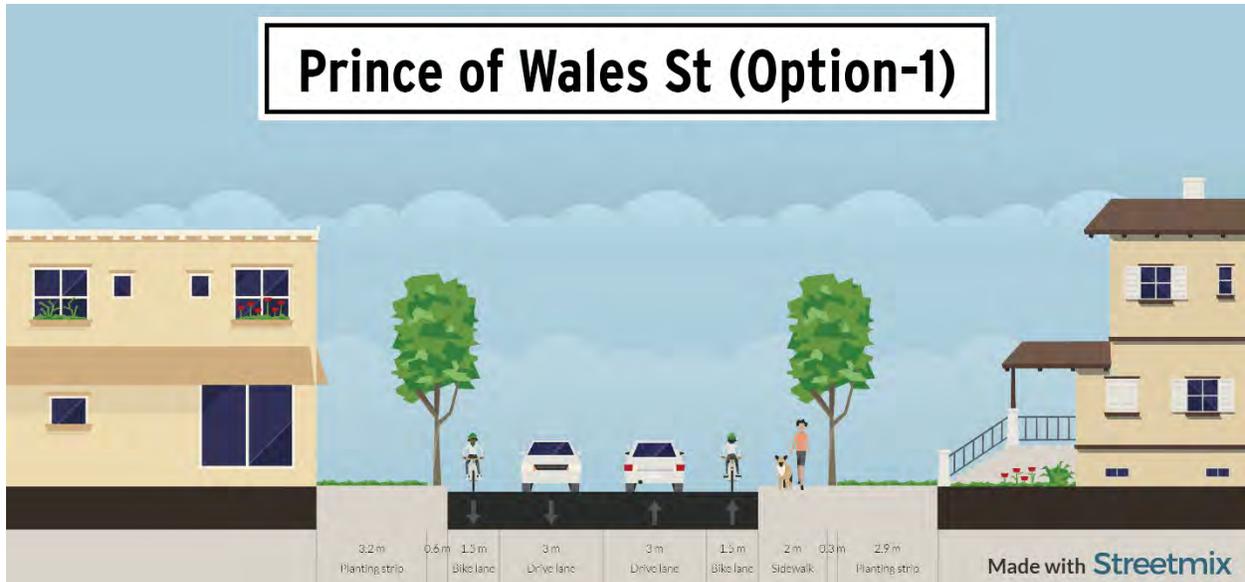
### 4.7.3 Prince of Wales Street

Like most of the Town’s road, Prince of Wales Street operates with a simple 7m wide paved area, primarily dedicated to automotive travel. Partial sidewalks are included on the west side, north of King Street (see Figure 62).



**Figure 62: Prince of Wales Street – Existing Cross-Section**

As a collector road in the Town’s Institutional Corridor, Prince of Wales Street would benefit from the addition of dedicated bike lanes, and the extension of the sidewalk though its entire length, at least on one side of the street (see Figure 63). This would require widening of the paved area from 7m to 9m, and the construction of curbs and sidewalks over formalized drainage facilities.

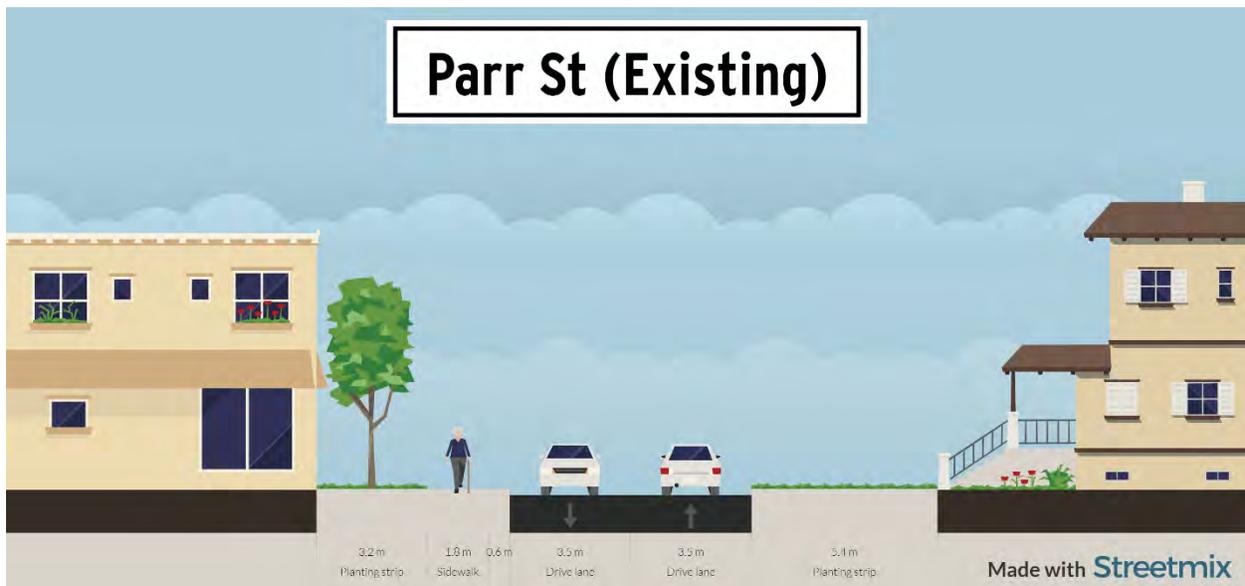


**Figure 63: Prince of Wales Street – Proposed Cross-Section**

- ▶ The limits of the Prince of Wales Street Upgrade are from Harriet Street to the Van Horne Trail.
- ▶ The estimated cost for the Prince of Wales Street Upgrade is \$404,000.

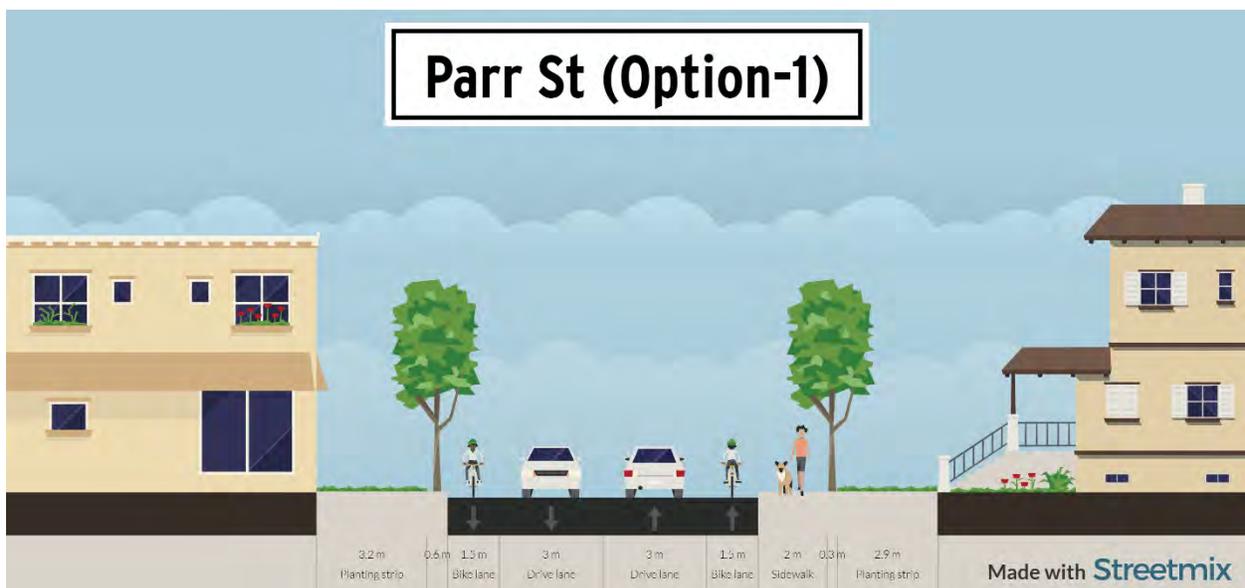
#### 4.7.4 Parr Street

Parr Street operates similarly to Prince of Wales Street, with a 7m paved portion that accommodates two-way vehicular travel, with sidewalks on one side of the street (see Figure 64).



**Figure 64: Parr Street – Existing Cross-Section**

The addition of dedicated bike lanes on both sides of the street, as per the proposed Active Transportation Plan, would require the widening of the paved portion to 9m (see Figure 65).



**Figure 65: Parr Street – Proposed Cross-Section**

- ▶ The limits of the Parr Street Upgrade are from Harriet Street to Augustus Street.
- ▶ The estimated cost for the Parr Street Upgrade is \$361,000.

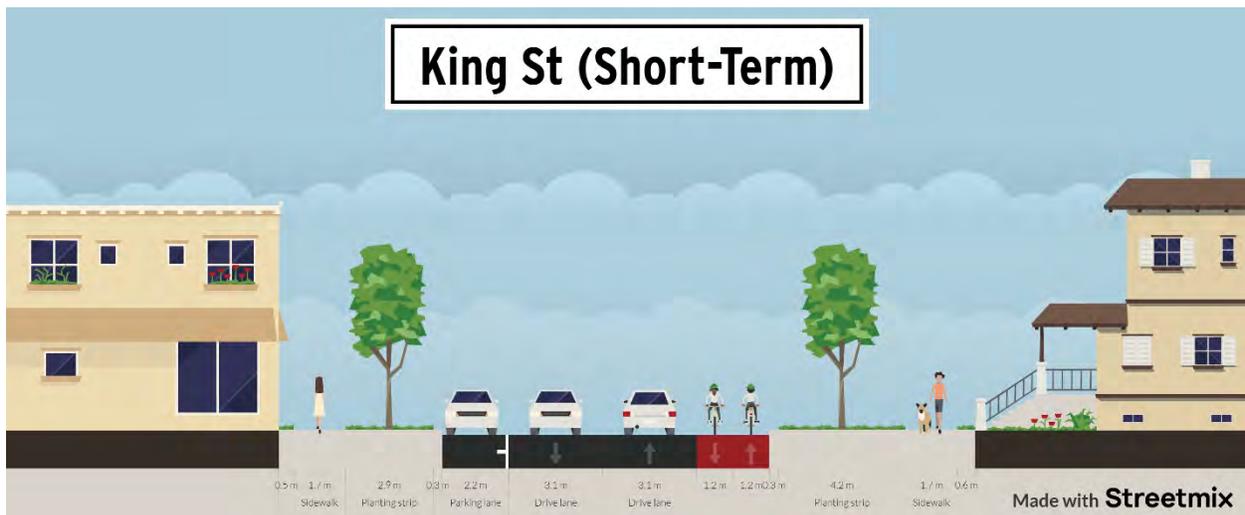
## 4.7.5 King Street

King Street is the widest road in Saint Andrews, covering a 23m ROW and including a 10.8m pavement. It operates with two bidirectional drive lanes, and on-street parking on both sides. It features a broad boulevard, with sidewalks on both sides (see Figure 66).



**Figure 66: King Street – Existing Cross-Section**

Over the short-term, the opportunity exists to install a temporary on-street bidirectional bikeway on one side of the street, displacing on-street parking zones. No changes would be made to the rest of the pavement (see Figure 67).



**Figure 67: King Street – Proposed Cross-Section (Short-Term)**

- ▶ The limits of the King Street Upgrade are from Water Street to Prince of Wales Street.
- ▶ The estimated cost for the King Street Upgrade (Option 1 – Short-Term) is \$34,000.

Should this temporary installation prove successful and well-utilized, the longer-term reconstruction of King Street may include bike lanes on the boulevard on both sides of the road, and the restoration of on-street parking on both sides (see Figure 68).

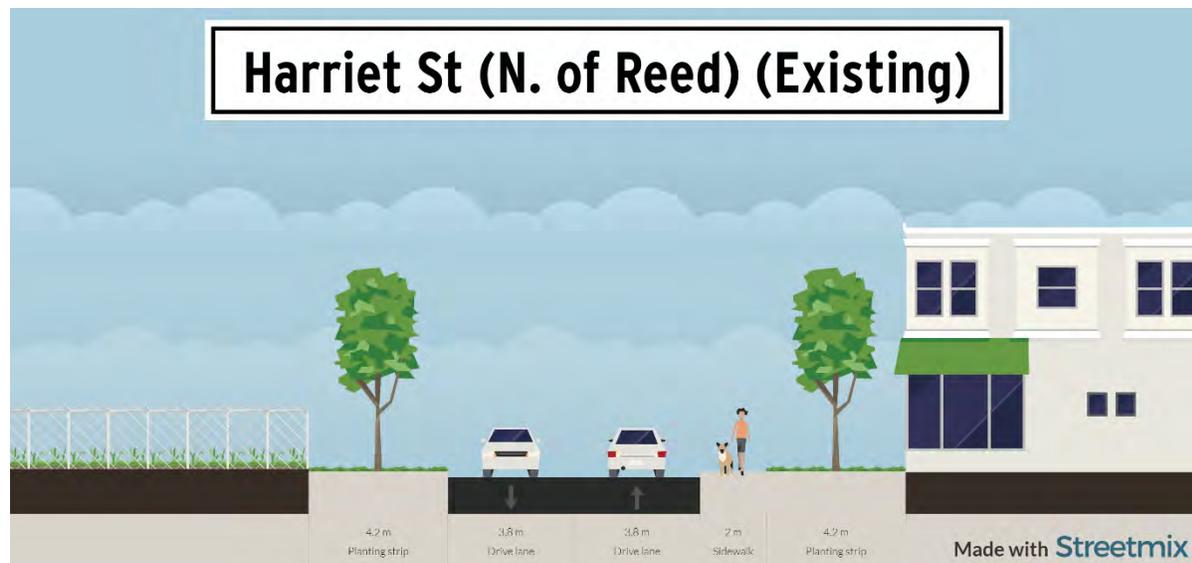


**Figure 68: King Street – Proposed Cross-Section (Long-Term)**

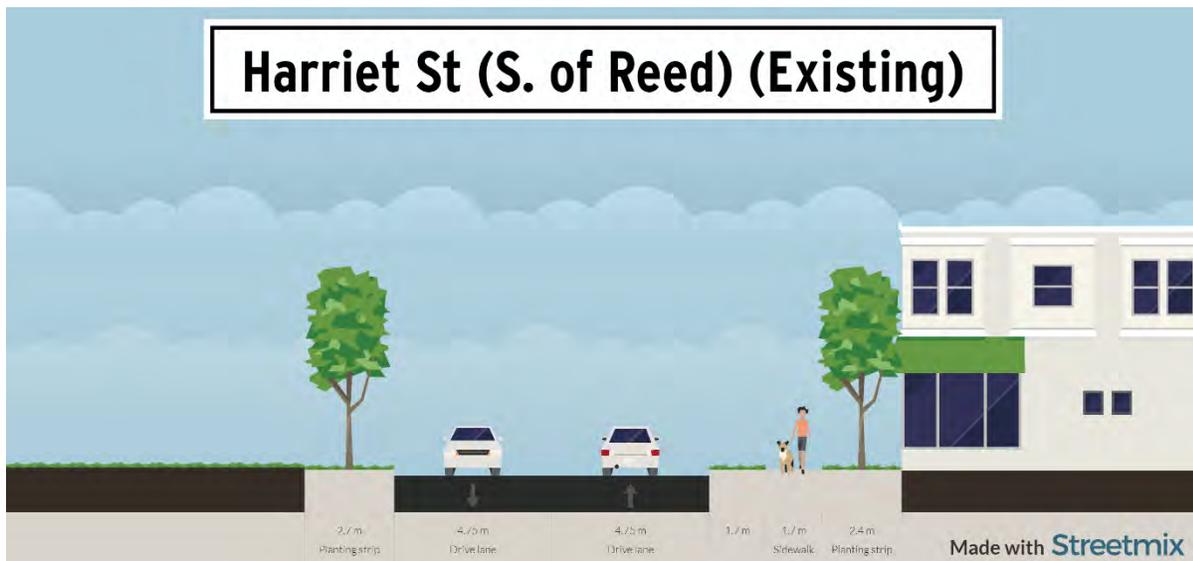
- ▶ The limits of the King Street Upgrade are from Water Street to Prince of Wales Street.
- ▶ The estimated cost for the King Street Upgrade (Option 2 – Long-Term) is \$269,000.

#### 4.7.6 Harriet Street

Harriet Street generally follows the consistent pattern of two-way travel with sidewalk on the east side of the road, however, it features significantly wider pavement than most other Town streets. North of Reed Avenue it features a 7.2m carriageway (see Figure 69), while south of Reed Avenue the carriageway widens to 9.5m (see Figure 70).

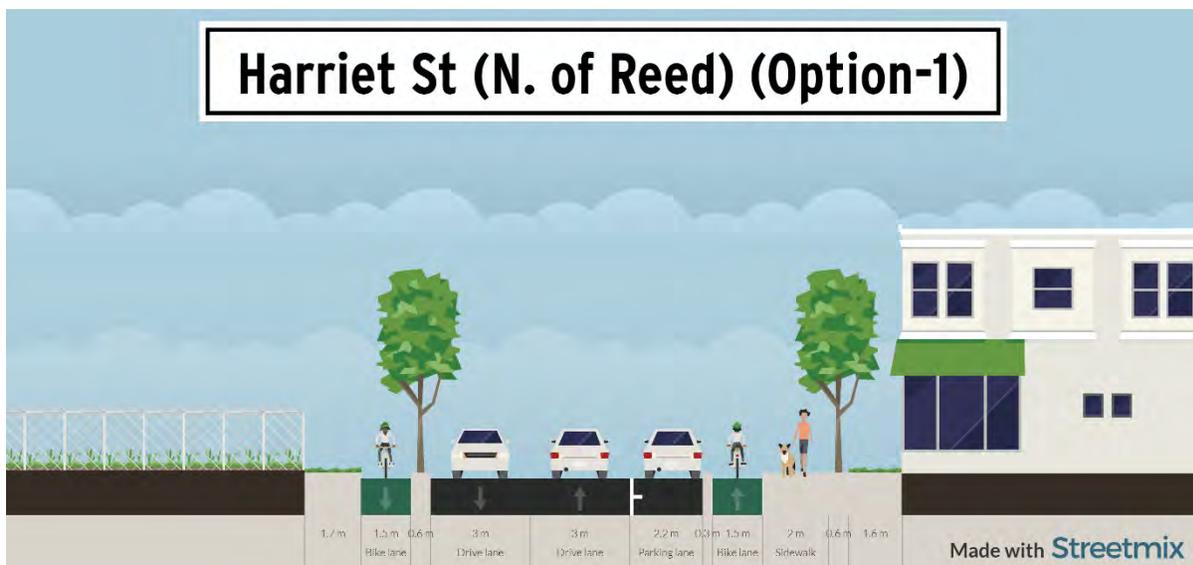


**Figure 69: Harriet Street (North of Reed Avenue) – Existing Cross-Section**



**Figure 70: Harriet Street (South of Reed Avenue) – Existing Cross-Section**

South of Reed Avenue, Harriet Street has a sufficiently-wide pavement to accommodate bicycle lanes on both sides of the road, while maintaining the two-way carriageway and a sidewalk on the east side. North of Reed Avenue, however, the installation of any cycling facility would require the widening of the boulevard (see Figure 71), or the widening of the pavement to permit off-street bikeways (see Figure 72).



**Figure 71: Harriet Street – Proposed Cross-Section (Option 1)**

- ▶ The limits of the Harriet Street Upgrade (Option 1) are from Water Street to Reed Street.
- ▶ The estimated cost for the Harriet Street Upgrade (Option 1) is \$282,000.

## Harriet St (N. of Reed) (Option-2)



**Figure 72: Harriet Street – Proposed Cross-Section (Option 2)**

- ▶ The limits of the Harriet Street Upgrade (Option 2) are from Water Street to Reed Street.
- ▶ The estimated cost for the Harriet Street Upgrade (Option 2) is \$86,000.

# Chapter 5 Recommendations and Implementation

---

## 5.1 Recommendations

It is recommended that the Town of Saint Andrews accept the Plan as proposed above, with the following specific actions.

1. Road Network
  - ▶ Adopt a new road classification recognizing that Highway 127 functions as an arterial road and that some of the Town's road function as collectors.
  - ▶ Declare the residential areas bounded by the collector road network as traffic calmed zones with special policies restricting vehicular access to local roads during peak summer months.
2. Active Transportation
  - ▶ Conduct pilot program during peak summer months to test the viability of dedicated cycling infrastructure, particularly along the arterial and collector road network.
  - ▶ Allocate available pavement space to bike facilities, until roads come up for recapitalization, at which point dedicated facilities can be introduced.
3. Public Transit
  - ▶ Continue collaborating with SWNBTAI, the Town of St. Stephen and St. John to implement a door-to-door regional transit service allowing on-demand trip booking.
  - ▶ Extend transit operation during peak summer months to cover a loop around Town covering major attractions and potential off-street parking lots.
4. Curbside Management
  - ▶ Implement on-street parking metering along Water Street and King Street and immediate side streets, with 2-hour parking limits.
  - ▶ Restrict on-street parking within the traffic calmed areas, to local residents only.
5. Signage
  - ▶ Conduct inventory of the Town's existing signs.
  - ▶ Develop a precise signage plan consistent with the Plan, upon Council approval of the Plan's proposed recommendations. The signage plan must add new signs at key intersections directing visitors to key attractions and services, while improving the effectiveness of signs at existing locations.

## 5.2 Cost Estimates

Class D estimates were developed for capital projects issued from the recommendations of this Plan. Costs are summarized in Table 4. The King Street and Harriet Street road upgrades include alternative costs, should the road be widened to accommodate additional pedestrian and cycling infrastructure. Similarly, alternative cost estimates are provided for parking metering, should dual-space parking meters be installed instead of multi-space parking machines.

**Table 4: Class D Cost Estimates\***

Project ID	Project Description	Cost	Alternative Cost
101	Water St. Road Upgrades	\$ 159,000	\$ 159,000
102	Water St (A.P) Road Upgrade	\$ 1,588,000	
103	Prince of Wales St Road Upgrade	\$ 404,000	
104	Parr St Road Upgrade	\$ 361,000	
105	King St Road Upgrade	\$ 34,000	\$269,000
106	Harriet St (E) Road Upgrade	\$ 86,000	\$282,000
202	Prince of Wales St Road Extension	\$ 258,000	
301	Augustus St Sidewalk	\$ 38,000	
302	Champlain Ave Sidewalk	\$ 188,000	
303	Harriet St Sidewalk	\$ 48,000	
304	Marine Science Dr Bike Lane	\$ 117,000	
305	Cemetery Rd M.U Path	\$ 106,000	
306	Brandy Cove Rd M.U Path	\$ 295,000	
307	Joe's Point Rd M.U Path	\$ 268,000	
308	Cedar Ln M.U Path	\$ 196,000	
309	Cornelia St M.U Path	\$ 156,000	
310	Harriet St (East) Bike Lanes	\$ 140,000	
311	Harriet St (West) Bike Lanes	\$ 82,000	
312	Champlain Ave Bike Lanes	\$ 360,000	
313	Reed Ave Bike Lanes	\$ 118,000	
314	Mowat Dr Bike Lanes	\$ 121,000	
315	Bayview Dr Bike Lanes	\$ 174,000	
316	Bayview Dr (2) Bike Lanes	\$ 329,000	
317	Marine Science Dr Bike Lane	\$ 234,000	
401	Metered Parking - Water St (Edward St to King St ) and William St North and South Sides (Water St to Queen St )	\$ 43,000	\$ 78,000
402	Metered Parking - Water St (King St to Princess Royal St ) and Fredrick St North and South Sides (Water St to Queen St )	\$ 43,000	\$ 78,000
403	Metered Parking - Queen St East and West Sides (from William St to Fredrick St) and King St North and South Sides (from Water St to Montague St)	\$ 52,000	\$ 104,000

Project ID	Project Description	Cost	Alternative Cost
404	Metered Parking - Water St (Elizabeth St to Edward St), Elizabeth St North and South Sides (Water St to Queen St), and Edward St North and South Sides (Water St to Queen St)	\$ 43,000	\$ 78,000
405	Metered Parking - Water St (Princess Royal St to Sophia St), Princess Royal St North and South Sides (Water St to Queen Street), and Sophia St North and South Sides (Water St to Queen St)	\$ 43,000	\$ 78,000
406	Metered Parking - Water St (from Adolphus St to Elizabeth St) and Adolphus St North and South Sides (Water St to Queen St)	\$ 33,000	\$ 52,000
407	Metered Parking - Montague St East and West Sides (William St to Fredrick St), Parr St East and West Sides (William St to Fredrick St), and King St North and South Sides (Montague St to Parr St)	\$ 64,000	\$ 129,000
408	Metered Parking - Carleton Street East and West Sides (King Street to Fredrick St) and King Street North and South Sides (Parr Street to Prince of Wales St)	\$ 39,000	\$ 67,000
409	Metered Parking - Harriet St South Side (Parr St to Prince of Wales St)	\$ 23,000	\$ 28,000

*\*Cost estimates include mobilization, engineering costs / contingencies, on top of material unit costs and are before taxes.*

With the exception of estimate 102, which includes full road reconstruction due to the raising of the road for climate change, it has been assumed that the existing street asphalt, curbs and sidewalks on the streets can be utilized as part of the conceptual upgrades with all the other estimates related to new curb, sidewalk, and asphalt widening. Conditions of the existing paved areas, curbs and sidewalks on the streets would need to be assessed at the time of implementation of the upgrades. Budgets would then need to be updated accordingly to include additional road reconstruction costs if required.

### 5.3 Implementation Phasing

There are many factors that will impact the implementation of the proposed concepts. Since the implementation of such a plan will take several years to complete there may be changes in direction along the way that will impact the schedule / order of this plan. In other words, this plan will be a living document that will likely incur various modifications along the way. For this reason it is difficult to create a strict implementation and phasing approach on such a large scale plan.

In general we would recommend that Town Staff and Council plan to complete proposed conceptual transportation upgrades in conjunction with other infrastructure projects (water, sanitary sewer, storm water, asphalt resurfacing, etc.) where they overlap. This would provide the most cost effective implementation for the infrastructure upgrades.

We would also recommend focusing on completing the proposed transportation upgrades involving road widening and/or the addition of curbs/sidewalks associated to the collector roads as per Figure

39 as the earlier phases. Once the transportation upgrades have moved to this level of completion it would be recommended to reassess the required level of service for active transportation in the Town and update the overall TMP at this time to help determine the next steps forward.

As for proposed upgrades involved with designated loading zones, parking enforcement, parking limitations and traffic calming, these could happen at the Town's discretion should they choose to move forward with these interventions.

# APPENDIX A

---

## Public Meeting Invitation and Materials, Photos, and Responses

# OPEN HOUSE

## Town of Saint Andrews Transportation Master Plan

July 17th, 2019  
5:00 - 7:00pm  
WC O'Neill Arena

Come and  
share your  
views on local  
transportation  
issues!





# Town of Saint Andrews Transportation Master Plan 2019

## Open House

Wednesday July 17, 2019

5pm to 7pm



Town of  
**Saint Andrews**  
New Brunswick, Canada

**Thank you for  
coming!**



# OPEN HOUSE

## Town of Saint Andrews Transportation Master Plan

July 17th, 2019  
5:00 - 7:00pm  
WC O'Neill Arena



Come and  
share your  
views on local  
transportation  
issues!



Town of  
**Saint Andrews**  
New Brunswick, Canada

- **Welcome**
- **Project Background**
- **Existing Conditions Presentation**
- **Needs Workshop**
- **Open House Discussions**



# Agenda for Tonight



Town of  
**Saint Andrews**  
New Brunswick, Canada

The Town of Saint Andrews, in collaboration with CBCL, is undertaking this **Transportation Master Plan (TMP)** to shape the course of transportation services and mobility in the Town.

**The Team is compiling information** about existing transportation and mobility conditions in the Town. This entails a comprehensive inventory of transportation infrastructure, surveys of traffic on Town streets, and developing an understanding of needs and opportunities.



**Welcome**



Town of  
**Saint Andrews**  
New Brunswick, Canada



# Project Background



Town of  
**Saint Andrews**  
New Brunswick, Canada

**Share findings** and existing conditions assessment:

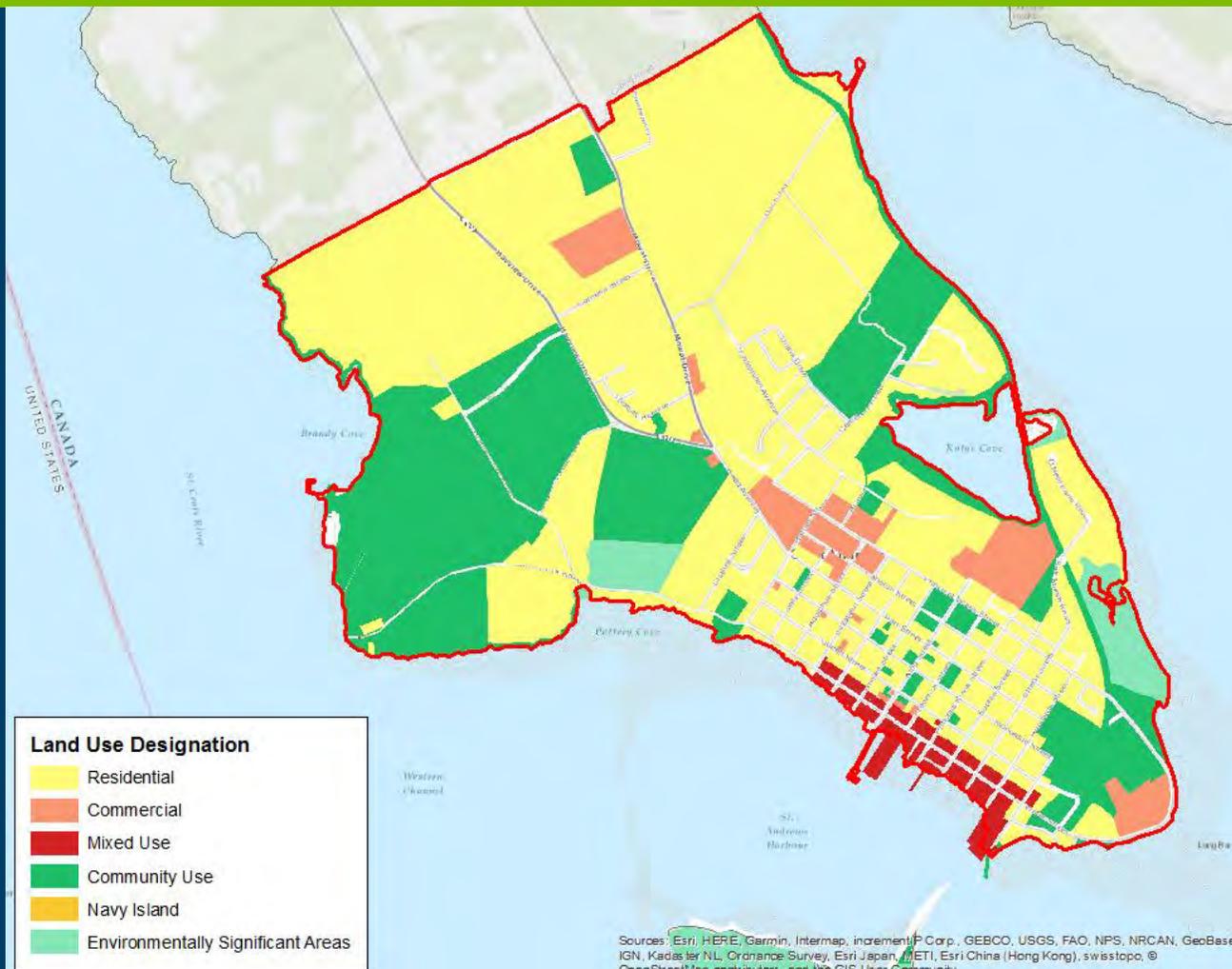
- Trends
- Roadway and Parking
- Active Transportation
- Public Transit

**Learn about your** transportation values and priorities

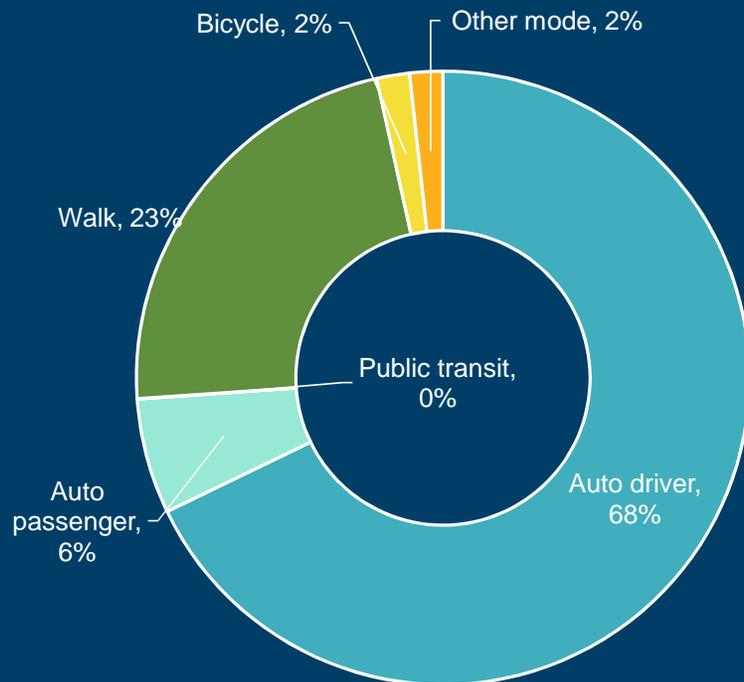
**Gather feedback** on key issues

**Discuss how** Transportation can benefit local residents and visitors





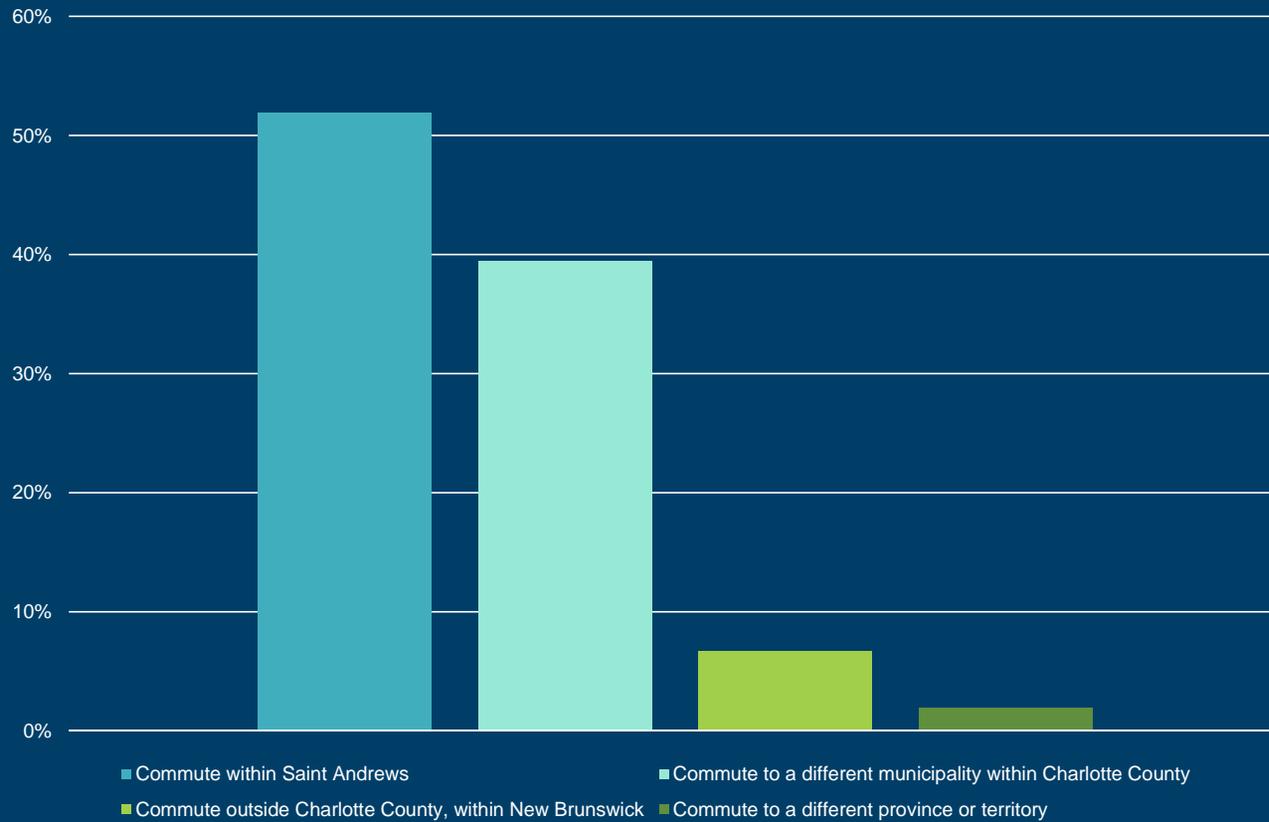
## 2016 - Travel Mode Choice for Work Commute



The majority of work trips are made by auto, as drivers

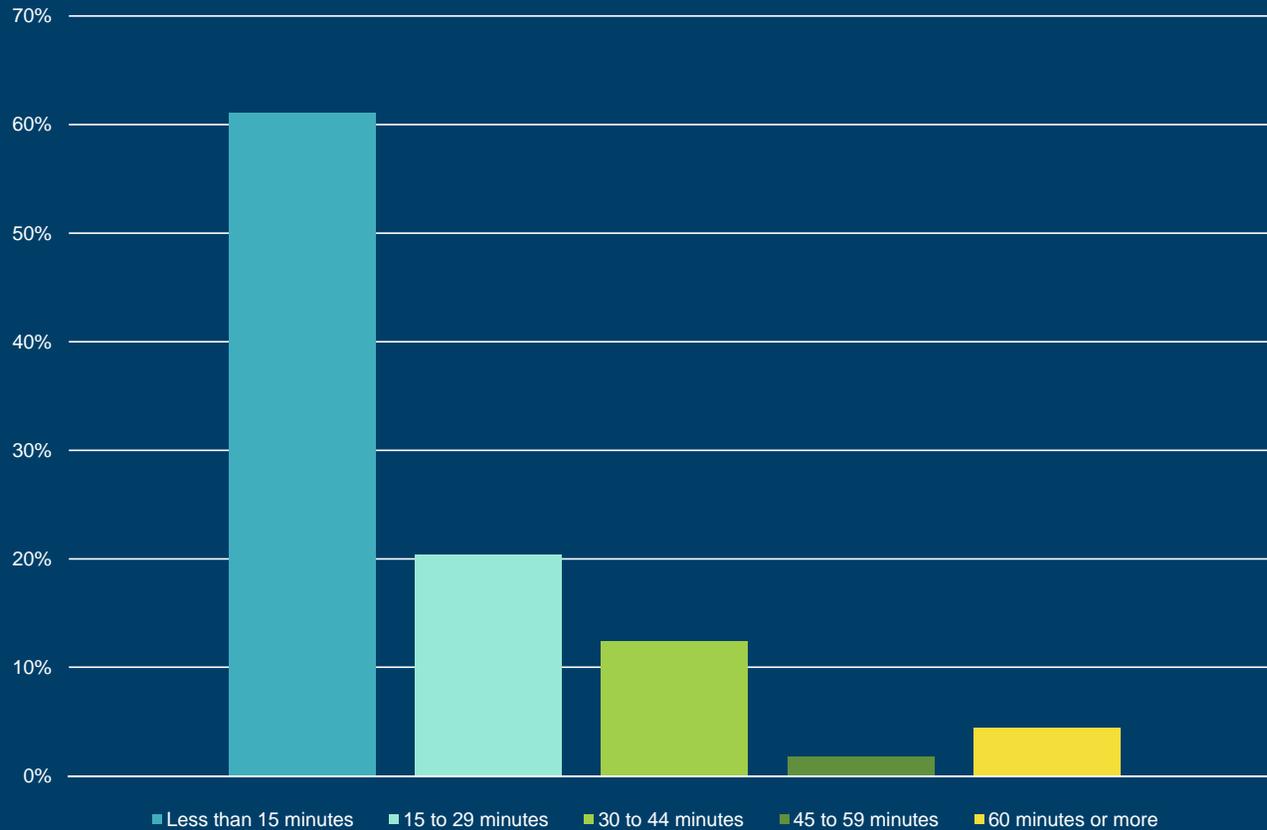
A significant number of work trips made by walking

2016 - Work Commute Destination



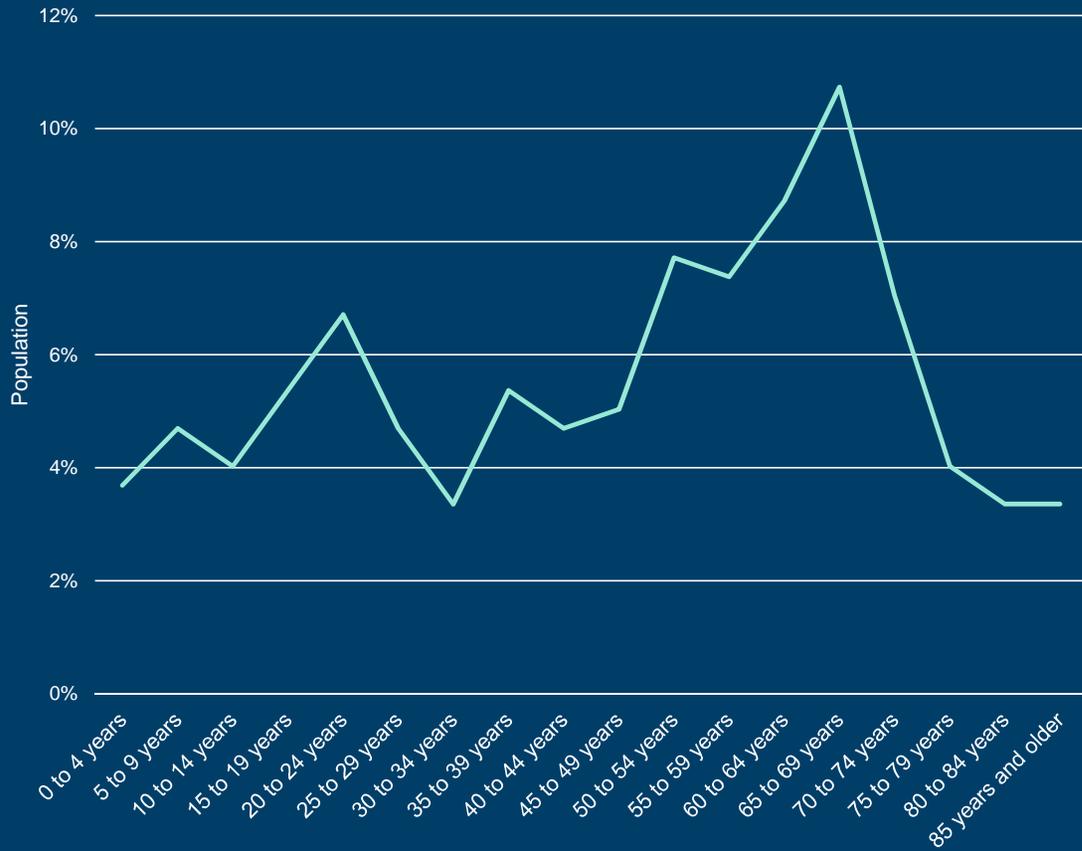
The majority of work trips are made within Saint Andrews, or within Charlotte County

2016 - Work Commute Duration

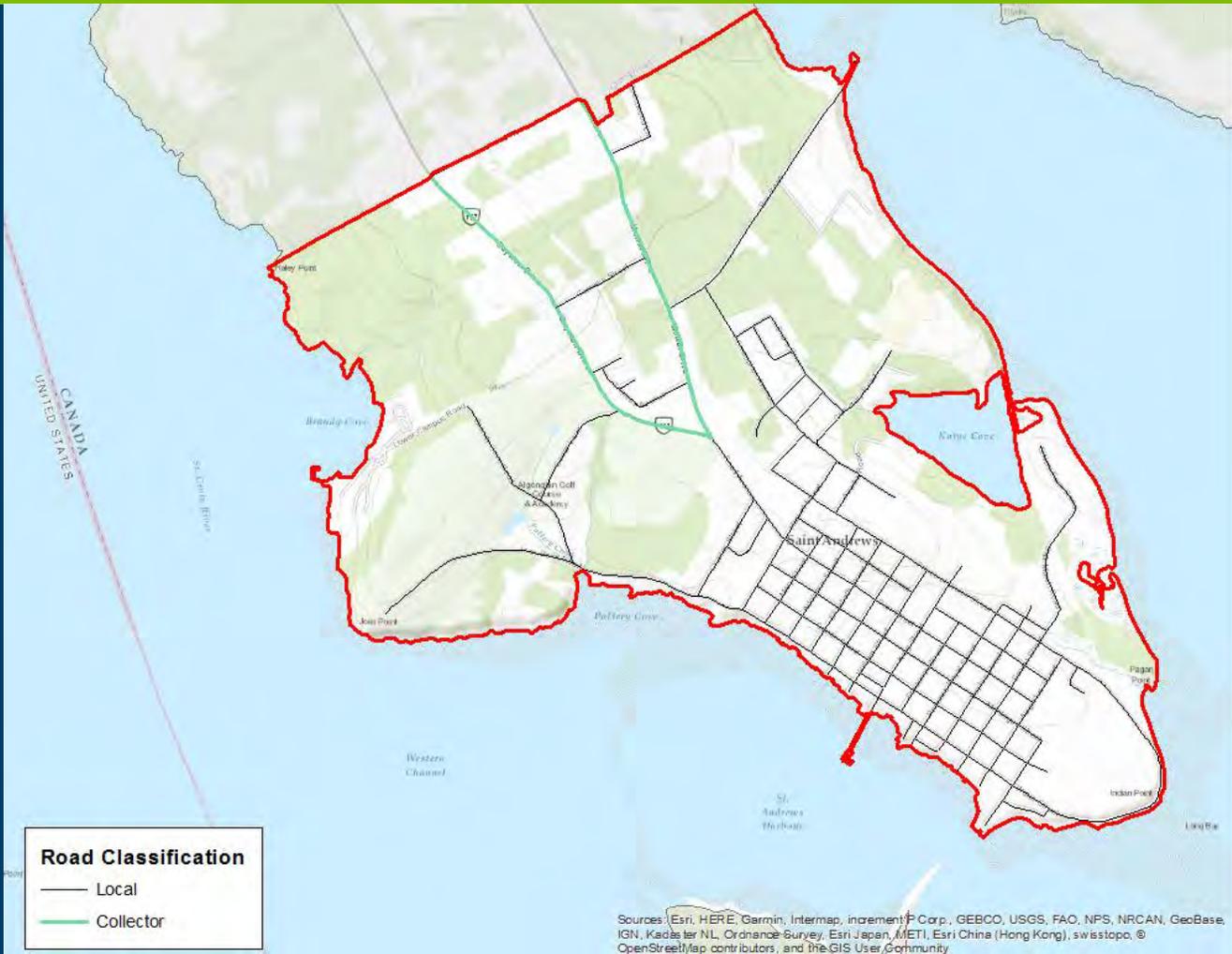


The overwhelming majority of work trips are less than 15 minutes long

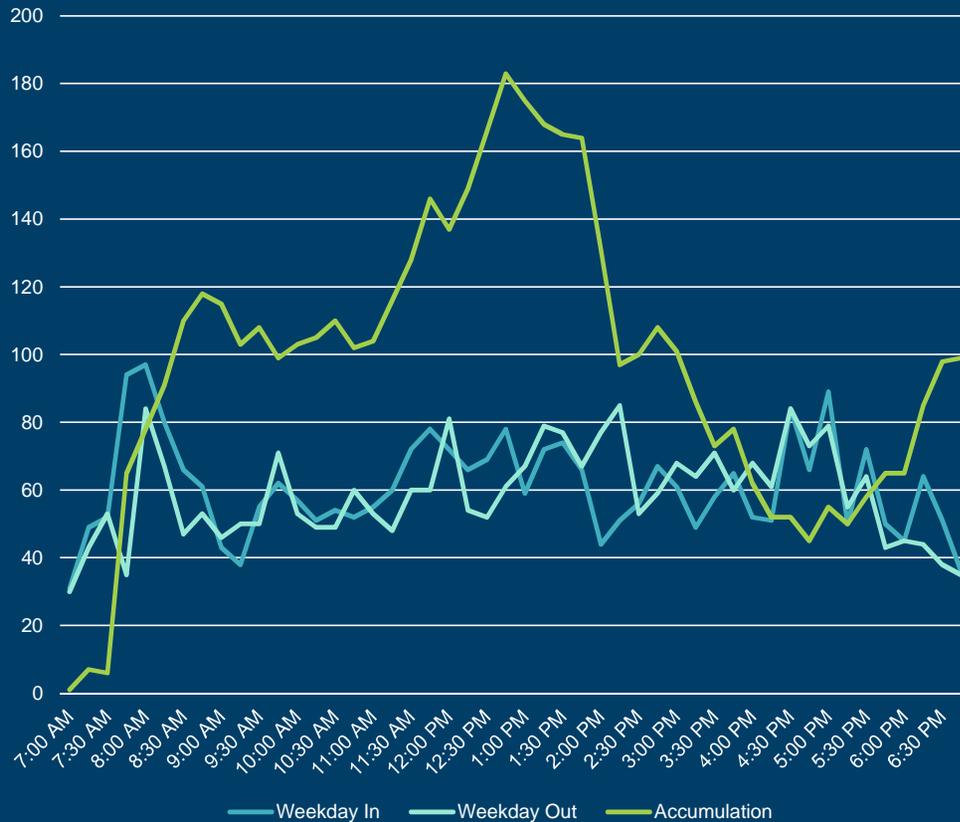
2016 - Population Profile



**12% <15 years old**  
**59% 15-64 years old**  
**29% 65 years old and older**



Typical Weekday



**Balanced distribution between inbound and outbound traffic**

**Clear peak in accumulation around the noon hour**

**A dip in accumulation consistent with end of work day**

**An evening peak, associated with leisure activities**

**Volumes are well within planned local and collector road capacities**



# Traffic Trends – Typical Weekday - AM

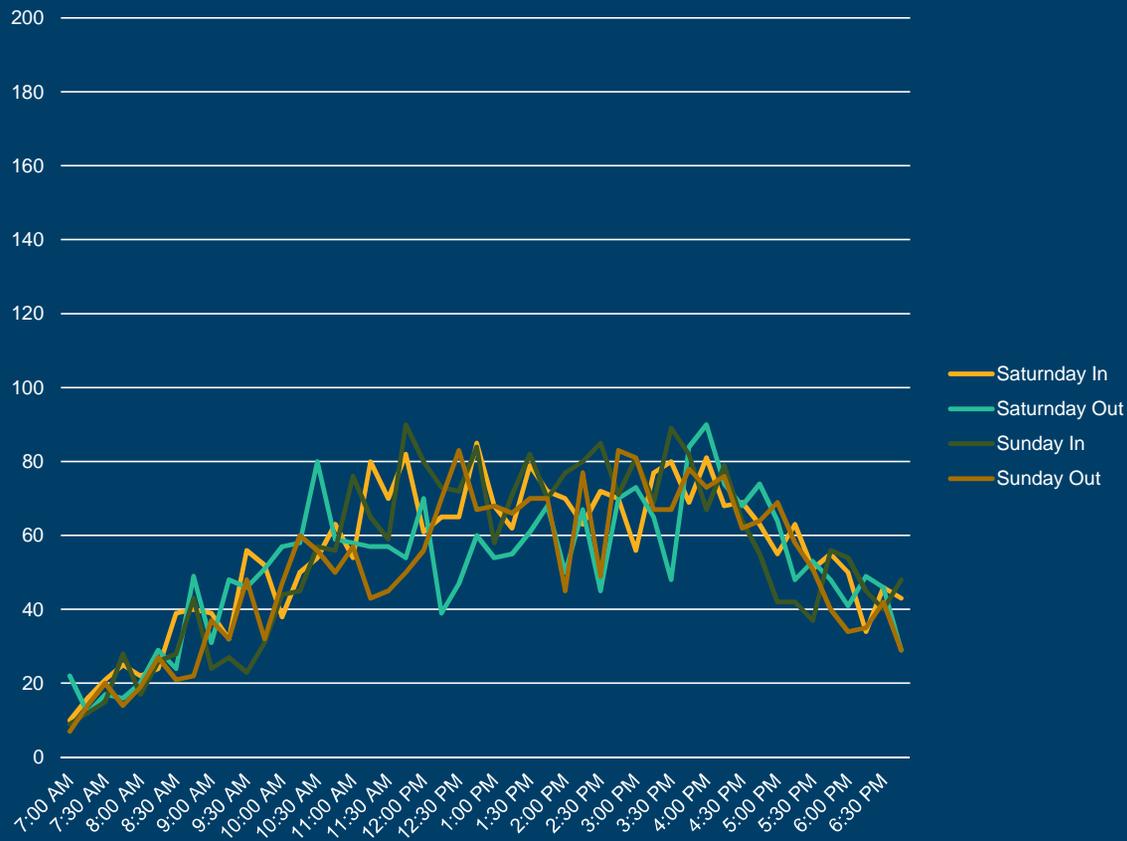


# Traffic Trends – Typical Weekday - Noon



# Traffic Trends – Typical Weekday - PM

### July 1<sup>st</sup> Weekend



- Consistent demand across weekend
- Plateau throughout the afternoon
- Evening drop in demand

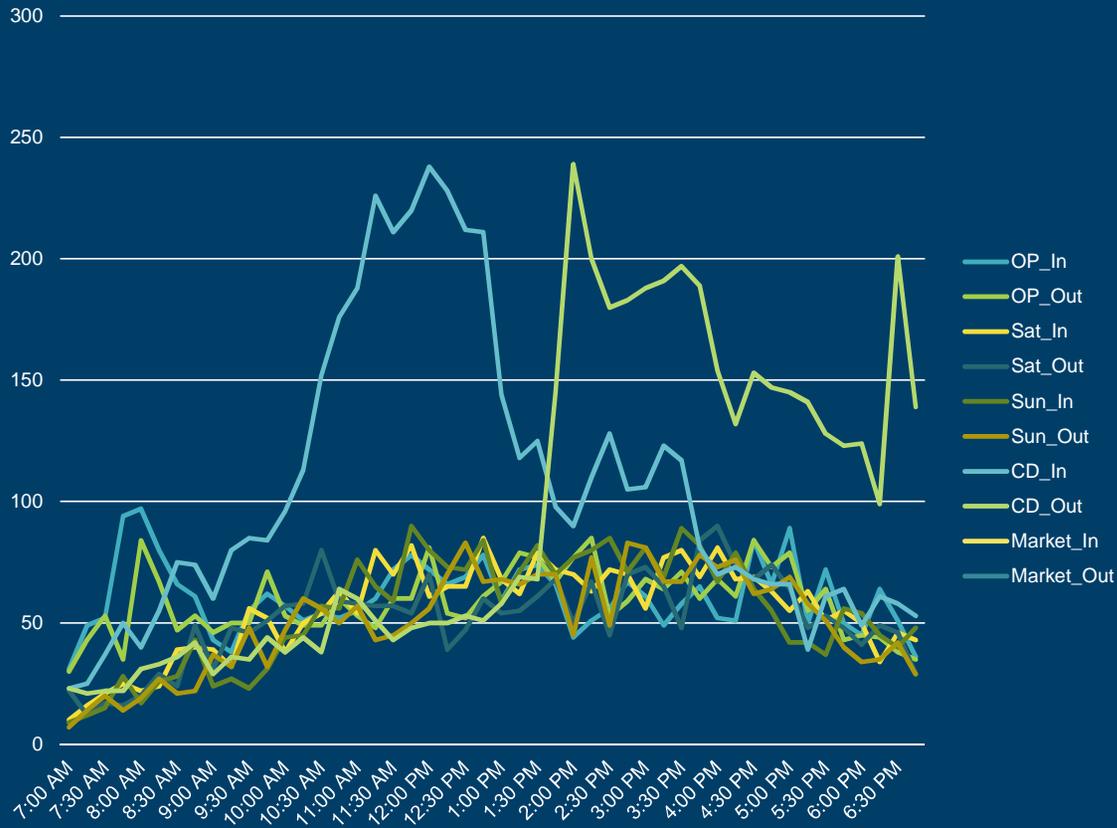


# Traffic Trends – July 1<sup>st</sup> Weekend



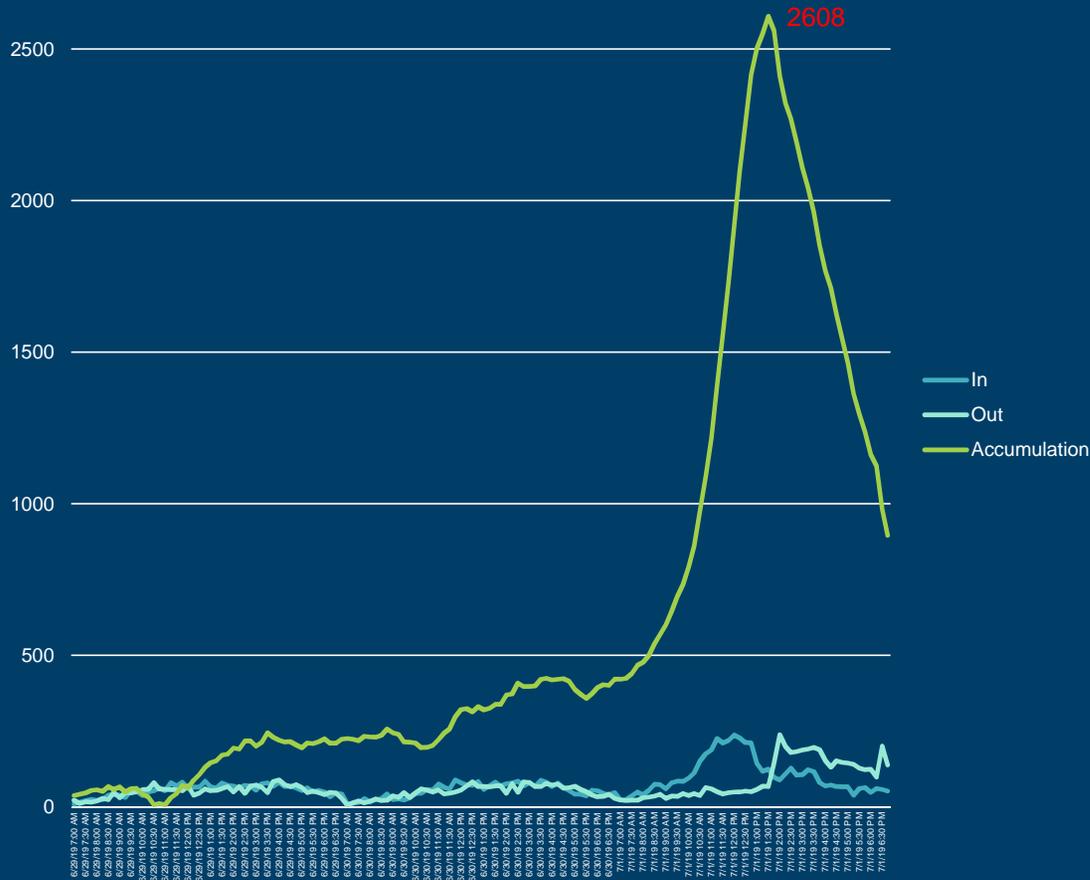
Town of Saint Andrews  
New Brunswick, Canada

Overall



- Observed traffic pattern demonstrates extreme peak in visits to Saint Andrews, associated with July 1<sup>st</sup> festivities
- Arrival and departure patterns are very closely related to the July 1<sup>st</sup> parade

## Canada Day Weekend



- Accumulation increases from approximately 350-450 vehicles over Saturday-Sunday, to over 2600 vehicles on July 1<sup>st</sup>



# Traffic Trends – July 1<sup>st</sup> Weekend

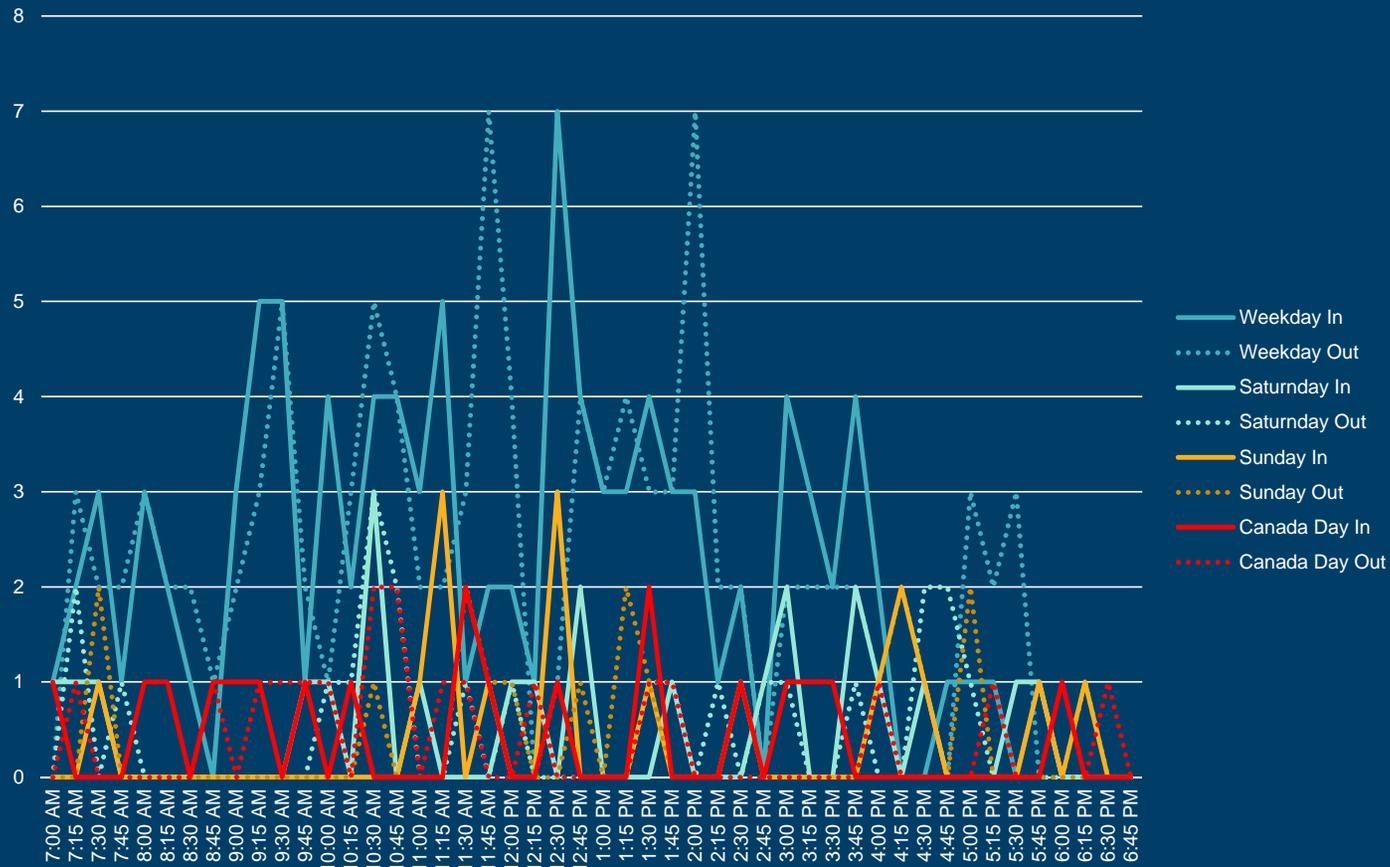


Town of  
**Saint Andrews**  
New Brunswick, Canada

*“A solution to parking issues is obviously needed. Potential solutions include painting parking lines on Water St. so parking is more efficient, having enforceable time limits (e.g. 2 hours), encouraging business owners/employees to park on side streets, purchasing private lots for public use, or using available land on the outskirts of town to create parking and providing shuttle service. This final option would almost certainly not generate revenue and would have to be seen as a public service.”*

Saint Andrews Municipal Plan

Typical Goods Movement



# Goods Movement – Typical Weekday



- Can be less expensive than other modes
- More sustainable
- Better for overall physical and mental health and wellness
- Reduces costs of health care
- Provides mobility opportunities and the ability to link to other modes and services

*“By implementing active transportation principles, the Town would be working towards its goals of having a healthy population, mitigating climate change, and economic development.”*

Saint Andrews Municipal Plan



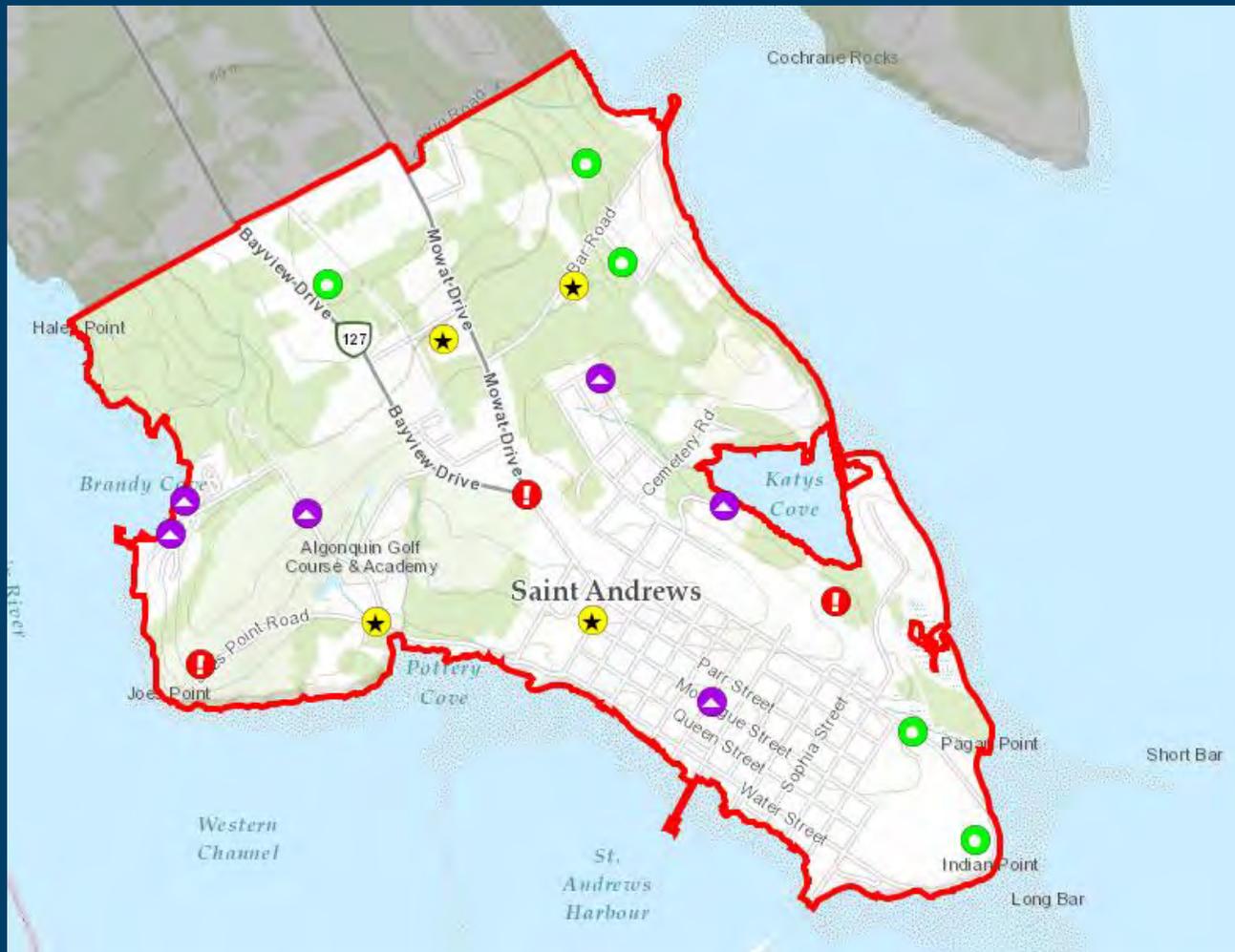
# Active Transportation



Town of  
**Saint Andrews**  
New Brunswick, Canada

- Creates mobility opportunities for all community members, including seniors, persons with disabilities, and youth
- Reduces the need for multiple vehicles
- Increases the number of people on the street, developing a sense of community and safety
- Physical and mental health benefits
- Less expensive than alternative modes
- Provides access to services (medical, financial etc.), and employment
- Brings positive impacts for business owners on transit routes
- Rural development impacts
- Health cost benefits





# Needs and Opportunities



Town of  
**Saint Andrews**  
New Brunswick, Canada



- **Transportation Priorities | 10 Minutes | Individual**  
Please rank your transportation priorities to help us best reflect these ideas in the Vision for the Transportation Master Plan.



- **Modes of Travel | 10 Minutes | Individual**  
Tell us how you travel to work, for leisure activities, and to places of interest in the Town of Saint Andrews, and why you use these modes.



- **Guiding Principles | 15 Minutes | Group**  
What do you think the guiding principles should be for a successful Transportation Master Plan?



Map

- **Mapping | 20 Minutes | Group**

Discuss and Map where you think there are issues, barriers, constraints or opportunities in the Town of Saint Andrews:

What do you like/what's good?, What needs improvement?, What are the safety issues?, Any other ideas?



Survey

- **Vision Statement | 15 Minutes | Group**

Based on the previous activities, what would be your Vision statement for the Town of Saint Andrews Transportation Master Plan?

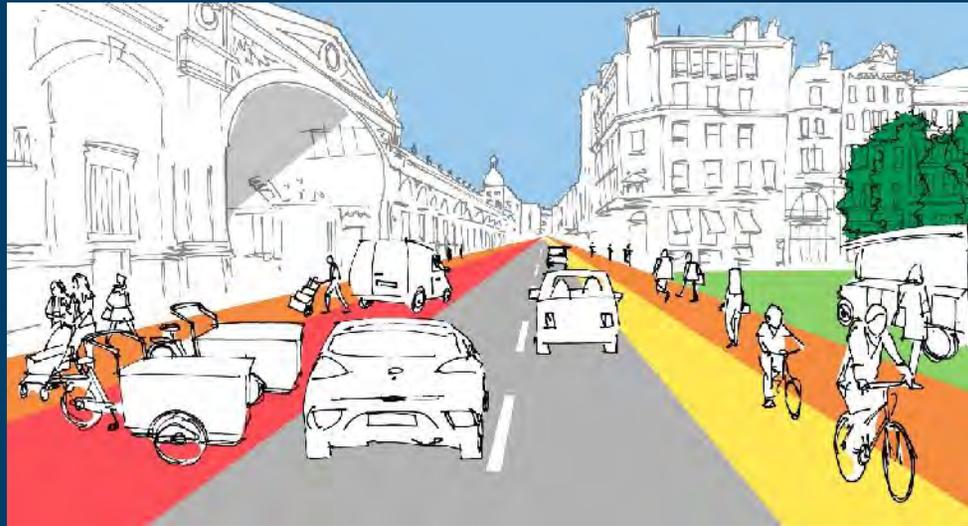


- **Discuss | 15 Minutes | Group**

Report back on your plans and ideas.



How do you want your streets to work?



Typical vs.  
Seasonal traffic  
demand

One size does not  
fit all. Consider  
seasonal policies

# Thank You!

Please remember to check out the project website at [www.statmp.ca](http://www.statmp.ca)

# PUBLIC CONSULTATION

## Town of Saint Andrews Transportation Master Plan

September  
12th, 2019  
5:00 - 7:00pm  
WC O'Neill Arena

Come and  
share your  
views on  
possible  
improvement  
options!



# PUBLIC CONSULTATION

## Town of Saint Andrews Transportation Master Plan

September  
12th, 2019

5:00 - 7:00pm

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---

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# Town of Saint Andrews Transportation Master Plan 2019

## Project Update



Town of  
**Saint Andrews**  
New Brunswick, Canada



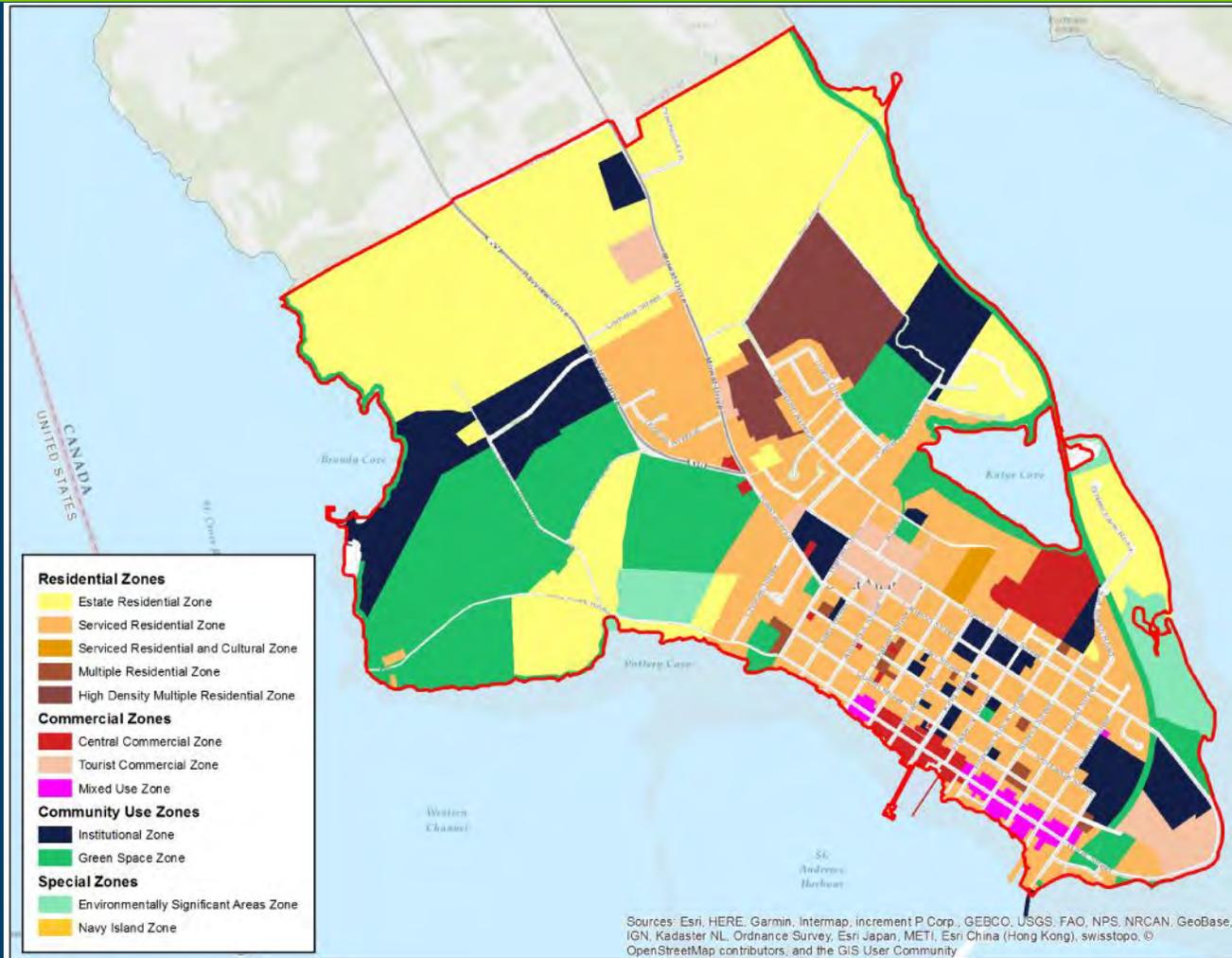
Town of  
**Saint Andrews**  
New Brunswick, Canada

# Existing Conditions Review

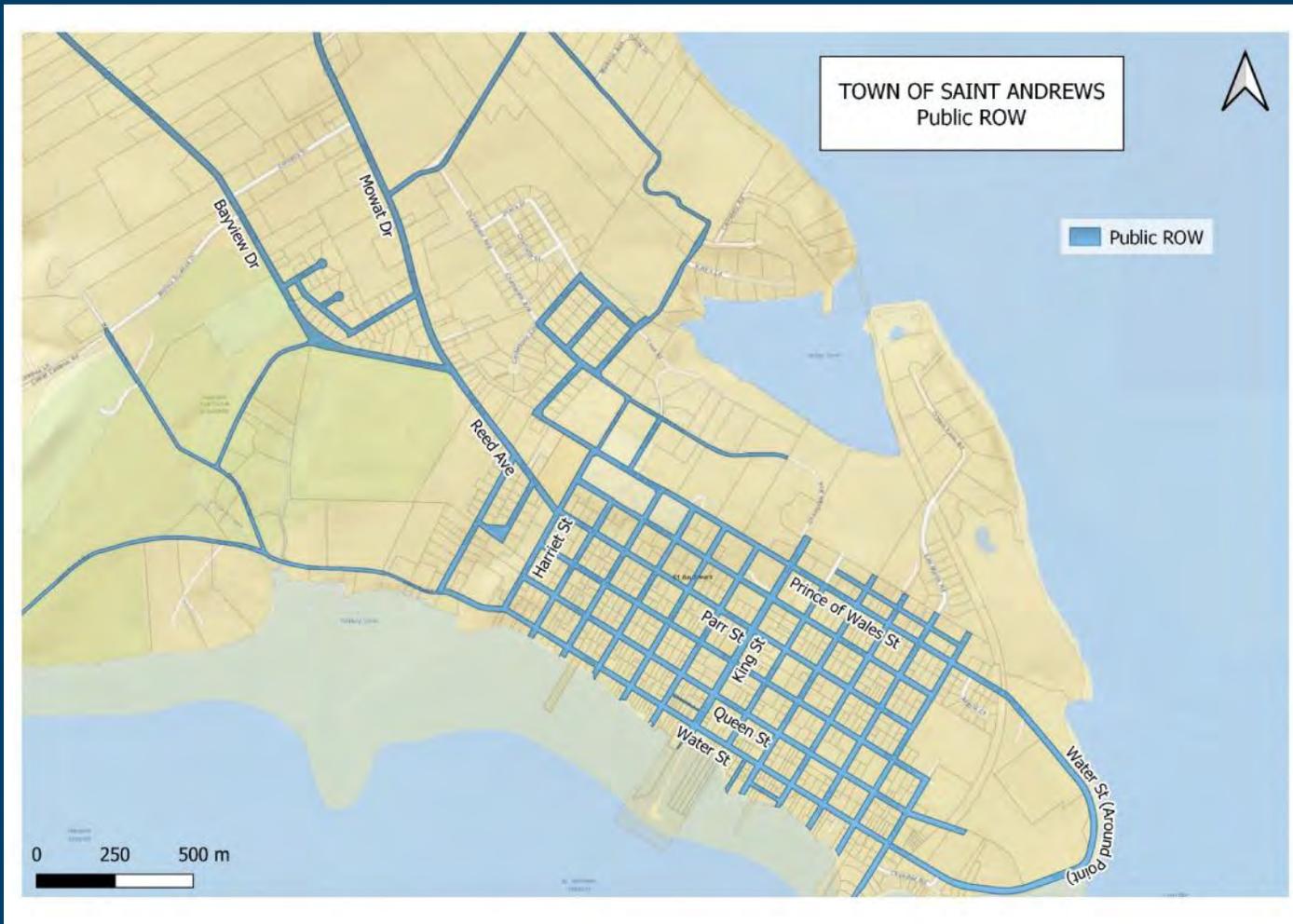
Land Use and Zoning

Mobility Networks

Travel Demand







Road	Ex. Pavement Width (m)	ROW (m)	Notes
Water St.	9.7 (West of Elizabeth St)	16	Curbed with a sidewalk on the northern side
	10.5 (East of Elizabeth St)	18.5	Curbed with sidewalks on both sides in most parts
Queen St	7	18	Ditch on both sides for most of the length
Augustus St	6.5	18	Curb with sidewalk on east side. Uncurbed north of Carleton St. Ditch on west side
Water St. (around point)	6-8	18-20	Uncurbed with riprap along sea side; The width available for development is limited to 13 meters in some parts due to sea side riprap and other constructions.
Prince of Wales St.	7.2-8 (West of King St.)	18	Curbed on the south side; Ditch on the north side.
	7 (East of King St.)		Uncurbed Ditch on both sides for most of the length.
Parr St.	7.2 (West of Sophia St.)	18	Curbed on the south side (Only west of King St);
	6.3 (East of Sophia St.)		Ditch on both sides for most of the length.
King St.	10.7-11	23	Curbed with sidewalks on both sides in most parts
Harriet St.	7.6 (North of Reed St.)	18	Curbed with sidewalks on east side to Prince of Wales St.
	9.5 (South of Reed St.)		The east side is curbed with a sidewalk



# Traffic Conditions – AM Peak Hour

Under typical conditions, close to 350 vehicles enter Saint Andrews during the AM peak hour, while 250 vehicles leave.

By comparison, during summer months, over 350 vehicles enter and leave Saint Andrews per hour. This does not cause any significant change during morning hours; the volumes of vehicles stays roughly the same, although the demand profile is different. Commuting trips under typical conditions are replaced by leisure trips during summer conditions.





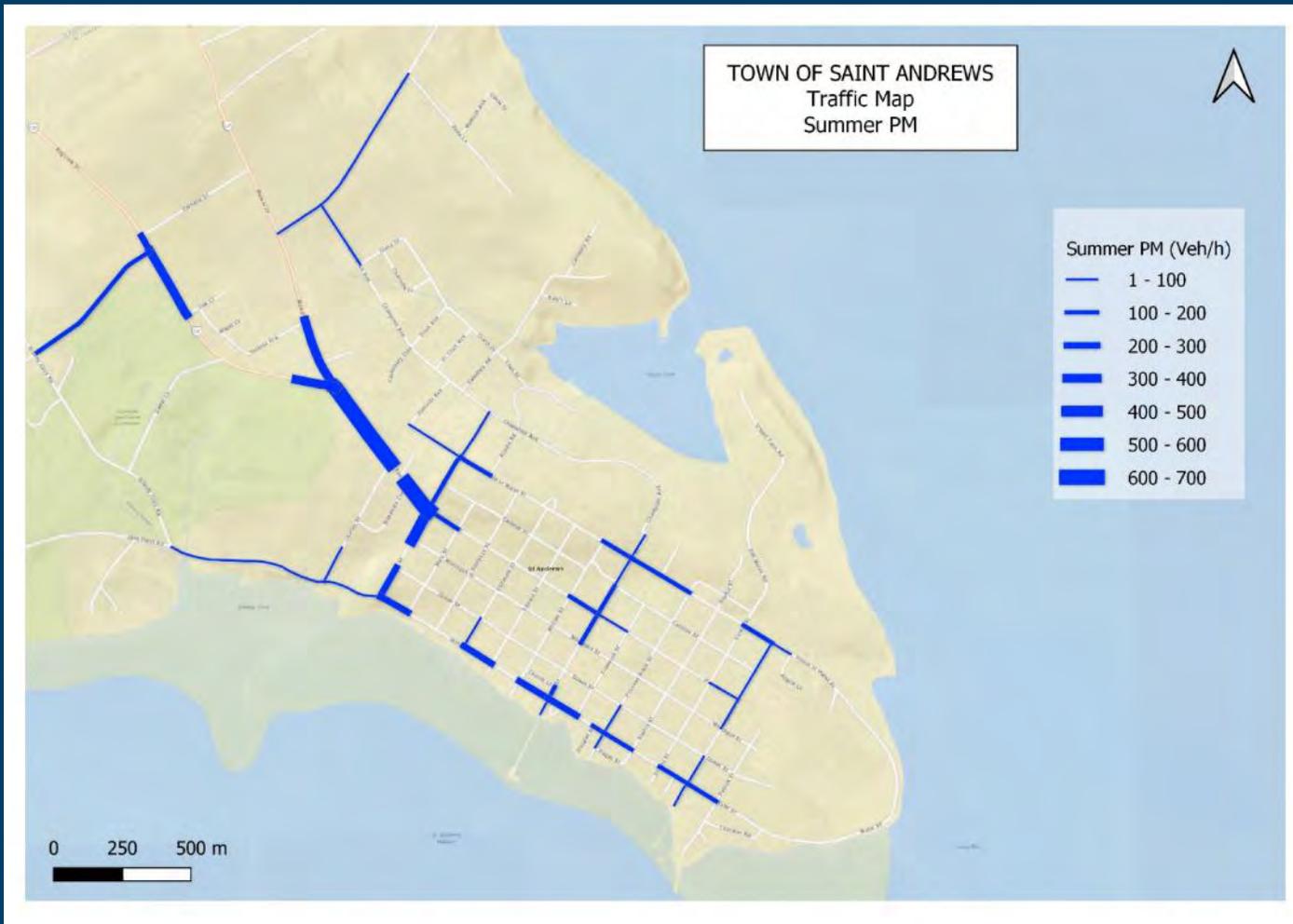
# Traffic Conditions – PM Peak Hour

Under typical conditions, close to 300 vehicles enter and leave Saint Andrews during the PM peak hour.

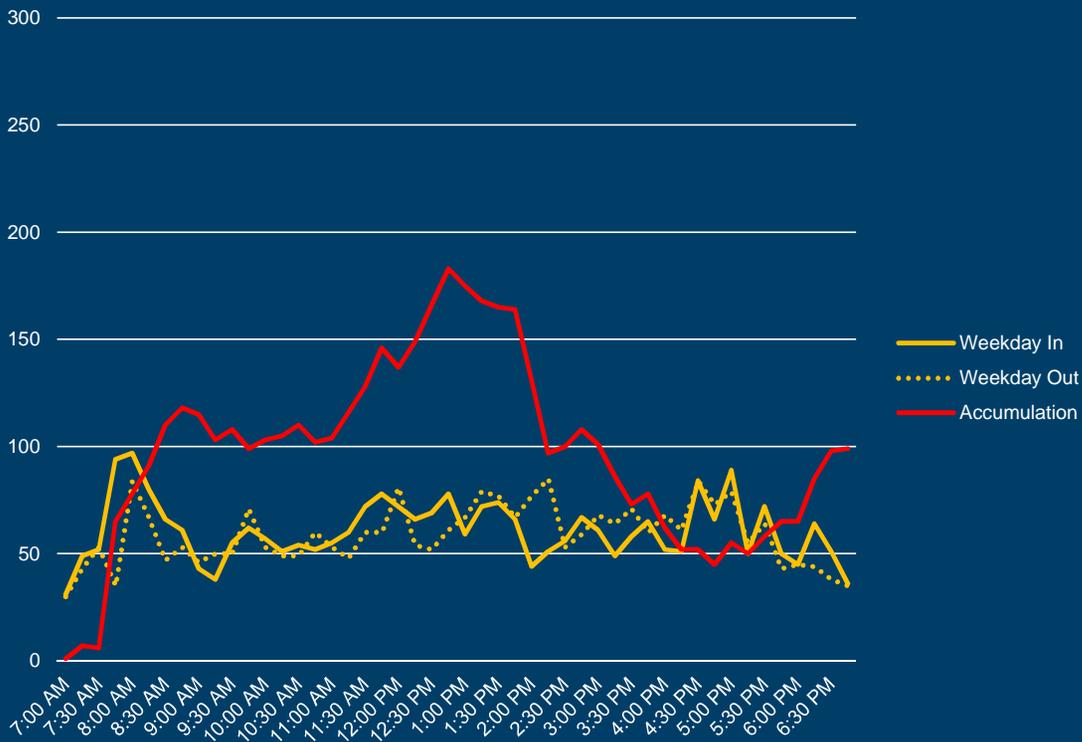
This volume grows to 350 vehicles entering and leaving during the PM peak hour during the summer months. The difference is in the daily profile of vehicle entering the Town: significantly more vehicles enter the Town than leave, when compared to typical conditions.

This confirms that more vehicles park on Town streets in summer than the rest of the year.

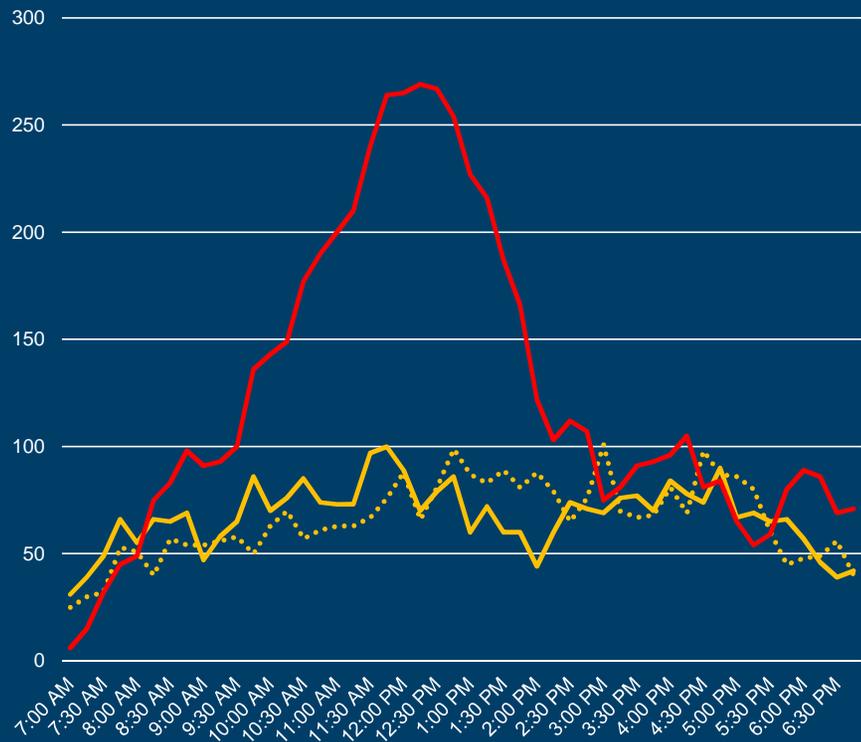




Typical Weekday



Summer Weekday



Accumulation = [Vehicles In] – [Vehicles Out]

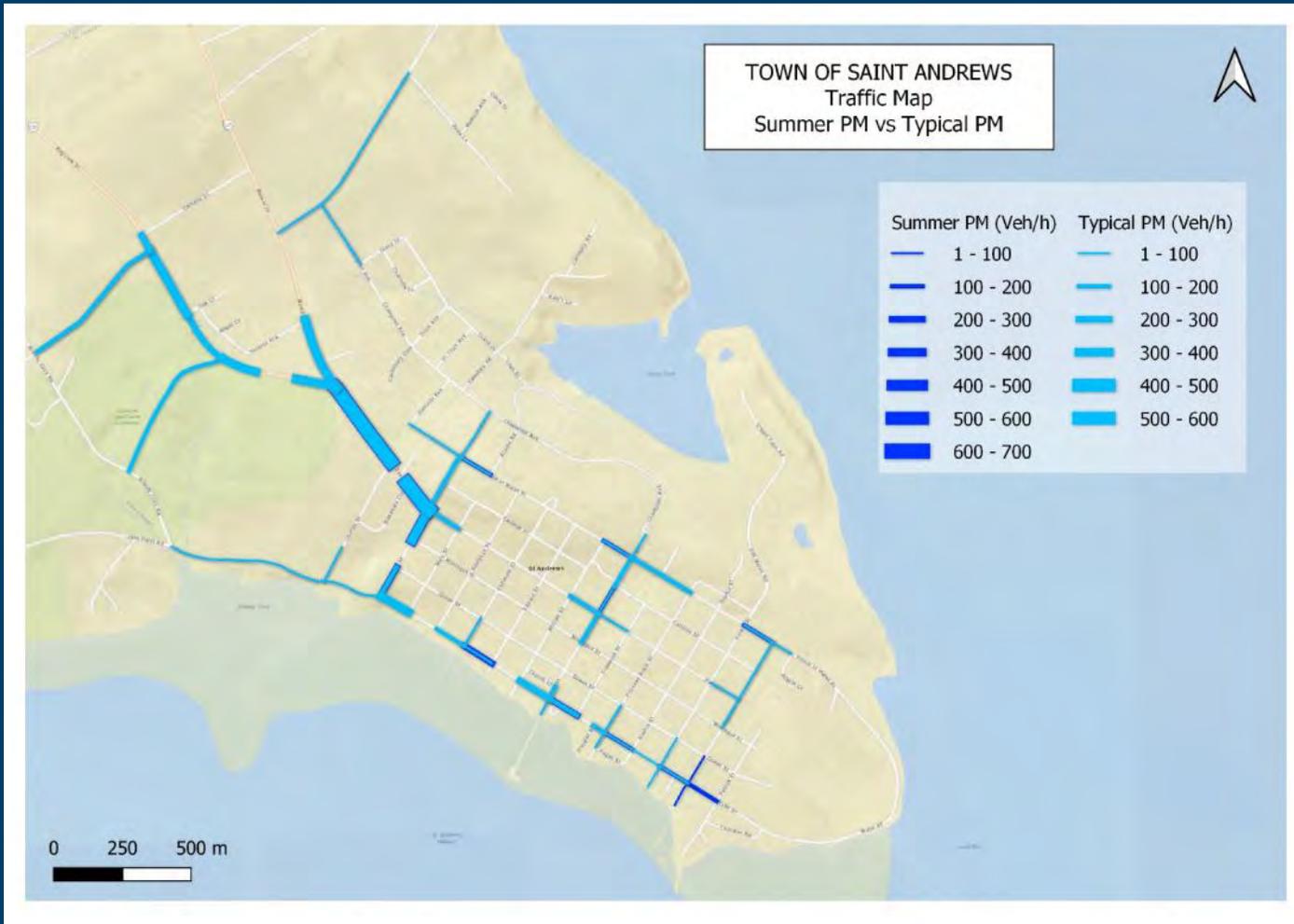


# Typical vs. Summer

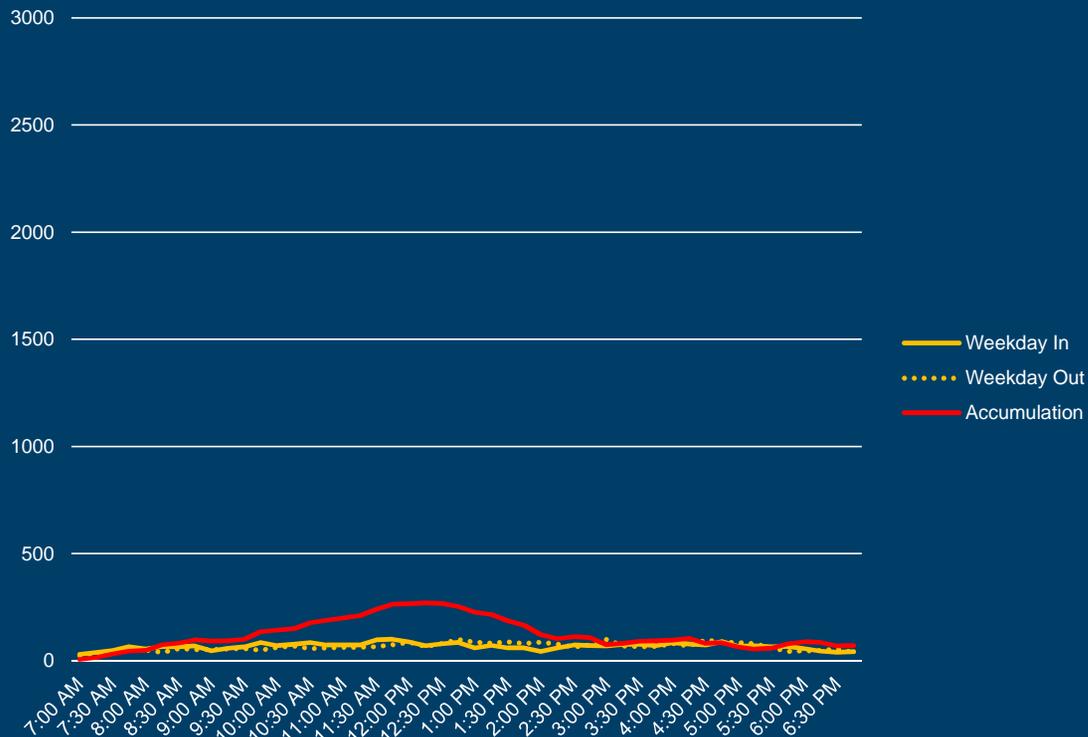


Town of Saint Andrews  
New Brunswick, Canada

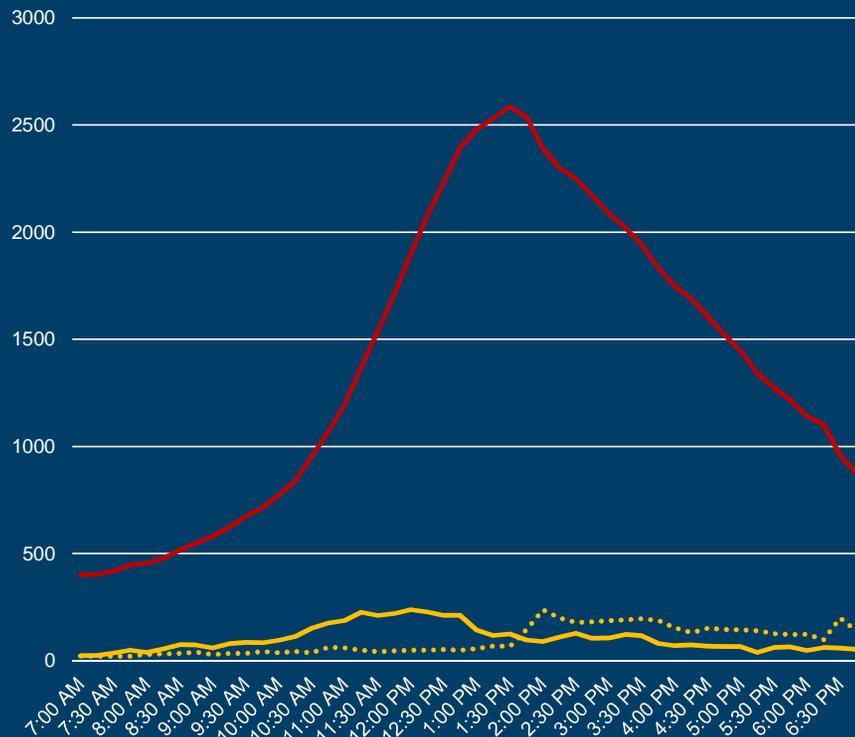




Summer Weekday



Canada Day

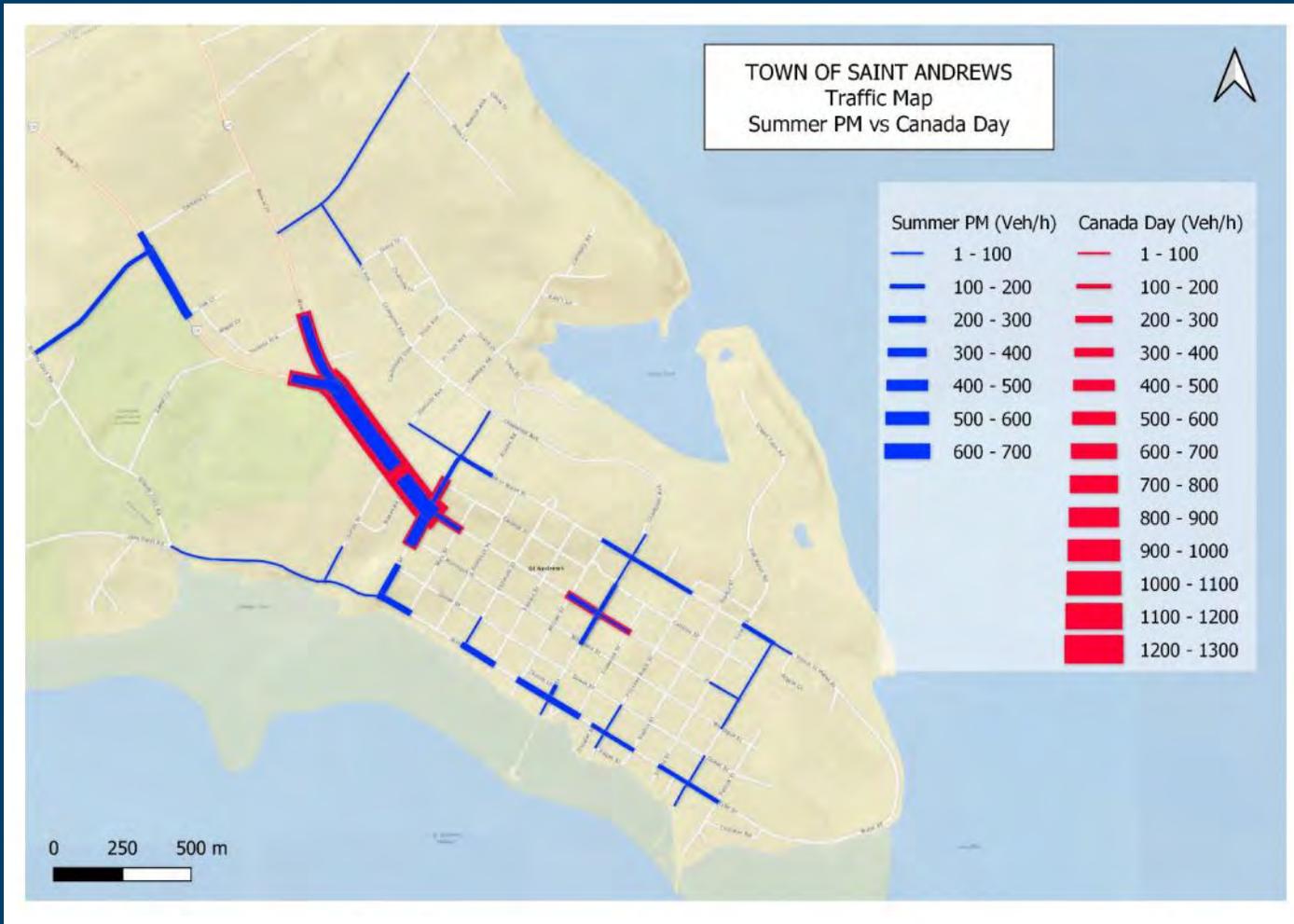


Accumulation = [Vehicles In] – [Vehicles Out]



# Summer vs. Canada Day



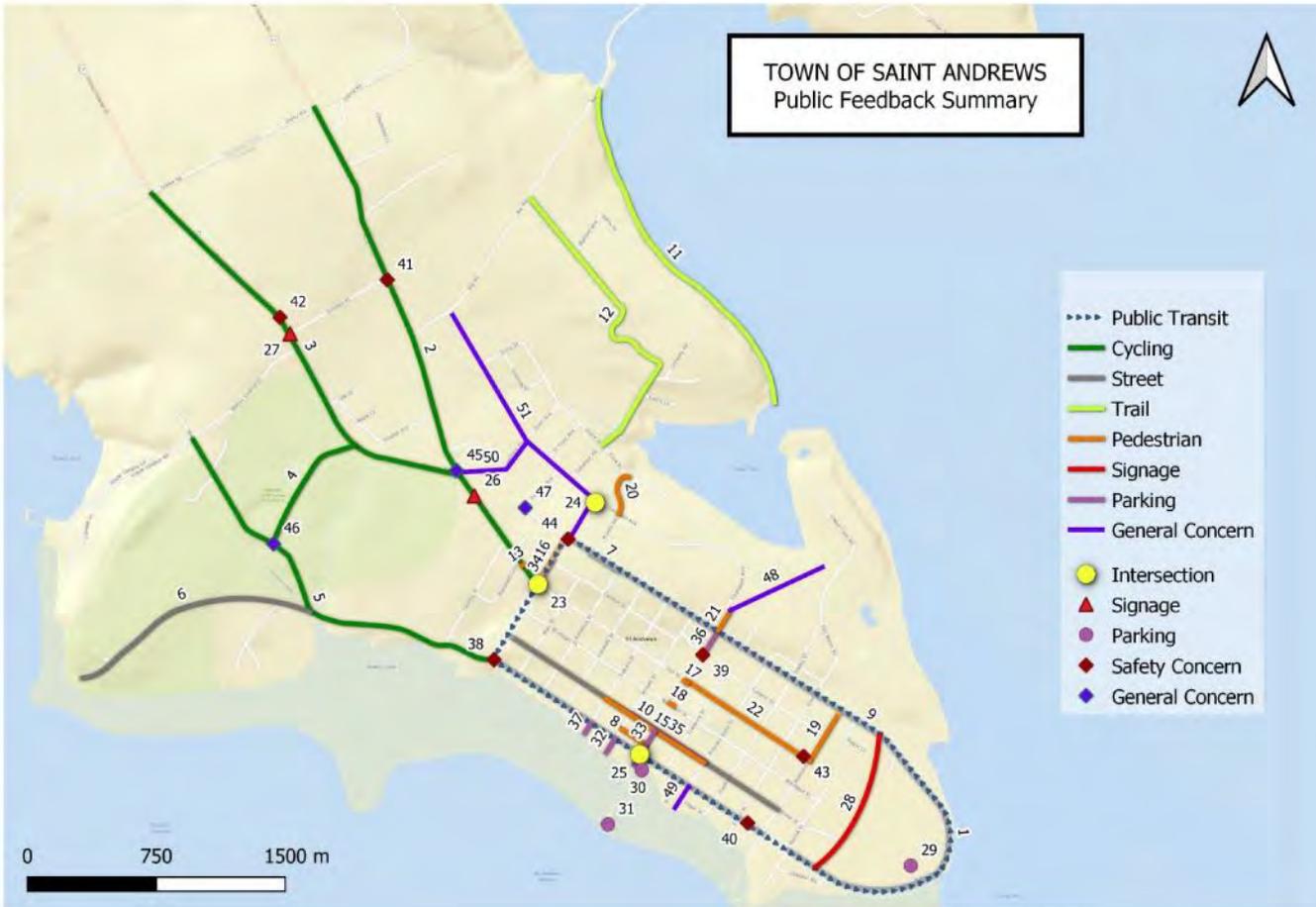


# Problems & Opportunities

Open House #1  
Online Survey  
Participatory Mapping Exercise



## TOWN OF SAINT ANDREWS Public Feedback Summary



Number	Type	Description	Number	Type	Description
1	Public Transit	Proposed public transit route	27	Signage	Traffic coming into town around bend too fast to safely turn onto
2	Cycling	Needs to be more Cyclist friendly	28	Signage	Better trail signage needed
3	Cycling	Needs to be more Cyclist friendly	29	Parking	Off-street parking needs to be developed
4	Cycling	Needs to be more Cyclist friendly	30	Parking	Need for a parking plan for Market Square
5	Cycling	Needs to be more Cyclist friendly	31	Parking	Seasonal parking problems in comparison with typical parking
6	Street	A request to pave the road	32	Parking	A request to provide more parking spaces at this location
7	Street	Stopped cars and pedestrian crossing causes congestion and	33	Parking	A request to provide more parking spaces at this location
8	Street	Congestion on Water St caused by delivery trucks and parking	34	Parking	Parking during council meetings and community movie nights
9	Street	Pavement is too narrow for shared use (autos, cyclists and	35	Parking	A request to provide more parking spaces at this location
10	Street	Requests to turn the street to one-way to reduce the	36	Parking	Staff parking causes congestion
11	Trail	A connection for Van Horne Trail to Ministers Island is needed	37	Parking	A request to provide more parking spaces at this location
12	Trail	A request for finishing the "already designed" connection	38	Safety Concern	Should be a 3-way stop
13	Pedestrian	A crosswalk is needed for the pedestrians crossing Reed Ave	39	Safety Concern	Need for flashing crosswalk lights
14	Pedestrian	A request to add a sidewalk at this location	40	Safety Concern	Speed at night on Water St
15	Pedestrian	No Sidewalks	41	Safety Concern	Need for Crosswalks
16	Pedestrian	No Sidewalks	42	Safety Concern	Trees and Brush need to be trimmed to provide sightlines for
17	Pedestrian	Need for Crosswalks	43	Safety Concern	Speeding by NBCC students needs to be monitored
18	Pedestrian	Need for Crosswalks	44	Safety Concern	Pedestrian walk across without looking
19	Pedestrian	No Sidewalks on Augustus to Prince of Wales St after the	45	General Concern	Intersection needs improvements
20	Pedestrian	Very rough. Walkers don't have safe way to Katy's.	46	General Concern	Re-evaluate intersection control
21	Pedestrian	A connection is needed to facilitate the pedestrian	47	General Concern	Curve is too narrow for the movemnt of two vehicles
22	Pedestrian	A sidewalk is needed to facilitate the pedestrian movement on Par	48	General Concern	A request for an access road
23	Intersection	Public safety concerns regarding the lack of safety and clarity of	49	General Concern	A request to add a sidewalk at this location
24	Intersection	Poor visibility on the southeast corner	50	General Concern	Requests for an access road to connect Champlain Ave to Reed
25	Intersection	Congestion	51	General Concern	A request to turn Champlain Ave to one-way
26	Signage	Better signage directing RV's directly to campground, keeping			

id	Type	Description	id	Type	Description
1	Public Transit	Suggestions to add a public transit system	14	Pedestrian	A request to add a sidewalk at this location
2	Cycling	Needs to be more Cyclist friendly	15	Pedestrian	No Sidewalks
3	Cycling	Needs to be more Cyclist friendly	16	Pedestrian	No Sidewalks
4	Cycling	Needs to be more Cyclist friendly	17	Pedestrian	Need for Crosswalks
5	Cycling	Needs to be more Cyclist friendly	18	Pedestrian	Need for Crosswalks
6	Street	A request to pave the road	19	Pedestrian	No Sidewalks on Augustus to Prince of Wales St after the community college
7	Street	Stopped cars and pedestrian crossing causes congestion and accidents	20	Pedestrian	Very rough. Walkers don't have safe way to Katy's.
8	Street	Congestion on Water St caused by delivery trucks and parking	21	Pedestrian	A connection is needed to facilitate the pedestrian movement to Kingsbrae entrance
9	Street	Pavement is too narrow for shared use (autos, cyclists and pedestrians)	22	Pedestrian	A sidewalk is needed to facilitate the pedestrian movement on Par St to NBCC
10	Street	Requests to turn the street to one-way to reduce the congestion on Water St	23	Intersection	Public safety concerns regarding the lack of safety and clarity of the intersection
11	Trail	A connection for Van Horne Trail to Ministers Island is needed	24	Intersection	Poor visibility on the southeast corner
12	Trail	A request for finishing the "already designed" connection between Bar Road and Cemetery Road	25	Intersection	Congestion
13	Pedestrian	A crosswalk is needed for the pedestrians crossing Reed Ave from/to the Youth Centre	26	Signage	Better signage directing RV's directly to campground, keeping them off Water Street.

id	Type	Description	id	Type	Description
27	Signage	Traffic coming into town around bend too fast to safely turn onto Bayview Drive from Cornelia Street and Marine Science Drive. Speed limit should be reduced to 50 Km/hr at town limit.	40	Safety Concern	Speed at night on Water St
28	Signage	Better trail signage needed	41	Safety Concern	Need for Crosswalks
29	Parking	Off-street parking needs to be developed	42	Safety Concern	Trees and Brush need to be trimmed to provide sightlines for traffic turning on to Bayview Drive from Cornelia Street and Marine Science Drive
30	Parking	Need for a parking plan for Market Square	43	Safety Concern	Speeding by NHC (students) needs to be monitored
31	Parking	Seasonal parking problems in comparison with typical parking demand	44	Safety Concern	Pedestrian walk across without looking
32	Parking	A request to provide more parking spaces at this location	45	General Concern	Intersection needs improvements
33	Parking	A request to provide more parking spaces at this location	46	General Concern	Re-evaluate intersection control
34	Parking	Parking during council meetings and community movie nights causes congestion	47	General Concern	Curve is too narrow for the movement of two vehicles
35	Parking	A request to provide more parking spaces at this location	48	General Concern	A request for an access road
36	Parking	Staff parking causes congestion	49	General Concern	A request to add a sidewalk at this location
37	Parking	A request to provide more parking spaces at this location	50	General Concern	Requests for an access road to connect Champlain Ave to Reed Ave
38	Safety Concern	Should be a 3-way stop	51	General Concern	A request to turn Champlain Ave to one-way
39	Safety Concern	Need for flashing crosswalk lights			



The **Gateway** is the entry point to the town; it distributes travel between the institutional and commercial corridors, and the residential centre. It prioritizes vehicular movement, but remains attentive to non-motorized modes of transportation.

The **Institutional Leisure Corridors** are the Town's promenade spaces; they prioritize active transportation and provide access to the Town's major institutional destinations.

The **Mixed-Use Commercial Corridor** is the Town's core and main destination; it features the most intense activities, and prioritizes multi-modal interaction, balancing the needs of pedestrians, cyclists, goods movement, and personal vehicles.

# Problem – Opportunity Statement

The Town of Saint Andrews is characterized by three main activity districts, bound together by an established residential fabric within a low-volume, low-speed environment. The physical and functional characteristics of Gateway, Institutional Leisure, and Mixed-Use Commercial districts vary in terms of primary purpose, intensity of activity, and urban design. Not surprisingly, the majority of reported problems coincide with these districts.

The opportunity exists to tie these disparate districts into a cohesive whole and improve the connecting fabric through a multi-modal mobility framework, and through targeted, district-specific policies.

# Conceptual Improvement Themes

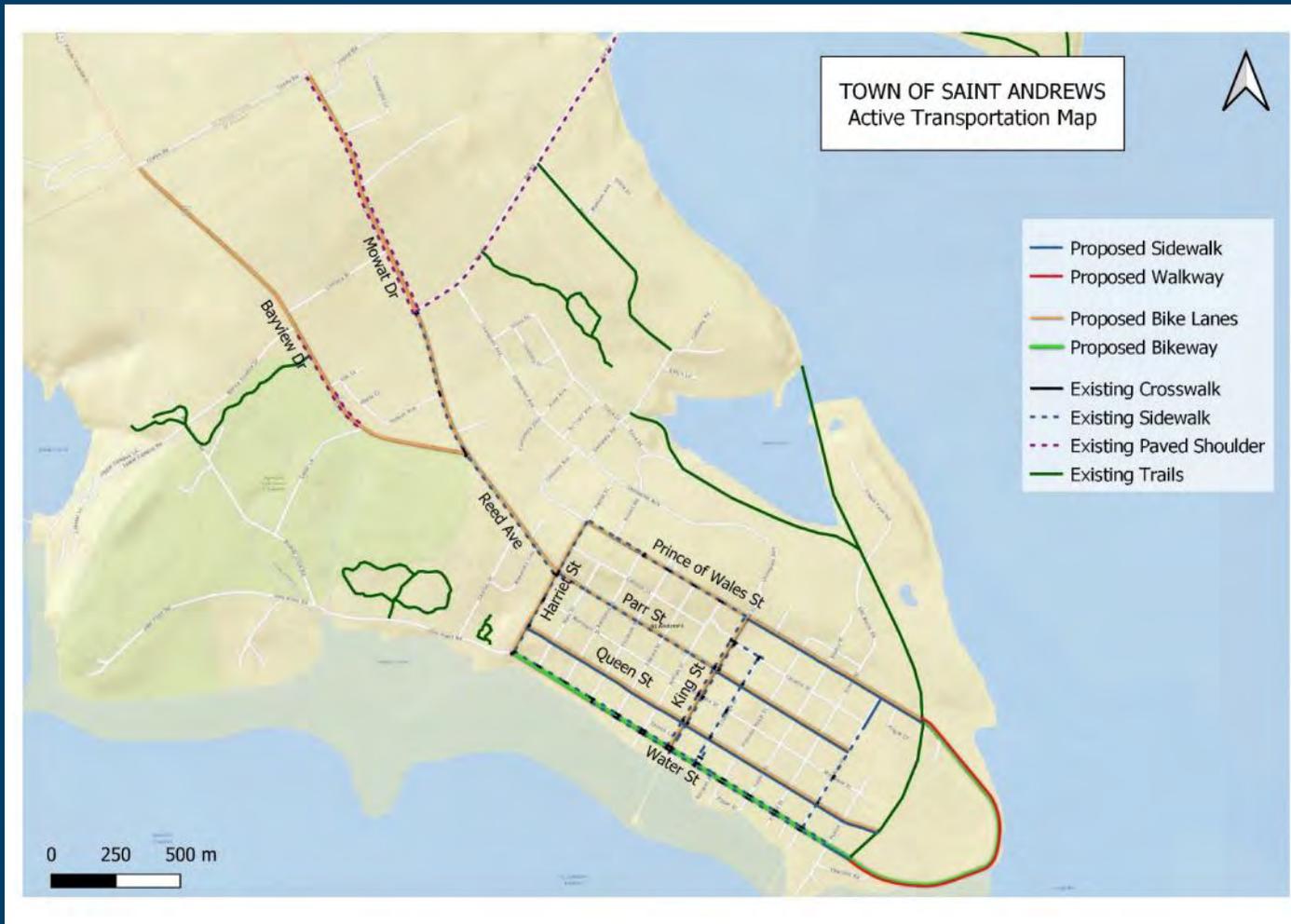
**Theme 1 – Complete Active Transportation Network**

**Theme 2 – Establish Public Transit Spine**

**Theme 3 – Improve Circulation Fluidity**

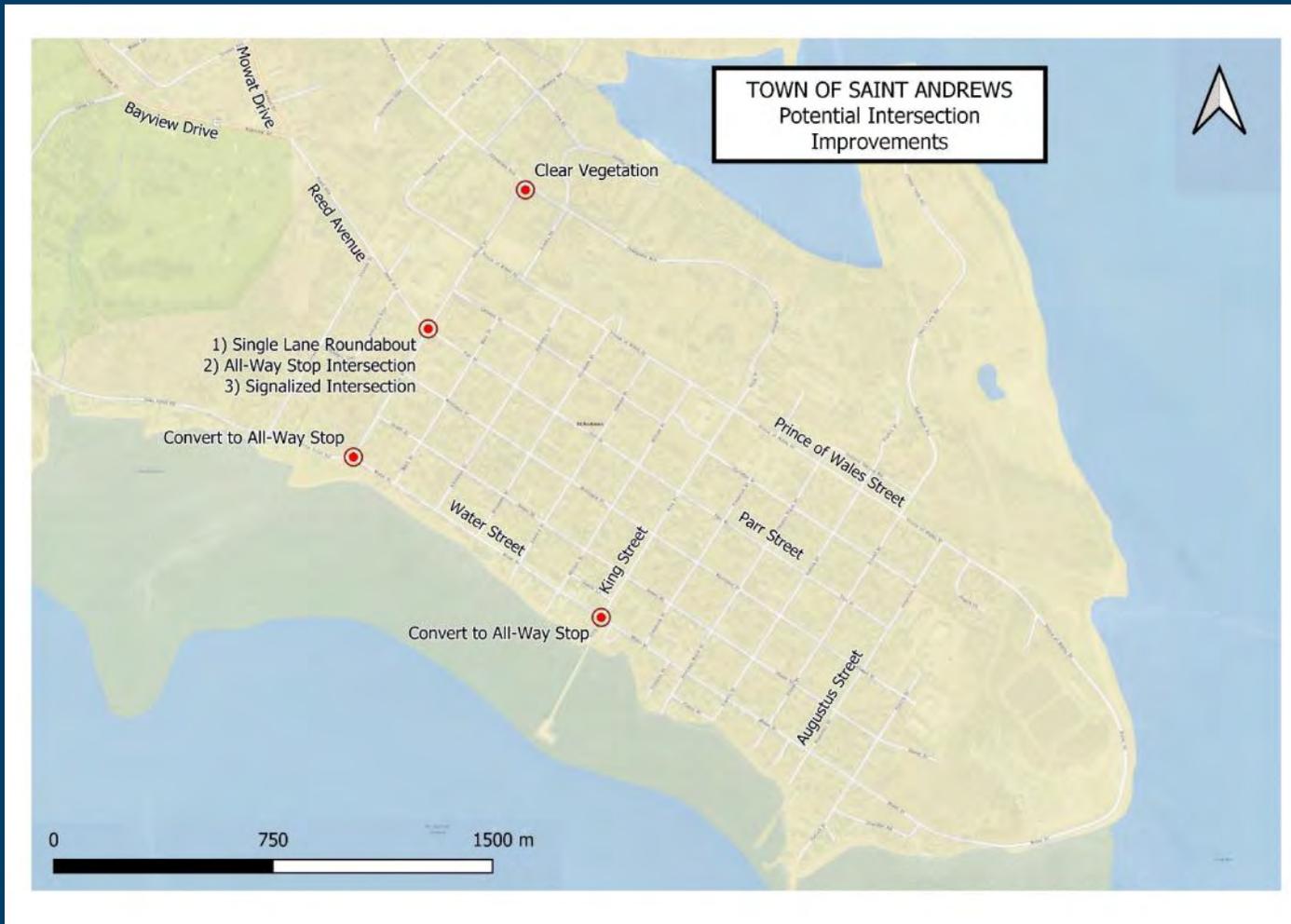
**Theme 4 – Improve Intersection Operation and Safety**

**Theme 5 – Develop Curbside Management Plan**









Most Town streets have not been designed for high levels of parking activity, and parking areas are not well defined, leading to unsafe/illegal parking.

The Town should develop comprehensive and coordinated parking enforcement and parking management plans, particularly within the Activity Districts.

The Town should set parking occupancy targets for high demand areas at 85% occupancy during peak periods to create a balance between the availability of parking and excessive parking supply.

Promote parking space turnover at these desirable locations through more stringent parking restrictions and higher pricing.

Encourage improved wayfinding and signage to locate parking facilities.

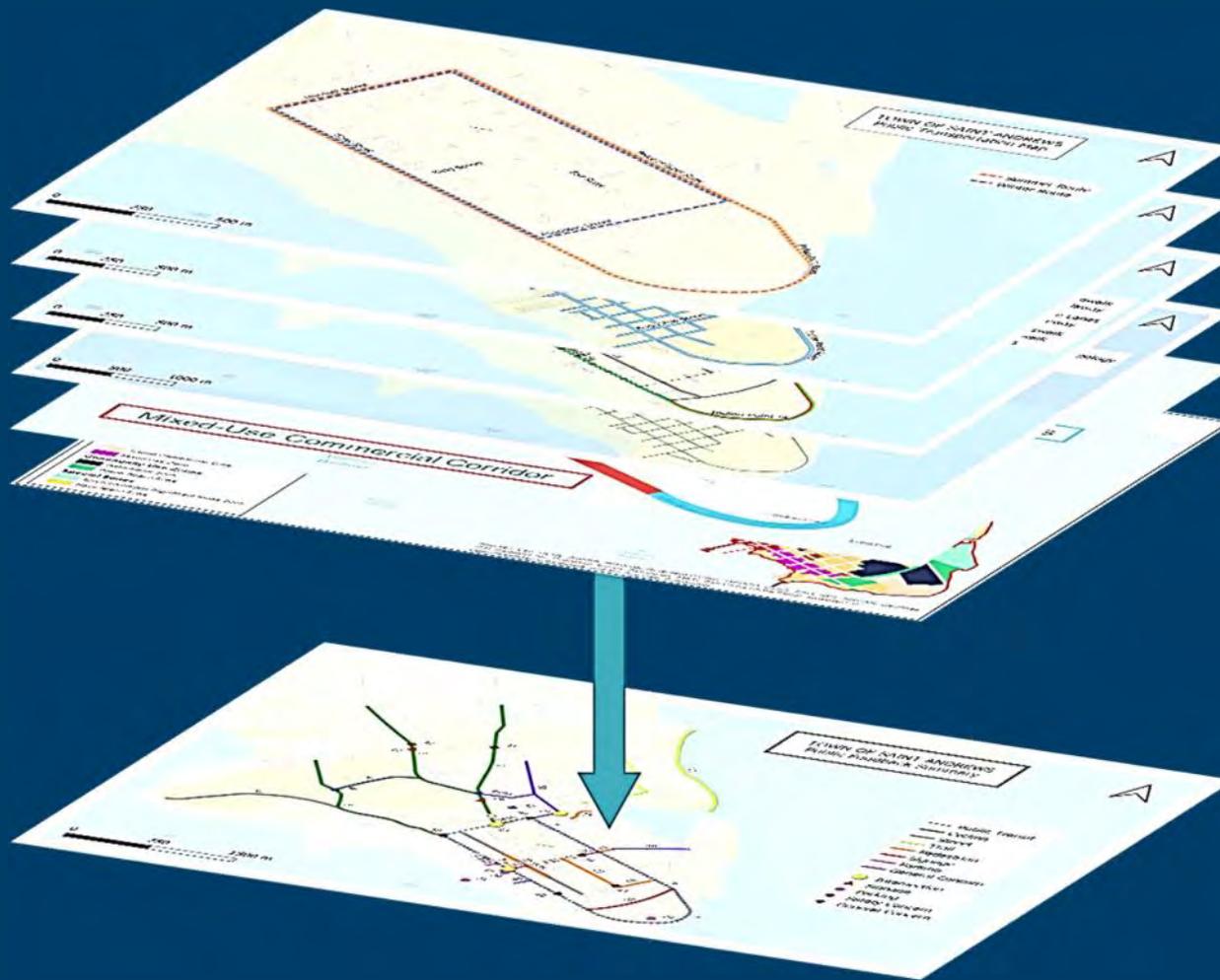
The Town should consider seasonally-adjusted and time-based parking pricing, restrictions, education and enforcement to address both the needs of residents, goods movement, and visitors.



## 5. Curbside Management Plan



Town of  
**Saint Andrews**  
New Brunswick, Canada



# Transportation Master Plan Concepts

Conceptual improvement options, subject to Detailed Transportation Plan Phase

## Mixed-Use Commercial Corridor

- Water Street One-Way Conversion
- Queen Street One-Way Conversion
- Parr Street One-Way Conversion

## Institutional Leisure Corridor

- Water Street around point
- Prince of Wales Improvements
- King Street Improvements

## Gateway

- Intersection Improvements
- Harriett Street Improvements
- Parr Street Improvements

# Water St. (Option-1)



Existing Pavement Width = 9.7m-10.5m



## Mixed-Use Commercial Corridor





Rendered View of Water St (with Option 1)



Rendered View of Water St (with Option 1)



# Mixed-Use Commercial Corridor



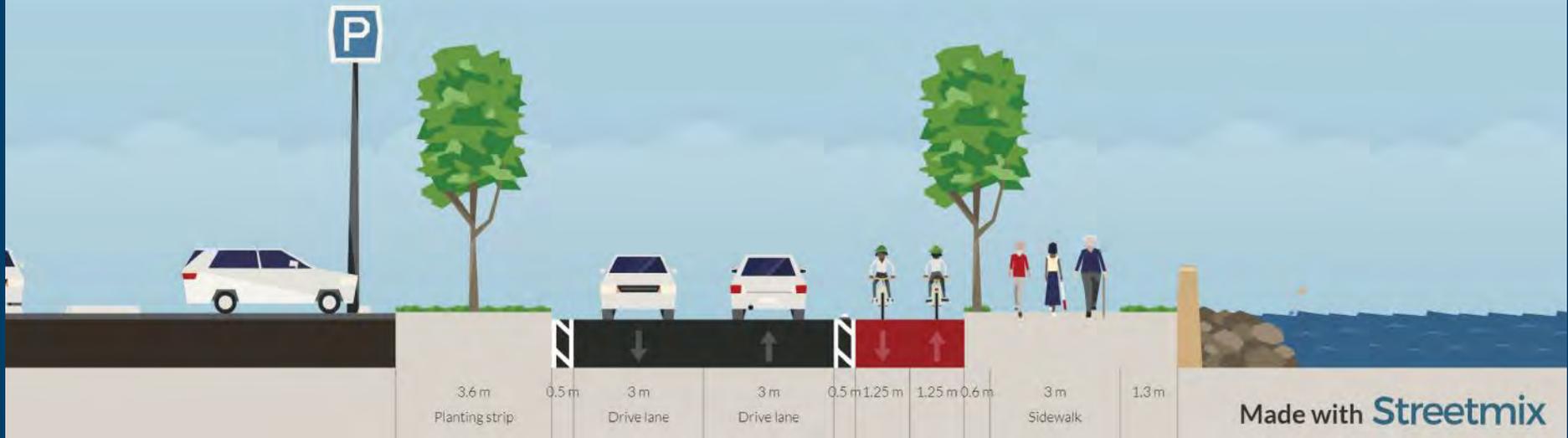
Town of  
**Saint Andrews**  
New Brunswick, Canada

# Water St. (Option-2)



Existing Pavement Width = 9.7m-10.5m

# Water St (Around Point)



Existing Pavement Width = 6.0m-8.0m

# Prince of Wales St (Option-1)



Existing Pavement Width = 7.0m-8.0m

# Prince of Wales St (Option-2)



Existing Pavement Width = 7.0m-8.0m

# King St (Option-1)



Existing Pavement Width = 10.7m-11.0m



## Institutional Leisure Corridor



Town of  
**Saint Andrews**  
New Brunswick, Canada

# King St (Option-2)



Made with Streetmix

Existing Pavement Width = 10.7m-11.0m



## Institutional Leisure Corridor



# Harriet St (N. of Reed) (Option-1)



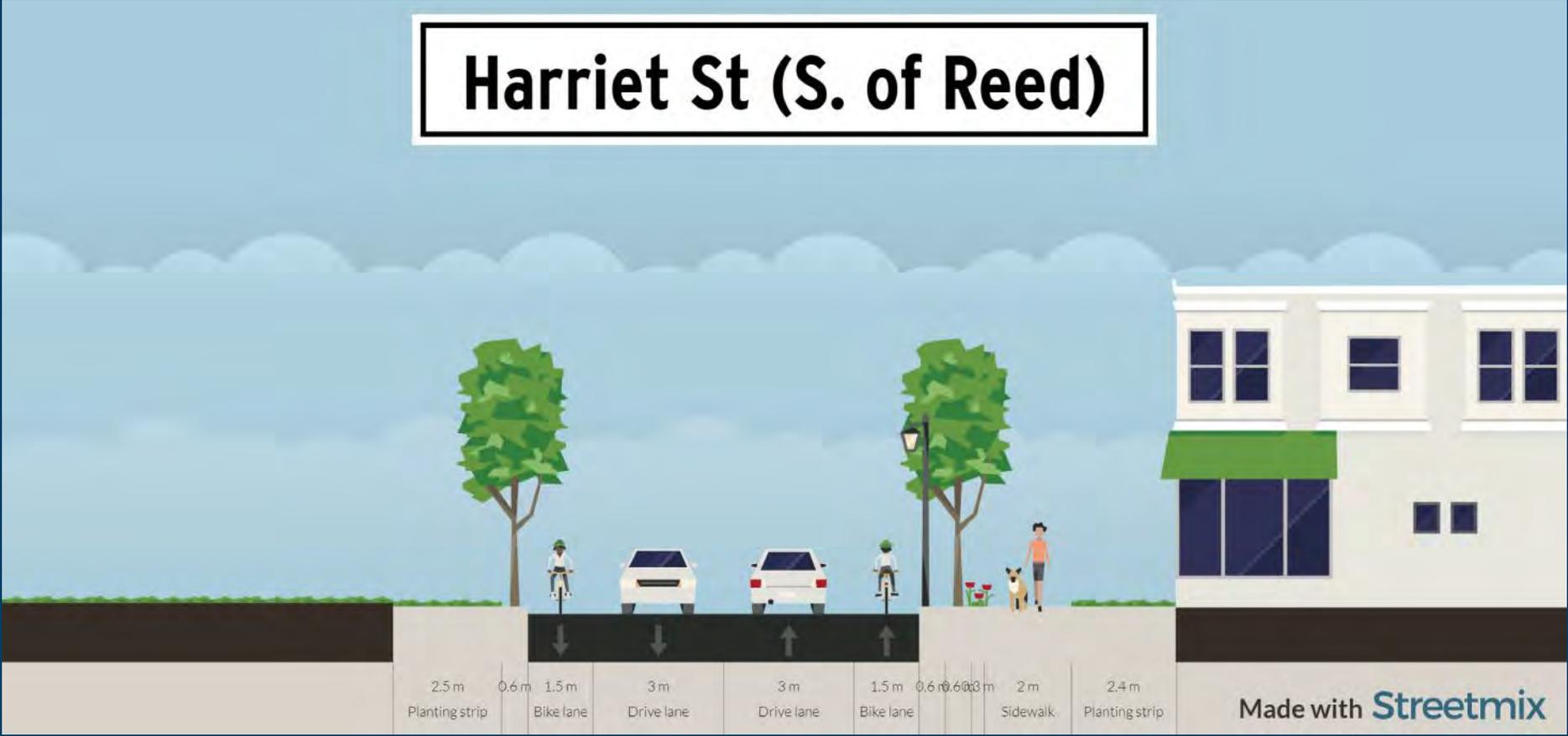
Existing Pavement Width = 7.6m

# Harriet St (N. of Reed) (Option-2)



Existing Pavement Width = 7.6m

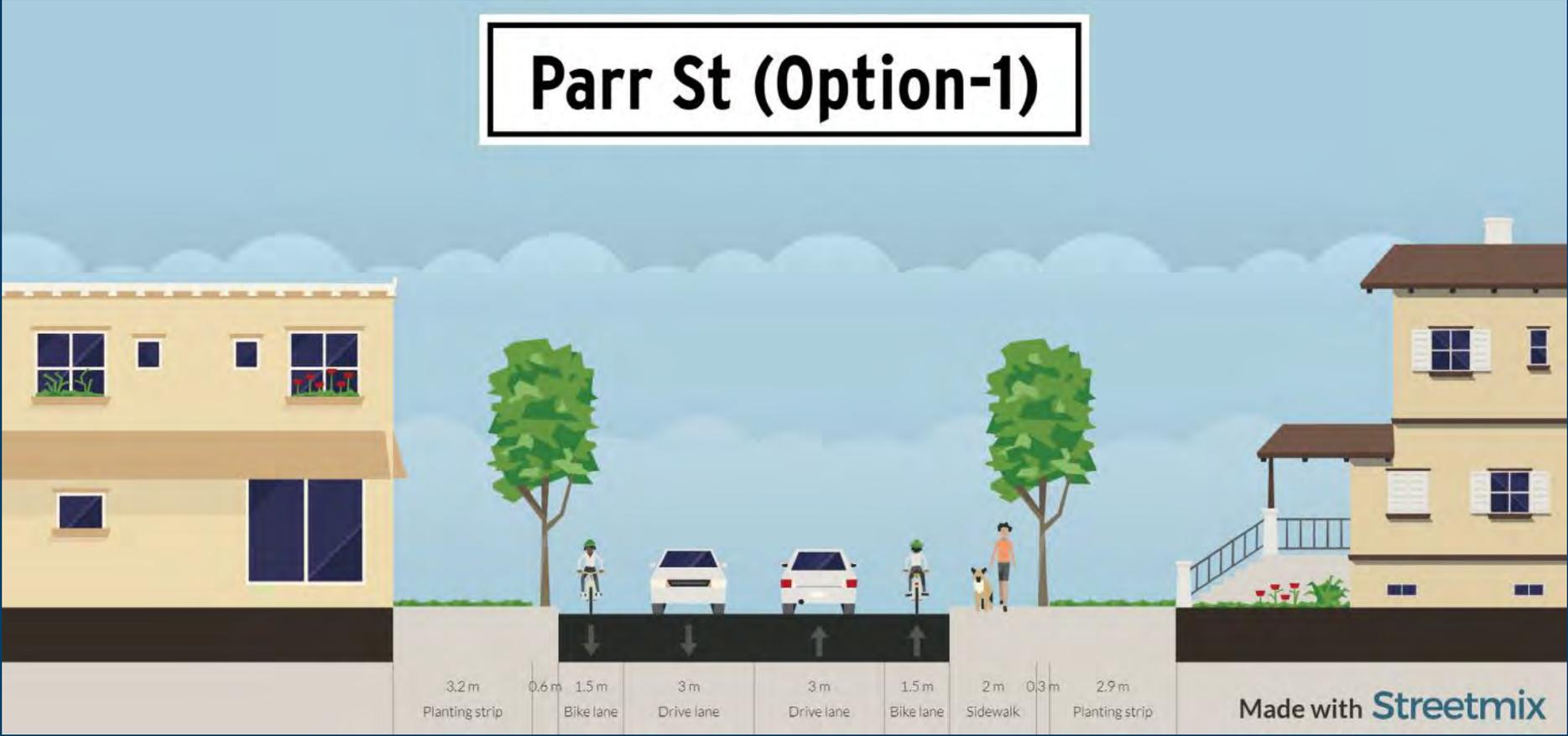
# Harriet St (S. of Reed)



Made with **Streetmix**

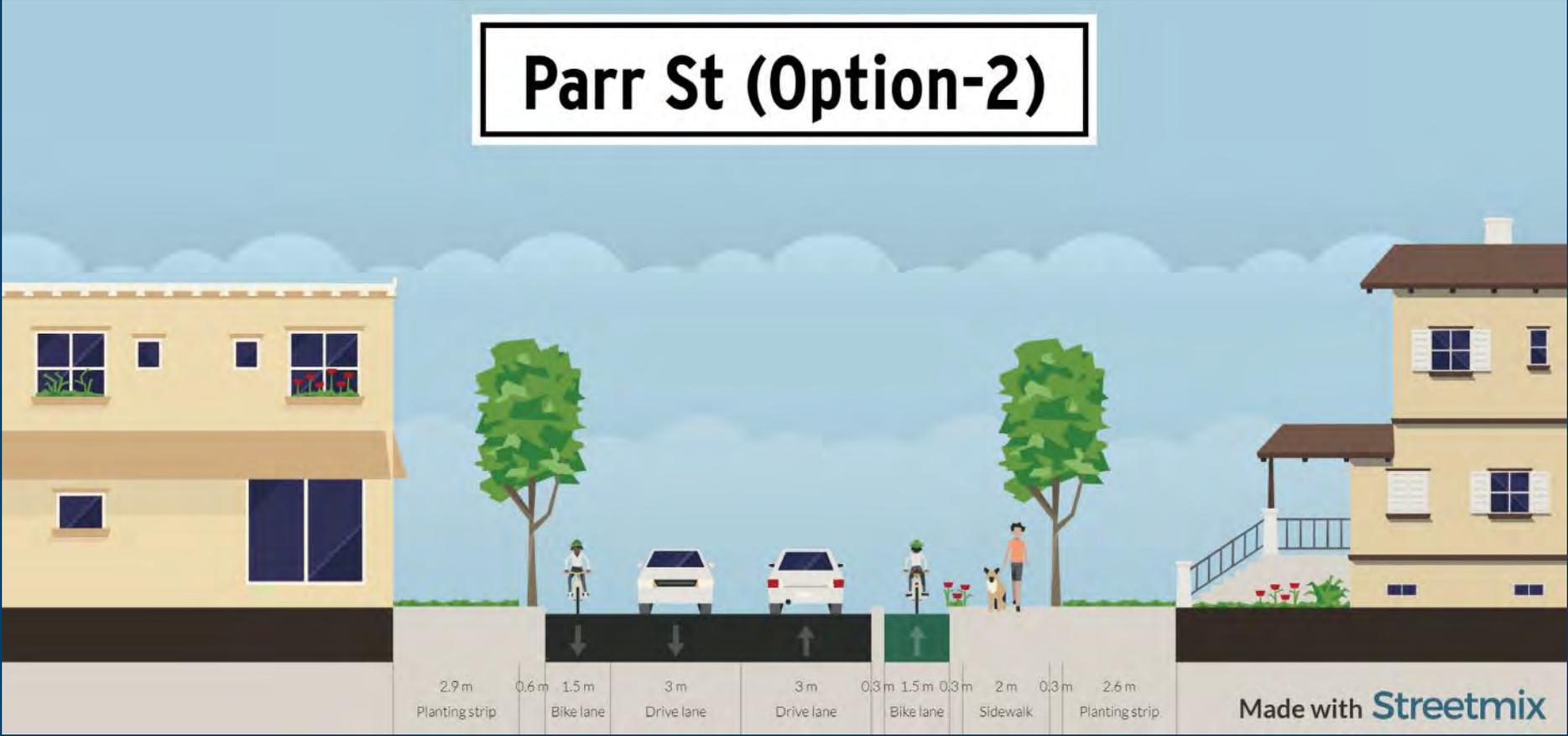
Existing Pavement Width = 9.5m

# Parr St (Option-1)



Existing Pavement Width = 6.3m-7.2m

# Parr St (Option-2)



Made with Streetmix

Existing Pavement Width = 6.3m-7.2m



## Gateway



Town of Saint Andrews  
New Brunswick, Canada



Reed St \ Harriet St Intersection  
Existing Condition



Reed St \ Harriet St Intersection  
With Roundabout



Reed St \ Harriet St Intersection  
Signalised



# Gateway



Town of  
**Saint Andrews**  
New Brunswick, Canada

# APPENDIX B

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## Survey Questionnaire



## Town of Saint Andrews Transportation Master Plan – Survey

1. Are you a local resident (you live in the Town all year round)? [YES / NO]

If NO, please provide your postal / zip code \_\_\_\_\_

2. Please indicate your transportation priorities by setting the rank for the following aspects

Congestion Management

Walking and Cycling

Public Parking

Complete Streets

Goods Movement

Public Transit

Accessibility

3. What mode of travel do you usually use for the following activities? (auto, walk, cycle, other). Why do you use each mode?

Work

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School

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Shopping

---

Entertainment, social and recreational activity

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Personal errands (post office, medical appointments, dropping someone off)

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Other (Please specify)

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**4. What do you think the guiding principles should be for a successful Transportation Master Plan?**

**Example:**

*"Promotes multi-use networks conducive to walking and cycling",  
"Supports economic development through better streets",  
"Promotes sustainable development with alternatives modes of transportation",  
"Transparent and accountable process"*

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**5. What would be your Vision statement for the Town of Saint Andrews Transportation Master Plan?**

**Example:**

*"The Town of Saint Andrews envisions a well-connected street network that meets the needs of all transportation users. New transportation construction and maintenance operations carefully assess and support the mobility needs of multiple users of all ages and abilities. The transportation network meets the needs of today while planning for the future."*

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**6. Any Other Comments?**

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Nova Scotia: Halifax, Sydney  
Prince Edward Island: Charlottetown  
New Brunswick: Saint John, Fredericton, Moncton  
Newfoundland & Labrador: St. John's, Happy Valley-Goose Bay  
Ontario: Ottawa