2/8

DISCUSSION PAPER

MAY 2019

TRANSPORTATION

PROJECT LUNENBURG

Navigating the Future, Together.

Discussion Paper 2/8
Transportation
May 2019

Project Lunenburg
Town of Lunenburg Comprehensive Plan

This report was prepared by Upland Planning and Design
in association with CBCL Limited

UPLAND

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Introduction

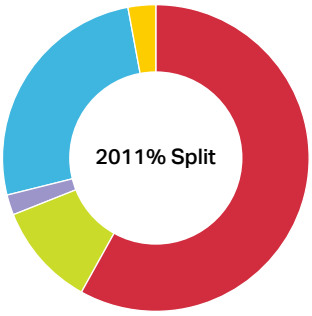
Transportation is an essential factor in the daily life of residents, and a major component of a visitor's travel experience. The ease of movement from point A to point B can have a significant bearing on quality of life. Residents of Lunenburg have opportunities and face challenges when it comes to the existing transportation network. The town has a relatively dense and compact road network, as well as an efficient grid system in the majority of neighbourhoods. On the other hand, the town is challenged by a lack of connectivity from Old Town to New Town, the hilly topography, and by high automobile and pedestrian volumes during the tourist season. Future infrastructure investment will seek to overcome these limitations and modify the existing transportation network to ensure it meets community demands.

This discussion paper is the second in a series of eight that provides context for the Town of Lunenburg and intends to lay the foundation for the Town's Comprehensive Plan. This paper takes an overarching look at the topic of transportation in Lunenburg. The review of infrastructure presented in this discussion paper was supplemented with the comments, issues, and ideas shared by the public through the project's online participatory map (*projectlunenburg.ca/participate*). The discussion will identify opportunities for transportation in the Town of Lunenburg, building upon the initiatives set out by the 2013 Active Transportation Strategic Plan, public transportation efforts, and existing municipal policy.

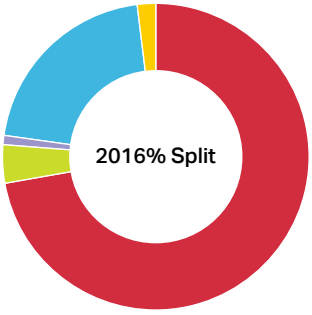
TRAVEL PATTERNS

In examining commuter patterns, there are several trends that illustrate future opportunities. In the face of demographic shifts, how can Lunenburg ensure that residents have transportation choices?

Trends



- Car, truck, van; as a driver (58%)
- Car, truck, van; as a passenger (11%)
- Public transit (2%)
- Walking (26%)
- Bicycling (0%)
- Other method (3%)



- Car, truck, van; as a driver (73%)
- Car, truck, van; as a passenger (4%)
- Public transit (1%)
- Walking (21%)
- Bicycling (0%)
- Other method (2%)

Mode of Travel for Commutes

The 2016 Census data for the town reveals a number of noteworthy transportation trends. The Census examines work commuting behaviour and reports on 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 provide information on leisure or education trips, it is a good indication of the primary modes of transportation for the town.

The 2016 Census data reveals that 77% of commutes to work by residents of the Town of Lunenburg were made by car while 20% of trips were made by walking. This is a change to the overall pattern of commute methods in 2011, when car-based work trips accounted for 69% of all trips. At the same time, there was a decrease in the proportion of walking trips, which fell from 26% of all trips in 2011 to 21% in 2016.

The population trends of Lunenburg suggest that there will be a reduction in the number of work trips and active trips made in the future. The community has an aging population, with the segment of the population over 64 years of age increasing from 31% in 2011 to 35% in 2016. As the population ages it is subject to different mobility needs and constraints. While an aging population results in a reduction of work trips (825 work trips in 2011, to 745 work trips in 2016), good quality active transportation and public transit infrastructure generally reduce the dependency on cars for both leisure and utilitarian trips.

The transportation behavioural profile of Lunenburg suggests that travel patterns are dominated by short, local trips. The opportunity therefore exists to reverse the trend towards auto dependence, by improving the quality and availability of non-motorized mobility.

ROADWAYS AND PARKING

Tourists are attracted to Lunenburg due to its beauty and unique heritage. How can the Town accommodate the high parking and traffic demands during tourist season while minimizing the disruption to local activity and maximizing efficiency of infrastructure year-round?

Existing Road Network

One of the major transportation issues facing Lunenburg is the seasonal change in the volume of vehicles that use the roadways and occupy parking. Considering its tourist draw in the summer months, the town exhibits two demand profiles: a year-round profile corresponding to typical resident and regional visitor activity; and a seasonal leisure demand profile corresponding to the influx of tourists over the summer months. The need to accommodate the two separate demand profiles is a challenge.

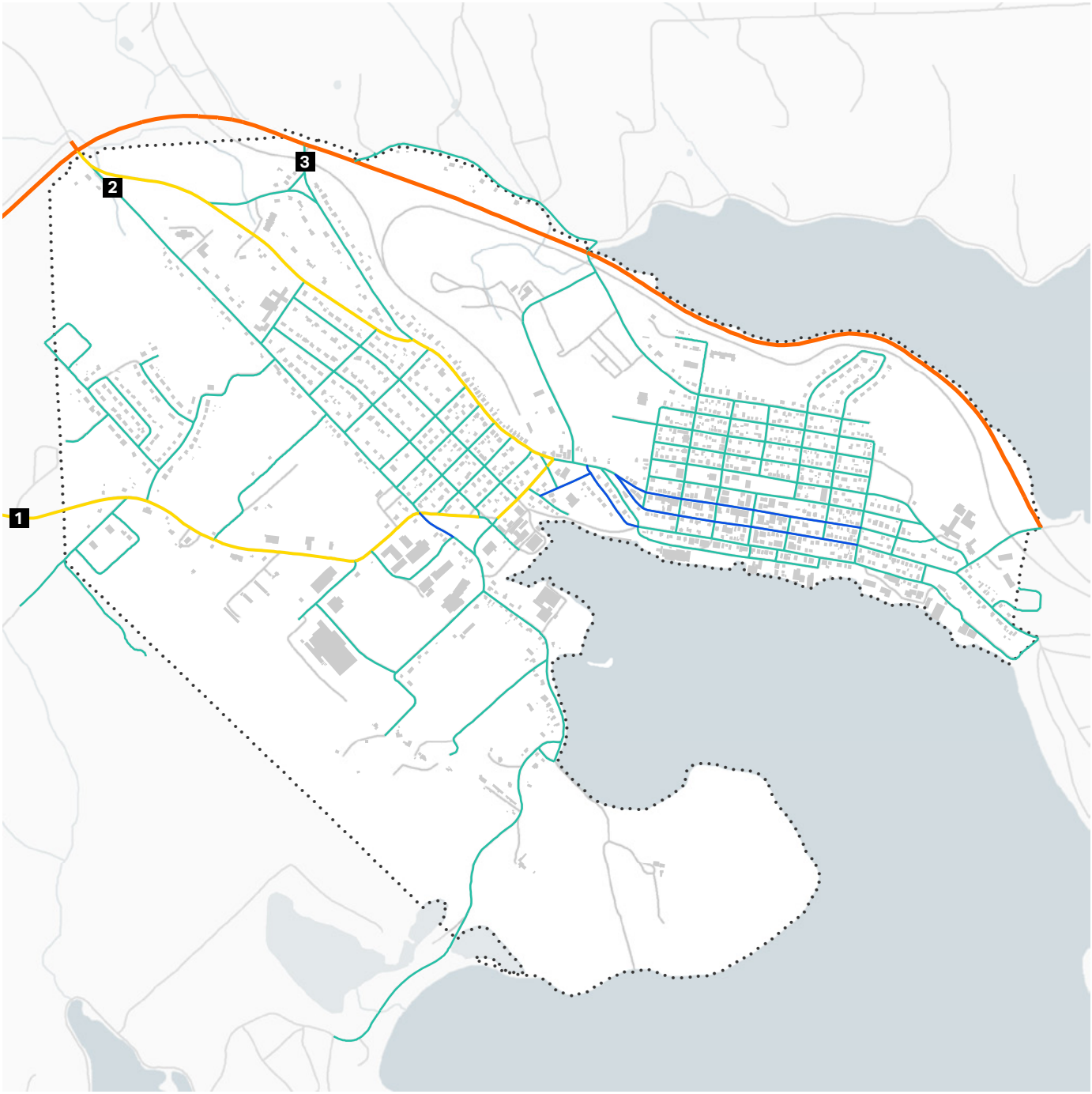
There are two local arterial roads acting as the main corridors in and out of Lunenburg. Based on 2008 and 2018 traffic counts, Victoria Road, the arterial road to the south, has the highest average daily traffic volume at 4100 vehicles per day. The Maple Avenue at Route 332, has a volume of 2700 vehicles per day, while Dufferin Street has a volume of almost 4700. These volumes are well within the the capacity of an arterial roadway. Operating speeds tend to exceed the 50 km/hour speed limits, especially for out-bound travel.

During the peak tourism summer months, key roadways into Old Town experience traffic congestion. Not only do visitors arrive in private automobiles and recreation vehicles (RVs), but the Town is also a destination for tourist coaches during the summer months. The majority of vehicles and tour buses enter the Town via Lincoln Street, and RVs and buses are directed to the Visitors' Information Centre and the campground at the eastern edge of the Town. There are minimal traffic management measures to control or direct vehicular traffic as it approaches the town.

Trip Generators

There are major activity clusters and significant travel generators in both Old Town and New Town. While Old Town features the World Heritage Area, the Town Hall, and the Lunenburg Shipyard, New Town includes the memorial hospital, a large athletic complex, and a significant employment cluster that is home to Stelia, ABCO, Lunenburg Foundry and Engineering, and HB Studios. The Town's population is divided roughly equally between the Old Town and the newer neighbourhoods, and both sides feature commercial uses and services.

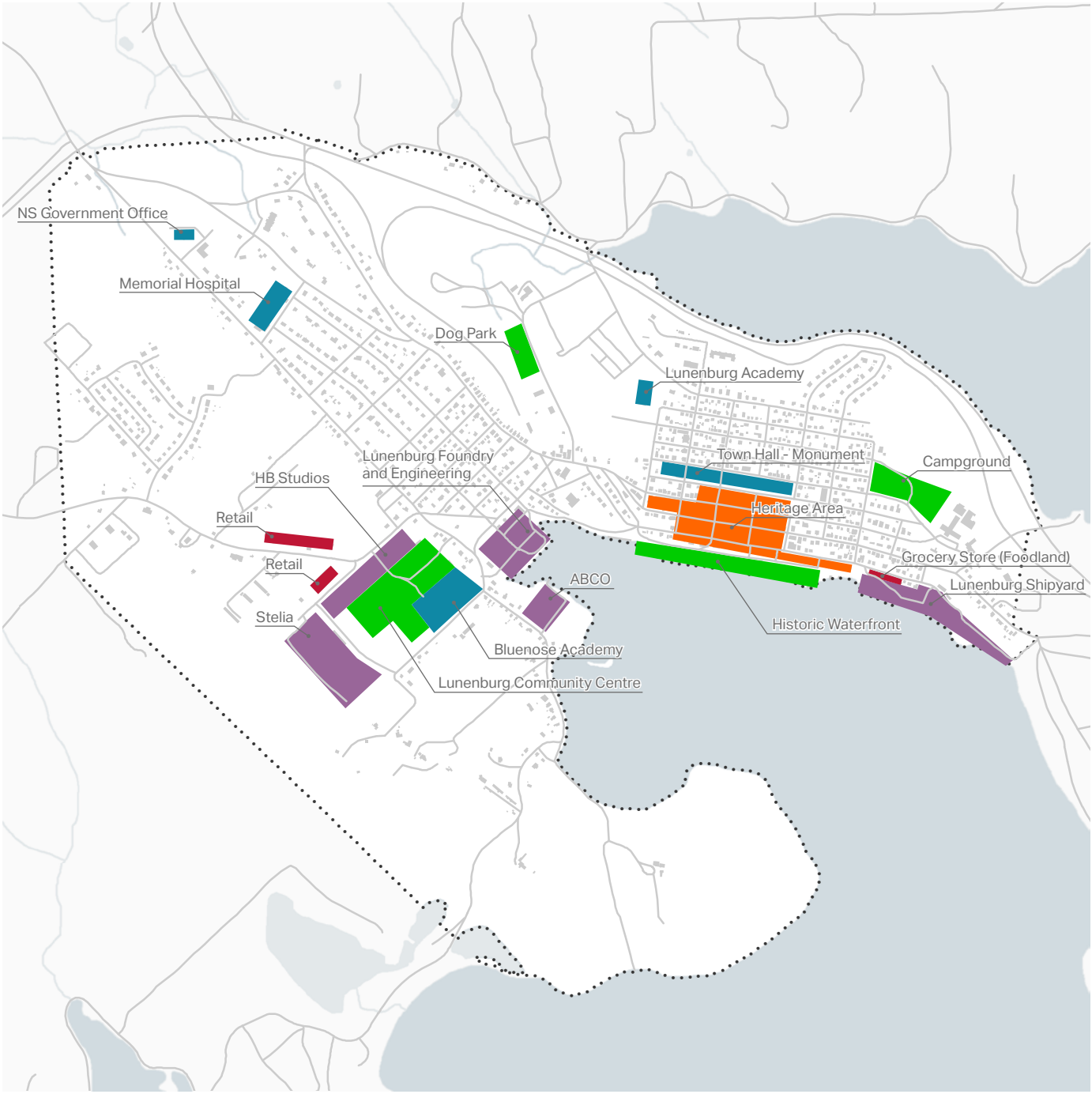
This activity profile suggests that there is ample year-round demand for travel in both directions across the Lincoln Street "bridge area" as well as between the more residential north side of Town and the employment focused south side and waterfront.



Existing Road Network

Audit Point	Vehicle Count	Average Speed (2008)
1	4102 veh/day (2018)	70 km/h Westbound 67 km/h Eastbound
2	4693 veh/day (2018)	70 km/h Northbound 56 km/h Southbound
3	2007 veh/day (2008)	47 km/h Westbound 49 km/h Eastbound

Road Class	Speed Limit
Local road	50 km/h
One-way local road	50 km/h
Local arterial road	50 km/h
Collector road	80 km/h



Major Trip Generators

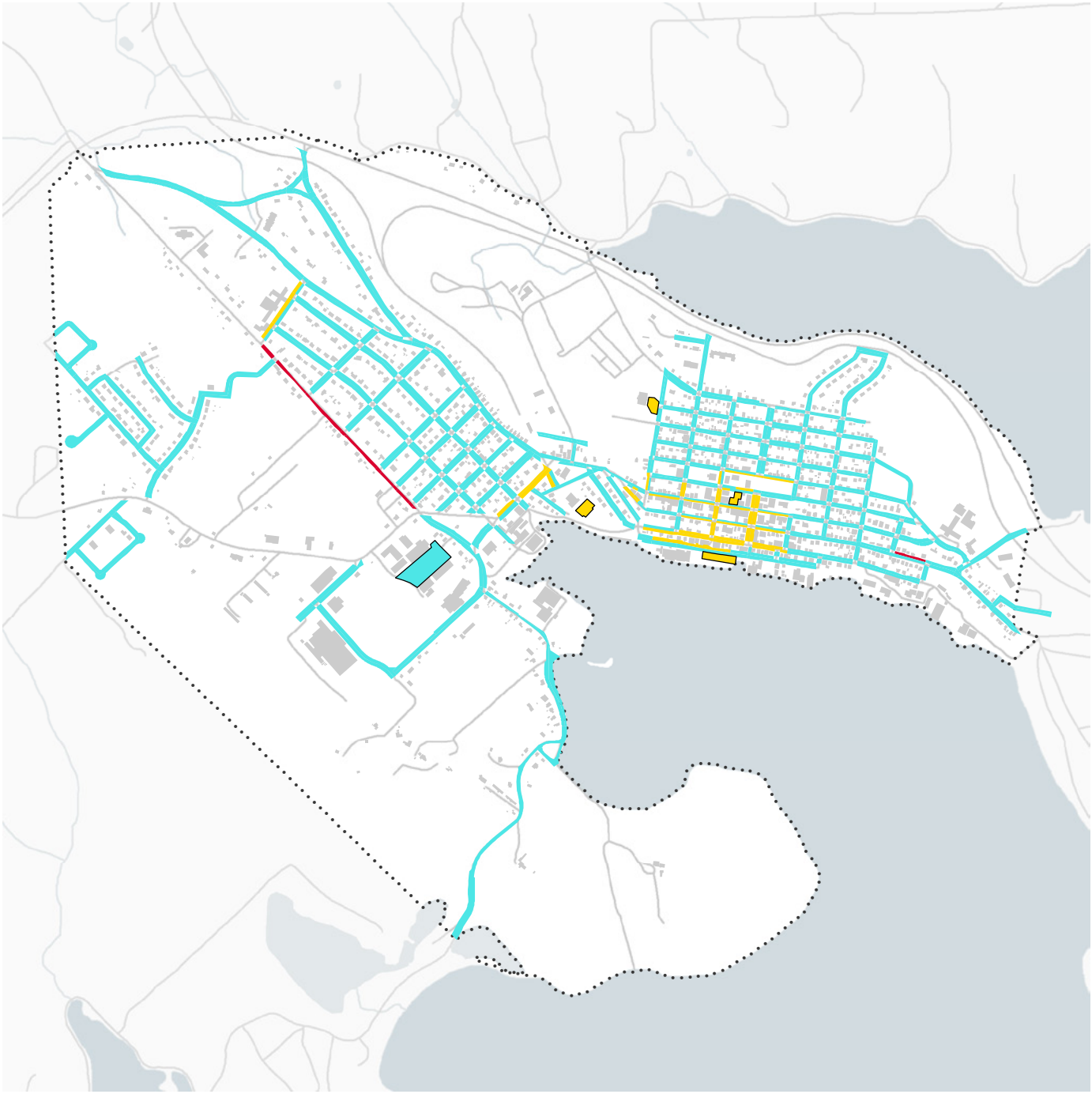
- Commercial
- Commercial / Leisure
- Employment
- Leisure
- Services

Parking

As with roadways, parking also experiences two distinct demand profiles. On one hand, the Town seeks to accommodate the high tourist demand for parking in a manner that minimizes disruption of local activity and keeps the Town safe and pleasant. On the other hand, it cannot maximize facilities and infrastructure specifically for tourism and leave it underutilized for the rest of the year when only typical demand is experienced.

The two juxtaposing demand profiles are compounded by the need to accommodate very different vehicle classes. While typical demand consists primarily of private auto and occasional delivery trucks, tourist demand includes a significant percentage of tour buses and recreational vehicles (RVs). The latter vehicle classes require significantly more space to manoeuvre through the Town, and more dedicated parking space.

Most of the town features permissive on-street parking. Some exceptions include total parking restriction on Green Street, and active parking management in the town core, which features time-restricted metered parking. There are also a number of parking lots with varying degrees of management and permissions.



Existing Parking

On-Street Parking

- Permitted
- Managed
- Restricted

Off-Street Parking

- Permitted
- Managed

ACTIVE TRANSPORTATION

To explore solutions that promote active transportation it is essential to understand the existing network. What are the existing conditions that will assist in promoting a healthy and active future for Lunenburg?

Active Transportation Strategic Plan

In 2013 the Town of Lunenburg undertook the creation of the Active Transportation Strategic Plan (AT Plan). The AT Plan reviewed the Town's transportation infrastructure, focusing on the provision of non-motorized, active transportation facilities.

Active Transportation (AT) aims to enhance quality of life, reduce vehicle traffic and improve the experience of public roadways. AT includes walking and biking, which are the focus for this discussion, as well as in-line skating, jogging, skateboarding, and the use of motorized personal mobility devices such as powered wheelchairs and medical scooters.

The Lunenburg Active Transportation Plan aimed to create a well-connected, safe and functional AT network that would encourage a more active, healthy lifestyle. The plan analyzed local conditions, reviewed existing policies and by-laws, determined best-case active transportation practices, and provided the opportunity for community consultation. The AT Plan for the Town of Lunenburg provides:

- Planning principles that were applied in the development of the plan;
- A plan showing the overall network of routes;
- An inventory of existing active transportation infrastructure; and
- Opportunities and design guidelines for future active transportation infrastructure; an opinion of probable costs; and a phasing plan.

Project Lunenburg aims to build upon the past planning work of the AT Plan, as well as identify new initiatives for the Town's future mobility needs.

Blue Route Hubs Bikeway

Bicycle Nova Scotia (BNS) is working with several communities in Lunenburg County, including the Town of Lunenburg, to develop The Blue Route Hubs Bikeway. Currently, the Bay-to-Bay Trail is an open segment of the Blue Route. This project is Nova Scotia's first provincial bike network and will connect Lunenburg to Mahone Bay and Bridgewater as well as surrounding Counties, while also improving the bicycle connectivity within the Town. Overall this project is intended to assist communities in evaluating their potential to develop bicycle routes that make residents of all ages and abilities feel comfortable cycling in their community and encourage active transportation.

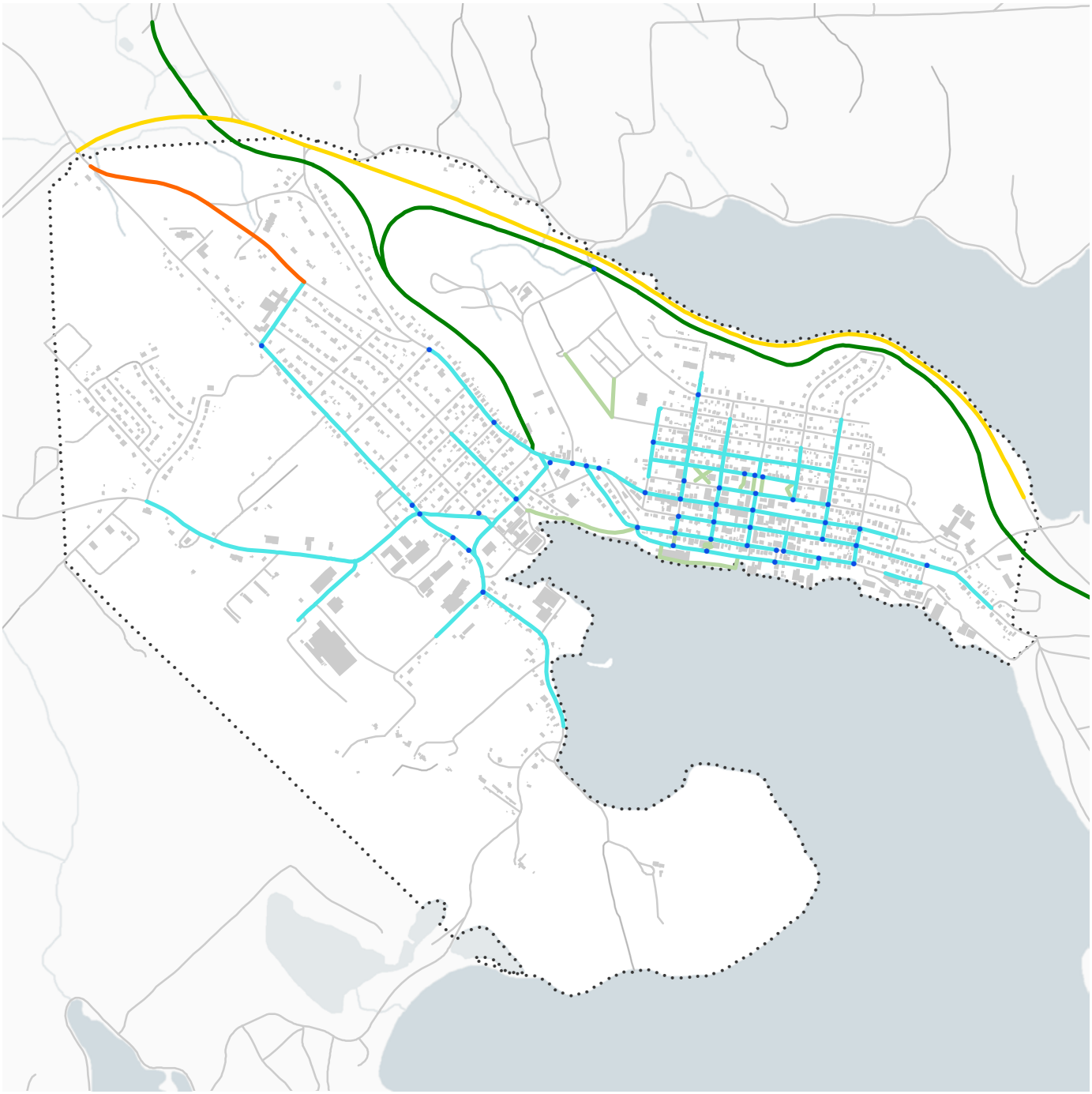
Currently BNS is undergoing Phase One of this project, developing a plan for a bicycle network in the Town of Lunenburg through analyzing the existing cycling conditions, incorporating feedback from the public, Town staff, and stakeholders, and applying an all ages and abilities approach to the planning process. Phases Two and Three intend to continue this work by providing an in-depth evaluation of selected route improvements.

Active Transportation Existing Conditions

The existing network in Lunenburg has many good pieces of infrastructure that partially meet the needs of an active transportation system. Overall, the existing network is an extensive, albeit incomplete and disjointed system of sidewalks, paths, trails, and partial cycling infrastructure throughout the Town. The distinction between Old and New Town is very clear, with active transportation facilities clustered in the Old Town, and at select points around newer developments.

Existing cycling infrastructure can be found both off-road on the Front and Back Harbour Trails, and on-road with a painted bike lane on Dufferin Street and Route 332 to High Street. Many of the local roads have sidewalks and crosswalks, especially in the core of Old Town.

Some of the local roads without sidewalks are rural in nature, with low traffic volumes, low vehicle speeds and narrow gravel shoulders, and are well suited for informal shared use by various modes of transportation.



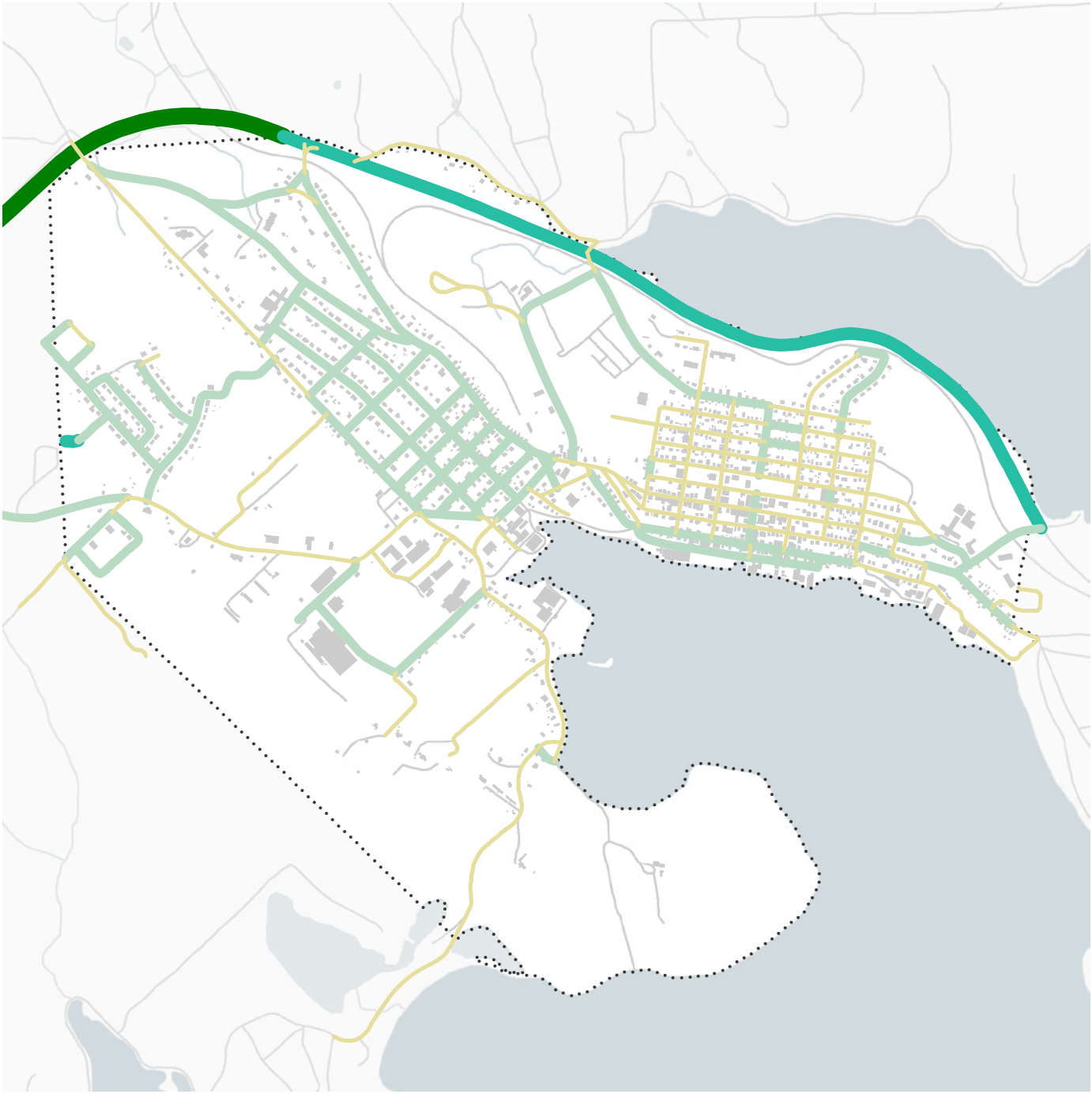
Existing AT Conditions

Sidewalk
On-Road Bike Lane
Paved Shoulder
Path
Trail
Crosswalk

Road Right-of-Way

Discussion of available and possible on-street facilities for cyclists or pedestrians must consider the available road space, or the public right-of-way (ROW), which is the space between property lines. The Town's existing ROW can be separated between the relatively narrow ~12m ROW in the Old Town, and the wider ~18m ROW in New Town. Wider allowances in the streetscape are observed in the newer areas on the periphery of the Town, as well as along key corridors within the Old Town.

Wider public ROW provides opportunity to examine the needs of the road space along those corridors and re-allocate the space in the manner most supportive of the Town's vision, such as bike lanes or sidewalks. In areas where the existing ROW cannot accommodate more infrastructure, it is possible to acquire land and widen the ROW, or to implement new roadway reconfigurations that would achieve the desired travel conditions.



Road Right of Way

The road right of way is the corridor of land in with the roadway travels. It is the width of the property on which the roadway is situated, and may differ in size from the roadway itself.

< 15m
16m - 25m
26m - 40m
41m - 60m

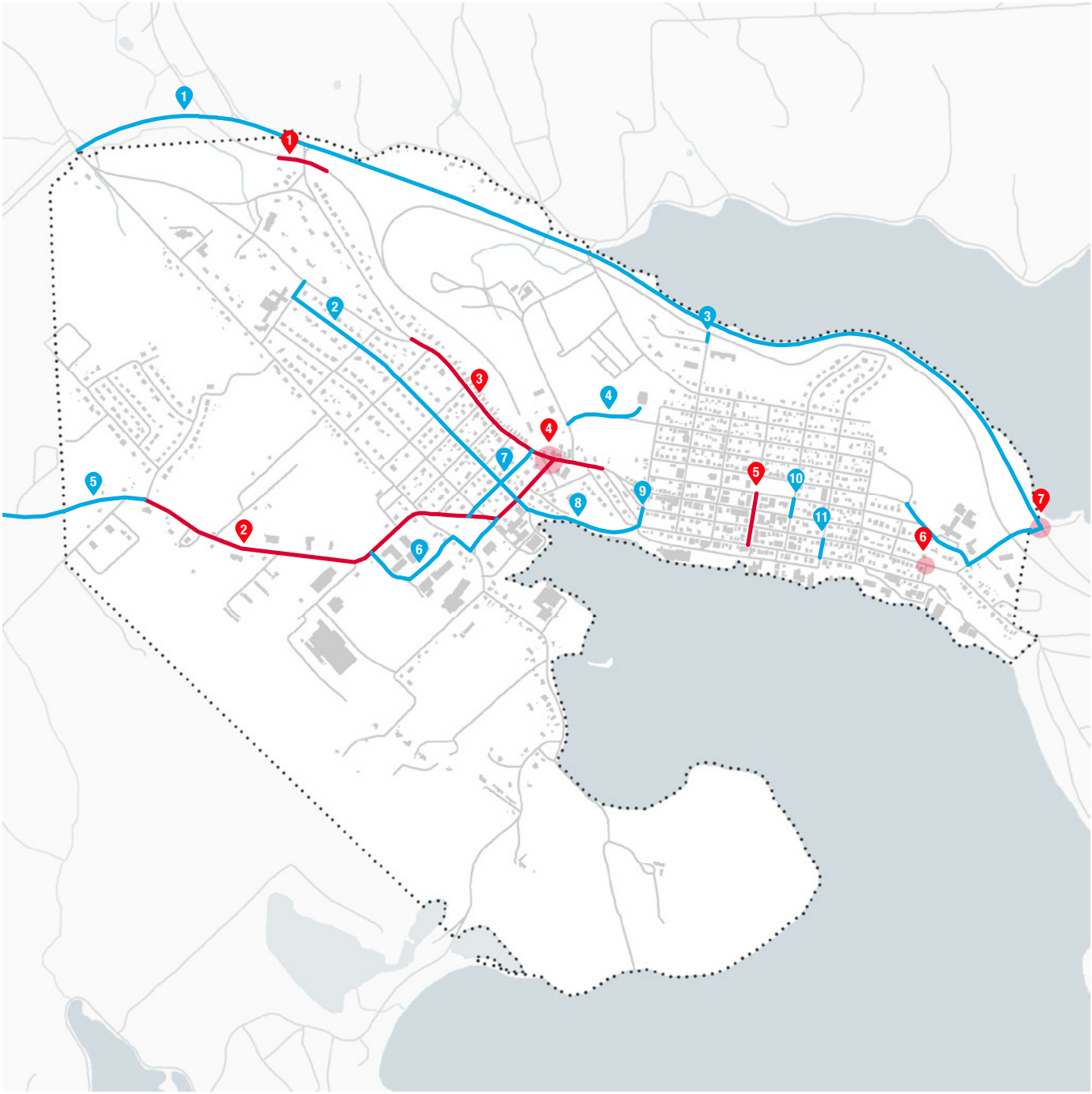
The key issues with Lunenburg's existing active transportation system are gaps in connections to key destinations, connectivity between Old and New Town, and the need to address the unique challenges in Old Town created by tourist congestion.

Opportunities to improve network limitations include:

- reconfiguring the Bay-to-Bay Trail crossing at Maple Avenue;
- improving conditions for walking and cycling on Victoria Road with infrastructure that will reduce traffic speeds and ensure comfort alongside high volumes of traffic;
- developing a strong connection between the Bay-to-Bay Trail and Old and New Town by utilizing existing low-volume streets as bicycle facilities; and
- creating cohesive signage to indicate active transportation routes.

Some of the larger blocks in the Old Town remain without formal mid-block connections, forcing pedestrians to use indirect routes. There are three right-of-ways (Opportunities 9, 10, 11) that are currently grassy areas with no design or management to indicate how they may or may not be used for active transportation.

The Dufferin Road and Falkland Road intersection layout is confusing, especially for visitors unfamiliar with the configuration, and it is perceived as unsafe. Similarly, the intersection of Pelham Street and Shipyard Hill Road is also highlighted as an intersection with safety issues.



Needs

1. Improve trail crossing and stairs
2. Improve conditions for walking and cycling on Victoria Rd and Falkland St
3. Improve parking and conditions for walking on Dufferin St
4. Simplify Dufferin St - Lincoln St - Falkland St intersection
5. Improve conditions for walking on King St
6. Improve safety at Pelham St-Shipyard Hill Rd intersection
7. Improve safety at Sawpitt Rd-Route 332 intersection

Opportunities

1. Route 332 Old-Town vehicle by-pass
2. Bicycle Nova Scotia cycling route on Broad St
3. Connection to Back Harbour Trail
4. Connection to Lunenburg Academy
5. Cycling Blue-Route to Bridgewater
6. Alternative Victoria Rd-Falkland St connection
7. Cycling route on Lorne St
8. Leverage existing pathway
9. Pedestrian connection
10. Pedestrian connection
11. Pedestrian connection

In order to accommodate and encourage human-powered modes of active transportation, routes should be safe, direct, comfortable and logical. Just as local roads, arterial roads and highways work together to form an effective vehicle network, different types of active transportation routes form an effective network for walking and cycling. Designs such as shared streets, protected bike lanes and multi-use paths each accommodate different modes, trip types and spatial contexts.

▸ Shared Streets

In Drachten, a Dutch town in the Friesland province of the Netherlands, shared streets are common and few intersections are signalized. These shared streets (or "woonerf" in Dutch) are increasing in popularity around the world, and many Canadian towns are catching on.

Shared streets began in the hopes of increasing personal responsibility for drivers. The degree of signage and traffic laws vary depending on the shared street, but some eliminate crossings, curbs, speed bumps, traffic lights and signs all together, though paver colouring may distinguish street space from the remainder. Speed limits can be lowered to around 20 km or eliminated altogether.

Although users may at first feel uneasy, this design has been proven to reduce collisions and increase driver awareness. By forcing all commuters to yield to each other, shared streets accommodate pedestrians and people using assistive devices, cyclists, motorcyclists, cars on one road, and traffic flows smoothly. By eliminating street delineations, shared streets can expand public space and offer room for seating, sidewalk cafés, markets and live shows. Shared streets allow room for users who may need more space, such as those using wheelchairs, walkers, vision canes, or even strollers. For pedestrians with vision loss, this model can be more difficult to navigate, but with careful design these spaces can be accessible and comfortable for all.

▸ Protected Bike Lanes

Bike lanes can protect cyclists using parked cars, bollards or landscaping, and some guerrilla urbanism or pop-up tactics use all manner of dividers from pylons to plant pots to toilet plungers. In order to make cycling safe, comfortable and easy, protected bike lanes lower stress and danger by separating cyclists from fast-moving cars. A study from Portland, Oregon found that protected bike lanes could promote alternative transportation by targeting the 60% of people that were interested in cycling but feared for their safety.

Cyclists are more sensitive to the design and topography of streets, and so some places, like Seattle, Washington, have designed bike lanes that include a passing lane on inclining slopes for faster cyclists or electric bicycles, and bike lanes that divert around transit stops. In order to make bike lanes effective, snow clearing prioritization is key, and route connectivity must allow cyclists to continue along a comfortable route at either end of the lane.

▸ Multi-use Paths

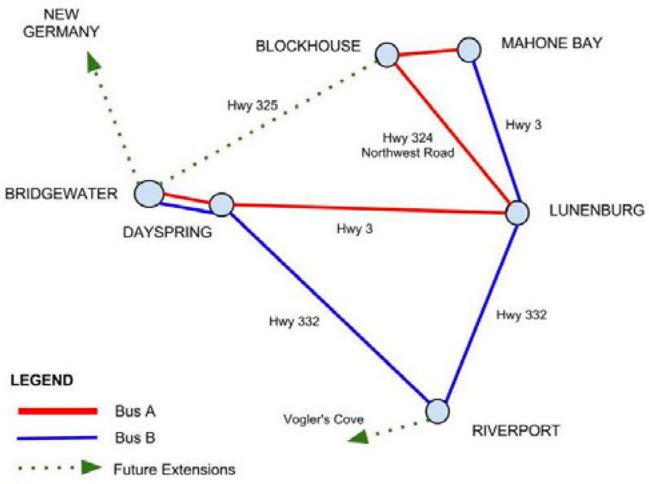
Multi-use paths are two-way routes separated from the street and designed to accommodate both pedestrians and cyclists. These paths require cyclists to slow and yield to pedestrians, and offer a space-saving option where there is no room for both sidewalks and protected bike lanes. This is often a preferred option alongside highways and major roads, through waterfronts, parks, or neighbourhood short-cuts. Multi-use paths are intended to be low-stress, and can be used by any variety of users, whether for transportation or recreation. By eliminating the interaction with cars, these paths are often more comfortable for vulnerable users such as less experienced cyclists, those with physical or sensory disabilities, seniors, and small children. Paths may offer wayfinding signage to nearby destinations or connecting roads, and can be a major tourist draw.

PUBLIC TRANSPORTATION

A public transportation network allows passengers to travel with ease around a fixed area. While Lunenburg currently does not have access to a transit system, what could be done to implement public transit in the community or utilize existing networks?

The Town of Lunenburg does not currently have access to a transit system. Two studies have been undertaken exploring the feasibility of a regional transit system (Municipality of the District of Lunenburg, *Public Transportation Feasibility Study*, 2009; and the Joint Transportation Committee *2014 Public Transportation Study*). Consultations for these studies clearly demonstrated a community need for a publicly funded transit service. A key challenge for transit through the region is the size and extent of the service area, where many residents travel long distances to their destinations. These studies examined a range of service frameworks and strategies for implementation.

There has been partial regional success to date and efforts are ongoing to implement a service within the resources of the Town of Lunenburg and neighbouring municipalities. Since the two transportation studies were completed, the Town of Bridgewater has implemented an independent system (Bridgewater Transit), and two private regional transportation businesses have begun to operate routes to Lunenburg.



▸ Citizens for Public Transit

TransitLunenburg was conceived by the Citizens for Public Transit (CPT) as a scheduled, fixed-route public bus system within Lunenburg County. The initial vision for this plan includes two routes, A and B, linking the Towns of Bridgewater, Mahone Bay, Lunenburg, and Riverport. CPT, a group of Lunenburg County residents, is recommending the system to the Municipality of the District of Lunenburg (MODL) and the three Town Councils of Bridgewater, Lunenburg, and Mahone Bay, seeking financial assistance from the Government of Nova Scotia.

The study is ongoing, and is continuing to seek an opportunity to incorporate some form of local transit service in the Town of Lunenburg.

▸ Bridgewater Transit

After a series of community consultations and extensive research by a consulting team, a Public Transit Feasibility Study was completed in 2017, exploring if Bridgewater was ready for a transit system, and what that system would look like to suit the needs of the community.

The report recommended a single 20-passenger bus, travelling a 45-minute loop around Town, connecting where people live with the various employers, services, and destinations of Bridgewater. The Feasibility Report also considered costs to ride the bus and to operate the system, locations for bus stops, types of ticket systems, and what hours the service would run.

In 2017, Bridgewater Town Council moved forward with a six-month pilot project that focused on a 16-kilometre service loop in Bridgewater, running on the hour. The pilot ran through the end of March 2018, at which time Town Council approved the service to continue.

Currently the transit route contains 25 designated stops in addition to a flag stop system. This system is part of a new phase in Bridgewater Transit planning, utilized to determine future bus stop locations to meet the needs of residents.

► Alternative Routes

Alternative Routes offers an in-depth and flexible approach to passenger travel, operating as a hop-on hop-off shuttle bus service. The van travels a daily loop from Halifax, down the South Shore to Bridgewater, across the province to Kentville, and through the Annapolis Valley to Halifax again. The trip takes a total of nine hours, with a half-hour stop in Peggy's Cove, and two hour-long stops in both Lunenburg and Wolfville.

Passengers can purchase single-trip tickets to get to a specific destination, or a hop-on hop-off pass allowing them to choose to stay at any destination along the way and for however long they want to stay there before continuing the tour. The tour service offers an economical and hassle-free option for all kinds of travellers, ensuring they can all travel at their own pace.

► Maritime Bus

After six years without a bus line, Bridgewater, Mahone Bay, Chester, and Lunenburg became connected to Halifax once again in 2018 by the inter-city bus service Maritime Bus.

This pilot service offers a Halifax-bound mid-morning trip and a late afternoon return trip from Halifax. While the general route is fixed, stops are scheduled on the individual basis of passengers. Overall, this route provides an opportunity for locals to visit other communities in the region, and tourists to reach Lunenburg.

The route has been modified slightly since its inception in 2018, which started with three round trips per day. In March 2019 the route was reduced to one round trip a day due to low ridership. Maritime Bus plans to re-evaluate ridership numbers at the end of summer 2019 to consider future modification to the route. .

MARINE TRANSPORTATION

Lunenburg was founded on its relationship to the sea and connections near and far were made by marine transportation. How can waterfront infrastructure continue to accommodate the diverse harbour users?

Lunenburg's Working Waterfront

Lunenburg's working waterfront is a major part of the town's history, identity and culture. The Lunenburg harbour is active year round and especially busy during the summer months. Lunenburg Harbour sees commercial marine traffic related to the fishery, ship repair, and wharf services. There are tour boats as well as an increasing number of recreational boats using the Lunenburg Harbour and facilities. Lunenburg Harbour is federally owned and managed by Transport Canada. Lunenburg is a port of entry for the Canada Border Services Agency.

Develop Nova Scotia's 5-year Strategy for marine related activities on the Lunenburg Waterfront includes a number of initiatives that will increase recreational and commercial marine activity over time. These include the structural upgrade and use of wharves currently out of service, continued improvements in the provision of services for recreational boaters and infrastructure improvements to help support and grow marine related businesses involved with boatbuilding, ship repair and ocean/marine technologies. Subsequent increases in vehicular traffic to these areas will likely also occur over time.

Recreational Boating Facilities

Currently recreational boaters may secure moorings by means of private arrangements, or by contacting the Lunenburg Boat Locker and 'renting' short term moorings. They berth primarily at Zwicker Wharf; but also have used: Shipyard Wharf, Adams & Knickle (larger vessels), Museum Wharf (larger vessels). In 2018, the first year keeping record, Zwicker Wharf berthed approximately 90 visiting boats and accommodated almost 250 overnight stays. As part of the Lunenburg Waterfront Marina, Develop Nova Scotia has made a number of infrastructure upgrades to the Zwicker Wharf in order to provide additional services to recreational boaters as well as enhance the experience of other visitors to the Lunenburg waterfront. The Town owns and operates the Broad Street boat launch, which provides public access to the Harbour for smaller recreational boats.

Recreational Boating

Broad St Wharf

Museum Wharf

Adams & Knickle Wharf

Zwicker Wharf

Shipyard Wharf & Haul-Out

Mooring Field


HOUSE ART
AND STUDIO
LAURIE SWIM
GALLERY

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